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# Enhancing the Cohesiveness of a Cognitive Diverse Team: the Role of Leadership

Upatham Atiwate

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ENHANCING THE COHESIVENESS OF A COGNITIVE DIVERSE TEAM:  
THE ROLE OF LEADERSHIP

by

ATIWATE UPATHAM

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
Department of Human Resource Development and Technology

Jerry W. Gilley, Ed.D., and Judy Yi Sun, Ph.D., Committee Co-Chair

College of Business

The University of Texas at Tyler  
December 2014

The University of Texas at Tyler  
Tyler, Texas

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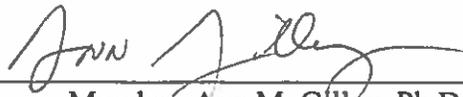
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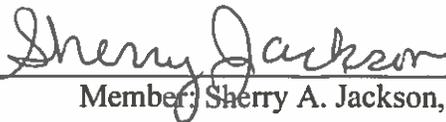
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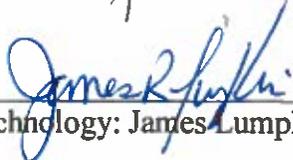
  
Dissertation Co-Chair: Jerry W. Gilley, Ed.D.

  
Dissertation Co-Chair: Judy Yi Sun, Ph.D.

  
Member: Ann M. Gilley, Ph.D.

  
Member: Sherry A. Jackson, Ph.D.

  
Chair, Department of Human Resource Development: Jerry W. Gilley, Ed.D.

  
Dean, College of Business and Technology: James Lumpkin, Ph.D.

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## **Abstract**

Researchers have been interested in the concepts of leadership, cognitive diversity, and team cohesiveness and much research has been done in these areas separately. The uniformity of the topics is still lacking in terms of the relationship among these variables. This research set out to explore the relationship between cognitive diversity and team cohesiveness as it was enhanced by the different leadership characteristic traits. These leadership characteristic traits consisted of charisma, individualism, and empowerment. The multiple regression analysis method was used to study the relationship among these variables.

Based upon data collected from a sample of 1,015 participants in six different types of industries, I found that there was a positive relationship between cognitive diversity and team cohesiveness. I also found that leadership individualistic trait did not have any relationship to team cohesiveness. Leadership charismatic trait did explain some variance on team cohesiveness but did not moderate the relationship between cognitive diversity and team cohesiveness. Lastly, leadership empowering trait had a direct relationship to team cohesiveness as well as moderated the relationship between cognitive diversity and team cohesiveness.

## **Chapter 1: Introduction**

### **Background to the Problems**

The definition of diversity is being redefined and studied differently, thus moving away from demographic quantifiers alone (Egan, 2005). The traditional demographic quantifiers most commonly used to describe diversity are gender, age, ethnicity, nationality, education, and workplace status (Podsiadlowski, Groschke, Kogler, Springer, & van der Zee, 2013). It is argued that even though there are no differences in demographic quantifiers, it is possible for a homogeneous team to still be diverse cognitively (Olson, Paryitam, & Bao, 2007).

In today's complex, ambiguous, and fast moving business climate (Ante & Schuelke, 2011), it is more important than ever that organizations assemble and lead cognitively diverse teams capable of generating multiple ideas, alternatives, and decisions that ultimately lead to a better outcome in the form of higher performance (Egan, 2005; Gilley, Gilley, McConnell, & Veliquette, 2010; Groves & Feyerhern, 2010; Malik, et al., 2012; Olson et al., 2007). This business environment has also been partially moderated by the changing level of competition in the market place, forcing many companies to redesign their structures and become more customer-oriented (Berber & Rofcanin, 2012). As a result, organizations' clients also become more diverse, which leads to different types of demands (Egan, 2005). Shin, Kim, Lee, and Bain (2012) reported that when transformational leadership was high, it helped moderate the level of positive relationship between cognitive diversity and individual creativity. Artiz and Waler (2014) found that leadership styles could have influence over the members' participation, contribution, feelings of inclusion, and satisfaction. However, there is a minimal amount of research

literature that examines leadership characteristic factors needed to lead successful cognitively diverse teams.

Organizations are changing at a rapid rate (Bass, Avolio, Jung, & Berson, 2003), which is particularly evident as organizations become increasingly globalized (Armache, 2012; Milliken & Martins, 1996; Shaw & Barrett-Power, 1998; Webber & Donahue, 2001), or are forced to change through mergers and acquisitions (Thompson, Wallace, & Flecker, 1992). Globalization of the corporations leads to the increase of the diversity in background, knowledge, and expert integration of employees (Horwitz, 2005; Podsiadlowski, Groschke, Kogler, Springer, & Van der Zee, 2013). These organizations have become dependent upon the aggregate skill sets of teams more now than in the past (Kearney, Gerbert, & Voelpel, 2009; Shen & Chen, 2007), and this team diversity creates challenges in terms of differences among individual values, cognitions, and cultural composition (Groves & Feyerhern, 2011; Thompson, Wallace, & Flecker, 1992).

Globalization has not only created the need to understand team diversity as mentioned above but also the need to understand how to lead diverse teams. The effective leadership of the diverse team is a new reality that organizations must accomplish in order to be successful (Aritz & Walker, 2014). Leadership may directly influence the workforce diversity and cannot be ignored (Podsiadlowski et al., 2013). Podsiadlowski et al. (2013) indicated that the management of the diverse workforce should fluidly adapt to the type of the dominant diversity represented. Aritz and Walker (2014), in the cultural diversity study, suggested that leadership styles may affect the team members' "feelings of inclusion and satisfaction within the group" (p. 72).

## Statement of the Problems

In today's highly competitive business environment (Ante & Schuelke, 2011), it is critical that organizations amass cognitively diverse teams and use these teams to generate cutting edge ideas, alternatives, and decisions that ultimately lead to higher performance and the prevention of market share erosion (Gilley & Gilley, 2000; Gilley, Gilley, McConnell, & Veliquette, 2010; Olson et al., 2007).

Unfortunately, not all members within a team perform well together (Hackman & Morris, 1975) and conflicts accompany team diversity (Jehn & Mannix, 2001), which can negatively affect a team's effort and performance (Shen & Chen, 2007). It is the characteristics and skills of team leaders who can effectively lead and moderate these cognitively diverse teams (Gilley et al., 2010). Concurrently organizations must seek ways to manage or prevent the negative effects of cognitive diversity within teams (Kearney, Gerbert, & Voelpel, 2009). Creating a synchronous and harmonious team may not be as simple as one may think.

*“Although in theory it may sound easy to place diverse individuals together into work teams and await superior performance, often in reality, many irreconcilable divisions among heterogeneous individuals lead to dysfunctional team interactions and, thus poor performance and decreased morale” (Horwitz, 2005, p. 220).*

Wang et al. (2005) indicated that cohesion can predict group behavior and that group cohesion is defined as the amount “group members feel a part of the group and desire to remain in the group” (p. 175). Leadership style also has a direct influence on team cohesiveness (Kasemsap, 2013; Wang et al., 2005). Soldan (2010) indicates that when diversity in groups is low, group cohesiveness was found to be uncorrelated to team

performance. On the other hand, Woehr, Arciniega, and Poling (2013) indicate that high levels of team diversity are correlated to low levels of team cohesion.

The definition and concept of diversity are being redefined, moving away from demographics alone (Egan, 2005). However, it is possible for a homogeneous team to have cognitive diversity (Olson, Paryitam, & Bao, 2007). Therefore, the study of cognitive diversity may be necessary especially in the area of leadership characteristic factors needed to lead a successful, cognitively diverse team. In more complex, higher-level decision-making type teams, cognitive diversity plays a role in influencing the team's outcome. Tegarden, Tegarden, and Sheetz (2009) stated that cognitive diversity can have an effect on team performance, especially during strategic planning.

Leadership types are known to directly affect teams. Kearney and Gebert (2009) indicated that high levels of transformational leadership were positively related to team performance. Transformational leadership exhibits traits that consist of charisma, individualistic, empowering, and visionary (Bass, 1990). They further confirmed that “transformational leadership moderates the relationship of age, nationality, and educational diversity with team performance” (Kearney & Gerbert, 2009, p. 86). Transformational leadership exhibits traits that consist of charisma, individualistic, empowering, and visionary (Bass, 1990).

Charismatic leadership has also been reported as an effective leadership style that may foster team cohesiveness (Wang, Chou, & Jiang, 2005). Charismatic leaders are believed to exhibit traits that consist of “envisioning, empathy, and empowerment” (Choi, 2006, p.24).

Kasemsap (2013) further reported that empowering leadership is positively related to team cohesiveness. Empowering leaders exhibit traits that consist of empowering, individual concerns, motivational, and supportive (Amundsen, Martinsen, & Campbell, 2013; Martin, Liao, & Campbell, 2013).

Servant leadership has also been associated with team performance and team potency (Hu & Liden, 2011). Dennis and Bocarnea (2005) cited Patterson (2003), who described servant leaders as having the individualistic, humility, altruistic, visionary, trusting, serving, and empowering traits.

The charismatic trait in a leader is defined as the leader's ability to energize and excite followers (Bono & Ilies, 2006). Shamir, House, and Arthur (1993) indicate that leaders with the charismatic trait are able to engage their followers to believe and be excited about the mission. Furthermore, leaders with the charismatic trait can emotionally express their visions and goals (Bono & Ilies, 2006). Bono and Ilies (2006) indicate that leaders with charisma also express positive emotions, which may be transmitted to the followers. This is significant because these positive emotions are associated with leaders' perceived effectiveness and followers' attraction to leaders (Bono & Ilies, 2006). Followers also feel the attachments, both emotional and motivational, that consequently lead them to believe and support the expressed mission (Bass, 1990; Shamir et al., 1993). Employees trust in leaders with the charismatic trait and strive to identify with these leaders (Bass, 1990).

The empowerment trait consists of the willingness of the leader to share power with subordinates and help facilitate their development (Amundsen & Martinsen, 2013; Conger & Kanungo, 1988). This power sharing goes beyond task delegation. It

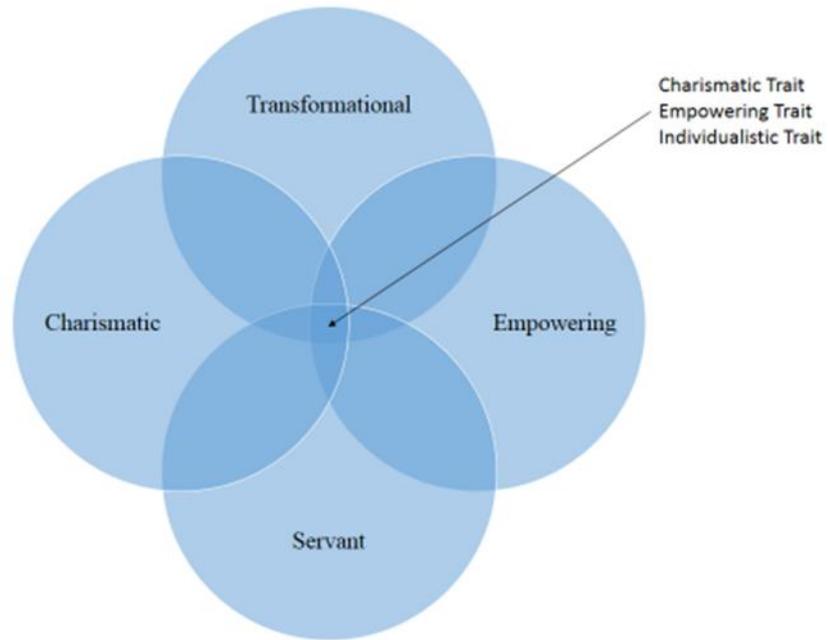
includes the process of “enhancing feelings of self-efficacy among organizational members” (Conger & Kanungo, 1988, p. 474). The empowerment trait is important because leaders who empower their employees create teams that are adaptive to organizational change and meet performance goals (Conger & Kanungo, 1988). Leaders who empower team members are able to produce better outcomes. Individual empowerment has been linked to team performance since empowered individuals believe that they have the autonomy to contribute work that will help organizations succeed (Chen, Kirkman, Kanfer, & Allen, 2007).

The individualistic trait commonly refers to individual consideration. This trait refers to the behavior of a leader that focuses on fostering the growth and needs of followers (Bono & Judge, 2004). Judge and Bono (2000) indicate that leaders with the individualistic trait help coach and mentor individual followers. Leaders with individualistic traits are constantly on the search for potential leaders among employees (Bass, 1985). They strive to meet each employee’s emotional needs (Bass, 1985; Bass, 1990). Individual consideration also means that leaders “pay close attention to differences among their employees” (Bass, 1990, p. 21). This is significant because managers are observed to pattern their leadership style after previous leaders (Bass, 1990). The individualistic trait may directly influence future leaders of the organization. Bass (1990) suggests that if top level executives exhibit transformational type behaviors, lower level managers will also emulate the behaviors; thus making the individualistic traits critical. Most important, employees reporting to leaders with individualistic trait feel that they are part of the team (Bass, 1985).

Ruggieri and Abbate (2013) further link leadership to team cohesiveness, which leads to the team's success. Wang and Huang (2009) reported that transformational leadership may be positively associated with team cohesiveness. Researchers have found that the cohesiveness factor is directly related to team performance (Chen, 2013; Kasemsap, 2013; Ruggieri & Abbate, 2013; Sivasubramaniam, Liebowitz, & Lackman, 2012; Soldan, 2010; Wang, Chou, & Jiang, 2005; Wang & Huang, 2009; Wendt et al., 2009).

Many leadership styles seem to enhance team performance as well as promote cohesiveness. It is unclear whether leadership styles or leadership traits dominate the enhancing effects of team performance and team cohesion. Little can be found that links leadership traits and skills, in a synchronous manner, to the cohesiveness of cognitively diverse teams.

Figure 1 demonstrates the cross section of the different traits among leadership styles. There are many traits that are common across the leadership styles. The three prime focuses of this dissertation research are the charismatic, empowerment, and individualistic traits.



**Figure 1: Leadership Traits Commonality Among the Leadership Styles**

Organizations are becoming more diverse as they expand globally. The nature of the work has become more complex as organizations try to maintain a competitive edge. The need of the team is critical due to the complex nature of work. Teams are demographically diverse and also cognitively diverse. Cognitively diverse teams, when not managed properly, can cause deterioration in the team due to the lack of cohesiveness. Leadership is known to moderate team cohesiveness, which is linked directly to team performance. There are three primary shared traits between several leadership styles: charisma, empowerment, and individualism. Although researchers have explored these topics, there is very little literature on how leadership traits affect the relationship between team cognitive diversity and team cohesiveness.

## **The Purpose of the Study**

Leadership traits, rather than leadership styles, may enhance team outcomes. This research studied leadership traits and their enhancing effects on the relationship between team cognitive diversity and team cohesiveness. The study explored the impact of leadership traits commonly shared across leadership styles on cognitively diverse teams because “effective leaders are especially capable of fostering group cohesiveness and promoting efficacy in goal attainment” (Ruggieri & Abbate, 2013, p. 1171). Avolio, Bass, and Jung (1999) indicated that a few leadership styles share certain characteristics. This study tested the commonality in the traits between styles and how they affected the cohesiveness of cognitively diverse teams.

## **Research Questions**

The research aimed to address the specific gap in the literature that exists in the relationships between cognitive diversity, team cohesiveness, and leadership characteristic traits. More specifically, this research explored the influence that leadership characteristic traits have on the relationship between cognitive diversity and team cohesiveness. The research questions are divided into two major, overarching questions. They are as follows:

1. Is there a relationship, positive or negative, between a team’s cognitive diversity and team cohesiveness?
2. Are there any specific character traits of leaders that moderate the relationship between team cognitive diversity and team cohesiveness?

## **Significance of the Study**

Diversity is being viewed as effective business strategy that allows organizations to access global customers (Podsiadlowski, et al., 2013). This research may provide a unique perspective from a cognitive point of view. There is a need for the study of a more complex level of diversity; specifically, to explore diversity at the cognitive level (Kilduff et al., 2000; Tegarden et al., 2009). This research may provide the Human Resource Development (HRD) field some understanding of the interactions between cognitive diversity, team leadership traits, and team cohesion. This is an important contribution because as organizations expand and become more complex, individuals can no longer handle complex tasks on their own.

Organizations are gaining competitive advantage in both manufacturing and engineering functions through acquisitions and outsourcing (Brown, 2009; Chang, Kuo, & Chen, 2008). The usage of teams becomes necessary in order to accomplish complex tasks. New demands and requirements create problems that organizations must solve, and as they become more complex, this increasing complexity cannot be addressed by an individual within the organization alone (Hackman & Morris, 1975).

Cognitive diversity in teams may create discord problems, especially in the area of team cohesiveness, if not managed properly. It is also important to realize that work team performance is directly linked to team cohesiveness (Wang & Huang, 2009) and that cohesiveness has been shown to be a critical determinant of team performance (Sivasubramaniam, Liebowitz, & Lackman, 2012). Team cohesiveness is important because organizations can only harvest the benefits of work efficiency, higher profit margins, and quality product outputs when employees are fully committed to the vision

and mission of the firm (Fritz, O'Neil, Popp, Williams, & Arnett, 2013). This research will contribute quantitative data to help with the understanding of this relationship between leadership traits and resulting team cohesiveness.

Cognitive diversity, when managed properly, has been shown to have a positive effect on team performance (Tegarden et al., 2009), although it is not typically addressed in research on cognitive diversity (Kilduff et al., 2000).

Organizations need effective leaders more than ever; as the “rapid accelerating pace of organizational change has made effective leadership imperative” (Gilley, McMillan, & Gilley, 2009, p. 38). An organization’s growing demographic diversity may result in the increase of cognitive diversity (Kilduff, Angelmar, & Mehra, 2000). Kaiser and Overfield (2010) also indicated that effective leaders add value to their organizations in terms of organizational revenue performance by leading teams to outperform the competitors in the market place.

There exists literature espousing the role of leadership on team performance (Hackman & Morris, 1975) and literature on the importance of cognitive diversity within teams. Leadership styles alone might not be enough to determine the necessary needed skills to lead teams due to the complexity of leadership styles. Specific leadership traits may provide a simpler way to select and train today’s leaders in effective leadership skills. It is possible that the results of this study might influence organizations to select and train leaders and managers who have the traits needed to be more effective at leading cognitively diverse teams.

Human Resource Development (HRD) professionals and scholars alike may address these organizational challenges by managing, adjusting, and developing

intellectual resources by creating and mentoring effective leadership. The knowledge gaps in this area must be filled as organizations expand and acquire vast and complex intellectual resources. The results of this study are expected to contribute and add to the empirical data and overall HRD knowledge on how leadership traits influence cohesion level of cognitively diverse teams.

The field of HRD has been interested in organizational change for a long time. Many organizations have utilized HRD professionals to lead change and create a smooth transition with succession planning. The research need is directly related to external economic influences causing organizations to adjust and overcome new challenges. Economic conditions require organizations to become increasingly more flexible and adaptable (Becker, Carbo II, & Langella, 2010), as the changing level of competition in the market place is forcing many companies to redesign their structures and become more customer-oriented (Berber & Rofcanin, 2012).

It is the intent of this study to explore those leadership traits, in the order of impact on teams. With increased levels of transparency, characteristic traits may be a better way of measuring and training future leaders in order to gain the ability to lead cognitively diverse teams.

### **The Terms and Definitions**

#### **Team:**

A team is defined as a group of people containing two or more members who work together toward a common goal (Tannenbaum, Mathieu, Salas, & Cohen, 2012).

**Team Cohesiveness:**

Festinger, Schachter, and Back (1950), as cited in Wang & Huang (2009), posited that a team's level of cohesiveness indicated the amount of professional attraction that demonstrated the members were willing to work and stay together as a team.

**Cognitive Diversity:**

Cognitive diversity is defined as the differences in beliefs, preferences, or world views of team members (Melone, 1994; Miller, Burke, & Glick, 1998).

**Charismatic Leadership:**

Charismatic leadership is defined as the type of leader who exhibits the traits that consist of "envisioning, empathy, and empowerment" (Choi, 2006, p.24).

**Transactional Leadership:**

Transactional leadership is defined as the type of leader who primarily employs exchange type of techniques such as giving praise and incentives to employees for meeting expectations or punishments for missing expectations (Bass 1985; Burke, Stagl, Klein, Goodwin, Eduardo, & Halpin, 2006).

**Transformational Leadership:**

Transformational leadership is defined as a leader who encourages and motivates his or her constituents to do more than normally expected, raising the level of awareness about task outcomes, motivating team members to rise beyond their self-interest, and moved the individual's needs level up the Maslow's pyramid (Bass, 1985).

**Empowering Leadership:**

Empowering leadership is defined as the type of leader who “shares power with employees by delineating the significance of the employees’ jobs, providing greater decision-making autonomy, expressing confidence in their capabilities, and removing hindrances to performance” (Zhang & Bartol, 2010, p 109).

**Servant Leadership:**

Servant leadership is defined as the type of leader who purposefully takes on the role of the servant in helping teams (Russell & Stone, 2002).

**Leadership Charismatic Trait:**

The charismatic trait in a leader is defined as the leader’s ability to energize and excite followers as well as engage them to believe in and be excited about the mission of the organization (Bono & Ilies, 2006; Shamir, House, & Arthur, 1993).

**Leadership Empowering Trait:**

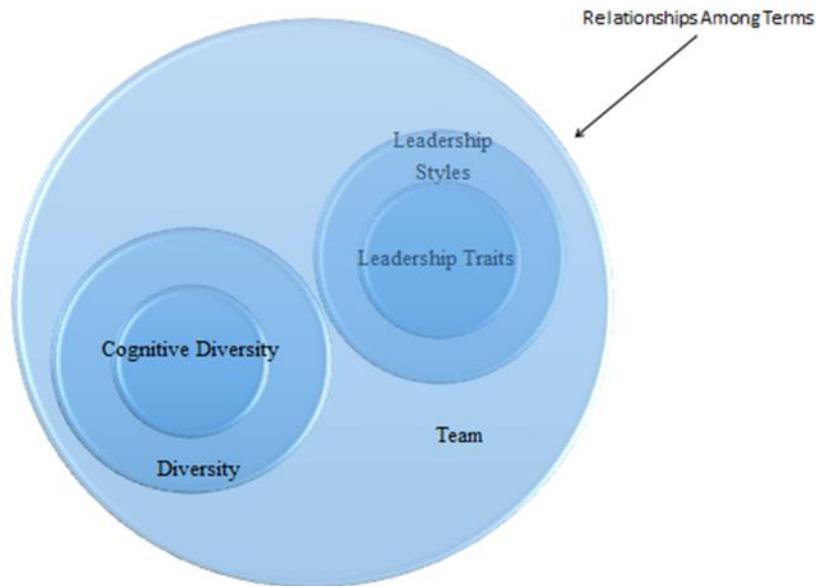
The empowering trait in a leader consists of empowering, individual concerns, motivational, and supportive (Amundsen, Martinsen, & Campbell, 2013; Martin, Liao, & Campbell, 2013).

**Leadership Individualistic Trait:**

The individualistic trait in a leader refers to the behavior of a leader that focuses on fostering the growth and needs of followers (Bono & Judge, 2004).

Figure 2, pictorially, demonstrates relationships among terms. Both leadership and diversity in this case are subsets of a team as shown nested inside team superset.

Further exploration indicates that leadership traits are shown to be a subset of the team leadership style set. Cognitive diversity is shown to be a subset of team diversity.



**Figure 2: Relationship Among Terms**

In conclusion, there exists a wide variety of diversity types. Cognitive diversity, which is a subset of diversity, is a deep level and more complex type of diversity. Such diversity can affect the function of a team. Cognitive diversity may cause conflict in the team and thereby reduce team cohesiveness which is critical to team effectiveness. I proposed that leadership traits, which are the subsets of leadership styles, may moderate the level of the relationship between cognitive diversity and team cohesiveness. This research explored how leadership trait may influence the level of the relationship between cognitive diversity and team cohesiveness.

## **Chapter 2: Literature Review**

This chapter reviews, analyzes, and critiques the literature in team diversity, team cohesiveness, leadership in teams, leadership types, leadership in relationship to teams, and leadership preference in diverse teams. The purpose of this review is to identify a research gap and lay the groundwork for this study.

This review will be organized into seven sections. The first section reviews teams and team cohesiveness. The second section reviews diversity and its definitions and types. The third section reviews diversity in teams as well as how diversity influences the team. The fourth section reviews leadership in teams. The fifth section reviews leadership in relation to teams and diversity. The sixth section reviews leadership preference in diverse teams. The last section addresses the theoretical underpinning literature supporting the study of this research.

The following databases were used to search relevant literature: Business Source Complete, Emerald, Sage: Management & Organization, PsycINFO, Science Direct, Springer Link, and Wiley Online through The University of Texas at Tyler library connection. Google Scholar was also employed to search relevant terms. These relevant terms include teams, team diversity, cognitive diversity, team leadership, leadership for diverse team, and leadership for cognitively diverse team.

### **Teams**

Teams are essential components of organizations. Organizations have been utilizing and employing team-based structures due to their valuable contributions to productivity and creativity outcomes (Dixon & Panteli, 2010). Boyett and Conn (1991),

as cited in Jehn and Mannix (2011), stated that organizations are migrating to team-based structures as the demand for efficiency increases as well as the need to be more effective in generating better solutions that require the support of others (Maier, 1967). Teams tended to produce more as well as hold larger amount of knowledge than individual members; according to Mailer (1967) “there is more information in a group than in any of its members” (p. 239).

Salas, Dickinson, Converse, and Tannenbaum (1992) declared that, to be considered a team, there must be at least a set of two or more members who collaborate synchronously toward a common outcome and that these members must be assigned certain responsibilities to accomplish (Tannenbaum, Mathieu, Salas, & Cohen, 2012). Kozlowski and Bell (2003), as cited in Tanenbaum et al. (2012), defined a team as a collection of members who assemble to accomplish tasks assigned by the organization such that these individuals work toward a common goal while operating within social norms. The traditional team definition held four common themes including stable tenure of members, exclusive membership to the team, stability of tasks definitions, and team member colocation (Tannenbaum et al., 2012).

Horwitz (2005) stated that “humans are social animals in that they are inclined to congregate and act in groups” (p. 223) and that in team through group interaction, there was exchange of information as well as knowledge. Tannenbaum et al. (2012) indicated that teams are changing and that they are no longer collocated. In fact, teams are now more dispersed geographically than they have ever been.

The traditional types of team include production, decision-making, and action teams (Tannenbaum et al., 2012). Recently other teams such as flash teams, emergency

large scale teams (Tannenbaum et al., 2012), and virtual teams (Dixon & Panteli, 2010) have become prevalent. Berber and Rofcanin (2012) suggested that flexible dynamic teams, that do not last a long period of time, have also emerged. Dixon and Panteli (2010) indicated that virtual teams are teams that utilize the communication technologies to replace the face-to-face interactions. The use of technology by virtual teams allowed members not only to overcome physical space limitations and to cross the geographical boundaries but also be more adaptive and representative in the changing nature of organizational teams (Dixon & Panteli, 2012; Tannenbaum et al., 2012).

West and Lyubovnikova (2012) took a different approach in their commentaries to Tannenbaum et al. (2012). They segregated teams into two primary types: real teams and pseudo teams. Richardson (2010), as cited in West and Lyubovnikova (2010), argued that a real team is a recognized group of people working toward achieving common objectives with unique roles and responsibilities. The author laid out six criteria that a team must have in order to be considered a real team. These criteria are: collaboration, common goals, self-regulation, bidirectional relationships, finite roles, and unique roles (West & Lyubovnikova, 2011). On the other hand, Richardson (2010), as cited in West and Lyubovnikova (2010), pointed out that other teams appointed by the managers in the organization that do not meet the aforementioned criteria may be considered pseudo teams. As one can see above, the definitions and types of teams are evolving thus requiring a great deal of attention for the years to come.

## **Team Cohesiveness**

Amabile et al. (2004) and Littlepage et al. (1989), as cited in Kasemsap (2013), indicated that team cohesiveness is defined as the level of commitment that team members have toward common goals as well as activities. Festinger, Schachter, and Back (1950), as cited in Wang and Huang (2009), posited that a team's level of cohesiveness indicated the amount of professional attraction and that the members were willing to work and stay together as a team. Carron et al. (1985) identified two types of team cohesiveness, which are task cohesiveness, being that the team works together toward common objectives, and social cohesiveness, representing the relationships between the team members (Kasemsap, 2013). Team cohesiveness is important because the cohesiveness factor is directly linked to team performance (Chen, 2013; Kasemsap, 2013; Ruggieri & Abbate, 2013; Sivasubramaniam, Liebowitz, & Lackman, 2012; Wang, Chou, & Jiang, 2005; Wang & Huang, 2009; Wendt et al., 2009). Stinson and Hellerbrandt (1972) did, however, indicate that Stogdill (1959) found the relationship between team cohesiveness and team performance to be negatively correlated.

## **Diversity**

Increasingly diverse organizations and work places have driven the need to understand different points of view that influence decision-making (Olson, Paryitam, & Bao, 2007). Githens (2011) defined diversity as "race, gender, ethnicity, sexuality, age, class, or disability" (p. 41). Githens (2011) cited the work of Mor-Barak (2011), presenting the three views of diversity, which included narrow category-based (gender, racial, national origin, disability, and age), broad category-based, and conceptual

articulations. The second category, the broad category-based, includes “cultural background, social class, marital status, education, length of tenure in the organization, and skills” (Githens, 2011, p. 42). Pelled, Eisenhardt, and Xin (1999) defined demographic diversity as the “degree to which a unit (e.g., a work group or organization) is heterogeneous with respect to demographic attributes” (p. 1). These attributes included age, gender, and ethnicity (Pelled et al., 1999). Kormanik (2009) explored a definition of diversity that included sexual orientation, gender, and identity.

Simon and Rowland (2011) described the need for differentiation in functional and social diversity that could have direct effects on organizational policies. The underlining idea stated that those who did not share commonalities tended not to form the social ties which are needed to create effective teamwork (Simon & Rowland, 2011). They posited that diversity could be truly sub-divided in two main categories. The first was the function or job-related diversity that included functional expertise, education, and organizational tenure, similar to Githens’ (2011) definition. The second category was the bio-demographic diversity that included age, gender, and race (Simon & Rowland, 2011). This definition was in agreement with Githens’ narrow category-based definition.

Milliken and Martins (1996), Shaw (1990), and Shaw and Barrett-Power (1998) similarly divided diversity into two groups. These groups included the readily detectable attributes type and the less visible attribute type of diversity. The readily detectable features as described by Cumming et al. (1993), Jackson et al. (1995), and Tsui et al. (1992), as cited in Milliken and Martins (1996), included race, age, and gender whereas the less visible type included “education, technical abilities, functional background,

tenure in the organization, socioeconomic background, and values” (p.404). Similarly, Harrison, Price, & Bell (1998) categorized diversity into two dimensions: surface-level and deep-level diversity. The surface-level diversity, according to Harrison et al. (1998), included observable features like age, sex, and race. The deep-level diversity, on the other hand, encompassed features like “attitudes, beliefs, and values” (Harrison et al., 1998, p.98).

Egan (2005) posited that through the qualitative research, the interviewees identified diversity to be beyond race, gender, ethnicity, age, and disability. In fact, other broader definitions like education, expertise, department, location, race, personality, and ability were also included (Egan, 2005). “Educational diversity is defined as range of individual differences, comprising a set of social and personal factors, which form a key aspect in any and every educational setting” (Rayner, 2009, p. 433). Glick, Miller, and Huber (1993), as cited in Miller, Burke, and Glick (1998), found that demographic diversity actually has indirect effects on the outcomes of decision-making through cognitive diversity. In fact, according to Shaw (1990), characteristics like culture and socioeconomic status influenced an individual cognitive schema. Effectively, the individual background, gender, and culture influenced his or her cognitive structure. In light of this factor, cognitive diversity will be the primary concentration of this research.

Cognitive diversity has typically existed in the form of the variation in preferences, beliefs, and thought processes. Miller et al. (1998) defined cognitive diversity as the variations in beliefs as well as preferences, addressing the cause-effect interplay. Olson et al. (2007) pointed to a very fundamental difference in people, in terms of cognitive diversity such that even if a team could have members who were of the

same functional background, race, and gender, cognitive diversity could still be prevalent. Demographic diversity itself might have very little bearing on the cognitive diversity, which indicated that the effects on the outcome might be very little. In fact, Glick et al. (1993) found that the relationship between demographic and cognitive diversity did not exist at all in some cases (Miller et al., 1998). Melone (1994) discovered that different types of professionals might interpret the same data in completely different ways depending on their professional world views and mental models.

Miller et al. (1998) indicated that there was support for both positive and negative outcomes of cognitive diversity. The positive outcome could be the constructive disagreement, in which individuals come together to share knowledge to solve the problems. Mitchell, Nicholas, and Boyle (2009) studied the openness of team as it affects cognitive diversity and found that there was a relationship between the openness to cognitive diversity and knowledge creation. They posited that this openness allowed team members to openly discuss their ideas thoroughly and exhaustively, and, as a result, the best solution was picked for the problem.

Miller et al. (1998) stated that diversity could imply that strong unwavering preferences and beliefs existed and such preferences and beliefs could cause disagreement among team members. They also suggested that such cognitive diversity could create a breakdown in the communication process that, in turn, could inhibit the productive outcome.

## **Diversity in Teams**

Horwitz (2005) identified two compelling theories governing teams' diversity, which includes the similarity-attraction paradigm and cognitive resource diversity theory. The similarity-attraction paradigm states that members of the teams tended to gravitate to those who possessed similar demographic attributes (Horwitz, 2005). This paradigm suggests that homogenous teams would be more productive and more efficient than the heterogeneous teams due to the mutual attraction in characteristics, which led to teams' harmony (Horwitz, 2005). Horwitz (2005) asserted that heterogeneous teams tended to be less productive because of the lower team cohesion arisen from tensions and conflicts indicative to the differences in membership.

Cognitive resource diversity theory indicates that unique cognitive variation in teams creates heterogeneous groups that increase the level of "creativity, innovation, and problem-solving" (Horwitz, 2005, p. 225). Horwitz concluded that people of different cultures, races, and experiences brought to the team unique contributions in terms of problem-solving and decision-making.

McGrath et al. (1995), as cited in Sauer, Felsing, Franke, and Ruttinger (2006), defined the attributes of team diversity into five clusters: demographics, including age, gender, functional background; task-oriented knowledge, such as skill sets and capabilities; personal beliefs and values; cognitive makeup and personality; and organizational-level status. Klein, Knight, Ziegert, Lim, and Saltz (2011) moved beyond normal demographic definitions of diversity and identified diversity to be value diversity that encompassed knowledge, skills, values, beliefs, personality, cognition, behavior styles, and organizational statuses. Horwitz (2005) classified diversity in teams into two

primary categories, which include biodemographic attributes and job-related attributes. Biodemographic attributes consisted of “age, gender, and race” whereas job-related attributes contained “functional expertise, education and organizational tenure” (Horwitz, 2005, p. 222). Horwitz claimed that the two categories contained the majority of the characteristics of the teams. Simons, Pelled, and Smith (1999) examined four kinds of diversity in teams that included “diversity in functional background, educational level, tenure, and age” (p. 663). They also claimed that out of the four types of diversity previously mentioned, functional, educational, and tenure were directly related to job functions. Due to such diversity, team members might respond differently to situations even though the context might be the same (Shin S. J., Kim, Lee, & Bain, 2012).

Egan’s (2005) finding indicated that individuals defined team diversity as “a large variety of individuals’ similarities and differences” and as a “collection of individuals whose unique characteristics provide a variety of perspectives aimed at the problem or task that the team is undertaking” (p 212). Maier (1967) stated that teams had a higher advantage when it comes to solving problems because each individual served as knowledge gap filler, and Miller et al. (2009) agreed that teams could bridge the gaps in knowledge between functional areas. Accordingly, “homogenous teams are less likely to develop creative ideas” (Egan, 2005, p. 213).

Mitchell et al. (2009) found teams were able to facilitate a knowledge creation process through a process known as engaging debate. Simons et al. (1999) defined debate as an open discussion that was related to tasks where each member presented his or her own different points of view and problem-solving approaches. Simon et al. (1999) argued that without these debates, it was not likely that the benefit of team

diversity could be realized, and they also discovered that debate was more fruitful when it was task related. People from different sections of the organization tended to bring fresh new perspectives to the team, which increased the teams' knowledge, skill sets, and effectiveness (Egan, 2005).

Although diverse teams were more creative as a whole, there were certain liabilities that must be monitored. These liabilities consisted of social pressure, that Maier (1967) described as the need for members to conform, valence of solutions in which a member with good manipulative skill might have a disproportionately higher influence on the group, and individual domination, which indicated that a single member might have more persistence in getting his or her way without regard to his or her talent in solving team problems. Therefore, diverse teams could pose threats and present opportunities (Horwitz, 2005).

### **Team Conflicts Due to Diversity**

The negative side of diversity must be carefully managed in order to minimize its effects on the team and its members. Pfeffer (1983) argued through similarity attraction theory that similar individuals tended to appreciate each other more. Shin et al. (2012) contended that dissimilarity might create friction as well as activate social categorization process. Miller et al. (1998) reported that researchers found that diversity could have a negative effect on decision-making, which in turn reduced performance outcomes. This was in agreement with Shin et al., (2012), when they wrote that "if a team suffers from dysfunctional conflicts caused by diversity, the team members are less likely to engage in creative process such as building, experimenting, and elaborating ideas with one another"

(p. 199). Further, Klein, Knight, Ziegert, Lim, and Saltz (2011) found that value diversity could create disruption within teams. Teams with members who were not authentic might create conflict and undesirable social interaction (Hannah, Walumbwa, & Fry, 2011). There were a few components influencing teams; some of these components could be assets to the teams, others could be liabilities, and yet others could be either (Maier, 1967). According to Pelled et al. (1999), diversity could shape conflicts and these conflicts could improve performance or reduce teams' outcome depending on the type of conflicts. Shen and Chen (2007) indicated that conflicts reduced the teams' abilities to process and evaluate new information as well as diminished team members' willingness to work together. Pelled et al. (1999) posited two types of conflicts, which included task conflicts and emotional conflicts. The functional background diversity was found to be closely related to the task conflicts, whereas the race and tenure diversity tended to increase emotional conflicts (Pelled et al., 1999). Task-related conflict was deemed to help increased performance while emotional conflicts reduced the output of the team (Pelled et al., 1999).

Diversity does not always reduce cohesiveness of the team. In fact, diversity in teams could actually promote the relationship between team cohesiveness and team performance. Soldan (2010) found that there was a relationship between team cohesiveness and team performance but more interestingly, this relationship was moderated by the team diversity. The relationship level between team cohesiveness and team performance was high when the diversity level was high. However, Condon and Crano (1988) suggested that cognitive diversity could affect the cohesion factor in a negative way, which was cited in Miller et al. (1998). Miller et al. (1998) suggested that

cohesion influenced groupthink due to the individual team members' desire to be liked and to get along as well as "the fear of ostracism and fear of membership loss" (p. 42). Therefore, if cognitive diversity existed in the team, the cohesiveness of the team might be reduced due to the cognitive conflicts, which in turn reduced the team performance. Miller et al. (1998) suggested that teams with less cohesiveness tended to challenge each other's opinions. Interestingly, Webber and Donahue (2001) used a meta-analysis method to research the relationship between different types of diversity and team cohesiveness. They found no relationship between the types of diversity and team cohesion.

There seems to be disagreement on how diversity affects the team cohesiveness and, therefore, the gap in literature exists for this relationship. Specifically, the gap exists in the relationship between the cognitive diversity and team cohesiveness because of a lack of literature on this relationship.

*Hypothesis 1: There will be a direct and negative correlation between team cohesiveness and team cognitive diversity.*

## **Leadership in Teams**

"Quantum leaps in performance may result when a group is roused out of its despair by a leader with innovative or revolutionary ideas and a vision of future possibilities" (Bass, 1985, p. 27). Leaders of teams often hold more responsibility than most of the team members. Leaders often had dual responsibilities to the team as members of the team and as the leaders of the team (Barnett & McCormick, 2012). Team leaders must be good communicators in order for the team to be successful.

DuBrin (2004), as cited in Yang, Hung, and Wu (2011), indicated that leadership was the process of using communication to accomplish a set goal. However, many teams never reached their potential, while others failed (Barnett & McCormick, 2012). Hannah et al. (2011) emphasized the importance of team leadership by stating that “team leader authenticity predicted the average levels of authenticity of their team members” (p. 792).

Bennett and McCormick (2012) indicated that leadership structure had migrated from a single central structure to one that was more team-oriented. Accordingly, this indicated that team leadership might have direct influence on team members. Antes and Schuelke (2011) cited several researchers (Basadur, 2004; Dess & Picken, 2000; Zheng, Khoury, & Grobmeier, 2010; Zhou & George, 2003), who posited that leadership could be the key to team creativity when leaders provided support, supplied resources, and led the team. Leadership had enhanced team performance and affected the level of teamwork and team cohesiveness (Shen & Chen, 2007; Yang et al., 2011). Leaders that coached and mentored team members while providing feedback, enabled members to grow and evolve (Antes & Schuelke, 2011). These behaviors enhanced organizational performance regardless of their leadership level (Antonakis, Finley, & Liechti, 2011).

Yang et al. (2011) found that leadership, teamwork, and project performance were significantly correlated. Egan (2005) reported that primary characteristics that team leaders looked for in creating diverse teams are individual creativity, intellectual engagement, and readiness to explore assumptions. Maier (1967) believed leaders had great influence over the outcome of the team because they increased the level of cohesiveness in the relationship among team members (Yang et al., 2011). Team cohesiveness was also strongly associated with leadership effectiveness. Ruggieri and

Abbate (2013) indicated that “effective leaders were especially capable of fostering group cohesiveness” (p. 1171). Literature indicated that leadership could strengthen the cohesiveness of the team but it was still unclear whether such influence might influence the relationship between cognitive diversity and team cohesiveness.

*Hypothesis 2: The presence of leadership will moderate the relationship between team cohesiveness and team cognitive diversity.*

Berber and Rofcanin (2012) studied leadership in dynamic teams, in which leadership was shared among team members instead of residing in the leader only. They claimed that the strength of the team could be increased by distributing the leadership across the teams. Hoch, Pearce, and Welzel (2010) defined shared leadership as the creation of a unique team that was the result of the leader’s ability to share decision making among team members. Hannah et al. (2011) claimed that teams, with high levels of authentic leadership, produced more as well as have better teamwork. When leadership was shared, leaders became a communal responsibility instead of authoritative (Berber & Rofcanin, 2012). According to Berber and Rofcanin (2012), this flexible structure created a new concept of teamwork that surpassed the traditional static work unit structure; they argued that this concept created employee satisfaction that increased organization’s profitability. Hoch et al. (2010), however, found that shared leadership might not be effective in all situations. They discovered that if the team diversity was low, the effect of the shared leadership was more effective; whereas, if the diversity level was high, the shared leadership was less effective.

Gilley, Gilley, McConnell, and Veliquette (2010) reported that leaders must have certain competencies in order to lead successful teams. These competencies included the

abilities to coach, communicate, motivate, and foster growth (Gilley, Gilley, McConnell, & Veliquette, 2010). Burke, Stagl, Klein, Goodwin, Salas, and Halpin (2006) indicated that leaders of teams provided vision and direction, organized structures, and coaching. The leader's knowledge of the working environment could be used to solve problems (Burke et al., 2006). Zhang and Bartol (2010) found that employee's creativity was highly dependent upon the support of the leader. Even with all of the benefits described, Yang et al. (2011) still indicated that "lack of information regarding leadership benefits along with uncertain competitive advantage from teamwork had resulted in a manager's reluctance to adopt different leadership styles" (p. 258).

### **Leadership in Diverse Teams**

Visagie, Linde, and Havenga (2011) suggested that in order for organizations to be successful, leaders must be capable, flexible, innovative, and able to manage diversity. Egan (2005) indicated that leaders, who were successful in leading creative programs, admitted that diverse teams generated better and more creative outputs, which directly affected organizational success. Differing diversity in teams, could be both benefits and conflicts (Sauer et al., 2006) if not managed correctly. Shin et al. (2012) indicated that the right leadership might reduce the negative effects of the team conflict. Klein, Knight, Ziegert, Lim, and Saltz (2011) suggested that team conflicts might change in either positive or negative directions depending on the type of leadership that led the team. Such leadership could be viewed from two different perspectives as studied by Klein et al. (2011). They had identified both task-focused leadership as well as person-focused leadership. Accordingly, they found that task-focused leadership

reduced the influencing effects of the value diversity in terms of team conflict, while person-focused leadership aggravated the value diversity effects.

The relationship between the members of cognitively diverse teams was dependent upon the leadership type (Shin et al., 2012). Egan (2005) found that leaders of successful teams preferred individuals who brought in a variety of views representing different parts of the organization as well as those who had different education, experience background, personality, and attitude.

Burke et al. (2006) also identified the same primary types of leadership. They believe task-focused leadership type was “transactional, initiating structure and boundary-spanning as the primary leadership behaviors” (Burke et al., 2006, p. 291). Task-focused leadership concentrated on communicating the clarity of task requirements, the procedure by which the tasks were to be accomplished, and the actual acquisition of the tasks themselves (Burke et al., 2006). Second, they contended person-focused or individualistic leadership, and the behaviors belonging to this type consisted of behavioral “interactions, cognitive structures, and the cohesive attitude development” (Burke et al., 2006, p.291). In other words, person-centered leadership focused more on the human and cognitive factors of the team and less on the actual procedures and transactional elements. According to Burke et al. (2006), person-focused leadership consisted of the “transformational, consideration, empowerment, and motivational” (p. 292) behaviors. Wang and Huang (2009) further suggested transformational leadership behaviors are positively correlated to team cohesiveness. Wendt et al. (2009) discovered that person-centered leadership and level of effectiveness of the leaders had direct and positive correlations to the level of team cohesiveness.

*Hypothesis 3: Leadership individualistic trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

Maier (1967) indicated that the leadership style might be the key to maximize the assets of the group diversity and minimize its liabilities. Leaders could use their positions to moderate and create constructive conflicts that were required for innovation, and they might do this without risking the negative conflict (Maier, 1967).

Klein et al. (2011) discovered that leaders had the ability to equally shape the effects of demographical diversity, informational diversity, and value diversity among team members. Maier (1967) argued that effective leaders should “receive information, facilitate communications between the individuals, relay messages, and integrate the incoming responses so that a single unified response occurs” (p. 246). Ahearne, Mathieu, and Rapp (2005) posited that empowering leadership accentuated the importance of the work while encouraging the employees to participate in decision-making processes, which built confidence in teams’ abilities to resolve problems (Zhang & Bartol, 2010). Leadership behaviors, therefore, might increase as well as decrease the diversity conflicts (Klein et al., 2011).

It is argued that shared leadership should be the future of leadership studies (Berber & Rofcanin, 2012; Hannah et al., 2011; Hoch et al., 2010). Hoch et al. (2010) found that team leadership effectiveness was dependent upon the condition of the team as well as the diversity level of the team. Thus, it was argued that shared leadership alone was not enough to mediate the effectiveness and cohesiveness of a cognitively diverse team. “Leadership style plays a venerable role in fostering creativity as well as

productivity within a team environment; it encourages innovation and co-ordination among employees” (Malik et al., 2012, p. 738).

Yang et al. (2011) claimed that good leaders have emotional intelligence that included “self-awareness, self-regulation, motivation, empathy, and social skill” (p.259). They also indicated that empathy influences the emotional ability of the leader. Yang et al. (2011) compared transactional and transformational leadership in their research on project management and teams. They indicated that transactional leadership rewarded employees in exchange for meeting the goals. Burke et al. (2006) reported that transactional behaviors involved exchanges of praise and incentives when team members meet expectations but also included punishments when expectations were not met. In other words, transactional leadership used contingency of rewards as well as active and passive management by exception. Bass (1985) indicated that transactional leadership could only produce a marginal amount of improvement because a transactional leader depended upon rewards as a motivator, and many did not have the ability to deliver that reward.

In contrast, transformational leaders did not have the ability to generate a higher level of improvement (Bass, 1985). Although Podsakoff et al. (2010) disagreed with this concept, they argued that certain elements of transactional leadership such as contingent reward and punishment behaviors might have great benefits in employees’ performance perception. On the other hand, Groves and Feyerhern (2011) contended that leaders with high cultural intelligence were able to better address team diversity. Malik et al. (2012) indicated that changes in leadership style could significantly improve team building effectiveness.

There were types of leaders that help facilitate the differences within diverse teams. Kearney and Gebert (2009) discovered that a high level of transformational leadership significantly influenced the relationship between nationality as well as educational diversity and team performance, thus, eliminating the negative effects of the diverse team, like low-level cohesiveness. Transformational leadership behaviors could help facilitate the team performance outcomes in the major areas including material management and human resource management (Burke et al., 2006). Bass (1985) pointed out that transformational leaders encouraged and motivated their constituents to do more than normally expected. These leaders not only raised the level of awareness about the importance of task performance outcomes; they also motivated the team members to rise beyond their self-interest (Bass, 1985).

Transformational leaders exhibited charisma, pride, respect, trust, and vision as well as showed consideration to the individual team members (Yang et al., 2011). Bass (1985) also agreed when he described the factors that transformational leaders possessed as charisma, individual consideration, and intellectual stimulation. Burke et al. (2006) indicated that when mixing transformational leaders' charisma with intellectual stimulation and individual consideration, leaders could create compelling direction for the team to follow. This enabled them to motivate the team members in coaching situations, thus, allowing them to create effective team performance.

Transformational leadership established a bond between leaders and team members (Kearney & Gebert, 2009). Van Dierendonck and Nuijten (2011) suggested transformational leadership was very similar to servant leadership in that the service was built into the leader-follower relationship. Avolio and Bass (2004) categorized

transformational leadership as providing role models, motivation, stimulation, and individualized consideration (Kearney & Gebert, 2009). Employees tended to improve their performance when their leaders were “charismatic, individualizing, and intellectually stimulating” (Bass, 1985, p. 33).

Choi (2006) posited that charismatic leaders possessed three components, which included vision, empathy, and empowerment. Bass (1985) stated that charisma was an essential part of leadership due to its inspiring, enthusiasm creating, and trust-gaining nature. Charismatic leaders’ actions and visions activated their followers’ needs for affiliation and power (Choi, 2006). Charisma typically separated a good leader from an ordinary one (Bass, 1985). In terms of team effectiveness, charismatic leaders put strong emphasis on teams as well team cohesiveness, and, as a result, members were more willing to support each other (Choi, 2006). Wang et al. (2005) suggested that leaders should exhibit more of the charismatic behaviors since these behaviors were found to help improve both team members’ cohesiveness and team performance. This was because charismatic leaders were able to combine the members’ personal goals with the teams’ goals (Wang et al., 2005).

*Hypothesis 4: Leadership charismatic trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

Beyond transformational and charismatic leadership, van Dierendonck and Nuijten (2011) indicated that servant leaders did not depend on their power in order to accomplish tasks, but instead they rely on their persuasive skill to improve employee performance. Servant leadership occurred when leaders take on the role of the servant in helping their teams (Russell & Stone, 2002). The servant leadership characteristics were

listed as empowerment, accountability, standing back, humility, authenticity, courage, interpersonal acceptance, and stewardship (van Dierendonck & Nuijten, 2011).

Empowerment allowed the employee to take initiative and be pro-active; held employee accountable for results; provided support and acknowledgement to the employee; demonstrated humility because the leader recognizes his or her own limitation; showed authenticity; demonstrated courage; provided empathy and responses to the diversity of team members; and provided stewardship (Van Dierendonck & Nuijten, 2011).

Additionally, Russell and Stone (2002) identified nine functional attributes and eleven accompanying attributes for servant leadership. The functional attributes included vision, honesty, integrity, trust, service, modeling, pioneering, appreciation of others, and empowering. The accompanying attributes included communication, credibility, competence, stewardship, visibility, influence, persuasion, listening, encouragement, teaching, and delegation (Russell and Stone, 2002). Finally, Yang et al. (2011) contended that empathy is very crucial in the role of leadership.

Empowering leadership was defined by Zhang and Bartol (2010) as the process of “sharing power with an employee by delineating the significance of the employee’s job, providing greater decision-making autonomy, expressing confidence in their capabilities, and removing hindrances to performance” (p. 109). Zhang and Bartol (2010) indicated empowering leadership helps employees realize how valuable they are to the work and organization while building and communicating the confidence in the employees’ abilities to be successful as well as giving them the autonomy to make decisions. Chen, Kirkman, Kanfer, Allen, and Rosen (2007) linked the individual empowerment to the team performance. They indicated that the two levels were closely related. It was

discovered through a meta-analysis that empowering leadership's behavior accounted for about thirty percent of the variance in team learning (Burke et al., 2006). These shared traits exist between transformational, empowering, charismatic, and servant leadership. Kasemsap (2013) argued that empowering leadership, as well as team cohesiveness, had strong influence on the success of the team.

*Hypothesis 5: Leadership empowering trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

Kearney and Gebert (2009) did not find any relationship between age diversity and team performance when transformational leadership level was high; however, the negative effect was discovered when the transformational leadership level was low. Kearney and Gebert (2009) also found that transformational leadership helped harvest the benefits of the diversity in teams as well as helped prevent the possible harmful effects of individual differences.

In summary, Burke et al. (2006) described transactional behaviors as being primarily an exchange type that gave praise and incentives for meeting expectations and punishment for missing expectations. Thus, transactional leadership managed through contingency of reward as well as active and passive management by exception. While transactional leadership provides more of a concrete cause and effect relationship for its employees, transformational leadership's relationship with its employees is more abstract (Burke et al., 2006). Transformational leaders exhibited charisma, pride, respect, trust, and vision as well as showed consideration to the individual team members (Yang et al., 2011). Bass (1985) described the factors that transformational leaders possessed to be charismatic leadership, individual consideration, and intellectual stimulation.

Empowering leadership was defined by Zhang and Bartol (2010) as the process of “sharing power with an employee by delineating the significance of the employee’s job, providing greater decision-making autonomy, expressing confidence in their capabilities, and removing hindrances to performance” (p. 109). Therefore empowering leadership includes many of the characteristic traits from the servant leadership as well as those of transformational leadership. Chen, et al. (2007) described the empowering leaders as those who developed personal relationship with individual employees. The common traits among these researches on the various leadership styles include charisma, empowerment, and individualist. These are the characteristic traits of leadership that are proposed to be tested in this research study.

Table 1 summarizes the characteristics found in each leadership style described above.

**Table 1: Leadership Traits Comparison**

Transformational	Leadership Behaviors		
	Empowering	Servant	Charismatic
Idealized influence	Participative Management	Empowerment	Individual Consideration
Inspirational	Goal Setting	Standing Back	Envisioning
Intellectual Stimulation	Job Enrichment	Accountability	Empathy
Individualized Consideration	Intrinsic Motivation	Forgiveness	Empowerment
	Creativity	Courage	Inspirational Enthusiasm
	Empowerment Role Identity	Authenticity	Creation
	Leadership Encouragement of Creativity	Humility	Trust
		Stewardship	Individual Consideration
		Visionary	
		Trusting	
		Service	

### **Theoretical Underpinning of the Study**

It is important to understand how implicit leadership theory is appropriate to underpin this study. “The implicit theories provide a degree of stability and predictability to dyadic relations in addition to simplifying the information-processing demands associated with social interactions” (Engle & Lord, 1997, p.991). Implicit leadership theory relied on social cognitive theory to explain how employees rated and classified individuals into leader or non-leader categories, which references upon a leader’s own knowledge structure, past experiences, and previous relationship interactions (Shondrick, Dinh, & Lord, 2010). Lord and Maher (1991) indicated there were two ways that leaders can be perceived: inferred or recognized as cited in Hartog et al. (1999). The inference was typically based on the outcome of the leadership

performance in that recognition was based on the match-up between the observed traits and the observers' implicit ideas of the leadership traits (Hartog et al., 1999; Moorman, Darnold, & Priesemuth, 2013). Claims are made that transformational leaders' (Wang & Huang, 2009), charismatic leaders' (Wang, Chow, & Jiang, 2005), empowering leaders' (Kasemsap, 2013), and servant leaders' (Dennis & Bocarnea, 2005) behaviors alike can influence the level of team performance. According to Bass, Avolio, Jung, and Berson (2003), "followers identify with and want to emulate their leaders" (p. 208). Wang and Huang (2009) indicated that a leader can only influence his or her team if the members "seek to identify with, and want to emulate him or her" (p.381). It is through the lens of implicit leadership theory that the effects of common leadership characteristic traits are seen on the cohesiveness of cognitively diverse teams.

Schyns and Meindl (2005) describe implicit leadership theory as the images that are associated with behaviors and characteristics of leaders that employees may have (Schyns, Kiefer, Kerschreiter, & Tymon, 2011). Individuals typically develop their own preconception of what the leaders and leadership should be; and, therefore, set certain expectations in the leaders' characteristics (Hartog et al., 1999). Schyns et al. (2011) also indicated "when meeting or observing a "leader" certain leader images are activated, and the behavior of this "leader" is interpreted in line with these images" (p. 399). Berber and Rofcanin (2012) indicated that implicit leadership theory crossed the domains of organizational behavior as well as psychology where the effective leadership represented the organizational behavior domain when the cognitive studies into the implicit leadership mental model fit in the psychological domain. Shondrick et al. (2010) mentioned three categories of leadership prototypical representations in their

research. These representations consisted of a superordinate level, basic level, and subordinate level (Shondrick et al., 2010). The superordinate level contained more abstract as well as general information that distinguished leaders from non-leaders, where basic level contained more contextual information about the leader that can be altered. Furthermore, the subordinate level contained information that indicated the distinct types of leaders (Shondrick et al., 2010). Hannah, Walumbwa, and Fry (2011) argued that leaders could become role models if the follower were attracted to their qualities as well as developed the desire to be associated with the leader, in which case the leaders' authenticity could be transferred to the team members. According to Bass, Avolio, Jung, and Berson (2003), "followers identify with and want to emulate their leaders" (p. 208). Wang and Huang (2009) also indicated that a leader could only influence his or her team if the members "seek to identify with, and want to emulate him or her" (p.381).

This study seeks to address the gap between the characteristic traits necessary for leaders to possess in order to lead and establish a cohesive, cognitively diverse team. In this study, team performance will not be studied because literature on the topic already exists on the direct correlation between team's cohesiveness and team's performance (Chen, 2013; Kasemsap, 2013; Ruggieri & Abbate, 2013; Sivasubramaniam, Liebowitz, & Lackman, 2012; Wang et al., 2005; Wang & Huang, 2009; Wendt et al., 2009). Researchers could not agree on the claims regarding which of the multiple styles of leadership were necessary to lead and create cohesiveness in teams coupled with the rapid globalization of organizations creating cognitively diverse teams. This study seeks to focus on the characteristic traits common in multiple leadership styles instead of any one particular style. These traits are charismatic, empowering, and individualistic.

## **Conclusion**

The major concepts that are directly relevant to this research have been identified. These concepts include team, team cohesiveness, diversity, diversity in teams, team conflicts due to diversity, leadership in teams, leadership in diverse teams, leadership preferences in diverse teams, and the theoretical underpinning of this study.

Three main concepts have been reviewed. First, multiple leadership styles seemingly are very effective in enhancing team performance. Second, homogenous teams can still be cognitively diverse. Third, ineffective leadership could lead to poor team performance.

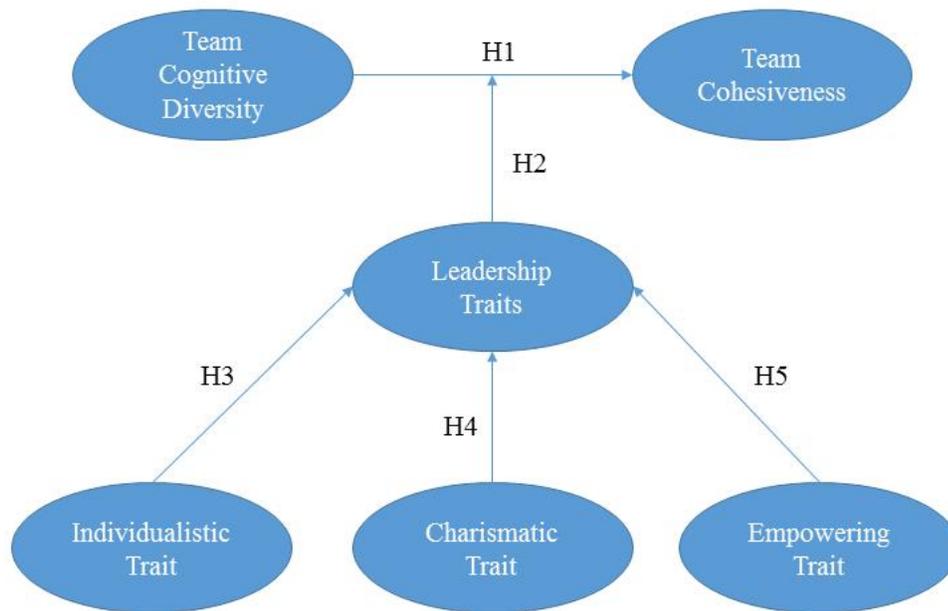
Literature also indicates that transformational leadership style described by Burke et al. (2006), servant leadership style described by Russell and Stone (2002) and Dennis and Bocarnea (2005), charismatic leadership style described by Choi (2006), and empowering leadership style described by Amundsen et al. (2013) and Martin and Liao (2013), held common traits like charisma, empowerment, and individualistic.

### **Chapter 3: Methodology**

The purpose of this research is to study the interaction and moderating effects between four primary variables. The research aims to address the specific gap in the relationship between cognitive diversity and team cohesiveness. The overarching research questions are:

1. Is there a negative relationship between a team's cognitive diversity and team cohesiveness?
2. Are there any specific character traits of leaders that may moderate the relationship between team cognitive diversity and team cohesiveness?

The moderating factors are addressed in this research in order to capture the leadership traits that influence the relationship between cognitive diversity and team cohesiveness. Following is the tested model representing relationships for each of the hypotheses. The model hypothesizes the main relationship between the team's cognitive diversity and team cohesiveness. It also hypothesizes leadership traits as the moderating factors. These traits include charisma, empowerment, and individuality. Figure 3 represents the aforementioned model.



**Figure 3: Proposed Research Model**

*Hypothesis 1: There will be a direct and negative correlation between team cohesiveness and team cognitive diversity.*

This hypothesis is tested using two instruments. The instrument shown in Table 2 and Table 4 measure the team cohesiveness components and cognitive diversity among participants.

*Hypothesis 2: The presence of leadership will moderate the relationship between team cohesiveness and team cognitive diversity.*

The second hypothesis represents regression analysis with all of the independent variables being run together in one step to generate a general regression model.

*Hypothesis 3: Leadership individualistic trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

The third hypothesis represents the moderating relationship of the individualistic trait acting on the relationship between a team's cognitive diversity component and team cohesion component.

*Hypothesis 4: Leadership charismatic trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

The fourth hypothesis represents the moderating relationship of the charismatic trait, acting on the relationship between a team's cognitive diversity component and team cohesion component.

*Hypothesis 5: Leadership empowering trait will moderate the relationship between team cohesiveness and team cognitive diversity.*

The fifth hypothesis represents the moderating relationship of the empowering trait acting on the relationship between a team's cognitive diversity component and team cohesion component.

The moderating relationships were hypothesized due to the nature of the leadership trait variables in question. These variables affect “the direction and/or strength of the relationship between an independent or predictor variable and a dependent or criterion variable” (Baron & Kenny, 1986, p. 1174). The moderating terms are created by the creation of the product of the independent variable and the moderating variables. The product terms become part of the regression equation.

## **Data Collection**

Regression analysis is the most suitable method to investigate the relationship among variables (Chen & Dang, 2008; Chen, Hsueh, & Chang, 2013; Kao & Chyu, 2003;

Tutmez, 2012); it is appropriated that a survey-style quantitative study is used in this research. The survey was administered via an online distribution and collection system. The target of the survey distribution was teams in organizations that have divisions across the United States. The samples were obtained using Qualtrics (<http://www.qualtrics.com>). Qualtrics is a private software research company specializing in collecting data across the globe.

Panel data collection process has become more common as a way of collecting needed information for research (Thornton, Autry, Gligor, & Brik, 2013). As long as the panelists are screened for qualification in advance, it is considered to be a valid usage (Thornton et al., 2013).

Qualtrics organization utilizes a research firm called ClearVoice Research (<http://clearvoiceresearch.com>) to collect the needed panel data. ClearVoice Research was established after the organization was successful in developing two other well-known panelist recruitment online sites, namely [www.surveyclub.com](http://www.surveyclub.com) and [www.surveyscout.com](http://www.surveyscout.com). These sites have been used for the purpose of online sampling as well as panelist recruitments. Historically, ClearVoice Research has used its panel for market research only. The combined memberships of all three sites/organizations total over 12 million members, although the survey club site was viewed as a database rather than a panel.

ClearVoice Research also has access to several hard-to-reach groups due to the census representative nature of the panel. The organization encourages the participation of the members via the partnership among other companies that may own these hard-to-

reach databases of the individuals and provide incentives for participation through revenue sharing.

ClearVoice Research does collect demographic data on the participating panelists. These data include name, e-mail address, postal address, gender, date of birth, and language. The participants are also asked to complete profile information as part of the membership process. In order to ensure a good and valid population sample, ClearVoice Research verifies all of the participants' postal addresses, flash cookies, and computer IP addresses. The process limits multiple accounts within the same household, prevents multiple registrations from the same computer, and verifies the countries of origin. In order to prevent the same member from filling out the survey twice, ClearVoice Research assigns its members a GUID for each survey. A survey invitation is then sent only once per e-mail address per that particular survey. The tracking cookies are also used to ensure that each member is only invited once per survey.

The surveys were deployed according to the clients' criteria as to which group of representative samples was pulled from the overall pool. A randomization technique is also used in order to ensure that a good mixture of members receive the requests to fill out the research surveys. If a minority group is desired, additional incentives are provided to ensure a higher response rate.

The boundaries were set such that the types of teams will be made up of sales, marketing, accounting, engineering, finance, and human resource across multiple business units and countries to ensure diversity in the data. The sample size for this study is around 1,000 respondents due to the high number of scales on the instruments as well as to ensure the data normality (Jaccard, Guilamo-Ramos, Johansson, & Bouris,

2006). Tabachnick and Fidell (2007) indicated that the sample size that should be taken into consideration for a social study is around  $N > 50 + 8m$  where  $m$  is the number of independent variables. In our case, there were 4 independent variables to be considered. Applying the Tabachnick and Fidell equation, we would need an  $N$  greater than  $50 + 8*4$  or 82. The number of respondents collected were sufficient for this research.

Demographic data such as age, gender, race, and educational level were collected for further testing. Data associated with identity of participants were not collected in order to protect the participants, as well as to eliminate social desirability bias. All data collected are kept confidential, and any additional identifiable features such as IP addresses were erased. The data is kept on the secure .NET platform servers that are located in the secure data center.

The data collection was divided into two phases. These phases included the soft launch and full launch. The soft launch was the initial launch of the survey. The soft launch collected about 10 percent of the total needed respondents. Since the total needed respondents was 1,000, the soft launch collected approximately 100 respondents. The data collected from the soft launch was used to test the initial reliability of the survey scales. This is critical because the four items team cognitive diversity scale is adapted from the original scale used to test executive leadership cognitive diversity.

Once the initial data was deemed to be valid, the second phase, the full launch, was implemented and additional respondents were added to the survey pool. A larger than needed number of respondents was targeted in order to achieve the total of 900 additional respondents. The number of respondents collected was 1,015 by the closing of the survey.

## The Instruments

One single instrument consisting of five separate scales was utilized in this research. The scales included were team cohesiveness, leader charismatic trait, team cognitive diversity, leader empowering trait, and leader individualistic trait.

The scale for team cohesiveness as represented in Table 2 is published in Wang et al. (2005). This scale was developed by Hoegl and Gemuenden (2001). It is made up of four items rating from 1 to 5, with 1 being never and 5 being always. The Cronbach's alpha value of the scale is tested to be 0.918. Since the Cronbach's alpha values were greater than 0.70, the scales were considered to be reliable. Nunnally (1978) as cited in Pallant (2010) "recommended a minimum level of .7 Cronbach alpha value" (p. 6).

**Table 2: Team Cohesiveness**

Team Cohesiveness Instrument (Wang, Chou, & Jiang, 2005)	Never				Always
It was important to the members of our team to be part of the project	1	2	3	4	5
The team members strongly attached to this project	1	2	3	4	5
The members of our team felt proud to be part of the team	1	2	3	4	5
Every team member felt responsible for maintaining and protecting the team	1	2	3	4	5

The scale for charismatic leadership as represented in Table 3 was developed by Cheung et al. (2001) and published in Wang et al. (2005). It is made up of six items rating from 1 to 5 with 1 being never and 5 being always. The scale was modified to range from 1 through 7 to keep with the consistency and ease of analysis. Appendix B shows this

modified scale. The Cronbach's alpha value of the scale was 0.968. Since the Cronbach's alpha values were greater than 0.70, the scales were considered to be reliable.

**Table 3: Charismatic Trait Instrument**

Leadership Charismatic (Wang, Chou, & Jiang, 2005)	Never					Always
My leader makes the team members enthusiastic about the project.	1	2	3	4	5	
My leader is a model for me to follow.	1	2	3	4	5	
My leader makes me feel good to work with him/her	1	2	3	4	5	
My leader makes me feel proud to be associated with him/her	1	2	3	4	5	
As a member of the project team member, I have complete faith in him/her	1	2	3	4	5	
I readily trust his/her judgment to overcome any obstacle	1	2	3	4	5	

The third scale (Table 4) is used to measure cognitive diversity. It is used as an independent variable. This scale is adapted from the published cognitive diversity scale in Miller et al. (1998). The scale is modified such that it would address the cognitive diversity component of a team. The original scale published in Miller et al. (1998) was based upon the work of Glick (1985) and Seidler (1974) and was used to measure cognitive diversity among executives. Cognitive diversity scale contains four items. The scale ranges from 1 to 7 with 1 being strongly disagree and 7 being strongly agree. In order to verify the validity of the adapted scale, the scale was distributed among the researcher's team for review and comments. The preliminary soft launch of the survey (initial 100 respondents) was also used to test the adapted scale. The reliability of the scale is tested to be 0.910. The Cronbach's alpha value is greater than 0.70 which indicates that the scale is reliable.

**Table 4: Cognitive Diversity Instrument**

Cognitive Diversity (Glick, 1985; Seidler, 1974)	Strongly Disagree						Strongly Agree
The best way to maximize the team's performance.	1	2	3	4	5	6	7
What the team's goal priorities should be?	1	2	3	4	5	6	7
The best way to ensure the team's long-term success.	1	2	3	4	5	6	7
Which team objectives should be considered most important?	1	2	3	4	5	6	7

The fourth scale (Table 5) was used to measure the empowering moderating variable, and the fifth scale (Table 6) was used to measure the individualistic moderating variable. Dennis and Bocarnea (2005) developed these instruments to measure servant leadership traits. The empowering traits scale is made up of five items. The items are rated from 1 to 7 with 1 being total disagreement and 7 being most agreement possible. The Cronbach's alpha value for the individualistic scale is tested to be 0.942. The Cronbach's alpha value is greater than 0.70 which indicates that the scale is reliable.

**Table 5: Empowering Trait Instrument**

Empowering (Dennis & Bocarnea, 2005)	Total Disagreement						Most Agreement
My leader empowers me with opportunities so that I develop my skills.	1	2	3	4	5	6	7
My leader turns over some control to me so that I may accept more responsibility.	1	2	3	4	5	6	7
My leader entrusts me to make decisions.	1	2	3	4	5	6	7
My leader gives me the authority I need to do my job.	1	2	3	4	5	6	7
My leader lets me make decisions with increasing responsibility.	1	2	3	4	5	7	7

The individualistic traits scale as represented in Table 6 is made up of five items. The items are rated from 1 to 7 with 1 being total disagreement and 7 being most agreement possible. The Cronbach's alpha value for the individualistic scale is tested to be 0.958. The Cronbach's alpha value is greater than 0.70, which indicates that the scale is reliable.

**Table 6: Individualistic Trait Instrument**

Individualistic (Dennis & Bocarnea, 2005)	Total Disagreement							Most Agreement
My leader is genuinely interested in me as a person.	1	2	3	4	5	6	7	7
My leader has shown his or her care for me by encouraging me.	1	2	3	4	5	6	7	7
My leader has shown compassion in his or her actions toward me.	1	2	3	4	5	6	7	7
My leader shows concern for me.	1	2	3	4	5	6	7	7
My leader creates a culture that fosters high standard of ethics.	1	2	3	4	5	5	7	7

### **Analysis Technique**

Although there are several analysis techniques used in this research, regression analysis was used as a primary analytical method for this research. The other analysis methods used in this research were confirmative factor analysis to ensure the correct loading of the variables. There are three main steps to factor analysis as described by Pallant (2010). The first step was the “assessment of the suitability of the data for factor analysis” (Pallant, 2010, p. 182). This step requires that the sample size is large enough in order for the result to be reliable. Tabachnick and Fidell (2007) posit that at least 300 cases are needed to produce both a reliable and generalizable result. The second step

was the factor extraction. This step consisted of finding the smallest quantity of factors that best represent the relationships among variables (Pallant, 2010). The third and last step consists of factor rotation. Factor rotation allows researchers to see the patterns of loadings in simpler ways and are, thus, easier to interpret (Pallant, 2010). The orthogonal rotation technique is used in this analysis.

The explorative factor analysis was used to determine the loading of the unrotated variables in order to test for the Harman's single-factor test, and similar to Gilley et al. (2010), multiple regression analysis is used to isolate and prioritize the effects of each trait, explaining the relationship. "Multiple regression is used to test a theory about presumed causal influences on the criterion variable" (Jaccard et al., 2006, p. 456). Chen et al. (2013) indicated that regression analysis is typically used to explore "the relationships between independent (or input, explanatory) and dependent (or output, response) variables" (p.302). Chen and Dang (2008) as well as Kao and Chyu (2003) indicated that regression analysis is the most commonly used method to analyze the relationship among multiple explanatory variables. "The regression analysis is used to investigate the functional relationship among variables" (Tutmez, 2012, p. 2). It was hypothesized, a single dependent variable that is team cohesiveness will have a negative relationship with the cognitive diversity independent variable. The independent moderating variables are the leadership traits of charisma, empowerment, and individualism. Regression analysis is picked as an approach for this study because there is a single continuous dependent variable and multiple continuous independent variables (Jaccard et al., 2006; Stevens, 1946). The dependent and independent variables have the following relationships:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon \quad (\text{eq. 1})$$

The equation representing my current model is as follows:

Let Y = Team Cohesiveness

X<sub>1</sub> = Cognitive Diversity

X<sub>2</sub> = Charismatic Trait

X<sub>3</sub> = Empowering Trait

X<sub>4</sub> = Individualistic trait

Therefore:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_1 X_2 + \beta_6 X_1 X_3 + \beta_7 X_1 X_4 + \epsilon \quad (\text{eq. 2})$$

Where Y is a dependent variable, X's are the independent variables,  $\beta_0$  is the constant or intercept,  $\beta_1$ 's are the constant representing the change in Y in the particular X variable of interest while holding all other X's variable constant, and  $\epsilon$  is the error term resulting from non-linearity in the data (Jaccard et al., 2006). The product terms (Jaccard et al., 2006) ( $X_1 X_2$ ,  $X_1 X_3$ , and  $X_1 X_4$ ) represent the three interaction terms moderating the relationship between team's cognitive diversity and team cohesiveness. Regression technique is the simple, straight forward, and elegant technique for handling this type of data set.

There are four criteria that must be met to ensure both validity and reliability of the data being analyzed. These criteria are linearity, independence, homoscedasticity, and normality. Linearity describes the relationship between dependent and independent variables. Multiple regression analysis is utilized when researchers make the assumption that the predictor and criterion variables in the population have linear relationships (Jaccard et al., 2006). The sample size should be large enough so that the relationship

becomes linear. The criteria for the observation of this linearity lies in the observed versus predicted values plot. The points must be symmetrically spread along the diagonal line of the plot. Any bow in the pattern indicates a problem in linearity.

Independence of errors indicates that there are no correlations among the error terms themselves to affect the apparent relationships to the dependent variable that in turn could cause miss-specification of the model under test. This is tested through the Durbin-Watson test. The criteria value for this test is 2.0. If the value gravitates toward 0, there exists a positive correlation. If the value gravitates toward 4, there exists a negative correlation.

Homoscedasticity describes the normality in standard deviation or constant variance of the error terms that should be normally distributed and can be tested using the Levene's test. The criterion for Levene's test is that the significance ( $p$ ) value must be greater than 0.05. It is the reverse of other statistical significance tests where the desired value of  $p$  is less than 0.05.

Lastly, normality follows Gaussian distribution shape for the data. Violation of this assumption can cause coefficients estimation to be unreliable (Jaccard et al, 2006). Although researchers typically delete data points that cause the skew in the normality curve, sometimes it may be impractical to delete points if there are not enough data.

In summary, similar to Rodell and Judge (2009) and Thornton et al. (2013) who used online data (recruit participants from [www.Craigslist.org](http://www.Craigslist.org)) for their research, the Qualtrics panel data via ClearVoice Research is used for this study to test the relationship between a team's cognitive diversity and team cohesiveness. The research tested the moderating relationships between leadership traits, team's cognitive diversity, and team

cohesiveness. Multiple regression analysis was used as an appropriate analysis technique to test the relationships. The proximal and psychological separation was used to help minimize the problem of variance. The Harman's single-factor test was used to isolate the common method variance once the data has been collected.

### **Reliability, Validity, and Common Method Biases**

In order to address the issue of reliability and validity, existing and proven surveys were used to collect the data. This would increase reliability of data collected for this study. The instruments used have the reliability; Cronbach's alpha values were greater than 0.70. In order to ensure internal validity, the instruments were taken from the scholastic publications where they had been used and reused by many researchers. The external validity that addressed how well the study could be generalized was accommodated through the data pool using Qualtrics' resource pool. This should ensure diversity in data as well as minimize validity problems.

Although Doty and Glick (1998) discovered that a high percentage of common method bias did not invalidate the majority of research findings, it was still important to consider common method biases when collecting data. The scale length was kept to the absolute minimum in order to "minimize the decay of previous responses in short-term memory" (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) as well as "enhancing the observed relationships between scale items" (p. 885). Since it was necessary to this research to collect both dependent and independent data from the same source, care was taken to eliminate or minimize the common method biases created during the data collection process. Podsakoff et al. (2003) noted that the common method variance

could “threaten the validity of the conclusions” (p. 879). Two techniques were deployed to help resolve common method biases issues. These techniques include proximal and psychological separation (Podsakoff et al., 2003; Podsakoff et al., 2012)

The first technique is the proximal separation in which the distance between the measurements is increased (Podsakoff et al., 2012). Weijters, Geuens, & Schillewaert (2009) via Podsakoff et al. (2012) suggested that proximal separation between similar constructs can help prevent item correlations as long as the measures are separated at least six items apart.

The second technique used was psychological separation. This technique created an illusion of non-relatedness in the respondents’ minds whereby the predictor was disconnected from criterion variables (Podsakoff et al., 2003). Psychological separation could be utilized by creating a “cover story to make it appear that the measurement of the predictor variable was not connected with or related to the measurement of the criterion variable” (Podsakoff et al., 2003, p. 887; Podsakoff, et al., 2012). In the case of this research, the dependent and independent variables were psychologically separated by a set of business belief questions that was unrelated to the rest of the questions.

The common method variance was tested after the data was collected. The method used to test the common method variance in the data set was Harman’s one-factor test. Podsakoff and Organ (1986) described the test as the part of the factor analysis test. The variables were loaded into a factor analysis and the un-rotated factor results were explored for a single factor that dominates the majority of the covariance in both dependent and independent variables (Podsakoff & Organ, 1986).

## Chapter 4: Results

This chapter presents the data descriptions that include demographic data such as gender, age, and ethnicity as well as the organizational-related data. These organizational related data include team and industry types as well as organization size and participants' job positions. Research findings using the common method variance test, factor analysis, and regression analysis tools are also discussed.

### Data Description

The survey was sent out with a goal of acquiring at least N = 1,000 by the Qualtrics organization. The survey was completed with N = 1,015. All of the questions were completed fully. The frequency analysis was run in order to observe the percentage makeup of the population relating to the demographic data.

### *Gender*

Of the respondents, 49.9 percent were males and 50.1 percent were females.

**Table 7: Gender**

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Gender	Frequency	Percent
Male	506	49.9
Female	509	50.1
Total	1015	100.0

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### *Age*

The age category question was divided into four age ranges. The first age range covered 12 to 18; which, if selected, the respondents would be screened out and forced to

exit the survey. The second age range was 18 – 33. This range made up 22.9 percent of the total number of respondents. The third age range was 34 – 51. This range made up 44.8 percent of the total respondents. The fourth age range was 51 to 65. This age range made up 32.3 percent of the total respondents.

**Table 8: Age**

Age	Frequency	Percent
18 - 33	232	22.9
34 -51	455	44.8
51 -65	328	32.3
Total	1015	100.0

***Ethnicity***

The ethnicity question was divided into five categories. These categories included Asian, African American, Caucasian, Hispanic, and Other. The ethnicity breakdown was as follows: 4.8 percent of the total respondents were Asians, 6.0 percent of the total respondents were African Americans, 79.2 percent were Caucasians, 8.5 percent of the total respondents were Hispanics, and 1.5 percent of the total respondents selected Other. The optional “fill-in-the-blank” was provided for this Other category. The respondents were asked to fill in their ethnicity if it was not included in one of the choices given. The responses included Italian American, Unknown, Mix, Mix Caucasian – Asian, Pacific Islander, Samoan, Native American, Multi Race, and Mix Caucasian – Native American.

***Table 9: Ethnicity***

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Ethnicity	Frequency	Percent
Asian	49	4.8
African American	61	6.0
Caucasian	804	79.2
Hispanic	86	8.5
Other	15	1.5
Total	1015	100.0

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***Team Type***

The respondents were asked to indicate the types of teams to which they belong. The teams were divided into seven categories. These categories included management, marketing/sales, technical/engineering, manufacturing, finance, human resource, and other types of teams. The result of the survey indicated that 46.1 percent of the total respondents work in management teams, 17.9 percent of the total respondents worked in marketing/sales teams, 22.1 percent of the total respondents worked in technical/engineering teams, 11.4 percent of the total respondents worked in production teams (teams that worked on the manufacturing floor), 0.7 percent of the total respondents worked in finance teams, 0.5 percent of the total respondents worked in human resource teams, and 1.3 percent of the respondents indicate that they worked in other types of teams. The respondents were asked to fill in the blank if they selected the other option. The respondents indicated other types of teams to be healthcare, service, service delivery, electrician, customer service, meat department, investigation, administrative, analytical, instructional, social service, and policy making.

***Table 10: Team Type***

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Team Type	Frequency	Percent
Management	468	46.1
Marketing/ Sales	182	17.9
Technical/ Engineering	224	22.1
Manufacturing	116	11.4
Finance	7	0.7
Human Resource	5	0.5
Other	13	1.3
Total	1015	100.0

---

***Industry Type***

The respondents were asked to indicate the types of industries in which they were employed. The question was divided into six categories. These categories included manufacturing, service, education, professional, government, and non-profit industries. The result of the survey indicated that 22.6 percent of the respondents were employed by the manufacturing type of industry, 28.8 percent of the respondents were employed by the service type of the industry, 7.9 percent of the respondents were employed by the education type of the industry, 27.7 percent of the respondents were employed by the professional type of the industry, 6.6 percent of the respondents were employed by the government type of the industry, and 6.5 percent of the respondents were employed by the non-profit type of the industry.

**Table 11: Industry Type**

Industry Type	Frequency	Percent
Manufacturing	229	22.6
Service	292	28.8
Education	80	7.9
Professional	281	27.7
Government	67	6.6
Non-Profit	66	6.5
Total	1015	100.0

**Organization Size**

The respondents were asked to indicate the size of the organizations in which they were employed. The question was divided into seven categories. These categories included unknown, 101 to 500, 501 to 1,000, 1001 to 2,500, 2,501 to 5,000, 5,001 to 10,000, and 10,001 and above. The result of the survey indicated that 27.8 percent of the respondents did not know the size of their organizations, 18.1 percent of the respondents were employed by the organizations that employ 101 to 500 employees, 13.0 percent of the respondents were employed by the organizations that employ 501 to 1,000 employees, 10.6 percent of the respondents were employed by the organizations that employ 1,001 to 2,500 employees, 7.3 percent of the respondents were employed by the organizations that employ 2,501 to 5,000 employees, 7.3 percent of the respondents were employed by the organizations that employ 5,001 to 10,000 employees, and 15.9 percent of the respondents were employed by the organizations that employ 10,001 or more employees.

**Table 12: Organization Size**

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Organization size	Frequency	Percent
1 - 100	282	27.8
101 - 500	184	18.1
501 - 1000	132	13.0
1001 - 2500	108	10.6
2501 - 5000	74	7.3
5001 - 10,000	74	7.3
10,001 +	161	15.9
Total	1015	100.0

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***Job Position***

The respondents were asked to indicate their positions in the organizations in which they were employed. The question was divided into four categories. These categories included front line employee/ team member, supervisor or team leader, mid-level executive manager, and other. The result of the survey indicated that 36.1 percent of the respondents held the front line employee/ team member type of positions, 29.8 percent of the respondents held the supervisor or team leader type of positions, 25.8 percent of the respondents held the mid-level executive manager type of positions, and 8.4 percent of the respondents selected other as position held. The text box was provided for the respondents to provide the positions held that were not covered in the presented categories. The other positions included operation associate, senior management, department head, owner, project manager, manager, solo practice physician, CEO director of sales and marketing, Co-owner, custom technical writer and instructor, student, business owner, office manager, laminator, intern architect, engineer, VP/ CFO, senior VP, and coordinator.

**Table 13: Job Position**

Job Position	Frequency	Percent
Front line employee	366	36.1
Supervisor/ team leader	302	29.8
Mid-Level executive	262	25.8
Other	85	8.4
Total	1015	100.0

### **Common Method Variance (CMV)**

The result of the Harman's single factor test indicated that although one variable did explain the majority of the variance, CMV may not be an issue in this data set.

Generally, when examining the un-rotated factor test result, one looks for an emergence of a single factor that accounts for the majority of the covariance in the measurements (Podsakoff et al., 2003). There is not a single variable in the factor analysis test that explains more than 50 percent of the total variance and, therefore, the data set should be valid (Gaskin, 2011).

**Table 14: Harman's Single Factor Test for Common Method Variance**

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	20.416	44.383	44.838	20.416	44.383	44.383
2	5.619	12.215	56.598			
3	1.892	4.113	60.711			
4	1.638	3.560	64.271			
5	1.114	2.421	66.693			
6	1.072	2.330	69.022			
7	1.018	2.212	71.235			
8	0.988	2.148	73.383			
9	0.879	1.911	75.294			
10	0.684	1.487	76.781			
11	0.643	1.397	78.178			
12	0.604	1.314	79.492			
13	0.577	1.254	80.746			
14	0.540	1.175	81.921			
15	0.526	1.144	83.066			
16	0.509	1.106	84.171			
17	0.449	0.977	85.148			
18	0.421	0.915	86.064			
19	0.382	0.830	86.894			
20	0.372	0.809	87.703			
21	0.357	0.776	88.480			
22	0.352	0.766	89.246			
23	0.335	0.728	89.974			
24	0.325	0.707	90.681			

### **Factor Analysis**

Factor analysis by the way of principle component analysis (PCA) tested and grouped the variables into smaller clumps of variables. PCA is commonly used to reduce the large set of variables down to smaller groups of factors by searching for groups of linear combinations in such a way that all variables are used in the process (Pallant, 2010). Tabachnick and Fidell (2007) stated that PCA is a good technique to

extract the “empirical summary of the data set” (p. 635). Pallant (2010) also indicated that PCA technique is also commonly used prior to regression analysis.

The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett’s test of sphericity were used to test the data for the factor analysis appropriateness. The result of Kaiser-Meyer-Olkin measure of sampling adequacy is 0.971, which is greater than 0.6. The Bartlett’s test of sphericity is significant ( $p = 0.000$ ), which indicates that the data set is suitable for the use of factor analysis (Pallant, 2010).

The result of the PCA indicated that most of the independent variables loaded into three main factors. All of the factors have at least required three items loaded (Pallant, 2010). Leadership charismatic trait and leadership individualistic trait loaded highly ( $>0.8$ ) into one factor as seen in Table 15. This meant that both charismatic and individualistic leadership traits were highly correlated and that they were not independent of each other as predictors. Leadership empowering trait loaded highly ( $> 0.75$ ), except for one questionnaire item, into a single individual factor. The analysis results show no significant cross-loadings between variables except for the one empowering item. Lastly, cognitive diversity questions all loaded highly ( $>0.8$ ) into one factor. The result of the factor analysis, in conjunction with the initial regression analysis test, led me to drop the individualistic trait as well as one question from the leadership empowering trait scale results. The leadership empowering trait scale was retested for reliability and validity. The resultant Cronbach Alpha was 0.941, indicating a valid scale. As mentioned later on in this chapter, the individualistic trait was dropped because it did not test significant to the dependent variable (team cohesiveness). When tested as a moderator, the individualistic trait also did not test to be significant.

**Table 15: Factor Loadings**

	Pattern Matrix		
	1	2	3
CHARIS1	.824	.142	
CHARIS2	.951		
CHARIS3	.907		
CHARIS4	.927		
CHARIS5	.919		
CHARIS6	.897		
INDIV1	.863		
INDIV2	.884		
INDIV3	.879		
INDIV4	.910		
INDIV5	.838		
EMPWR1	.465		.415
EMPWR2			.958
EMPWR3			.950
EMPWR4	.123		.754
COGND1		.850	
COGND2		.872	
COGND3		.893	
COGND4		.893	
EMPWR5			.878

**Regression Analysis**

The standard regression analysis was used in which all of the predictors were simultaneously entered into the equation. The sample size was confirmed to be appropriate for the multiple regression method. Steven (1996) quoted in Pallant (2010) indicated that at least 15 participants are needed per predictor used in the multiple regression equation. In the case of this research, four primary predictors included team cognitive diversity, leadership charismatic, individualistic, and empowering traits. The recommended number of participants needed were 60. After the extreme outliers were

removed by inspection of the Mahalanobis Distance results, the usable sample size left was 1,008 respondents.

The data were also checked for multicollinearity. This was done using two values. The first value was the coefficients tolerance. This value indicated the level of “variability of the specified independent variable that was not explained by the other independent variables in the model” (Pallant, 2010, p. 158). According to Pallant (2010), this value must be greater than 0.10 for low amount of multicollinearity. All of the included variables tolerance values are above 0.10, indicating a low level of multicollinearity. The second value was the coefficient variance inflation factor (VIF) value. VIF was the inverse of the coefficient and the value should be under 10 (Pallant, 2010). All of the included variables VIF values in this data set were under 10, also indicating low multicollinearity. The normal probability plot (P-P) of the regression standardized residual and the scatter plot were inspected for major deviations from the normality.

The software used for the regression analysis was IBM SPSS Statistics version 20. The initial regression analysis was run only with dependent and independent variables without any moderation effects to test the direct effects between dependent variable against its predictors. The result indicated a significant relationship between team cohesiveness and team cognitive diversity ( $r = .34, p = 0.000$ ). There was a significant relationship between team cohesiveness and leadership charismatic trait ( $r = .35, p = 0.000$ ). There was a significant relationship between team cohesiveness and leadership empowering trait ( $r = .20, p = 0.000$ ). However, there was not a significant

relationship between team cohesiveness and leadership individualistic trait ( = -.040, p = 0.389).

**Table 16: Effects of Team Cognitive Diversity and the Leadership Traits on Team Cohesiveness**

Predictor	Unstandardized Coefficients		Standardized Coefficients
	B	SE	
Cognitive Diversity	.350	.026	0.34*
Charismatic Trait	.264	.036	0.35*
Empowering Trait	.175	.033	0.20*
Individualistic Trait	-.030	.034	-.040

\*p < .001

Hypothesis 1 indicated that there would be a direct and negative correlation between team cohesiveness and team cognitive diversity. The results indicated that there was a direct relationship between team cohesiveness and team cognitive diversity, although the relationship was not negative. Hypothesis 1 was not supported.

**Table 17: Effects of Team Cognitive Diversity and Combined Leadership Traits on Team Cohesiveness**

Predictor			R <sup>2</sup>	R <sup>2</sup>
Step 1			.557**	.558**
	Cognitive Diversity	0.360**		
	Leadership combined traits	.509**		
Step 2			0.559*	.003*
	Leadership moderating variable	.059*		

\*p < .01, \*\*p < .0005

Hypothesis 2 indicated that the presence of leadership would positively moderate the relationship levels between team cohesiveness and team cognitive diversity.

Leadership variable was created by taking a mean of charismatic and empowering traits.

The regression analysis shows that there was a relationship between combined leadership traits and team cohesiveness ( $\beta = .509, p = 0.000$ ), and the combined leadership traits did moderate the relationship between team cognitive diversity and team cohesiveness ( $\beta = .059, p = 0.009$ ). Hypothesis 2 is supported.

Hypothesis 3 indicated that the leadership individualistic trait would have a positive influence such that it would positively moderate the level of relationship between team cohesiveness and team cognitive diversity. The individualistic trait was tested to be non-significant. Hypothesis 3 was not supported. Factor analysis also indicated that both charismatic and individualistic traits loaded together as one factor. The individualistic trait was dropped from the further analysis since it loaded highly with the charismatic trait and tested non-significant to the team cohesiveness dependent variable. The remaining leadership traits were the charismatic and empowering traits.

Hypothesis 4 indicated that the team leadership charismatic trait would have a positive influence such that it would positively moderate the relationship between team cohesiveness and team cognitive diversity. Charismatic leadership trait tested significant to have a positive relationship to team cohesiveness ( $\beta = .336, p = .000$ ). It did not, however, moderate the relationship between team cognitive diversity and team cohesiveness as can be seen in the moderation test result ( $\beta = -.046, p = .218$ ). Hypothesis 4 was partially supported due to the significant direct effect of the charismatic leadership trait on team cohesiveness.

**Table 18: Effects of Team Cognitive Diversity and Moderating Leadership Traits on Team Cohesiveness**

Predictor		R <sup>2</sup>	R <sup>2</sup>
Step 1		.556**	.558**
	Cognitive Diversity	.354**	
	Charismatic Trait	.336**	
	Empowering Trait	.211**	
Step 2		.561*	.006*
	Charismatic Trait Moderating Variable	-.046	
	Empowering Trait Moderating Variable	.112*	

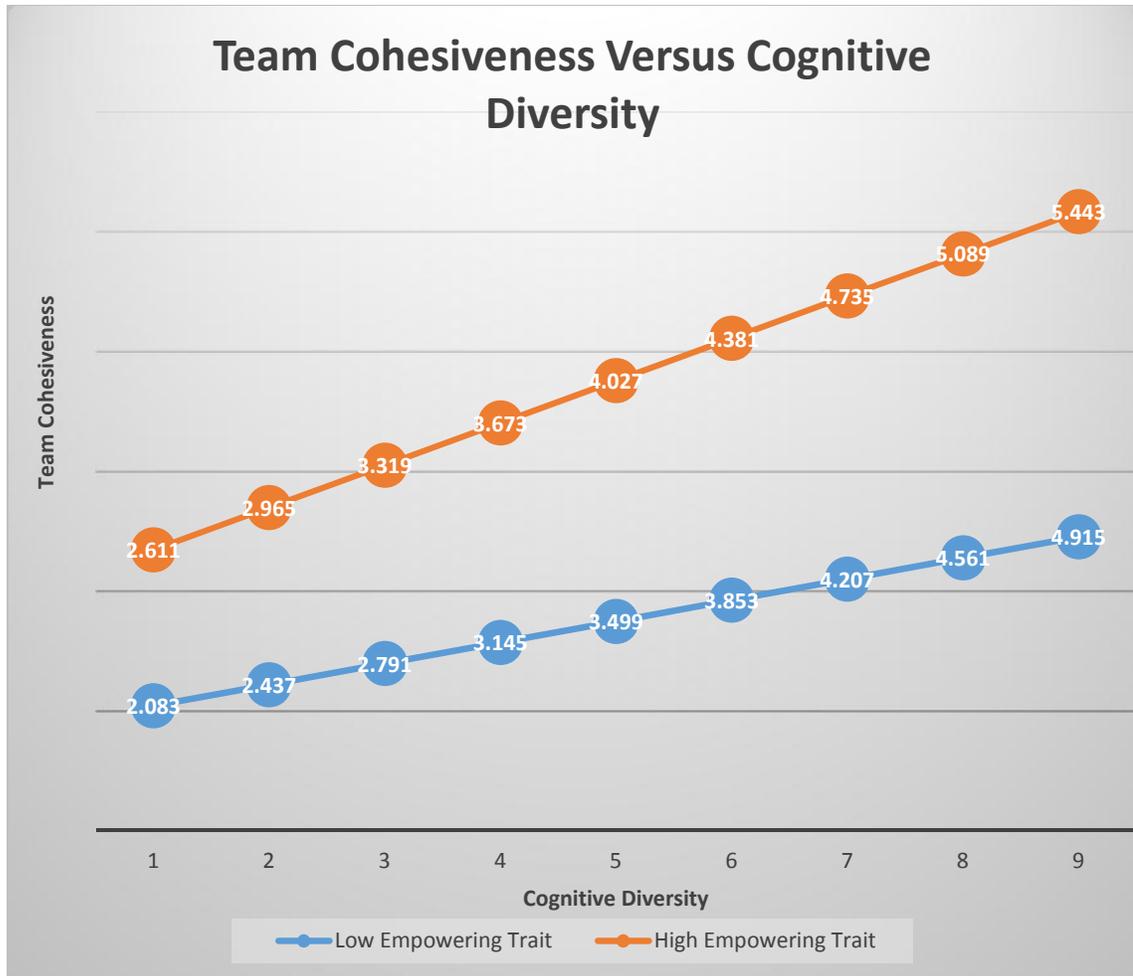
\*p < .01, \*\*p < .0005

Hypothesis 5 indicated that the leadership empowering trait will positively moderate the relationship between team cohesiveness and team cognitive diversity. The regression result indicated that there was a significant relationship between the leadership empowering trait and team cohesiveness ( = .211, p = .000). Leadership empowering trait also tested to positively moderate the relationship between team cognitive diversity and team cohesiveness ( = .112, p = .003). Hypothesis 5 is supported.

The overall model summary indicated that 56.1 percent of the unique and shared variances in the dependent variable, team cohesiveness, was explained by the model (R<sup>2</sup>= .561, p = .002). The correlations part coefficients were examined in order to isolate the unique contribution of each variable. The cognitive diversity variable uniquely contributed 8.4 percent to the overall regression model. Charismatic leadership trait uniquely contributed 4.3 percent to the overall regression model. The empowering leadership trait uniquely contributed 1.7 percent to the overall regression model. Lastly,

the moderating variable, empowering leadership trait, uniquely contributed the additional 0.4 percent to the overall regression model when it was added to the overall relationship.

Figure 4 pictorially demonstrated the influence of the leadership empowering trait on the relationship between cognitive diversity and team cohesiveness. The level of the relationship was positively moderated as the leadership empowering trait was increased.



**Figure 4: Moderating Role of Empowering Leadership Trait**

In conclusion, the results of the analysis indicate that Hypothesis 1 is partially supported due to the positive effect of cognitive diversity on team cohesiveness.

Hypothesis 2 is supported due to both the significant direct (leadership traits combined) effect and the significant moderating effect on the relationship between team cognitive diversity and team cohesiveness. Hypothesis 3 is not supported due to the non-significant direct effect of leader individualistic trait on the team cohesiveness.

Hypothesis 4 is only partially supported due to the significant direct effect of leadership charismatic trait on team cohesiveness and non-significant interaction effect of charismatic trait and cognitive diversity on the team cohesiveness. Hypothesis 5 is supported due to the significant direct effect of leadership empowering trait on team cohesiveness and the significant interaction effect of leadership empowering trait and team cognitive diversity on team cohesiveness.

## **Chapter 5: Discussion**

In this chapter, the results and findings of this research will be discussed along with limitations and future research needs. The contributions and implication will also be given.

This research study aims to explore the relationship between cognitive diversity and team cohesiveness as it is moderated by three different leadership characteristic traits. The literature research indicates that the relationships between leadership traits exist in terms of leadership influencing the cohesiveness of teams. The literature research also indicates teams that are cognitively diverse can affect team cohesiveness due to the differences in mental processes. This research is based on the implicit leadership theory specifically addressing the idea that followers tend to mimic the behavior of the leaders whom they admire. The end goal is to identify the most important traits and behaviors that organizations should include in their leadership training in order to create cognitively diverse cohesive teams.

### **General Discussion and Findings**

Research in the area of how leadership affects the cohesiveness of the team that is cognitively diverse is still under developed. Literature indicates that there is a direct link between team performance and team cohesiveness. Literature also indicates that there is a relationship between team leadership behavior and team cohesiveness. Lastly, literature indicates that there is a relationship between cognitive diversity and team cohesiveness. However, there has been very little research on the links between all three components.

The research findings from the current study indicate that there are relationships between cognitive diversity and team cohesiveness but surprisingly, the relationship is in the positive direction instead of the negative direction. This seems to contradict the publication by Miller et al. (1998), who suggested that team cohesiveness may be reduced due to cognitive conflict, and the findings of Woehr et al. (2013), who suggested that “more similarity resulted in more team cohesion” (p. 107). There are two possible explanations for this phenomenon. The first explanation is that the population sample largely strives on having cognitive diversity in the team and that little to no cognitive conflict due to the cognitive diversity exists in this sample (i.e., the majority of the population sample have similar cognitive make up). In fact, when tested for cognitive diversity variation, approximately 35 percent of the total sample population have the same coefficient of variance (standard deviation/ mean), while 71.9 percent have exactly or less than 10 percent variance. This indicates that the population sample has relatively high homogeneity and low levels of cognitive diversity, and may explain for less cognitive conflict.

The second explanation is related to the types of conflict that exist within team diversity. A few authors have noted that there were different types of conflict related to diversity. These conflicts were affective and cognitive conflict (Ensley, Pearson, & Amason, 2002). Affective conflict was defined by Ensley et al. (2002) as the disagreement among team members on the personal level when team members had interpersonal dislikes for each other. Cognitive conflicts, on the other hand, as defined by Amason et al. (1997), were functional, strategic, and task-oriented conflict related to team member disagreement on how to achieve objectives (Ensley et al., 2002). Ensley et

al. (2002) suggested that cognitive conflict was directly correlated to team cohesion because high levels of cognitive conflict had been found with high levels of team cohesion. They also suggested that high levels of affective conflict would decrease the level of team cohesion. This indicates that the increase in levels of cognitive conflict and team cohesion may help reduce the affective conflict level in the team (Ensley et al., 2002).

Pelled, Eisenhardt, and Xin (1999), as cited in Harrison et al. (2002), reported that emotional types of conflicts were reduced over a period of time. Jehn et al. (1999), as cited in Harrison et al. (2002), suggested that social category type of diversity “may become less relevant overtime” (p. 1033). Harris et al. (1998, 2002), as cited in Van Knippenberg and Schippers (2007), reported that teams gained familiarity and experience in working together over time. Such experience could help reduce the effects that diversity may have on team conflict (Van Knippenberg & Schippers, 2007).

This could help explain the phenomenon that was revealed in this research. It is possible that team members have been working together for an extended period of time such that the effect of cognitive diversity on the team cohesiveness has been reduced and may even increase in the positive direction as per Ensley et al. (2002) findings. It is also possible that those who have had irreconcilable affective conflicts with teams have left the team, thereby leaving team members who know how to manage cognitive conflicts. This would explain the positive relationship between cognitive diversity and team cohesiveness.

One interesting discovery was that there is no relationship between the leadership individualistic trait and team cohesiveness. This is very surprising since several

leadership styles, such as transformational, servant, and charismatic, encompass this trait. It is possible that this trait needs to be combined with other leadership traits in order to create an overall system effect on team cohesiveness. Leaders with the charismatic leadership trait can appear to show concern for the individual team member and could be mistaken for the individualistic trait. This would explain why the charismatic trait and the individualistic trait loaded together as one factor when factor analysis was applied. Since leadership charismatic trait and individualistic trait load together as one and individualistic trait is not significant, the leadership individualistic trait was dropped from the study in order to strengthen the remaining variables. The result of the analysis indicates that Hypothesis 3 is not supported.

It is also possible that leadership individualistic trait, when applied, is perceived as micromanaging or special treatment. This could explain the lack of significance the trait has on team cohesiveness. If a leader shows concern and spends a lot of time with one team member more than others, two things may be anticipated. One, the team member to whom the attention is directed may feel that he or she is being micromanaged while the rest of the group is empowered and trusted. This could create disengagement in team cohesiveness. The other perception is that the other members of the team may perceive the individualistic act as a leader giving special treatment to a particular team member. Both scenarios violate the principle in the implicit leadership theory in which leaders must fit the followers' expectations in order for the leaders to have any influence on the team members. This, therefore, could cause the insignificant finding between the leadership individualistic trait and team cohesiveness.

The analysis results also indicate that there are relationships between the leadership traits and team cohesiveness. The charismatic trait is positively related to team cohesiveness. This result agrees with the literature; Wang et al. (2005) indicate that leadership charismatic trait can influence the cohesiveness of a team. This means that the additional increase in the charismatic trait in leaders will also increase team cohesiveness. This characteristic trait was also tested for the moderating affect. Surprisingly, charismatic trait does not moderate the relationship between cognitive diversity and team cohesiveness. This indicated that Hypothesis 4 is only partially supported. Although the moderating relationship does not exist between cognitive diversity and team cohesiveness, there may exist other relationships, such as the mediation relationship. It is possible that there is a strong relationship between cognitive diversity and team cohesiveness because the leadership charismatic trait is mediating the relationship.

Leadership empowering trait was found to be positively correlated to team cohesiveness. This finding is in agreement with Kasemsap (2013), who reported that empowering leadership, as well as team cohesiveness, had strong influence on the success of the team. This finding indicates that there is a direct relationship between this particular leadership trait and the team cohesiveness such that an increase in the empowering leadership trait influences an increase in team cohesiveness.

The leadership empowering trait was also tested for the moderating relationship. This relationship was tested significant, which fully supports Hypothesis 5. The result indicates that leadership empowering trait does moderate the relationship between cognitive diversity and team cohesiveness. If the level of the empowering trait

increases, then the level of the relationship between cognitive diversity and team cohesiveness also increases. This finding adds to the body of literature and provides new knowledge to the field.

When the leadership traits were combined as a single variable, the leadership variable is positively related to team cohesiveness. This result agrees with previous publication studies. Leadership has been proven to be associated with the enhancement of team performance and significantly affects the level of teamwork and team cohesiveness (Shen & Chen, 2007; Yang et al., 2011). Ruggieri and Abbate (2013) indicated that “effective leaders were especially capable of fostering group cohesiveness” (p. 1171).

The leadership component also helps moderate the relationship between team cohesiveness and team cognitive diversity. This indicates that leadership traits play an important role in moderating the relationship between cognitive diversity and team cohesiveness such that increasing the level of the leadership trait will also increase the relationship level. This supports the validity of Hypothesis 2 and a new contribution to the body of literature.

## **Limitations and Future Research**

### ***Limitations***

This research has some limitations that must be considered. First, there is a high level of correlation between leadership charismatic trait and leadership individualistic trait. This may be due to the questionnaire used to collect the data. Further investigation may be needed to analyze the questions being asked on the scale. The

second option is to use the leadership individualistic scale on its own. The individualistic trait can then be tested against the dependent variable.

The second limitation is related to the method used to do this research. Quantitative research and analysis method are only as good as the instruments used to collect the data. Many variables can affect the relationships proposed in this research. In order to make this research manageable, variables were limited. Additional variables might make the instrument long and tedious, which might create a respondent fatigue problem. Qualitative research allows researchers to probe deeply into the phenomenon by asking probing questions through interviews. Therefore, qualitative research on the relationships of the variables examined in the current study could be employed as the next step of the study. This may be an alternative research method that can be used to address this limitation.

The third limitation is in relation to the moderating relationship hypothesis. The moderating effect assumes that a relationship between two variables exists already; however, the level of relationship will increase when a moderating variable is added to the relationship. Unlike moderation, the mediation effect is an effect that explains the existing relationship between variables. It may be possible that the reason for the strong relationship between cognitive diversity and team cohesiveness is due to the mediation effects of the various leadership traits and could be tested in future research.

### ***Future Research***

Future research should include applying the qualitative research method to this topic of research in order to explore additional variables that may influence the relationship between cognitive diversity and team cohesiveness. The qualitative method

may also uncover different variables from the perspective of both the team leaders and team members. These additional variables may also be used to create additional scales for quantitative survey and analysis.

Due to the high percentage of Caucasians in the sample, the race demographic variables may also be tested in the future regression analysis. Using this mixed method will allow researchers to have both the depth and quantifiable data to address this research topic.

Another possible future research is to explore the relationship between the cognitive diversity and team cohesiveness variables using leadership traits as mediators. This can be done using structural equation modeling. This will allow us to determine whether the leadership characteristic traits do explain the strong relationship between cognitive diversity and team cohesiveness. Literature also indicates that team cohesiveness is directly linked to team effectiveness. The team effectiveness variable could be added to the structural equation modeling in order to explore cause and effect relationships.

## **Contributions and Implications**

### ***Literature Contribution***

This research adds to the body of literature by providing a quantitative link between cognitive diversity and team cohesiveness. It also provides new knowledge in terms of leadership traits moderating and influencing the relationship between cognitive diversity and team cohesiveness. This research proposes that leadership traits will increase the level of relationship between cognitive diversity and team cohesiveness.

The result of this research also indicates that the empowering leadership trait, in

particular, helps moderate the relationship between cognitive diversity and team cohesiveness such that the increase in the empowering trait will also increase the relationship between team cohesiveness and its predictors.

This contribution adds to the leadership body of literature in which there are few studies in the area involving team cohesiveness, cognitive diversity, and leadership traits. Most leadership literature presents and discusses leadership styles instead of traits. This research digs deeper into leadership traits by isolating the traits that may take on the primary influences that make the leadership styles effective. For example, most leadership styles share multiple traits such as charismatic, individualistic, and empowerment traits. This research posits that individualistic traits may have no real influence in the style's effectiveness. Charismatic and empowerment traits, however, may influence and moderate leadership style effectiveness.

### ***Practical Implication***

Organizational mergers and acquisitions create cognitive diversity among team members. It is important to know how to handle this diversity when teams are combined in order to work on and solve complex tasks.

The field of HRD has been interested in organizational change for a long time. Many organizations have utilized HRD professionals to lead change and create a smooth transition to make change less painful. These changes are externally influenced by economic conditions that require organizations to become increasingly more flexible and adaptable (Becker, Carbo II, & Langella, 2010), as the changing level of competition in the market place is forcing many companies to redesign their structures and become more

customer oriented (Berber & Rofcanin, 2012). The research requirements in HRD are becoming more prevalent to satisfy such needs.

Diversity, including diverse teams, is also being viewed as an effective business strategy that allows organizations to meet the needs of global customers (Podsiadlowski, Groschke, Kogler, Springer, & van der Zee, 2013). The results of this research study provide a unique perspective on team diversity from a cognition point of view. The need for understanding a more complex technical team cognition may be more important than what is known as typical demographic-type diversity. This research provides several implications to HRD practice, which can help organizations better train leaders and manage teams. These implications include validation of the positive relationship between cognitive diversity and team cohesiveness. Literature indicated that positive cognitive conflicts were very productive for teams and that team cohesiveness may help increase cognitive conflict in a positive and productive way. This research may add some contributions to the work of Ensley et al. (2002) and Harris et al. (2002). It is possible that cognitive diversity in teams may not lead to negative conflict (affective conflict) but that over time, it increases team cohesiveness that may lead to the increase of cognitive conflict. This conflict can actually increase the level of team productivity and innovation.

The literature confirms that team cohesiveness leads to team effectiveness. It is also important to realize that work team performance is directly linked to team cohesiveness (Wang & Huang, 2009) and that cohesiveness has been shown as a critical determinant of team performance (Sivasubramaniam, Liebowitz, & Lackman, 2012).

This research also explores the effects of leadership traits that help moderate the relationship between cognitive diversity and team cohesiveness.

This work may be used in the academic community and in organizational management practices. Hartog et al. (1999) indicated that followers matched the observed traits of their leaders to what their ideas of leadership traits should be. This helps members make decisions on whether to follow leaders. Bass, Avolio, Jung, and Berson (2003) also indicated that followers who identify with their leaders tend to imitate the actions of their leaders. Wang and Huang (2009) indicated that a leader can only influence his or her team if the members “seek to identify with, and want to emulate him or her” (p.381).

This is crucial because leadership traits can be replicated throughout teams and create more holistic teams. If team members exhibit both empowering and charismatic behaviors toward each other, it may be possible to influence and increase the cohesiveness among team members. The additional implication to practice is that it can be used and tested in leadership situations and also in peer-to-peer interactions.

This research provides the HRD field with increased understanding of the interactions between cognitive diversity, team leadership traits, and team cohesion. This is an important implication because as organizations expand and acquire more complex systems, the development of diverse teams to meet these complex task needs is required. New demands and requirements create problems that organizations must solve as they become more complex; this increasing complexity cannot be solved or expected to be solved by an individual within the organizations alone (Hackman & Morris, 1975). This complexity includes the combination of individuals from different backgrounds,

whether demographic, functional, or experience. These backgrounds lead to different cognitive makeups. Organizations end up with teams that have wide ranges of cognitive diversity. It is imperative that cognitively diverse teams are lead effectively.

Leaders are essential to communicate the needs of the organization to team members. Leaders also serve the critical roles of orchestrating the seamless work interface among team members. Organizations only benefit when employees are fully committed to the vision and mission of the organization (Fritz, O'Neil, Popp, Williams, & Arnett, 2013). This research contributes quantitative data that will further the understanding of this relationship.

*“As cultural diversity increases, however, social comparison and categorization processes occur, and in-groups/out-groups and cognitive biases may emerge, creating barriers to social intercourse (Blau, 1977; Smith, Smith, Olian, Sims, O’Bannon, & Scully, 1994; Tsui et al., 1992). Therefore, as heterogeneity in management groups reaches moderate levels, the psychological processes associated with social identity theory and self-categorization processes may be more likely to occur. These processes generate individual behaviors such as solidarity with others in a race- or gender-based group, conformity to the norms of one’s group, and discrimination against out-groups (Tajfel & Turner, 1985). To the extent that multiple subcultures exist in moderately heterogeneous groups, conflict is potentially maximized (Earley & Mosakowski, 2000; Lau & Murnighan, 1998), and intergroup interaction and communication may be blocked (Alexander, Nuchols, Bloom, & Lee, 1995; Blau, 1977)” (Richard, Barrett, Dwyer, & Chadwick, 2004, p. 256).*

The research also provides a basic understanding of future research needs on how leadership can help moderate and influence teams.

In terms of business applications, this research may help lower costs and increase profits when applied to the team dynamics. Organizations have growing needs to use decision making teams; therefore, it is important to understand team dynamics and their decision-making processes (Chou, Lin, and Chou, 2012). Gilley, Gilley, & McMillan (2009) found that many managers' skills and behaviors can influence leadership effectiveness. This means that when leadership of the team is effective the team is more productive, which in turn produces results faster and with higher quality.

The results of this research show that leadership traits in general are related to team cohesiveness; an increase in level of leadership traits increases the level of team cohesiveness. Most important, the empowering leadership trait is shown to moderate the relationship between cognitive diversity and team cohesiveness. Charismatic leadership trait, although not shown to moderate the relationship between cognitive diversity and team cohesiveness, has a strong influence on team cohesiveness. Results suggest that organizations should concentrate their resources on building the empowerment trait in their leaders since this trait makes the most impact on the relationship between team cognitive diversity and team cohesiveness. Organizations should also concentrate on leadership charismatic trait since this trait also has an impact on team cohesiveness. These two traits are found to have significant impacts on the team cohesiveness component and should be utilized by the organizations to increase the team cohesiveness and as result team effectiveness.

## **Conclusion**

Globalization has driven business needs for diversity study, which this research contributes to in terms of cognitive diversity relating to member cohesiveness in teams. As a result of globalization, organizations' customers have also become more diverse, which leads to different types of demands as well (Egan, 2005). With increasing diversity in teams it is more crucial than ever that research provide additional understanding of the relationship between cognitive diversity, leadership, and team cohesion. Chou et al. (2012) concluded that it is important to understand team cognition because it is important to teams' decision making. Teams' effective decision making ability can become a much needed advantage for organizations in today's global market. "Organizations are increasingly using teamwork for effective strategic decision making with the air of acquiring a sustainable competitive advantage in a rapid changing business environment" (Chou et al., 2013, p. 382).

As global expansion occurs and the rising pressure for leaders to become more culturally intelligent increases, there are more demands for leaders who are capable of leading diverse teams (Groves & Feyerherm, 2011). This research extends the findings from Shin, Kim, and Bain (2012), who found that demographic diversity alone will not guarantee creativity within teams. High levels of cognitive diversity in teams require more attention from team leaders; without guidance, diverse cognitive resources may not be realized by teams (Shin et al., 2012). This research provides more quantitative data on the leadership traits necessary to lead and moderate the level of cognitive diversity and member cohesiveness within teams.

The results of this research help identify, train, and prepare future leaders for the expanding landscape of cognitively diverse teams as organizations expand their footprints across the world. More specifically, this research identifies the crucial leadership traits such as charisma and empowerment, necessary to lead cognitively diverse teams. Organizations can concentrate their resources on these identified traits to maximize benefits and performance effectiveness. Egan (2005) interviewed team leaders of Fortune 500 teams and concluded that team diversity was essential to their successes and creativity and that leaders of these diverse teams play major roles in creating and leading high performance teams (Malik, et al., 2012).

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## Appendix A: IRB Approval



**THE UNIVERSITY OF TEXAS AT TYLER**  
3900 University Blvd. • Tyler, TX 75799 • 903.565.5774 • FAX:  
903.565.5858

**Office of Research and  
Technology Transfer**

**Institutional Review  
Board**

May 12, 2014

Dear Mr. Upatham,

Your request to conduct the study: *Enhancing the Cohesiveness of a Cognitively Diverse Team: The Role of Leadership* IRB #F2013-34 has been approved by The University of Texas at Tyler Institutional Review Board under expedited review. This approval includes a waiver of written informed consent and assurance that participants are informed of the following prior to study participation: this is a research study; participation is completely voluntary with no obligations to continue participating, with no adverse consequences for non-participation; and assurance of confidentiality of their data.

In addition, please ensure that any research assistants are knowledgeable about research ethics and confidentiality, and any co-investigators have completed human protection training within the past three years, and have forwarded their certificates to the IRB office (G. Duke).

**Please review the UT Tyler IRB Principal Investigator Responsibilities, and acknowledge your understanding of these responsibilities and the following through return of this email to the IRB Chair within one week after receipt of this approval letter:**

- This approval is for one year, as of the date of the approval letter
- Request for Continuing Review must be completed for projects extending past one year
- Prompt reporting to the UT Tyler IRB of any proposed changes to this research activity

## Appendix A: Continued

- **Prompt reporting to the UT Tyler IRB and academic department administration will be done of any unanticipated problems involving risks to subjects or others**
- Suspension or termination of approval may be done if there is evidence of any serious or continuing noncompliance with Federal Regulations or any aberrations in original proposal.
- Any change in proposal procedures must be promptly reported to the IRB prior to implementing any changes except when necessary to eliminate apparent immediate hazards to the subject.

Best of luck in your research, and do not hesitate to contact me if you need any further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Gloria Duke, PhD, RN".

Gloria Duke, PhD, RN  
Chair, UT Tyler IRB

## Appendix B: The Survey Instrument

### Cognitive Diversity

Atiwate (Joe) Upatham, together with the advising committee at The University of Texas at Tyler, have created a survey that seeks to explore the effects of cognitive diversity on teams' cohesion. You have been selected to participate in this research project because you have been screened and deemed suitable for this research. Your taking part in this web survey is completely voluntary. It should only take you about 15-20 minutes. Your survey responses will be confidential and only seen by the research team at The University of Texas of Tyler. The survey instrument does not collect any identifying information and Joe and his research team will make sure that the information collected is kept private and used only for the purpose of the study. Joe may use the data to support his research interests through publication or conference venues, but no identifiable characteristics will be used. If you have any questions or concerns, let me know (aupatham@patriots.uttyler.edu) or direct your questions to Dr. Gloria Duke, Chair of the The University of Texas at Tyler Institutional Review Board at (903) 566-7023, or gduke@uttyler.edu.

- I understand and acknowledge that this survey is completely voluntary. (1)
- I do not wish to participate. (2)

Q1 What is your gender?

- Male (1)
- Female (2)

Q2 What is your age range?

- 12 - 18 (1)
- 18-33 (2)
- 34-51 (3)
- 51-65 (4)

Q3 What is your ethnicity?

- Asian (1)
- African American (2)
- Caucasian (3)
- Hispanic (4)
- Other (please specify) (5) \_\_\_\_\_

## Appendix B: Continued

Q4 Type of team in which you were most recently a member:

- Management (1)
- Marketing/ Sales (2)
- Technical/ Engineering (3)
- Manufacturing (4)
- I have not worked on a team in the last 12 months (5)
- Finance (6)
- Human Resources (7)
- Other (8) \_\_\_\_\_

Q5 Type of industry in which you work currently or most recently:

- Manufacturing (1)
- Service (2)
- Education (3)
- Professional (4)
- Government (5)
- Non-profit (6)

Q6 Total number of employees in your current or most recent organization:

- (1)
- 101-500 (2)
- 501-1000 (3)
- 1001-2500 (4)
- 2501-5000 (5)
- 5001-10,000 (6)
- 10,001+ (7)

Q7 Your current or most recent position:

- Front line employee/ team member (1)
- Supervisor or team leader (2)
- Mid-level executive manager (3)
- Other (please specify) (4) \_\_\_\_\_

## Appendix B: Continued

Q10 Please reflect on your most recent team involvement and rate the followings:

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
It was important to the members of our team to be part of the project (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The team members strongly attached to this project (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The members of our team felt proud to be part of the team (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Every team member felt responsible for maintaining and protecting the team (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Appendix B: Continued**

Q11 Please reflect on your most recent team involvement and rate the followings on the team leader:

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
My leader makes the team members enthusiastic about the project (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leader is a model for me to follow (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leader makes me feel good to work with him/her (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My leader makes me feel proud to be associated with him/her (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a member of the project team member, I have complete faith in him/her (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Appendix B: Continued**

I readily trust his/her judgment to overcome any obstacle (6)	○	○	○	○	○	○	○
My leader is genuinely interested in me as a person (7)	○	○	○	○	○	○	○
My leader has shown his or her care for me by encouraging me (8)	○	○	○	○	○	○	○
My leader has shown compassion in his or her actions toward me (9)	○	○	○	○	○	○	○
My leader shows concern for me (10)	○	○	○	○	○	○	○
My leader creates a culture that fosters high standard of ethics (11)	○	○	○	○	○	○	○

**Appendix B: Continued**

My leader empowers me with opportunities so that I develop my skills (12)	<input type="radio"/>						
My leader turns over some control to me so that I may accept more responsibility (13)	<input type="radio"/>						
My leader entrusts me to make decisions (14)	<input type="radio"/>						
My leader gives me the authority I need to do my job (15)	<input type="radio"/>						
My leader let me make decisions with increasing responsibility (16)	<input type="radio"/>						
Please select strongly disagree for this line (17)	<input type="radio"/>						

**Appendix B: Continued**

Q13 Please reflect on your most recent team involvement and rate the followings in term of how strongly do team members agree or disagree with each other about the followings:

	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neither Agree nor Disagree (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)
The best way to maximize the team's performance (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What the team's goal priorities should be? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The best way to ensure the team's long-term success (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which team objectives should be considered most important? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>