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Diversity and Inclusion in The Information Technology Industry: Relating Perceptions and Expectations to Demographic Dimensions

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ABSTRACT

The American society, especially the workplace, is becoming increasingly diverse in terms of race/ethnicity, culture, national origin, sexual orientation, familial status, age, religion, disability, and educational attainment (where there are people from different backgrounds and cultures the potential for suspicion and prejudices occur). This study examines diversity and inclusion in the information technology sector and assesses whether differences in group members perceptions and expectations are influenced by gender, race/ethnicity, position, and educational status. This study adopts a descriptive, quantitative approach utilizing a survey in the form of a questionnaire constructed using the Web-based survey software SurveyMonkey.

This researcher designed a 12-item instrument administered to information technology (IT) professionals who are members of a national IT association. Statistical analyses, including descriptive statistics, correlation analysis, and t-tests were used to answer the research questions. It was found that perceptions and expectations of diversity and inclusion initiatives within the IT industry do not differ significantly by race/ethnicity, gender, education, and position. Details of the results, limitations, recommendations for future research, and applications for practice in organizations by human resources development professionals and technology managers are discussed.

PREFACE

The nation's workforce is made up of people from diverse backgrounds, cultures, religion, national origin, physical ability, sexual orientation, level of educational attainment, position, marital status, and income group. Within organizations, there have been several efforts to accommodate everyone's interests by offering support and training. One method to do this is in the form of diversity and inter-cultural sensitivity training. This has worked to some extent to enhance diversity and inter-cultural awareness; however the problem of including everyone even in a seemingly diverse organization remains questionable. This study was to determine whether the perceptions and expectations of diversity and inclusion are based on demographic dimensions within the context of the information technology industry.

Much as organizational goals and objectives for diversity and inclusion efforts may appear to be well intentioned in terms of focus on creating a virile and conducive workplace for organizational members to perform, it is important that such efforts be directed toward boosting productivity and achieving success. Still, all the people may not perceive of the efforts in a positive way nor will they expect the same set of outcomes from them; hence the need to investigate those underlying factors that influence perceptions and expectations in the IT industry. This study draws on knowledge gained from numerous fields of human endeavor as well as experience from diverse professional endeavors in national and international settings.

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Introduction

> The collaborative energy that is created when talented people from different backgrounds come together to focus on innovation has helped fuel Microsoft's success for more than 30 years. As we bring our innovations into more and more markets around the world, and as we strive to bridge the digital divide so that people at all levels of society can benefit from the opportunities of the global knowledge economy, we recognize that it's more important than ever to honor diversity, both inside Microsoft and in the communities where we live and work. (Gates, n.d.)

Information technology (IT) is used in virtually every area of human endeavor and has been used to describe an entire industry or occupation. IT refers to the study, design, development, implementation support and/or management of any computer based information system and deals with using electronic computers and software to convert, store, protect, process, retrieve with security or transmit any information (Hill, 2008). IT has been described as a vital resource and critically important capital asset that is extensively used in the workplace today (Rainer, Laosethakul, & Astone, 2003). With IT being a major facilitator of the global marketplace, employers are increasing becoming aware of the benefits of their organizations having a diverse workforce that is as expansive as the customer base (Moody, Woszczynski, Beise, & Myers, 2003). IT professionals can be categorized into different occupational groups

based on the Standard Occupational Classification (SOC) and Table 1 represents the groupings with the 2008 employment figures obtained from the Bureau of Labor Statistics (BLS) Occupational Outlook Handbook 2010-11 edition.

Table 1

IT Occupational Groups and 2008 Employment Figures

IT Occupations	Number Employed
Computer and information system managers	293,000
Programmers	426,700
Software engineers, applications	514,800
Software engineers, system software	394,800
Computer and information scientists	28,900
System analysts	532,200
Hardware engineers	74,700
Computer support specialists	565,700
Database administrators	120,400
Network and computer system administrators	339,500
Network systems and data communication analysts	292,000
Computer operators and all other specialists	209,300

People who are demographically different from one another encounter fundamental challenges in developing high quality relationships in organizations due to status differences and reluctance to disclose personal information (Phillips, Rothbard, & Dumas, 2009). Diversity in the workforce has multiple dimensions ranging from diversity in terms of age, ethnicity,

gender, and disabilities (Moody et. al, 2003). This could shape the perceptions and expectations of the climate of diversity and inclusion in the organization and thus influence perceptions and expectations of organizational members of the diversity and inclusion programs of the organization. The term demographic dimensions, demographic variables, demographic characteristics, or demographic factors as used in this report have the same meaning.

Unlike Affirmative Action (AA) and Equal Employment Opportunity (EEO) programs, diversity initiatives are essentially voluntary, although some organizations organize some mandatory diversity programs for their employees (Kulik & Roberson, 2008). Many organizations have implemented various types of initiatives to deal with diversity (Friday & Friday, 2003) including conducting diversity training and other diversity and inclusion programs as diversity management has become an organizational response to workforce diversity and its challenges and opportunities (Pitts, Hicklin, Hawes, & Melton, 2010). For instance, a report by the Society for Human Resource Management (SHRM) found that 67% of U.S. organizations have a diversity training program initiative (Esen, 2005). Also, it has been suggested that most government agencies and 60% of all Fortune 500 companies provide some form of diversity training to their workforces (Tallarigo, 1998). However, the 2003 Annual Industry Report compiled by Training Journal showed that 79% of the organizations surveyed provide diversity training to their employees (Galvin, 2003). Diversity training programs help management and employees effectively deal with multicultural and other issues among existing and future employees of an organization.

It is now no longer possible to ignore the pervading influence of diversity and issues associated with it in our daily lives, be it at work, school, church, on the bus, or at the neighborhood playground. The workforce as well as the customer base is experiencing great

changes in terms of virtually all the demographic characteristics, such as age, gender, race, national origin, religion, sexual orientation, and physical ability. Based on a U.S. Bureau of Census estimate, it is projected that by 2050, nearly half of the population will be Hispanic, Black, American Indian, or Asian (Chrobot-Mason and Quinones, 2002). Generally, the average worker is now older, and more women, minorities, and immigrants populate the workforce.

In the decade of the 1990s, immigrants accounted for about 50% of the increase in the U.S. workforce, and Hispanics/Latinos became the largest minority group in 16 metro areas with 14% holding positions in managerial or professional occupations compared with 33% for non-Hispanic whites. Based on the U.S. Census 2000, 3 out of 10 people identify themselves as non-whites (Lieberman, 2002). It is likely immigrants will constitute a large chunk of workers in the 21st Century. As workforce diversity increases, so will the challenges, some of which include maintaining a strong corporate culture that supports diversity, work life balance, and coping with conflicts arising from cultural differences (Daft, 2001).

Workforce diversity is also becoming a top priority for top executives of organizations around the world. According to a Society for Human Resource Management (SHRM) study, the main advocates for diversity and inclusion at 60% of companies surveyed were chief executive officers, top management, or the board of directors ("Diversity and Inclusion," 2009). To successfully cope with an increasingly diverse workforce, organizations need to ensure employees understand how their values and stereotypes influence their behavior toward people of a different gender, race, ethnicity, religion, sexual orientation, and national origin. There is need to ensure that people understand, tolerate, and appreciate cultural differences among

themselves. Also, organizations need to put in place mechanisms to effect improvement in behaviors that isolate or intimidate minority members.

Diversity management thus provides a means through which an organization could prepare its workforce to appreciate and relate to diversity and associated issues. Diversity training programs have been instituted in some organizations for the purpose of promoting a positive environment for diversity in the workplace. In addition to improving work relations between diverse employees, intense diversity programs are implemented in many U.S. organizations to ensure that employees interact effectively with business customers, partners, and suppliers (Koppelman and Goodhart, 2008). Programs that promote valuing differences and managing diversity can foster a climate that is conducive for career development in the organization (Werner & DeSimone, 2009).

Most diversity management programs focus on recruitment, education and training, career development and mentoring initiatives to increase and maintain a multicultural and diverse workforce (Cox, 1991; Morrison, 1992), it has now become obvious that there is need to expand beyond these traditional programs to much broader and inclusive initiatives, such as employee participation, communication strategies, and community relations (Wentling & Palma-Rivas, 2000) as they emphasize breaking down constraints to full utilization of skills and competencies of employees in organizations (Harvey, 1999). This line of thought is supported by Mor-Barak and Cherin (1998) that as the heterogeneous workforce has become a reality that is here to stay, it is necessary to extend the focus of current diversity efforts to include a bridge between diversity characteristics and the organizational environment. These authors see that bridge as the concept of inclusion-exclusion, which is a continuum defined by the degree to which an organizational member feels part of critical organizational process.

Although workforce demography, respect for and tolerance for diversity, fairness, and inclusion are often highlighted as dimensions upon which to measure the perceptions of diversity climate in organizations, a number of researchers have suggested that differences exist between the concepts of diversity and inclusion (Kossek & Zonia, 1993; Mor Barak & Cherin, 1998, Roberson, 2006). Dimensions specific to inclusion include access to information and resources, involvement in groups, and ability to influence decision making process (Mor Barak & Cherin, 1998). In another research, Pelled, Ledford, and Mohrman (1999) obtained similar results on the dimensions of inclusion but added job security to decision-making influence, and access to information. Cox & Nkomo (1991) see job involvement as critical to inclusion as it influences a number of important career issues and outcomes, such as organizational commitment, expected career satisfaction, turnover, and upward mobility.

Human resources (HR) and IT leaders are now faced with a growing crisis of inability to attract and retain talent in the technology sector (Kastrul, 2008). Technology firms are always searching for talent with attention focused on attracting people from diverse cultures. However, women and minorities are still essentially fewer in technology organizations, especially at the top echelons of the IT industry. Results from a study conducted by Bridge Partners LLC and released in January, 2008 lend credence to this assertion. In the study, a total of 75 companies (the top 25 each of Silicon Valley technology companies, non-Silicon Valley technology companies, and Fortune 25 non-technology companies) made up of 372 executives and 859 board directors were surveyed. The results obtained from the survey showed that Silicon Valley technology companies were better in terms of gender diversity with the highest percentage of women executives, and that ethnic diversity is lacking in all three groups at executive management level, especially with regard to minority females. Also, it was found

that the vast majority of board directors were males across all three groups but non-technology companies fared better. Silicon Valley technology companies were the worst in terms of minority female directors, according to the report. A summary of the results obtained from the survey is shown in Table 2:

Table 2

Comparison of Executives and Board Directors in Technology vs. Non-Technology Companies

	SV	Non-SV	Non-Tech
Executive Management Gender			
Male	85.5	92.0	89.0
Female	14.5	8.0	11.0
Board Director Gender			
Male	88.0	86.0	81.5
Female	12.0	14.0	18.8
Executive Management Minority			
Male	13.0	7.5	6.5
Female	1.0	1.0	0.0
Board Director Minority			
Male	10.5	9.0	11.0
Female	0.5	2.0	4.0

Note. SV= Silicon Valley Technology Companies; Non-SV = Non-Silicon Valley Technology Companies; Non-Tech = Non-Technology Companies; The numbers in the table represent percentages. Source: Bridge Partners LLC (2008, Jan.). Senior management and board director survey: A comparison of senior-level diversity executives in U.S. headquartered technology and non-technology companies. Retrieved on December 12, 2009 from http://zfpr.presskit247.com/edocs/site127/hi-tech%20board%20%20mngt%20survey%20-%20jan%202008.pdf

In a report titled "The Use of the Internet" published by the U.S. Department of Commerce in 2000, disproportionate use of the Internet across racial lines was highlighted. According to the report, the percentage of whites using the Internet was 50.3 compared with 29.3 and 23.7 for blacks and Hispanics respectively (Moo-Young & Odi, 2002). With this kind of information gap or the so-called digital divide, minorities are at a disadvantage in competition with majority group members for opportunities in the economy, be it in political, social, business, education, or the technology sector. Therefore, the authors called for building a bridge to close the divide or gap in order to tap into the underutilized human resources that are abundant in America. Furthermore, they contend that exposure to new communities of people will increase diversity and that this will pay dividends in terms of creativity.

Managing a diverse workforce has been acknowledged as a strategic business imperative (Turnbull, Greenwood, Tworoger, & Golden, 2009; Nishii & Mayer, 2009) yet challenges continue to exist (Turnbull et al, 2009) in spite of the fact that benefits of diversity in a global economy are widely recognized (Davis, 2009; Werner & DeSimone, 2009; Allen, Dawson, Wheatley, & White, 2008; Ng, 2008; Noe, 2008). Although the outcomes have been described as less than desired, many companies are still spending time and huge resources on diversity efforts (Chavez & Weisinger, 2008). For instance, some research findings suggested that diversity training has not been effective in reducing discrimination and harassment complaints, produces a divisive impact, and does not teach behavioral skills (Tallarigo, 1998); and diversity can create workgroup conflict, and reduce cohesion and cooperation (Williams & O'Reilly, 1998). Therefore, the question arises as to why these companies invest in diversity initiatives if after decades of diversity training boom, gaps that such diversity and inclusion programs were intended to address still exist.

Furthermore, it is becoming obvious that diversity is not synonymous with inclusion. It is possible to have diversity in an organization, yet inclusion is nonexistent although this will not work well as you will have the people there but they are mentally resigned. On the other hand, if there is inclusion without diversity, the result is a homogenous workforce and this robs the organization of the benefits of a diverse workforce in terms of innovation, creativity, and multiple perspectives to problem solving (Dhillon, 2009). Therefore, it is best to have an environment that fosters diversity and inclusion initiatives working simultaneously in the organization.

This study focuses on the differences in perceptions of the climate of diversity and inclusion and the expectations of diversity and inclusion efforts among members of the IT industry by examining if these differences are influenced by demographic factors, such as race/ethnicity, gender, education and position. The implications of these for technology management in a globalized economy are analyzed and recommendations proffered for practice as well as for future research.

This study complements the limited research on diversity in the technology sector that is available. Diversity and inclusion in the IT industry is especially important as IT firms attract people from diverse backgrounds, especially in today's world of increasing globalization and interdependence. Also, with outsourcing and off shoring bringing together people from different parts of the world to collaborate on projects, sometimes on real-time basis, an understanding of cross-cultural communication and diversity has become really important in the IT industry. Working on teams with people from different backgrounds today is more of the norm than ever before and IT is foremost in this respect, especially with the application of IT as well as IT professionals working in virtually all industries and fields of specialization. This has

elevated the problem (of diversity and inclusion) to other sectors of the economy as well, not just the IT industry.

To address this problem, a survey questionnaire was developed and administered to participants drawn from IT professionals who are members of a national IT association. The instrument collected data in order to measure the differences in perception and expectations of organizational group members based on their demographic attributes, and then analyze the factors that bring about results obtained. The data was analyzed by statistical means and based on the findings, the limitations, implications for technology management, and recommendations both for future research as well as professional practice were discussed.

Background

The American society, and especially the workplace is becoming increasingly diverse in terms of gender, race/ethnicity, culture, national origin, sexual orientation, familial status, age, religion, attitudes, and beliefs. Workforce diversity has been defined by Tallarigo (1998) as differences in the workforce based on race, color, religion, sex, national origin, age, and disability as well as lifestyle differences based on sexual orientation, marital status, education, appearance, and anything else that distinguishes one person from the other. For instance, it has been estimated that approximately 10% of the general population is gay, lesbian (Lieberman, 2002), bisexual, or transgender (GLBT). Other researchers also agree with this notion that diversity should extend beyond race/ethnicity and gender to include dimensions that influence work-related outcomes such as age, background, work role, and personality (Pitts, 2006; Kellough & Naff, 2004; Wise & Tschirhart, 2000; Thomas, 2001; Norton & Fox, 1997; Slack, 1997) as well as religion, caste, regional affiliation (birth region), and education (Cho & Mor Barak, 2008).

Advances in communication, transportation, and information technologies have not only increased the speed of doing business but has enabled the persons in far-flung locations all over the world to collaborate on projects and do business together easily, faster, and even cheaper than was the case even a couple of decades ago. Wherever there are people from different backgrounds and cultures, suspicion and prejudices occur. According to Koppelman and Goodhart (2008), diversity refers to "the presence of human beings with perceived or actual differences based on a variety of human characteristics" (p. 15). Matton and Hernandez (2004) offer a more elaborate definition of diversity as follows:

> Diversity is an expanded and more inclusive conception of whom and what is valuable in the workplace, a collaboration of cultures, thoughts, and ideas that enhances business performance. Although some companies' primary diversity focus "emanated from issues surrounding women and minorities," others strongly highlighted the equal importance of all attributes of differences of experience, thought, education, geography, and language in addition to race, gender, sexual orientation, and physical disabilities. (p. 48)

Inclusion should be seen in terms of collaboration with stakeholders, creating opportunities, access, and participation. Therefore, it is an active process of collaboration with all relevant stakeholders to break down barriers, real and/or perceived, in order to create workable means through which excluded people - the underrepresented minorities, or historically discriminated groups - can have access to participate in and contribute meaningfully to the group or organization, up to and including aspiration to the apex position in any organization in which they are a part. In this way, inclusion can play a vital role in an

organization through deriving optimum benefits from performance of its diverse workforce occupying positions at all levels.

Movement of people, goods and services into and out of countries are becoming commonplace. The United States has always been a foremost destination of movement of people in search for greener pastures and for those escaping from persecution in their countries who are seeking a society where freedom, justice and civil liberties are respected. Furthermore, technology firms attract people from diverse backgrounds and cultures. A number of American firms are outsourcing services and setting up in various countries of the world to take advantage of low labor cost for producing goods and services. This has brought new management challenges in terms of how to deal with people in a multicultural milieu, particularly the need for organizations to implement diversity training to manage this trend (Holladay & Quinones, 2005).

In a global economy characterized by increasing interdependence, companies that are aspiring to be leaders in their business sectors need to adopt a redesigned team-based structure in line with changing demographics and conduct diversity trainings (Mirvis, 1997) to foster a virile environment for diversity and inclusion for enhanced business performance for the benefit of their organizations. The extent of diversity and the attendant prejudices and perceptions have necessitated the call for equity and fairness in dealing with people, especially underrepresented minorities. There is the need to not only ensure that people are present in the organizations to fulfill the aims of diversity but to ensure they are included in vital sectors of the organization. Their inclusion will provide benefits to the organization, such as enhanced creativity and innovation, increased performance, and improved organizational commitment and success.

There is mounting evidence suggesting that diversity and inclusion are critical predictors of organizational commitment and job performance (Cho & Mor Barak, 2008).

Problem Statement

According to Laroche (2003), the number of multicultural teams has significantly increased within North America in the past 10 years due to immigration and increased globalization. He referred jokingly to the workforce of many research centers, IT organizations, and hi-tech companies as "United Nations". Although they also face challenges, multicultural and global teams have advantages over homogenous teams when these challenges are overcome. According to Knouse and Dansby (1999) even if at the beginning a homogenous group may appear to perform better, with experience of working together heterogeneous groups perform better in terms of problem-solving and innovation. The advantages, including having different approaches to problem-solving and making decisions, could become a major source of achieving competitive advantage (Laroche, 2003). Yet, Cho and Mor-Barak (2008) has cautioned that managers who work with a diverse workforce need understand how differences rooted in culture may affect workers' perceptions and behaviors and which of these differences are consequential. When understood, it is possible to initiate deliberate efforts to accommodate the needs of the employees and to develop human resources practices to show that their inputs are valued. This will in turn foster harmonious coexistence and create an environment for everyone to contribute their best and be recognized for excellence.

Organizational gains as a result of diversity include better decision making, higher levels of innovation and creativity, enhanced marketing performance, and new opportunities in untapped markets (Jain & Verma, 1996). Also, people from diverse backgrounds and cultures are said to bring in unique and diverse approaches into solving problems and this innovation

and creativity results in increased performance and business success (Laroche, 2003). However, it is also important to note that cross-cultural environments as found in many technology organizations also present issues arising from cultural and ethnic differences such as higher levels of dissatisfaction and turnover, interspersed conflict and breakdown in communications (Miliken & Martins, 1996).

According to Laroche (2003), when employees and managers come from different cultural backgrounds, issues revolving around initiative, competence, and feedback among others tend to arise. For instance, an employee who is known to be competent but does not put his or her ideas forward, consistently shy away from taking part in projects in which he or she is clearly one of the organization's key experts, or keeps running to get the manager's permission or advice on virtually every issue may be viewed by a manager as lacking initiative or even technically incompetent but in actual fact he or she is merely acting based on cultural practices and not due to lack of confidence or incompetence.

A number of studies have been carried out to investigate the receptivity to diversity and diversity management (Gaze, n.d.; Soldan, 2009; Soldan & Dickie, 2008) and findings suggest receptivity and perceptions vary among gender and racial/ethnic groups. With respect to diversity and inclusion and its importance in the cross-cultural environments in which many organizations, including those in the technology sector now find themselves, it becomes important to examine the differences in the perception of the group members that comprise these organizations based on visible demographic characteristics such as gender, race/ethnicity, and age as well as less visible ones such as position and education attainment.

There is no question about the fact that there could be differences in perception among members of any community with respect to virtually anything but what is of concern here is to

the extent those perceptions are driven based on group considerations (in-group vs. out-groups) as espoused by the social identity theory. This study extends beyond highly visible demographic dimensions such as gender and race/ethnicity to cover work-related, informational and less visible dimensions such as work role (position) and level of educational attainment. Therefore, the problem of this study is to assess the extent to which differences exist in the perception and expectation of organizational members with respect to diversity and inclusion in information technology (IT) organizations based on gender, race/ethnicity, position, and education.

As part of the study, the factors necessitating these differences will be assessed based on group member characteristics in line with the social identity and social categorization theories. Of interest is the examination of the extent to which the perception of organizational members differ as to the expected outcomes of diversity and inclusion initiatives and whether these perceived differences have any bearing on performance and business success.

Research Questions

The research questions are as follows:

RQ1: What are the differences in perceptions of diversity and inclusion in IT organizations based on race/ethnicity of group members?

RQ2: What are the differences in perceptions of diversity and inclusion in IT organizations based on gender of people in the organization?

RQ3: What are the differences in perceptions of diversity and inclusion in IT organizations based on education attainment?

RQ4: What are the differences in perceptions of diversity and inclusion in IT organizations based on position occupied?

RQ5: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on race/ethnicity of group members?

RQ6: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on gender of the people in the organization?

RQ7: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on the level of educational attainment?

RQ8: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on position occupied?

A related study by Chow and Crawford (2004) investigated the relationship between gender, ethnic diversity, and career advancement in the workplace from a social identity perspective. Based on this perspective, the researchers believed that group membership and the perception of the group status are relevant in seeking to understand intergroup relations in organizational environments. In the present study, the intention is to examine whether differences in the perceptions and expectations of diversity and inclusion efforts in IT organizations are influenced by demographic variables, such as race/ethnicity, gender, education, and position.

Hypotheses

The following hypotheses were developed to investigate the above research questions:

Hypothesis 1: There are no significant differences between nonwhites and whites in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 2: There are no significant differences between females and males in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 3: There are no significant differences between less educated and more educated persons in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 4: There are no significant differences between persons in lower positions and those in upper positions in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 5: There are no significant differences between nonwhites and whites in their expectations of diversity and inclusion in IT organizations.

Hypothesis 6: There are no significant differences between females and males in their expectations of diversity and inclusion in IT organizations.

Hypothesis 7: There are no significant differences between less educated and more educated persons in their expectations of diversity and inclusion in IT organizations.

Hypothesis 8: There are no significant differences between persons in lower positions and those in upper positions in their expectations of diversity and inclusion in IT organizations.

Need for the Study

According to DeMuse and Hostager (2001), diversity programs could potentially influence the perceptions, behaviors, attitudes, and knowledge of organizational group members. Understanding how employees and managers perceive of diversity and inclusion in the organization could help to direct focus on where there are needs for corrections so as to maximize the benefits from such endeavors, and especially to manage workforce diversity in such a way that discrimination is prevented (Ozgener, 2008). Organizations pursue diversity and inclusion programs for different reasons: to enhance organizational performance, client relations, competitiveness, retention, employee satisfaction, and creativity (McMahon, 2010; Pitts, 2005, 2006; Richard, 2000) all of which are very relevant to technology management and

the IT industry. The effect of diversity and inclusion initiatives on IT team processes and performance could have an impact on organizational outcomes (Ancona & Cadwell, 1992).

In addition to examining perceptions, this research also focused on what organizational members believe the diversity and inclusion efforts of their organizations typically should seek to achieve, i.e. the expected outcomes. One of the recurring themes in the research literature on diversity and inclusion is its linkage to organizational success and business performance (Allen, et al., 2008; Cox & Blake, 1991; ; Davis, 2009; Kochan et al., 2003; Ng, 2008) as well as in achieving several other benefits for organizations including employee satisfaction, retention, reduced complaints and litigation, and improved client relations. Therefore, examining how those in the IT industry perceive of the climate of diversity and inclusion and their perceptions of expectation of efforts by the organization to entrench a culture of diversity and inclusion is important.

The need for diversity and inclusion is reinforced by several studies in the literature. For instance, Martins, Milliken, Wiesenfeld, & Salgado (2003) found that outcomes of racial diversity tend to be more negative in homogenous than in multicultural, pluralistic organizations. Organizations that take a hard look at diversity and inclusiveness do so because they have realized that taking action is a strategic imperative, especially as diversity management is now considered a major part of strategic human resource management (Ozgener, 2008). At the same time, the IT industry has been greatly influenced by the globalization of business activities which is a major push factor for bringing increased focus to bear on diversity issues (Jackson & Alvarez, 1992). According to Moody, Woszcynski, Beise, and Myers (2003), culturally diverse IT teams are necessary, as globalization becomes a reality in today's work place.

In addition, there has been an increasing level of interdependence of businesses and national economies on one another with technology being the main driver of these changes. Following this is the increased incidence of interaction of people from diverse groups and interests to work collaboratively in teams on technology or technology-related projects. This has heightened the need for diversity training for managers and employees and to give all stakeholders the sense of inclusion in organizational decision-making as well as in the reaping of benefits that accrue to efforts in which they are part of without any perception of discrimination and prejudice.

In a related study on Latina (Spanish-speaking women) perceptions of diversity climate in the U.S. military, Parks, Crepeau, Knouse, and McDonald (2008) found that diversity climate was positively related to job satisfaction, organizational commitment, and trust in the organization. A study conducted by Harter, Schmidt, and Hayes (2002) found that career satisfaction among immigrants and visible minorities is lower and has a significant impact not only on employee performance and retention but also on organizational profitability and productivity.

Employees who are satisfied with their career are more engaged and so more likely to contribute toward organizational success. However, it has been reported that women and minorities achieve lower levels of objective career success than white males. For example, findings by Igbaria and Wormley (1992) obtained in a study that focused on IT professionals show that blacks receive less career support, and tend to have lower levels of met expectations as well as lower levels of career satisfaction than whites.

Along the same lines, a study by Greenhaus, Parasuraman, and Wormley (1990) of 828 manager and supervisor pairs found that blacks reported less job discretion and lower feelings

of acceptance than whites. They also reported receiving fewer promotions, less satisfaction with their careers, and more likely to report negative organizational feelings than whites. When these research results are considered against the background of the problem of technology and information gap or digital divide and its negative impacts on the poor, rural dwellers, and minorities, the real problems become evident. Information disparity or digital divide keeps the poor, rural dwellers, and minorities away from participation in or benefitting from information technology (Moo-Young & Odi, 2002). How can these persons then compete effectively in a globalized economy in which IT is the major driver?

As stated in Moody et al. (2003), there have been few studies on diversity issues and its effect with specific focus on the IT industry. The researchers noted that research in the management literature regarding the effects of diversity (visible and invisible) on team performance and processes provides fertile ground for developing research that are specific to IT teams. Also, there is a growing need for research on issues regarding diversity and inclusion as they could assist in the management of IT teams, and IT talent sourcing.

This study is developed to fill that void and to also contribute to the literature on diversity and inclusion with a focus on technology management and the IT industry. Specifically, the study focuses on diversity and inclusion in IT sector and examines whether differences in perceptions and expectations are influenced by group member demographic dimensions, such as race/ethnicity, gender, education, and position.

Also, with the youth bulge which refers to "a cohort of youth between ages 16 and 25 that is unusually large relative to the adult population" (Hart, Atkins, Markey, & Youniss, 2004, p. 591), especially from Asian and Middle Eastern countries increasingly moving out to seek employment in other countries such as the US, as well as the growing minority representation in

the IT workforce, new management concerns for diversity and inclusion in America has manifested (Adya, 2008). Although issues of diversity and inclusion are common in organizations and have been the focus of several studies reported in the literature, not so much have been done with a focus on the perceptions of minorities and the diversity climate in IT organizations, and therefore, not much is known about how organizations deal with these issues apart from what they put out on their web sites. This study presents an opportunity to make a contribution in this regard. The perceptions of underrepresented groups are important to IT organizations because the contributions of everyone in that sector needs to be properly harnessed and coordinated to produce fruitful results to the maximum extent possible for the success of the organizations.

Significance of the Study

More than 50% of the US workforce consists of underrepresented persons, minorities, immigrants and women (Thomas, 2001). An organization can achieve the goals of diversity by having all the groups represented in some way in the organization without exclusion in terms of uninhibited access to opportunities for development, participation in key decision-making, upward mobility in the corporate ladder, training opportunities, and participation in key assignments and projects. Where this is not the case, the resultant frustration could lead to dissatisfaction and reduced commitment with overall impacts on productivity and organizational success.

Public and private sector organizations as well as not-for-profit organizations are searching for more effective ways of managing diversity and inclusion in order to meet anticipated global labor shortage due to factors such as aging baby boomers, and declining fertility rates. For instance, Jenkins (2008) noted that as labor markets continue to tighten,

technology continues to evolve, and foreign student immigration into America in search for opportunities dwindles, a core challenge facing companies is how to attract and retain a skilled workforce.

All the aforesaid situations have the potential to make organizations take a harder look at their diversity and inclusion programs in order to fine tune them in line with set goals and expectations rather than as a yearly routine undertaking in the organization's systems and practices best valued for its relevance only in the public relations arena (Tran & Dawson, 2008). This study will help in understanding the perceptions and expectations of group members of the diversity and inclusion climate in the IT sector, add to the body of knowledge with respect to diversity and inclusion, and provide insights into how technology managers should deal with diversity and inclusion.

Assumptions

It is assumed that the IT professionals who participate in this study by taking the survey understand what diversity and inclusion is all about, and that their organizations have in place some diversity and inclusion programs. It is also assumed that the participants have provided responses to the best of their knowledge and belief on their perceptions and expectations of diversity and inclusion in their organizations given assurances of respect for privacy and confidentiality provided by the researcher.

Limitations

The limitation for this study is in regard to the difficulty in obtaining data on diversity and inclusion considering the social, cultural, economic as well as political nature of diversity and associated issues. The study relied on the willingness of participants to supply necessary data through their response to survey questionnaire items. The researcher did not envisage any

reluctance to respond truthfully since no data was required on any IT organization specifically rather it was the perception and expectation of the people in the organization that was of interest.

An inherent error that could arise was due to the self-report nature of the data collected (provided by the respondents). However, the researcher expected the responses to be as close as possible to the true perceptions of the respondents in that what is being measured relates more to broader social issues affecting the general population than anything specific to any specific organizations or group of persons. What was important was that the peculiar experiences relevant to the IT industry be captured in the measurements.

Also, due to access limitations to IT professionals, the researcher relied on the goodwill of an administrative assistant who was the contact person in a national IT association to reach out to participants for the study. Information was made available to members of the association through emails and those who opt to participate did so willingly and on their own volition. The contact person distributed the survey questionnaire to participants in an email blast to members on the association's membership list.

Delimitations

Since IT is used in most firms in USA banks, insurance, real estate, hotels, restaurants, fast food chains, airlines, mailing industries, medical, energy, and educational institutions, for the purpose of this study participants were sourced from IT professionals working in any occupational or business group in so far as they are engaged in IT work, including computer (office) equipment, computer software, and IT services lines of businesses. According to Hicks (2002), professionals versed in any of these IT areas fit into every spectrum of the economy. The Information Technology Association of America (ITAA) notes that 92% of all IT workers

are employed in non-IT companies, with 80% of them in small companies outside the IT industry (ITAA, 2002). However, for this study, respondents were expected to be IT professionals working in the United States.

Definition of Key Terms

Affirmative action – "A program or effort by an organization to bring members of underrepresented groups, usually groups that have suffered discrimination, into higher degree of participation in the organization" (Werner & DeSimone, 2009, p. 531)

Diversity – "The presence of human beings in an organization with perceived or actual differences based on a variety of human characteristics" (Koppelman & Goodhart, 2008, p. 374). "Diversity refers to the collective (all-inclusive) mixture of differences and similarities along a given dimension" (Thomas, 1996, p. 7)

Diversity and inclusion – can be viewed in three perspectives: integration and learning, access and legitimacy, and discrimination and fairness (Ely & Thomas, 2001). In this study, workforce diversity and inclusion were taken together and not treated separately.

Diversity training – a training program "designed specifically to address issues of cultural diversity in the workforce". It could take the approach of "valuing differences" (awareness of differences) or "managing diversity" (emphasis on skills needed to succeed in a multicultural environment) (Werner & DeSimone, 2009, p. 535).

Exclusion – "the goal is to minimize diversity by keeping diverse elements out or by expelling them once they have been included" (Thomas, 1996, p. 21)

Expectation – "a belief about the likelihood that something will occur. Expectations can encompass behaviors, feelings, policies, and attitudes" (Werner & DeSimone, 2009, p.253)

Human resource development – the framework for enabling employees within an organization to develop their personal and organizational skills, knowledge, and abilities which include training, development (career development, talent development, organization development, personal development), succession planning, mentoring, coaching, and performance management

Inclusion – "the goal is primarily to increase the number of target-group members in the organization at all hierarchical levels" (Thomas, 1996, p. 20).

Inclusiveness – the intentional act of being open, reaching out, removing barriers, and creating an environment where all members of an organization can achieve their fullest potential.

Information Technology (IT) – the use of computer processes, software, hardware, information systems, programming language, and data constructs to manage information. IT professionals are typically involved in installing applications, designing complex computer networks, and information databases. The term also refers to an entire industry or occupation (Hill, 2008).

Information Technology Industry – "those organizations concerned with furthering computer science and technology, design, development, installation, and implementation of information systems and applications" (Hicks, 2002)

Perception – "the ability to organize the message from the environment so that it can be processed and acted upon" (Noe, 2008, p. 135).

Technology – "the practical implementation of learning and knowledge by individuals and organizations to aid human endeavor. Technology is the knowledge, products, processes,

tools, and systems used in the creation of goods or in the provision of services"(White & Brutton, 2007, p. 16).

Technology management – "the linking of different disciplines to plan, develop, implement, monitor, and control technological capabilities to shape, and accomplish the strategic objectives of the organization (White & Brutton, 2007, p. 18).

Summary

In this chapter, the concept of diversity and inclusion as it relates to this study and the American society was introduced, including a discussion and explanation of the various dimensions of diversity. As the society and the workplace become increasingly diverse, IT continues to play a major role in bringing people together in the pursuit of their business and in the course of doing their jobs. This laid a background on which the problem statement for the study which is to examine whether the differences in the perceptions and expectations of members of the IT industry are based on race/ethnicity, gender, education, and position was developed.

There were discussions on the research questions, need, significance, assumptions, limitations, delimitations, as well as a definition of key terms used in the study. The next step is a general review of the literature to address issues such as the extent of diversity in the nation, perceptions of diversity and inclusion, purposes of diversity and inclusion initiatives, diversity and inclusion in the IT industry, how technology management relates to diversity and inclusion, and the problems of researching diversity issues.

CHAPTER 2

Review of Literature

Overview

This chapter sheds light on the extent and perceptions as well as the purposes of diversity and inclusion in the IT sector and assesses the progress that has been made especially against the back drop of dwindling minority and women enrollments in natural sciences, mathematics and engineering majors, an aging population, declining fertility rates, changing demographics, and increased off-shoring/outsourcing. The importance of diversity and inclusion within the context of technology management as well as the challenges of researching diversity and inclusion are also discussed.

Extent of Diversity in USA

The American society is becoming increasingly diverse in several dimensions, such as race, national origin, religion, physical ability, and even mode of dressing. The increasing diversity in the American workforce is a reflection of the world's diverse population. Furthermore, the American workforce has been increasingly diversified through women and minorities having greater access to jobs (Choi & Rainey, 2010). The U.S. Bureau of Labor Statistics projected that between 2000 and 2010, White, non-Hispanic portion of the workforce will grow by 0.9% per annum compared to Asians at 3.7%, Hispanics at 3.1% (Adya, 2008). As global demographics change, the need for inclusive workplaces becomes higher (Lieber,

2008). Based on the 2000 and 2010 national census figures, there exist even deeper complexities in the diversity mix of the country. For instance, even if people of one race were still an overwhelming majority at 97.6% and 97.1% in 2000 and 2010 respectively, the population of people with two races increased 32% within the same period as can be seen in Table 3. This presents an interesting dimension with new challenges for diversity and socio-cultural interaction.

Table 3

Population by Race and Hispanic origin for the United States – 2000 and 2010

Race and Hispanic or Latino	2000		2010		% Change 2000-2010
	Number	% of total population	Number	% of total population	
RACE					
Total population	281,421,906	100.0	308,745,538	100.0	9.7
One race	274,595,678	97.6	299,736,465	97.1	9.2
White	211,460,626	75.1	223,553,265	72.4	5.7
Black or African American	34,658,190	12.3	38,929,319	12.6	12.3
American Indian and Alaska Native	2,475,956	0.9	2,932,248	0.9	18.4
Asian	10,242,998	3.6	14,674,252	4.8	43.3
Native Hawaiian and Other Pacific Islander	398,835	0.1	540,013	0.2	35.4
Some other race	15,359,073	5.5	19,107,368	6.2	24.4
Two or more races	6,826,228	2.4	9,009,073	2.9	32.0
HISPANIC OR LATINO					
Total population	281,421,906	100.0	308,745,538	100.0	9.7
Hispanic or Latino	35,305,818	12.5	50,477,594	16.3	43.0
Not Hispanic or Latino	246,116,088	87.5	258,267,944	83.7	4.9
White alone	194,552,774	69.1	196,817,552	63.7	1.2

Source. Humes, K.R.; Jones, N. A.; & Ramirez, R. R. (2011, March). Overview of race and Hispanic origin: 2010. *United States Census Bureau 2010 Census Briefs*. Retrieved April, 2011 from http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

In the area of education, the profile for females is being increasingly seen in all areas as graduation rates and enrollment for males plummet due to a number of factors including high number serving time in prisons and on military assignments. According to the Department of Education's National Center for Education Statistics (http://nces.ed.gov/programs/coe/press/highlights2.asp), women accounted for 57% of the bachelor's degrees and 62% of all associate's degrees awarded in the 2006-2007 academic year in the United States. Also, the average graduation rate for women in 2004 was 60% representing a 6 percentage point higher rate than the rate for men.

According to Lieber (2008), the United States is expected to become a minority-majority Country by 2050 suggesting that the aggregate number of minority people will exceed the number of nonminority residents, and that changes within specific racial and ethnic populations are also occurring. For instance, whereas in 1970 only 1.3% of the U.S. black population was born outside of the United States, by 2000, that number has jumped to nearly 8%. In addition, she asserted that as the workforce gets older, and as baby boomers retires, high-level positions will open in organizations, and many employees will move up. This will make organizations fill a large number of vacancies at lower levels with migrating workers and younger workers. The very nature of work and of organizations will change as new demands for flexible work arrangements, telecommuting are received from these employees, many of whom will be caring for both their children and their aging parents.

Changes in the age of the workforce will affect aspects of diversity, such as race and gender. For example, in the United States, racial diversity is higher among younger age groups. Therefore, as older workers leave and younger workers replace them; the racial composition of the workforce will be altered. Also, because women outlive men, the aging population—which

is working longer—will include more women than men, and the more experienced workforce will become increasingly female. This could pose problems for organizations in attracting experienced workers if they have not yet achieved equality within management. According to Nishii and Mayer (2009), "The changing demographics of today's workforce make managing diversity effectively a key strategic issue for organizations." (p. 1423)

Several researchers have examined these concepts of diversity and inclusion and have reported findings related to gender and race/ethnicity. For instance, Adam et al. (2006) studied the relationship between gender and technical skills and impacts on gender identity. They reported that the mostly-male information and communications technology (ICT) workplace influences women behavior and perception of their own identity. ICT women workers, in their opinion, find themselves torn between distancing themselves from work and distancing from their identity as women.

Gaze (n.d.) studied the extent of differences in receptivity of diversity and diversity management by gender and ethnicity among government and military employees and reported that employees are generally receptive to diversity and diversity management but that receptivity varied among gender and ethnic groups. He found, for instance, that male Asian Americans were more receptive to diversity and diversity management than Caucasians, and that Hispanics were more receptive to diversity management than Caucasians. Also, in studies by Soldan & Dickie (2008) and Soldan (2009) on employee receptivity to diversity management (RDM) in an Australian public sector agency, the researchers took a representative sample of 391 employees and investigated the extent to which employee RDM varied among gender and ethnic groups and the relationship between receptivity and its antecedents. Results obtained showed that employee receptivity varied among gender groups with females being

more receptive than males. It was also found that the predictors of RDM includes gender, personal view of value of diversity for the group or organization, level of comfort with and openness to diversity, and the perception of inclusion.

Relating Perceptions and Expectations to Demographic Dimensions

There are a number of models, dimensions, aspects, or categorizations of diversity. Table 4 shows some of the various classifications by leading diversity researchers.

Table 4

Categorizations of Diversity Dimensions

Loden (1996)	Harrison, et al. (1998)	Jehn, et al. (1999)	Knouse & Moody (2008)
Primary	Surface-level	Social category	Visible, surface factors
Secondary	Deep-level	Informational	Underlying traits (non-observable, deep, invisible)
		Goals & Values	

Loden (1996) developed a Dimensions of Diversity Wheel essentially made up of primary and secondary dimensions to attempt to characterize the different aspects of diversity. According to Loden, the primary dimensions include age, gender, race, ethnic heritage, sexual orientation, mental/physical abilities and characteristics. The secondary dimensions relate work experience, income, military experience, geographic location, education, work style, family status, communication style, religion, first language, organizational role and level.

A number of researchers have expressed the need to distinguish between diversity that is high in visibility but low in job relatedness, such as diversity in demographic traits, such as

race/ethnicity, and gender from diversity that is low in visibility but high in job relatedness, such as diversity based on position, or educational attainment (Nishii & Mayer, 2009; Pelled, 1996; Tsui, Egan, & O'Reilly, 1992). Understanding the extent to which the perceptions of the diversity climate as well as the expectations of diversity and inclusion efforts are driven by diversity based on demographic factors compared to diversity based on job relatedness factors could help technology managers and human resource development professionals, especially those in the technology sector; address issues related to diversity and inclusion in their organizations and to also use such knowledge to create processes, procedures, and activities to enhance the performance of their workforce in order to boost their productivity.

Moody et al. (2003) discusses two models – the trait and expectations models. According to them, the trait model assumes diversity in terms of age, gender, and race/ethnicity to be of high visibility. On the basis of the expectations model, group members through processes of social categorization infer the high job relatedness attributes of others based on their high visibility attributes and treat them accordingly. Jehn, Northcraft, and Neale (1999) identified three variants: Social category, informational, and values diversity. Diversity along the lines of age, gender, and race/ethnicity are referred to as social category diversity, while diversity along the lines of education, functional experience, corporate tenure, attitudes, and beliefs, which imply high job relatedness and are less visible are categorized as informational diversity. Values diversity refers to diversity in terms of team and organizational goals, mission, vision, operating procedures, and the underlying work values.

Harrison, Price, and Bell (1998) identified two categories: the surface-level diversity (such as race, gender, age, appearance, physical ability) and the deep-level diversity (such as attitudes, beliefs, and values). They stated that as people interacted over time, deep-level

diversity emerges as the more potent force to benefit the group. Similarly, Knouse and Moody (2008) categorized diversity into two dimensions with the first dimension dealing with the visibility of diverse surface factors such as gender, age, race, while the second dimension deals with underlying traits (non-observable, deep, and invisible) which encompasses attributes such as personality, values, ability, and education.

According to the social identity theory developed by Tajfel and Turner (1979) to seek understanding of the psychological basis for intergroup discrimination, people tend to categorize themselves by means of demographic characteristics such as age, gender, race, and various affiliation groups. There are four important components: categorization, identification, comparison, and psychological distinctiveness. Categorization refers to putting others (and ourselves) into categories or labeling. Identification refers to associating with certain groups, and comparison refers to comparing one's group with others, which leads to favorable bias toward one's group or stereotypically dividing into social groups. Therefore, social identity theory is based on the knowledge that a person belongs to a social group or category (Hogg & Abrams, 1988) with a common social identification – associating with certain groups (in-groups), which bolsters self-esteem. Through a social comparison process, in-groups are compared with other groups, out-groups (Stets & Burke, 2000) and this forms the basis for in-group favoritism. Psychological distinctiveness relates to one group's desire to be seen as distinct from the outer-group in such a way that they see the outer group as subordinate to them. The question is then why does one group dominate, discriminate, or oppress another and why is it so difficult to eliminate it? According to Sidanius and Pratto (2001), social dominance theory argues that intergroup conflicts, such as classism and patriarchy are all basically derived from

the human predisposition to form and maintain hierarchical and group-based systems of social organization.

Some authors, such as Koppelman & Goodhart (2008), proposed the interest theory to explain discrimination against subordinate groups due to enlightened self-interest of majority group in a bid to protect their power and privilege and not necessarily out of prejudice. An example of this is fear of white males that Affirmative Action programs might reduce their opportunities of being hired, retained, or promoted and so could have negative perceptions of the program activities in their organizations. Also, they describe two other theories of discrimination that are common in the workplace. These are internal colonialism theory of discrimination, a form of discrimination in which unequal distribution of control and economic and political resources are maintained through continued domination of subordinate groups, and the institutional theory of discrimination, which refers to the institutionalized policies and practices that have different and negative impacts on subordinate groups within organizations. This includes how privileges and advantages are embedded into the organization's norms, regulations, informal rules, and roles (social status, positions).

According to Werner and DeSimone (2009), a diverse workforce presents both opportunities and challenges to HRD professionals. The challenges are two-fold: (1) to confront the underlying assumptions, beliefs, and attitudes that foster bigotry and stereotyping within the organization by acting as advocates for victims of discrimination and by willingly fighting for institutional justice, and (2) to examine the organizational practices in terms of socialization, orientation, career development, and sexual and racial harassment. Valuing diversity and diversity management programs rely on education and training to change the underlying assumptions, beliefs, values, and attitudes that entrench barriers like glass ceiling.

However, it is only diversity management that seeks to integrate these efforts as a core part of the organizational strategy to foster success and increase business performance.

Table 5

Demographic Variables and Differences in Perceptions and Expectations

Dimension	Example	Theoretical Basis	Hypothesis
Race/Ethnicity	Members of different groups distrustful of sincerity of the initiatives	Social identity; social categorization; interest theory	There are no significant differences between nonwhites and whites in their perceptions and expectations
Gender	Both females and males have differing views of diversity and inclusion efforts	Intergroup theory; social dominance; internal colonialism; institutionalized discrimination	There are no significant differences between females and males in their perceptions and expectations
Education	Less and more educated persons have differing views of diversity and inclusion efforts	Social dominance; social categorization; internal colonialism; institutionalized discrimination	There are no significant differences between less educated and more educated persons in their perceptions and expectations
Position	Staff and managers view diversity and inclusion efforts from different perspectives	Social dominance; social categorization; internal colonialism; institutionalized discrimination	There are no significant differences between persons in lower positions and those in upper positions in their perceptions and expectations

Socialization should not only be seen in terms of learning to fit in through acquisition of knowledge and skills necessary to fulfill job requirements, rather it is equally essential for the construction of group identity within the context of the organization (Korte, 2007). For as

Douglas (2008) noted, diversity is no longer just about race or gender and numbers; its goals is to foster inclusion which she defined as "a conscious, systematic business strategy to make certain that everyone in an organization shares the same advantages" (p. 11) in terms of having their voices heard, access to necessary information for success, productive links to coworkers and management, an opportunity to make valuable contributions, and professional career advancement opportunities. The theoretical bases for differences among demographic groups and examples linked them to the hypotheses developed for this study is shown below in Table 5.

Gauging the perception of people within the workplace and working assiduously to correct negative impressions is a key task HRD professionals need to take seriously to create a positive work environment. People go into technology careers with certain perceptions and expectations and could blame their frustrations and unmet expectations on policy initiatives such as diversity and inclusion rather than looking at their own shortcomings. For instance, a 2001 survey by the Information Technology Association of America, *IT Magazine*, and *US Black Engineer* found that the primary reason cited by people entering into the IT field was desire for training opportunities and professional development, followed by salary and benefits (Hicks, 2002). However, it is important to note that because technology changes at a fast pace and if one does not have up-to-date skills and the requisite training, moving up the corporate ladder may be elusive even if one is already in the organization. This could cause great disaffection leading to frustrations, disillusionment, and eventually increased turnover.

A study by Catalyst (2009) found that clear communication, sound programs and processes, as well as education integration are the keys to avert negative impressions and perceptions of diversity and inclusion efforts that arise out of rumor-mongering about the goals,

objectives, and expected outcomes of the initiatives. Some of the perceptions are the belief that unearned benefits or advantages will be given to a specific group, such as parents, white women, or people of color and merit jettisoned; the perception that one has to be part of a specific group in order to be promoted; equating the goal of the diversity effort with tokenism; and the feeling that diversity and inclusion efforts separate employees by emphasizing groups over individuals. Others are the perception that the development of some employees necessarily impedes the advancement of others; the feeling of being singled out or punished, and the feeling of being dominated by "political correctness."

Their recommendations to avert these negative perceptions and ensure that resistance to the efforts are minimized included clear and frequent communication through communicating the business case for diversity and inclusion, communicating the rationale for promotions, demonstrating fairness, and showing top management support. Additionally, it was suggested that efforts should be made to tie activities involved in the diversity and inclusion efforts to specified business objectives, and to monitor progress as part of the goal-setting and review process. Furthermore, it was suggested that diversity education be extended beyond classroom training to integrate the precepts into core business and management practices in order to create an organization culture that is receptive of the initiative and which views diversity and inclusion as part and parcel of the very nature of doing business. This is important as the way a person views workforce diversity influences how he or she expresses and manages tensions related to diversity and inclusion, how the traditionally underrepresented will feel valued and respected, and how the meaning of their racial identity is interpreted at work. All of these impacts how well work groups and their members function (Ely & Thomas, 2001).

Prior research work has also been conducted on how the diversity climate in organizations affected minorities and impacted organizational outcomes. For instance, Kossek and Zonia (1993) studied the diversity climate in a large public university and found that perceptions of diversity climate were affected by factors such as the hierarchical level in the organization, race/ethnicity, and gender. Similarly, Hicks-Clarke and Iles (2000) found that gender and management level affected diversity climate, organizational commitment, and job satisfaction. However, a study by Hopkins, Hopkins, and Mallette (2001) of 233 managers showed no evidence of differences in organizational commitment to diversity or value commitment based on gender and race/ethnicity.

Organizations therefore face challenges in dealing with group member differences in beliefs, perceptions, and experiences. In some cases, even if the experiences are similar, there could still be varying levels of satisfactions among members of different demographic groups if their interests, preferences, experiences, and concerns are excluded from the spheres of organizational activity (Proudford & Thomas, 1999).

Purposes of Diversity and Inclusion Initiatives

The literature contains a huge volume of information about the purposes of organizational diversity and inclusion efforts and their expectations. Although these purposes, goals or objectives may vary with organizations, they are usually similar in the following respects: to increase knowledge about diversity, to improve attitudes about diversity, and to develop diversity skills (Kulik & Roberson, 2008), and because it is a good business imperative that is good for the bottom line (Jayne & Dipboye, 2004). According to Pless and Maak (2004), diversity is primarily a cultural issue bordering on norms, values, beliefs, and expectations, and so it is an ethical question determined by the foundational principles of human existence. They

asserted that these facts need to be taken into consideration for diversity efforts to be successful. Dhillon (2009) suggested that diversity is about getting the right mix of people with the right set of skills and competencies, thus focusing on the workforce and that inclusion, on the other hand, is about the workplace in terms of the organizational environment we seek to create - making sure the mix of people we have works best for the organization, organizational members feeling a sense of belonging, respected, valued, and accepted for whom they are, and about the way we welcome people into the organization. Therefore, in her opinion, for optimum results it is good to have both diversity and inclusion as they complement each other and work best when applied together. According to Jayne and Dipboye (2004), inclusion when applied as a diversity strategy attempts to embrace and leverage all differences between and among the members of a given group or organization to benefit everyone within that organization.

In order to enhance the potentials of workforce diversity, therefore, Pless and Maak (2004), opine that a culture of inclusion needs to be created within the organization. Pless and Maak (2004) define a culture of inclusion as:

> an organizational environment that allows people with multiple backgrounds, mindsets and ways of thinking to work effectively together and to perform to their highest potential in order to achieve organizational objectives based on sound principles. In such an environment different voices are respected and heard, diverse viewpoints, perspectives and approaches are valued and everyone is encouraged to make a unique and meaningful contribution. (pp. 130-131)

In a 2001 survey jointly conducted by the Society for Human Resource Management (SHRM) and Fortune Magazine tagged *SHRM/Fortune Impact of Diversity Initiatives on*

Bottomline Survey, responses were received from 121 human professionals chosen from Fortune 1000 companies and top companies on the list of the best Fortune 100 companies to work for. Analysis of the responses obtained suggested that diversity initiatives have a direct impact on the bottom line and help an organization maintain a competitive advantage. The results obtained are as shown in Table 6.

Table 6

Results from SHRM Survey on Diversity Initiatives and Competitive Advantage

Items	Percent Response
Improves corporate culture	83%
Improves employee morale	79%
Higher retention of employees	76%
Easier recruitment of employees	75%
Decreases complaints and litigation	68%
Increases creativity	59%
Decreases interpersonal conflict among employees	58%
Enables the organization to move into emerging markets	57%
Improves client relations	55%
Increases productivity	52%
Improves the organization's bottom line	49%

Source. SHRM/FORTUNE Survey on Impact of Diversity Initiatives on the Bottom Line. June 2001

From the above results only 49% and 52% suggested that diversity initiatives have an impact on the bottom line and productivity (or performance) respectively as against 83% and 79% respectively for improvements in corporate culture and employee morale respectively. This shows that even among HR professionals diversity training is still not being viewed as a strong strategic initiative that not only makes the organization look good in terms of its impact but a vital resource for impacting the bottom line and productivity. According to Kulik and Roberson (2008), although conclusive data is lacking, many organizations believe that diversity training is an essential part of their human resources strategy success as well as their overall business performance. One key metric for determining the relevance of diversity training to organizations is measurement of return on investment (ROI). According to Noe (2008), "Measuring the return on investment-- is key for demonstrating the value to the business." (p. 5). By focusing in part on expectations of diversity and inclusion, this study will add to the growing body of knowledge on the underlying reasons why organizations invest in diversity and inclusion efforts, especially by focusing on the IT industry. One area where research on diversity and inclusion would be helpful to organizations is in the recruitment and management of IT teams (Moody et al., 2003). Since HRD professionals typically handle diversity and inclusion issues, and if it can be demonstrated to leaders in IT organizations that diversity and inclusion positively impacts the bottom line by using metrics (Feitz-enz & Davison, 2002) such as ROI (Phillips & Stone, 2002), then the importance of HRD professionals as active contributors and key partners and not merely support service providers will be evident.

It has been suggested that the ability to capitalize on America's rich diversity, particularly among underrepresented groups, by building human capital via higher education will drive the nation's re-emergence as a healthy, sustainable, secure and economically strong

world power (Qayoumi, 2009). Furthermore, Moo-Young and Odi (2002) suggested that closing the digital divide could lead to an influx of people hitherto underutilized being available to companies for employment, and that these companies may find that their increasingly diverse workforces are more creative. This is because they bring in their unique experiences, thoughts, and insights into the performance of their tasks as "Diversity of thought is directly related to life experiences, which are dictated by geographic region, socioeconomic status, religion, race, gender, and academic background" (p. 36). These are strong business cases in support of diversity and inclusion in the IT sector where talent creativity and innovation is consistently sought.

Diversity and inclusion programs are not just annual rituals but are increasingly becoming recognized as being important to the survival of organizations (Cox & Blake, 1991; Shapiro, 2000; Wentling & Palma-Rivas, 2000), and this is more so considering the extent of diversity in most organizations today in U.S. It is interesting to see that diversity issues which emanated from the viewpoint of legal and regulatory conformance have now increased in reckoning by its influence being recognized in strategic terms through its importance and impact on the bottom line. According to Richard (2000), cultural diversity interacts with business strategy to impact business performance based on productivity, return on equity (ROE), and market performance, and so cultural diversity could add value and within the proper context contribute to a firm's competitive advantage. Also, a more diverse workforce enhances an organization's ability to mirror customer wants and needs (Quayle, 2006).

If there is need to conduct diversity training with technology professionals in attendance, it is important to adapt the training to their learning styles to create the intended impact and achieve the desired results. According to Laroche (2003), HRD professionals and

diversity trainers should note the following when conducting diversity training for technology professionals:

- Label “games” as activities to increase receptiveness on the part of technology professionals.
- Since technology professionals are trained to analyze information and look for hidden meanings, it is necessary to always state the stated objective of the training activity and to avoid conducting activities where the objective is not stated or where there is no objective at all as they will feel it is a waste of their time.
- Where possible, discuss with a technology professional about ideas on how to run activities - as a thought experiment or as a physical activity.
- Wherever possible, support points being made during the training activity with quantitative evidence as opposed to qualitative. Also, give an insight into how the data was collected and how it supports the conclusion being made.
- Explain any meaningful difference in the data being presented and wherever possible use pictures, diagrams, and sketches to illustrate points. Scientists and engineers use drawings a lot to explain their work and so would relate positively to them when used in training activities they attend.
- Technology professionals may have limited understanding of human processes and group dynamics, so it is essential to include activities that seek create to create contracts between them or require them to work in teams. This is very important and progress on this needs to be monitored closely.

Diversity and Inclusion in the Technology Sector

Although there is increasing diversity in virtually all sectors of the economy in the United States, presence and extent of participation of under- represented minorities and women in technology companies is still problematic. Diversity in the IT industry is nowhere near where it needs to be, and this is supported by the disturbing statistics (Figure 1) presented by the president of the Information Technology Association of America (ITAA) in a testimony before the House Committee in March 2000 (Hicks, 2002). The two major minority groups (African Americans and Hispanics) combined represented about 10% each of all computer programmers and systems analysts in the U.S.. Although Native Americans represented 0.7% of the total population in the country, they represented only 0.2% of the total science and engineering labor force.

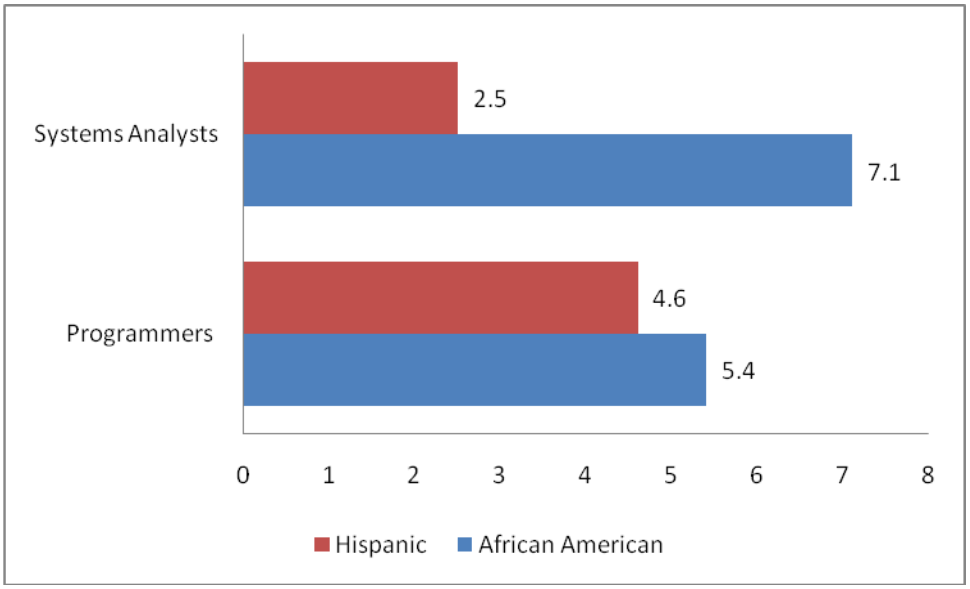

Figure 1 Minority representation in IT workforce

A study by Anita Borg Institute of Women and Technology (as cited in Worthen, 2009) found that blacks, Hispanics, and Native Americans make up only 6.8% of engineering and other technical personnel in the technology industry, out of which only a tiny percentage occupy high level positions. Only 8.2% of technical women in Silicon Valley technology companies are underrepresented minorities (Insight into Diversity, 2009). Also, ethnic minority women make up less than 2% of high-level technical positions (Thomson, 2009). Part of the blame for low representation of minorities in the technology seems to have its roots in education. For instance, although African Americans, Hispanics, and Native Americans make up about 32% of the undergraduate students in the country, only fewer than 12% of bachelor's degrees in engineering are produced by these groups (USBE, 2008).

The impacts of this situation as highlighted in the Anita Borg Institute report is that high-tech companies are at risk of losing underrepresented minority talent. Lack of racio-ethnic diversity at the top ranks encumbers organizational talent recruitment and retention efforts from ethnic minority backgrounds. Also, high tech companies are also at the risk of losing the benefits of gender and ethnic diversity in decision-making and problem solving. This kind of situation potentially leads to lost commercial opportunities for companies as it creates a disconnection between those designing technology and those using it, lack of role models, and a feeling of isolation (or call it exclusion) from important social groups at work (Insight into Diversity, 2009; Thomson, 2009).

Furthermore, there is the issue of biased hiring, promotion, training opportunities, evaluation practices, and salary levels. For instance, ethnic minorities even with equivalent or higher qualifications tend to be paid lower salaries than their majority group counterparts for doing work of comparable knowledge, skill, and intensity (Black, Haviland, Sanders, & Taylor,

2006; Neal & Johnson, 1996; Trejo, 1997). These factors could influence minority and women perceptions and expectations of diversity and inclusion in the organization if such organizations are not taking actions to curb or eliminate practices that could be portrayed as prejudicial or discriminatory to any segment or group within its members.

Perhaps the best way to capture the importance of diversity in the IT workforce is in the following concluding remarks in a study conducted by Moody et al. (2003):

> Diversity in the IT workforce is important. Without women on IT development teams, technology pursuits may focus more on doing things faster, and less on doing new things. Without disabled persons on IT teams, technology advances may evolve further away from accessibility, as with graphical user interfaces. Without age diversity, rich knowledge is lost. Teams may even find themselves re-inventing or even missing successful development methodologies without inclusion of aging IT workers. (p. 68)

Technology Management and Relationship to Diversity and Inclusion

The role of technology management in entrenching a strong and positive diversity and inclusion climate through purposeful leadership in an organization is crucial (Friday & Friday, 2003; Kreitz, 2008; Leo & Barton, 2006; Ng, 2008; Parks et al., 2008; Podsakoff, McKenzie, Moorman, & Fretter, 2008). SHRM's international study on diversity and inclusiveness reveals that chief executive officers are the main advocates of diversity and inclusion in organizations (Davis, 2009). Therefore, leadership at the highest level is necessary in building a diverse and inclusive culture in technology organizations.

According to Nishii and Mayer (2009), leadership, especially inclusive forms of leadership, is critical for leveraging diverse human capital successfully, and that inclusive

leaders do help the bottom line. Managers in technology organizations deal not only with engineering and technology issues; they are also faced with other challenges such as people issues (their own employees and those in other departments), business issues (their department's role in the context of organizational goals and strategies), and leadership issues (staff motivation and extending influence throughout the organization).

Although diversity initiatives are commonly carried out in organizations, the perception that it has failed to yield the desired dividends has led to calls for renewed diversity leadership focus on improving diversity performance (Combs, 2002). There is good business reason to promote diversity and inclusion in a multicultural work environment; it is based on the fact that such policies generate better decision-making processes, enhance creativity and innovation, and increase business competitiveness (Dessler, 2001). Exclusion could be implicit or explicit. No matter the case, research has shown that where a sense of exclusion persists, a looming sense of lack of job satisfaction, absenteeism, low morale, and low well-being will equally thrive (Avery, McKay, Wilson, & Tonidandel, 2007; Mor Barak & Levin, 2002), and this will be counter-productive for business performance.

Furthermore, research has also shown that store units in which subordinates and managers reported less hospitable diversity climates achieved lower sales growth in contrast to store units in which highly pro-diversity climates were perceived. This lends credence to the notion that positive financial outcomes accrue to perceptions of valuing diversity in the workplace (Mckay, Avery, & Morris, 2009). According to Quayle (2006), three keys to successful leadership are 1) building resiliency, flexibility, and adaptability into organizations, 2) developing a "caring" leadership, and 3) emphasizing diversity and inclusion. To achieve diversity and inclusion, the following steps can be taken by technology leaders and managers:

increasing women and people of color in middle management, developing a business case for diversity, building a foundation for future demographic changes, and to be innovative in recruiting.

Also, the leadership and management in technology organizations need to look at the way diversity efforts, such as diversity education and training are organized. Research on the impact of diversity self-efficacy suggests that a developmental approach is best as it strengthens manager as well as employee confidence to deal with a host of issues related to diversity and inclusion, such as gender, race/ethnicity, and cross-cultural interaction (Combs & Luthans, 2007). These issues are very important, especially in today's global economy and considering the increasing demographic changes in the American workforce, including IT firms.

Diversity Research Challenges

One of the problems of researching issues related to diversity and inclusion is the unavailability of data for such studies emanating from the reluctance of organizations to provide such data due to the political, and socio-cultural issues involved. Sometimes, it may prove difficult for a researcher to gain the necessary access to an organization to obtain the needed information or people may just not willingly supply the requested information. Diversity is a hot topic and many organizations try to demonstrate that they embrace diversity and may not want to disclose data on their diversity initiatives. According to Berry (1995), for effective research into diversity and inclusion climate and associated issues, researchers must be able to gain entry into organizations to conduct meaningful and informative research. He proposed four ways to solve this problem in view of the fact that field experiments are not appropriate for this type of study: (1) researcher-administrator partnerships, (2) researcher observation within

organizations, (3) detailed case histories and analysis, and (4) third-party evaluations of diversity management initiatives.

Research-administrator partnerships are essential for collaboration to study the impact of diversity programs. While researchers bring in scientific expertise, measurement skills, and outside creativity to bear on the study of the approach used, the administrators complement the effort by bringing in organizational expertise, understanding and vision about the history, plans, constraints, and opportunities of the firm. Collaboration will enable a blend of viewpoints of both parties to fit the needs of the organization. However, commitments of both are required to make it work successfully.

On-going observation by researchers within the organization is needed to familiarize with the organization and administrators through observation of people, events, and interactions rather than relying on data from archival records, mailed surveys, and secondary database analyses. It is difficult to completely capture the complexities of organizational life by way of analyzing data from the above sources without actually interacting with the people – employees and managers in the organization. These kinds of interaction apart from improving the researcher's insight into the organization create some bond of friendship and collaboration among the researchers and program administrators.

Case studies, if well-designed, can be very useful in monitoring a diversity management technique or intervention to learn about and describe the impact and reaction of the workforce to the initiative. This can be focused on a unit, group, or the entire organization using observation or other means in a natural setting to develop insights, propositions, or hypotheses. Case study approach allows for flexibility in data collection – interviews, observations, company files, annual reports, and publications, and should be done over a period of time (one

year or longer). It should not be a one-time snapshot of what goes on in the unit, group, or organization being studied.

Third party evaluators in this context should be a single person or a team of researchers who are not involved in carrying out the efforts or consulting on the diversity management program. When third party evaluators corroborate positive results, unintended outcomes, and counter-intuitive results, they tend to gain more weight with management than the reports, analyses, and suggestions provided by trainers and consultants. The following are some of the points that third party evaluators need to watch out for:

- Are the intended diversity and inclusion initiatives, including expected outcomes, and anticipated impacts sufficiently defined and measurable?
- Is the study being done over a sufficient length of time to examine a complete picture of the initiatives, outcomes, and impacts? For example, the impact of diversity and inclusion effort may be slow and could unfold over an extended period of time. It should be noted that to date there are no available studies to determine how long after a diversity management initiative should one expect individuals to be impacted.
- Can the practitioners use the results of the study to improve their understanding and practice of diversity management?
- Have the ethical issues of conducting diversity and inclusion research been carefully evaluated? For instance, participation in a study should require the consent of the participant and should be voluntary.
- If any significant changes are anticipated, it is important to specify at the outset what that will be: change in cognition, emotion, or practice. Also, according to

> Ivancevich and Gilbert (2000), it is important to determine if the statistically significant results are of any practical significance to the organization, individuals, or practitioner?

This research was conducted using the first option by seeking assistance of HR personnel at the corporate headquarters of selected companies to administer a questionnaire to employees and managers to gauge their perceptions of the diversity and inclusion climate and also to measure their perceptions of diversity and inclusion outcomes in these organizations. The choice of this option is informed by its being the most practical and will afford the opportunity of reaching out to participants quicker and easier than would be the case if the researcher were to seek out these persons in these companies by himself for the purposes of the research. The contact person should be able to provide the researcher with a list of participants for the study without breaching any company regulations on privacy as this issue will be discussed with management of the company beforehand. To ensure that the participants in the study are representative of the broad spectrum of demographics in the organization, the researcher will review a proposed list of participants to be received from the HR contact person and then pick those to participate in the study using a random sampling method.

Summary

In this chapter, the extent of diversity in the nation, perceptions of diversity and inclusion, purposes of diversity and inclusion initiatives, diversity and inclusion in the IT industry, how technology management relates to diversity and inclusion, and the problems of researching diversity issues were discussed. As the workforce continues to experience dramatic demographic changes so has the concept of diversity and inclusion become an important

strategic issue in organizations and proper management and understanding of it has the potential of galvanizing the organization towards greater success.

Two issues may impact attempts to address diversity and inclusion in technology organizations squarely: 1) as baby boomers retire, younger workers will take over at a time there is a national outcry for lackluster performance of school children in science, technology, engineering, and mathematics (STEM) disciplines; 2) more women in the workforce, especially in management ranks which could necessitate increasing demand for telecommuting, virtual workplaces, and flexible work arrangements. Also, although women are doing better in education compared to men based on graduation data, in the core STEM fields of computer sciences and engineering men still have the edge. With an increasingly higher male prison inmate population the IT industry may need to source their talent needs from qualified youths of other nationalities and foreign students, and this adds to the diversity and inclusion complexity and challenges already faced by organizations. According to the American Community Survey, there were 37 million foreign-born persons residing in the country representing 12.4% of the population (Table 7), out of which over 57% are not citizens as shown in Figure 2 (U.S. Census Bureau, 2009). The foreign-born population is contributing immensely to the economy, educational, and technological development of the country.

Table 7

US Population Data Showing Native and Foreign-Born Population Figures

	Population	Percentage
Total population	301,461,533	100.00%
Native	264,118,663	87.60%
Born in United States	260,236,655	86.30%
State of residence	177,790,341	59.00%
Different state	82,446,314	27.30%
Born in Puerto Rico, U.S. Island areas, or born abroad to American parent(s)	3,882,008	1.30%
Foreign born	37,342,870	12.40%
Naturalized U.S. citizen	15,917,019	5.30%
Not a U.S. citizen	21,425,851	7.10%

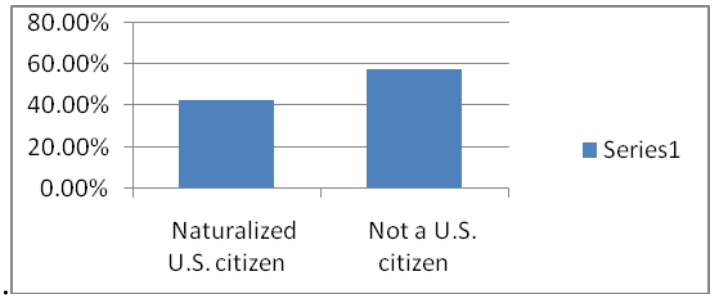

Figure 2. Foreign-Born population in the United States

According to Tech America Foundation (2011), 25% of scientists and engineers in the country are foreign-born, and that nearly 50% of all the Nobel prizes awarded to researchers in the

United States between 1901 and 1990 were won by foreign-born individuals or their children. Furthermore, foreign nationals receive 54% of mathematics, 60% of computer sciences, and 65% of engineering doctoral degrees as well as about 40% of all master's degrees in mathematics, computer sciences, and engineering awarded in the United States.

Although race and gender are the dimensions generally remembered when one talks of diversity, it needs to be borne in mind that there are many other aspects, dimensions, or categorizations of diversity, such as diversity along the lines of education, age, functional experience, position, rank, status, corporate tenure, attitudes, beliefs, and values. As these dimensions differs so are the perceptions and expectations of diversity and inclusion initiatives among members of an organization, especially as within the IT industry there exists people from different backgrounds and cultures; with some of them working on projects together but do not meet face to face with their counterparts. But the question remains how significant are these differences? Figure 3 shows the interplay between demographic dimensions and perceptions and expectations of diversity and inclusion efforts within organizations.

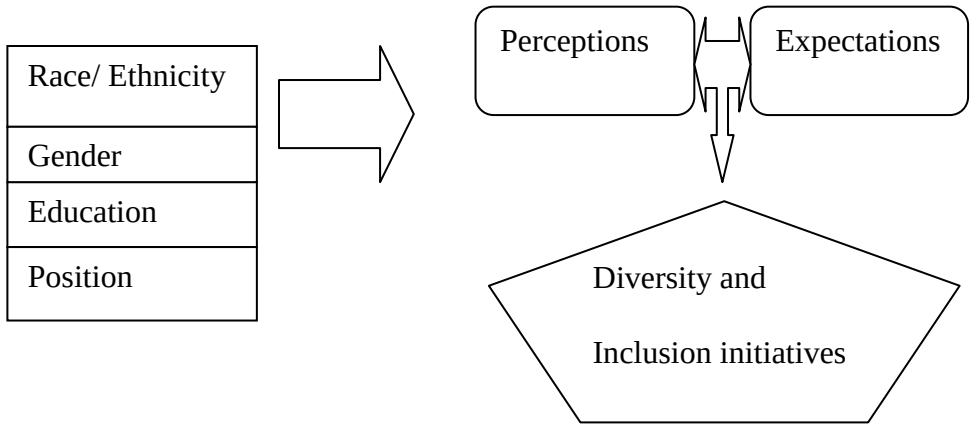

Figure 3. Demographic dimensions, perceptions and expectations

In Chapter 3 focus on the research design and methodology, population, instrument, variables, data collection and analysis techniques, pilot test, reliability, and validity of the study are discussed.

CHAPTER 3

Methodology

Overview

This chapter describes the quantitative research methodology adopted this study, articulates the research design, the research questions, hypotheses to be tested, data collection procedures, data analysis techniques, population, and issues relating to protection of participant confidentiality and privacy. The chapter also addresses issues related to the appropriateness of the research design, instrumentation, data coding, pilot test, the statistical analytic software and specific tests used as well as issues related to reliability and validity of the instrument.

Research Design

This study adopts a descriptive, quasi-experimental, quantitative research approach to analyze the relationship between perceptions and expectations of diversity and demographic dimensions (race/ethnicity, gender, education, and position) of group members in IT organizations. A survey questionnaire was developed using commercially available internet computer software developed by Surveymonkey, Inc. and emailed to participants through a contact person in a national IT association with about 2,500 members. Following approval of the dissertation proposal, the researcher applied to Indiana State University's Institutional Review Board (IRB) for review and received stating that the study falls into the exempt category and was therefore exempt from IRB review (Appendix B).

The research questions are as follows:

RQ1: What are the differences in perceptions of diversity and inclusion in IT organizations based on race/ethnicity of group members?

RQ2: What are the differences in perceptions of diversity and inclusion in IT organizations based on gender of people in the organization?

RQ3: What are the differences in perceptions of diversity and inclusion in IT organizations based on education attainment?

RQ4: What are the differences in perceptions of diversity and inclusion in IT organizations based on position occupied?

RQ5: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on race/ethnicity of group members?

RQ6: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on gender of the people in the organization?

RQ7: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on the level of educational attainment?

RQ8: What are the differences in expectations of diversity and inclusion efforts in IT organizations based on position occupied?

The following hypotheses were developed to answer the research questions:

Hypothesis 1: There are no significant differences between nonwhites and whites in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 2: There are no significant differences between females and males in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 3: There are no significant differences between less educated and more educated persons in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 4: There are no significant differences between persons in lower positions and those in upper positions in their perceptions of diversity and inclusion in IT organizations.

Hypothesis 5: There are no significant differences between nonwhites and whites in their expectations of diversity and inclusion in IT organizations.

Hypothesis 6: There are no significant differences between females and males in their expectations of diversity and inclusion in IT organizations.

Hypothesis 7: There are no significant differences between less educated and more educated persons in their expectations of diversity and inclusion in IT organizations.

Hypothesis 8: There are no significant differences between persons in lower positions and those in upper positions in their expectations of diversity and inclusion in IT organizations.

The research questions RQ1 – RQ4 were answered by testing the first four hypotheses using data collected based on responses to items 2-11 on the survey questionnaires (Appendix A). These responses (as shown in Appendix E) were summarized and analyzed by statistical means to determine the differences in perceptions based on each of the demographic dimensions being investigated, i.e. race/ethnicity, gender, education, and position.

The research questions RQ5 through RQ8 were answered by testing the fifth to eighth hypotheses. Respondents were provided a list of phrases to choose from on survey question 12 (Appendix A) to describe what they perceive to be the outcomes of diversity and inclusion activities in their organization. These words or phrases include employee satisfaction, performance improvement and competitiveness, retention, career development, and others (please specify). These words were chosen bearing in mind the outcomes of diversity and

inclusion as reported in the literature by several leading authorities on the subject (Cox, 1991; Cox & Blake, 1991; Miliken & Martins, 1996; Mor Barak, et al., 1998; Noe, 2008; Werner & DeSimone, 2009).

Additionally, workforce diversity and inclusion can be viewed in three perspectives: integration and learning, access and legitimacy, and discrimination and fairness (Ely & Thomas, 2001) while managing workforce diversity effectively can be viewed in terms of three interrelated components – recruitment and outreach, valuing differences, and pragmatic policies and programs (Pitts, 2006). All of these were taken into consideration in constructing the questionnaire and they formed the bases for themes used in the questionnaire items. Therefore, although there are differences between the terms diversity and inclusion, in this study they were not treated separately.

On question item 12 which deal with expectations, participants were given the option to choose all that apply in order not to limit them to the options provided by the researcher. This was done in order to unearth any other new diversity dimensions which the researcher did not specify. It was possible for respondents to add to the list by choosing other and typing in any additional expectation of diversity and inclusion not on the list into the dialog box provided. However, it was expected that this would be done only if there is no phrase or word that matches their choice(s) among the options provided.

Population

A national association of IT professionals, the Association of IT professionals (AITP), was contacted for permission to solicit for participants from among its members. According to information posted on its web site, http://www.aitp.org/organization/council/council.jsp, AITP is a professional association of career minded individuals (employees, managers, programmers,

business owners) who seek to expand their potentials through learning and making contact with one another in an effort to be more marketable in today's rapidly changing technological careers. After a series of emails, telephone calls, and examination of the survey instrument by the Board of Directors, the association accepted. According to the Association's contact person, an email with the URL for the survey was sent to members of the association. The survey contained 12 items or questions and designed to collect data for analysis in order to answer the above listed research questions.

Subjects were informed that participation was voluntary and the purpose of the survey was clearly spelled out in the emails prospecting for participants (Appendix C) as well as in the instructions on the survey questionnaire. The researcher had no access to the email ID's or any identifying information of the participants and had no way of even confirming how many persons got the emails for the survey. Therefore, there was a strong reliance on the goodwill of the association to send an email with a reminder to members requesting them to take a few minutes out of their time to participate in the survey.

Data Collection

The survey questionnaire (Appendix A) was designed by the researcher in line with items in instruments used in similar studies that focused on diversity climates or perceptions of diversity (Cukier, Yap, Holmes, & Rodrigues, 2009; De Muse & Hostager, 2001; McKay, Avery, & Morris, 2008; Roberson, 2006; Soldan, 2009; Woszczynski et al., 2006). For instance, in a prior study, the diversity perceptions inventory (DPI) designed to collect data for investigating the relationship between diversity perceptions and career choice had demographic factors such as gender, ethnicity, and age among other dependent variables that were tested against factors such as work-life balance, teamwork preferences, IT history, and importance of

diversity. The study focused on student perceptions of diversity in IT (Woszczynski et al., 2006).

In this study, participants were given the options to choose from a drop-down list to identify to which demographic sub-group or groups they belong. Within the broad groups, such as gender, race/ethnicity, education, and position, the participants were asked to choose a particular subgroup. For instance, under the broad group – education, they are provided predetermined options or choices to enable them identify their highest level of educational attainment, such as high school or less, Associate degree or some college, Bachelor's degree, Master's or professional degree, and Doctorate.

On items 2-11 of the questionnaire, participants were expected to choose an option among five possible options on a five-point Likert-type scale ("strongly disagree", "disagree", "neither disagree nor agree", "agree", and "strongly agree") similar to what other perceptions of diversity researchers did (Choi & Rainey, 2010; Cundiff, Nadler, & Swann, 2009; Dillinger & Landrum, 2002; MLDC, 2010; Sia & Bhardwaj, 2009; Tuz & Gumus, n.d.; Woszczynski et al., 2006). Responses (Appendix E) to the survey questions (Q2 – Q11) were added together and divided by 10 for each study participant to determine perception (that is Perception = Q2+Q3+Q4+Q5+Q6+Q7+Q8+Q9+Q10+Q11). Question 1 asked participants to enter demographic information.

For question 12, participants were asked to choose what from among 10 options what they considered to be expectation(s) of diversity and inclusion initiatives in their organizations. They were given the opportunity to choose all that apply and the tenth item was "Other" in which case they were free to add to the list. A choice of an item was given one (1) point and an item not chosen was given a zero (0). The researcher identified key outcomes, results or

expectations associated with diversity and inclusion initiatives based on recurring themes in the literature. These include employee satisfaction, performance improvement, increased retention, promotion from within, creativity and innovation, reduced interpersonal conflicts, supplier diversity, improved client relations, and reduced complaints and litigations. Responses to this question (question 12 in Appendix E) were added together to determine the expectation for each participant. Therefore for each participant expectation was defined as the sum of scores for all of the ten items on question 12. Using statistical means (t-tests and correlation analyses) the data collected was analyzed to compare expectations between the different demographic groups. A description of the variables and the corresponding items on the questionnaire are shown in Table 8.

Table 8

Variable Descriptions

Concept	Label/Variable Description
Perceptions	
Information and programs	"Diversity information and programs (including education and training) are available in my organization"
Top leader commitment	“Top leaders in my organization demonstrate a visible commitment to diversity and inclusion as stated in our mission, goals and strategy”
Tolerance/Respect	“We respect and tolerate differences in people in my organization”
Fair treatment for all stakeholders	"I trust my organization's policy on fair treatment for all internal and external stakeholders"
Support groups/networks	“There are employee support groups, networks, or affinity groups in my organization”
Involvement	"Opportunity for involvement in various work systems is available in my organization"

Table 8 (continued)

Concept	Label/Variable Description
Equal access	" Equal access to opportunities (positions, career development, support groups, etc) is available for all members of my organization"
Representation	"Representation of different demographic groups exists at all levels in my organization"
Accommodation for physical and developmental abilities	"There is a provision to accommodate for physical and developmental abilities in my organization"
Equitable system for awards	"We have in place an equitable system for incentives, recognition, and reward"
Expectations	Expectations are made up of composite scores of responses on 10 expected outcomes of diversity and inclusion efforts and activities: "Diversity and inclusion efforts of my organization have helped to achieve ----- (choose all that apply)". An opportunity was provided for respondents to add to the list 1. Employee satisfaction 2. Performance improvement 3. Increased retention/decreased turnover 4. Increased promotion from within the organization 5. Increased creativity and innovation 6. Reduced interpersonal conflicts 7. Increased supplier diversity 8. Improved client relations 9. Decreased complaints and litigations 10. Others

Data Analysis

To enhance comparison, the demographic dimensions or variables were broken down into four broad groups with two subgroups for each as shown in Table 9.

Table 9

Demographic Dimensions and Subgroups

Dimensions	Subgroups
Race/Ethnicity	1. Non-white (American Indian/Alaskan Native, Asian/pacific Islander, Black/African American, Hispanic, Other)
	2. White
Gender	1. Female
	2. Male
Education	1. Less education (High School or less, Associate or Some College, Bachelor's)
	2. More education (Master's or Professional Degree, Doctorate)
Position	1. Lower Position (Staff, Others)
	2. Upper Position (Managers/Supervisors, Executives, Owners)

a. Race/Ethnicity: American Indian/Hawaiian Native, Asians/Pacific Islander, Blacks/African American, Hispanic, Other, and White. This was broken down into:
    - Nonwhites - American Indian/Hawaiian Native, Asians/Pacific Islander, Blacks/African American, Hispanic, Other coded as 1
    - White coded as 2
b. Gender: Female coded as 1; Male coded as 2

c. Education: High School and less: Associate degree and Some College; Bachelor's; Master's and Professional Degree; and Doctorate. This was broken down into:
    - Less Education - Associate degree and Some College; Bachelor's coded as 1
    - More Education - Master's and Professional Degree; Doctorate coded as 2
d. Position: Staff, Manager/Supervisor, Executive, Owner, Others. This was broken down into:
    - Lower Position – Staff, Others coded as 1
    - Upper Position - Manager/Supervisor, Executive, Owner coded as 2

The responses to survey questions 2-11 were collated and those coded as "Strongly Disagree" were assigned a value of 1, "Disagree" assigned a value of 2, "Neither Disagree nor Agree" assigned a value of 3, "Agree" assigned a value of 4, and "Strongly Agree" assigned a value of 5. To answer the research questions on perceptions RQ1, RQ2, RQ3, and RQ4, Hypotheses 1 through 4 were tested using statistical *t*-tests to determine the extent of differences between the subgroups for each demographic variable - race/ethnicity; gender, education, and position. If the p-value was found to be less than the significance level, $\alpha=0.05$, the conclusion was that the null hypothesis is rejected and this means that the differences between the groups are significant. On the other hand, if the p-values obtained from the *t*-test showed a value greater than $\alpha=0.05$, the conclusion is that the test has failed to reject the null hypothesis and this suggests that there are no significant differences between the subgroups for that demographic variable.

Responses to question 12 were added together to analyze the expectations. Since a respondent could choose more than one item (the instruction on the survey included that a respondent could choose all that apply), all choices for a particular respondent were added

together to produce a score for expectation. This means that Expectation = item1 + item2 + item3 + item4 + item 5 + item 6 + item 7 + item 8 + item 9 + item 10. The scores for each respondent for each of the subgroups were then compared between subgroups for each of the demographic variables using *t*-tests to determine the extent of differences. If the *p*-value was found to be less than the significance level, $\alpha=0.05$, the conclusion was that the null hypothesis is rejected and this means that the differences between the groups are significant. On the other hand, if the *p*-values obtained from the *t*-test showed a value greater than $\alpha=0.05$, the conclusion is that the test has failed to reject the null hypothesis and this suggests that there are no significant differences between the subgroups for that demographic variable.

Pilot Test

A pilot study was conducted to test the reliability and content validity of the instrument and to determine whether some of the items of the instrument should be modified for the actual study. The pilot survey (Appendix D) was designed using commercially available internet software www.surveymonkey.com and emailed to thirty persons either in technology departments of their organizations or working in educational institutions and involved in technology management. Ten responses representing a 30% response rate (8 received within three days of the administration of the survey) were received. The email as well as the questionnaire contained information that participation was voluntary and that privacy and confidentiality will be respected and strictly adhered to. Respondents were also given the opportunity to comment on the items in the questionnaire and/or to offer some feedback, if necessary. The feedback from the pilot test was used to improve on the survey instrument used for the study. For instance, the pilot survey had ten items but the improved version that was eventually used had 12 items.

An analysis of the demographic information of the pilot test respondents showed that in terms of race/ethnicity showed 40% for each of Blacks/African American and Whites, and 10% for each American Indian/Alaskan Native and Asian/Pacific Islander responded. Based on gender, 60% of the responses were received from females and 40% from males. All but one of them was within the 40-59 age range, with 40% in the 40-49 and 50% in the 50-59 age brackets. Furthermore, 60% had graduate or professional degrees, out of which 30% had doctorate degrees; 30% work in government organizations; 40% in the information technology department of their organizations, and 20% in engineering/technology.

The respondents were given the opportunity to critique the survey and provide feedback on the wordings, clarity, and ease of taking the survey. The responses received indicated that it was clear, easy to take, and there were no ambiguities. The pilot survey instrument was also found to be reliable with an internal consistency, Cronbach's alpha, of 0.880 obtained. According to Peterson (1994), an internal consistency of 0.70 for values and beliefs, and 0.82 for job satisfaction appears to be acceptable based on averages obtained for behavioral research. All of the surveys were not taken at the same time, and there was no case of someone emailing back for clarification on any of the items. The respondents were told to call the researcher if they needed clarifications on any of the items or for clarity on the purpose of the survey, if necessary.

Feedback from the pilot test respondents suggested that the questionnaire items should be made in complete sentences, even though it was understood by them. It was reasoned that clarity was important so that all who receives the survey will have no problems with understanding the true meaning of the questions. Therefore, this researcher reformatted all the items into complete sentences. Item 8 was removed and replaced with a question on

accommodation for physical and developmental abilities to take care of diversity in terms of disability or people with physical and mental handicap. This was done because the item "views of people like me are respected and included in vital activities" has been taken care of by the item on respect and tolerance for differences (item 5). The entire dimension for "Department" was removed since it was reasoned that "Industry/Business Sector" would be enough to categorize people among the different subsectors/units or occupation groups within IT industry.

Items 7 and 9 were reworded, and items 10 and 11 added to take care of some of the important dimensions of diversity and inclusion that were not directly addressed in the pilot test instrument. These dimensions are: equitable system for recognition, acknowledgement, and reward, and employee support groups, networks or affinity groups. According to Douglas (2008), affinity groups are "communities within a corporation that are organized around employees' similar circumstances and common goals" (p. 12). She asserted that the goals of diversity and inclusion can be nurtured and supported by an organization's existing affinity groups. At Cisco, a company with a workforce of over 72,600 people in over 90 countries, employee resource groups provide a means for employee engagement in order to help them achieve individual and business goals (Nagel, 2011).

Also, the revised survey instrument was sent out to about ten persons (some of whom are doctorate degree holders as well as being experts knowledgeable about survey instruments, information technology, and workforce diversity) for comments before the study actually began. Feedback obtained as well as the fact that it was constructed based on instruments used in prior diversity perception studies attested to the validity of the study instrument.

Summary

In this chapter, the study methods including the instrument, sample, data collection technique, analysis method, pilot test, reliability and internal consistency of the instrument were discussed. The study adopted a descriptive, quantitative approach with a sample drawn from a population of IT professionals in USA. Modifications to the survey instrument were following a pilot test based on comments and responses received. In Chapter 4, the empirical results obtained following analysis of the data obtained from responses to the questionnaire items on the survey are discussed.

CHAPTER 4

Results

Overview

This study investigated the perceptions and expectations of diversity and inclusion among members of the IT industry. Through an online survey created using commercially available survey software available at www.surveymonkey.com , IT professionals drawn from a national IT association in the United States participated in the study in August and September, 2010. Information on the association was obtained from their Internet web site and contact was made through the administrative staff using telephone and email beginning in July 2010.

Following these discussions, the Executive Board of the association met and deliberated on whether to accept or reject the request to have an email with a link to the survey sent to their members soliciting them to participate in the survey. A decision to accept the request was made in August, 2010 and an email was sent to their members later in the month. The researcher was not allowed access to the email and any subsequent reminders they promised to send about two weeks later to their members. However, the administrative assistant confirmed that there are about 2,500 members in the association and that usually emails are sent to all members but there was no way for the researcher to verify the number of members who actually received the emails. Additionally, there could be several inactive members still listed as members on their rolls and some of the mails could have gone to their junk mail boxes.

Demographics of Participants

As of October 1, 2010, 111 participants visited the web site for the survey out of which 110 fully completed the survey. A breakdown of the demographic composition of participants is shown in Table 10. In terms of race/ethnicity, 1.8% of the responses were received from American Indians, 1.8% from Asian/Pacific Islanders, 2.7% from Hispanics, 8.2% from Black/African Americans, 81.8% from Whites, and 3.6% who chose to be identified as other Racial/ethnic groups. In terms of gender, 27.3% of the respondents were females and 72.7% males. Relative to age distribution, less than one percent was less than 25 years of age, 10.3% were in the 26-39 age group, 20.6% in the 40-49 age group, 32.7% in the 50-59 age group, and 35.5% were 60 years or older.

Nearly 15% of the 108 respondents had earned an Associate degree or some college, 41.7% had earned a Bachelor's degree, 37% had earned a Master's degree, and 6.5% had earned a Doctorate degree. With regard to position held in their organizations, of the 108 who responded, 32.4% were staff members of their organizations, 32.4% were managers or supervisors, 10.2% were executives, 9.3% were owners of their businesses, while 15.7% reported others positions.

In terms of occupational or business groups, participants were employed in more than 10 business groups or sectors but were all working in the IT industry. A breakdown of the 107 who responded indicated that there were 22.4% in education, 12.1% in financial services, 0.9% in construction, 6.5% in manufacturing, 4.7% in healthcare, 5.6% in retail, 7.5% in government, 5.6% in non-profit, 2.8% in transportation, 1.9% in hospitality, and 29.9% identified themselves as "others". Those who chose to be listed as "others" typically indicated they were in

consultancy services, defense contracting, communications, or engaged in IT services and support.

Table 10

Descriptive Characteristics of Participants

Variable	Sub-group	*N*	%
Race/Ethnicity	American Indian/Alaskan Native	2	1.8
	Asian/Pacific Islander	2	1.8
	Black/African American	9	8.2
	Hispanic	3	2.7
	Other	4	3.6
	White	90	82.0
Gender	Female	30	27.0
	Male	80	73.0
	Others	0	0.0
Education	High School	0	0.0
	Associate	16	15.0
	Bachelor's	45	42.0
	Master's	40	37.0
	Doctorate	7	6.5

Table 10 (continued)

Variable	Sub-group	*N*	%
Position	Staff	35	32.0
	Managers/ Supervisors	35	32.0
	Executives	11	10.0
	Others	17	16.0
	Owners	10	9.3
Age	Less than 25	1	0.9
	26 – 39	11	10.0
	40 – 49	22	21.0
	50 – 59	35	33.0
	60+	38	36.0
Business Groups	Construction	1	0.9
	Education	24	22.0
	Financial Services	13	12.0
	Government	8	7.5
	Healthcare	5	4.7
	Hospitality	2	1.9
	Nonprofit	6	5.6
	Other	32	30.0
	Retail	6	5.6
	Transportation	3	2.8

Note. The percentages may not add up to 100% for some of the demographic groups due to rounding.

Hypothesis Testing for Perceptions

Four demographic variables (gender, race/ethnicity, education and position) were used to examine differential perceptions of it professionals regarding diversity and inclusion initiatives in their respective organizations. An inspection of the correlation matrix and a Cronbach's alpha of 0.901 (see Table 11) suggest that the 10 questions on the survey instrument were highly reliable. Therefore, all 10 question items related to perceptions were combined into a composite index and used for the study on the basis of the reliability and internal consistency results. Inter-correlation matrix showing the correlations between the questions items Q2 to Q11 are shown in Table 11. The correlation coefficients show the nature and magnitude of the correlation between items ranging from 0 to 1. Correlation coefficients can be positive or negative and provides information on what happens with regard to one item when the other rises or falls. It does not tell us what causes the rise or fall; only the direction (positive or negative with regard to the other. According to Salkind (2000), a "correlation coefficient is a numerical index reflecting the relationship between two variables. It is expressed as a number between -1.00 and +1.00, and increases in strength as the amount of variance that one variable shares with another increases" (p. 204).

The *p*-values provide information on whether the correlation was due to chance occurrence or was statistically significant. Generally, if the *p*-value is less than α=0.05 (95% significance level), the hypothesis that the correlation between the items is not significant is rejected suggesting that there are significant differences in their correlations. A *p*-value greater than α=0.05 suggests that there are no significant differences in correlation between the items.

Table 11

Inter-item Correlations for Perceptions

		Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Q2	Correlation	1	.415**	.500**	.287**	.197*	.443**	.374**	.257**	.281**	.492**
	p (2-tailed)		.000	.000	.003	.042	.000	.000	.007	.004	.000
	N	107	105	107	107	107	106	107	107	106	106
Q3	Correlation	.415**	1	.575**	.571**	.412**	.472**	.468**	.506**	.506**	.446**
	p (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	105	106	106	106	106	105	106	106	105	105
Q4	Correlation	.500**	.575**	1	.738**	.655**	.607**	.492**	.704**	.533**	.470**
	p (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	107	106	108	108	108	107	108	108	107	107
Q5	Correlation	.287**	.571**	.738**	1	.599**	.439**	.457**	.618**	.523**	.324**
	p (2-tailed)	.003	.000	.000		.000	.000	.000	.000	.000	.001
	N	107	106	108	108	108	107	108	108	107	107
Q6	Correlation	.197*	.412**	.655**	.599**	1	.407**	.492**	.771**	.600**	.301**
	p (2-tailed)	.042	.000	.000	.000		.000	.000	.000	.000	0.002
	N	107	106	108	108	108	107	108	108	107	107
Q7	Correlation	.443**	.472**	.607**	.439**	.407**	1	.455**	.617**	.505**	.530**
	p (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	106	105	107	107	107	107	107	107	106	106
Q8	Correlation	.374**	.468**	.492**	.457**	.492**	.455**	1	.527**	.427**	.411**
	p (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	107	106	108	108	108	107	108	108	107	107
Q9	Correlation	.257**	.506**	.704**	.618**	.771**	.617**	.527**	1	.615**	.425**
	p (2-tailed)	.007	.000	.000	.000	.000	.000	.000		.000	.000
	N	107	106	108	108	108	107	108	108	107	107
Q10	Correlation	.281**	.506**	.533**	.523**	.600**	.505**	.427**	.615**	1	.440**
	p (2-tailed)	.004	.000	.000	.000	.000	.000	.000	.000		.000
	N	106	105	107	107	107	106	107	107	107	106
Q11	Correlation	.492**	.446**	.470**	.324**	.301**	.530**	.411**	.425**	.440**	1
	p (2-tailed)	.000	.000	.000	.001	0.002	.000	.000	.000	.000	
	N	106	105	107	107	107	106	107	107	106	107

*. *P*<0.05 level (2-tailed). **. *p*< 0.01 level (2-tailed). Cronbach's alpha= 0.901
*Legend:*Q2 represents survey question 2 "Diversity information and programs (including education and training) are available in my organization" also denoted by "Availability of Information and Programs." Q3 represents survey question 3 "Opportunity for involvement in various work systems is available in my organization" also denoted by "Opportunity for Involvement." Q4 represents survey question 4"Top leaders in my organization demonstrate a visible commitment to diversity and inclusion as stated in our mission, goals and strategy" also denoted by "Leadership Commitment." Q5 represents survey question 5"We respect and tolerate differences in people in my organization" also denoted by "Respect and Tolerance". Q6 represents survey question 6" Equal access to opportunities (positions, career development, support groups, etc) is available for all members of my organization" also denoted by "Equal Access to Opportunities." Q7 represents survey question 7"Representation of different demographic groups exists at all levels in my organization" also denoted by "Representation of Different Groups." Q8 represents survey question 8"There is a provision to accommodate for physical and developmental abilities in my organization" also denoted by "Accommodation for Physical and Developmental Abilities." Q9 represents survey question 9"I trust my organization's policy on fair treatment for all internal and external stakeholders" also denoted by "Fair Treatment." Q10 represents survey question 10"We have in place an equitable system for incentives, recognition, and reward" also denoted by "Equitable System for Awards." Q11 represents survey question 11"There are employee support groups, networks, or affinity groups in my organization" also denoted by "Support Groups and Networks."

Descriptive statistics, Levene's test for homogeneity of variances (F-tests), and t-tests were used to test the four hypotheses related to perceptions of diversity and inclusion initiatives. An examination of the data in Table 12 shows that IT professionals who were white, male, had earned at least a Master's degree and who had higher positions in their organizations had more positive perception of diversity and inclusion compared to their counterparts. These mean values are inconsistent with the null hypotheses that were stated in chapters 1 and 3. Now the question becomes - are these values statistically different or are these values due to chance variations?

Table 12

Descriptive Statistics for Perceptions

	Subgroups	*N*	Mean	*SD*	*SE*
Race	Non-White	20	3.6250	.78464	.17545
	White	88	3.8158	.73351	.07819
Gender	Female	30	3.6430	.93414	.17055
	Male	78	3.8333	.65474	.07413
Education	Less Educated	59	3.7574	.72372	.09422
	More Educated	47	3.8000	.78706	.11480
Position	Lower Position	51	3.7370	.80956	.11336
	Upper Position	55	3.8127	.69390	.09357

To statistically test the first null hypothesis which states that there are no differences in perceptions of diversity and inclusion initiatives between nonwhites and whites, the results of Levene's test in Table 13 were used to determine the extent of homogeneity of variance between perceptions scores of White and non-White IT professionals. The result showed *F*-value of 0.063and a *p*-value of 0.803 suggesting that there are no significant differences in the variances; therefore, we use the t-value of -1.037. With this *t*-value and the associated *p*-value of 0.302 which is greater than α=0.05, the conclusion is that the test value failed to reject null hypothesis 1. As such, the hypothesis is supported by these data in that white and nonwhite IT

professionals have similar perceptions of diversity and inclusion efforts in their respective organizations.

To test the second null hypothesis which states that there are no differences in perceptions of diversity and inclusion initiatives between females and males within the IT industry the result of Levene's test in Table 13was used to determine the extent of homogeneity of variance between perceptions scores of female and male IT professionals. The result (F=7.895; p=0.006) suggested that there was a significant difference in the variances; therefore, we use the t-value of -1.024. This t-value and the associated p-value of 0.312 which is greater than α=0.05 leads to our conclusion the test value failed to reject null hypothesis 2. Therefore, the hypothesis is supported by these data suggesting that male and female IT professionals do not differ significantly in their perceptions of diversity and inclusion initiatives.

To test the third null hypothesis which states that there are no differences in perceptions of diversity and inclusion initiatives between those with less and more education within the IT industry, we used the result of Levene's test in Table 13 to determine the extent of homogeneity of variance between perceptions scores of IT professionals with less education and those with higher education. The result showed an F-value of 0.360 and a p-value of 0.550 which suggested that there was no significant difference in the variances, and so we use the t-value of -0.289. This t-value is associated with a p-value of 0.773 which is greater than α=0.05 leading to our conclusion that the test value failed to reject null hypothesis 3. Since the hypothesis is supported by these data, the suggestion is that IT professionals with less than a Master's degree have similar perceptions of diversity and inclusion initiatives as IT professionals with a Master's degree or higher.

To test the fourth null hypothesis which states that there are no differences in perceptions of diversity and inclusion initiatives between those in lower positions compared to those in upper positions within the IT industry, the result of Levene's test in Table 13 was used to determine the extent of homogeneity of variance between perceptions scores of IT professionals in lower positions and those in upper positions. Levene's test result (F=1.59; p=0.21) suggested that there was no significant difference in the variances and as such we use the t-value of -0.518. With this t-value and the associated p-value of 0.606 which is greater than α=0.05 we conclude that the test value failed to reject null hypothesis 4. The hypothesis is therefore supported by these data and this suggests that perceptions of diversity and inclusion efforts do not differ significantly by position held in the organization.

Table 13

Independent Samples T-tests

		Levene's Test		*t*-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Diff.	*SE* Diff.	Lower	Upper
Perceptions Race (nonwhite, n=20 vs. white, n=88)	Equal variances assumed	.063	.803	-1.037	106.000	.302	-.19078	.18404	-.5557	.1741
	Equal variances not assumed			-.993	27.064	.329	-.19078	.19209	-.5849	.2033
Perceptions Gender (females, n=30 vs. males, n=78)	Equal variances assumed	7.895	.006	-1.195	106.000	.235	-.19037	.15935	-.5063	.1256
	Equal variances not assumed			-1.024	40.450	.312	-.19037	.18597	-.5661	.1854

Table 13 (continued)

		Levene's Test		*t*-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Diff.	*SE* Diff.	Lower	Upper
Perception Education (Less, n=59 vs. More, n=47)	Equal variances assumed	.360	.550	-.289	104.000	.773	-.04256	.14710	-.3343	.2492
	Equal variances not assumed			-.287	94.745	.775	-.04256	.14852	-.3374	.2523
Perceptions Position (Lower, n=51 vs. Upper, n=55)	Equal variances assumed	1.590	.210	-.518	104.000	.606	-.07569	.14613	-.3655	.2141
	Equal variances not assumed			-.515	98.852	.608	-.07569	.14699	-.3674	.2160

Hypothesis Testing for Expectations

Four demographic variables (race/ethnicity, gender, education, and position) were used to examine differing expectations of IT professionals with regard to diversity and inclusion efforts in their organizations. After examining the data collected for question 12 on the survey instrument and removing skipped questions, item 10 was deleted because respondents generally entered comments rather than an expectation they felt should be added to those on the list of options provided by the researcher. Therefore, expectation equals to item 1 + item 2 + item 3 + item 4 + item 5 + item 6 + item 7 + item 8 + item 9.

An inspection of the correlation matrix (Table 14) as well as the Cronbach's alpha of 0.75 suggests that the nine items for this part of the survey instrument were highly reliable. All nine items were combined into a composite index and used for the study on the basis of the internal consistency and reliability results.

Table 14

Inter-item Correlations for Expectations

		Item1	Item2	Item3	Item4	Item5	Item6	Item7	Item8	Item9
Item1	Correlation	1	.270*	.272*	.141	.120	.141	-.043	.117	-.147
	p (2-tailed)		.020	.020	.231	.311	.231	.715	.32	.21
	N	74	74	73	74	73	74	74	74	74
Item2	Correlation	.270*	1	.454**	.344**	.536**	.179	.260*	.358**	.152
	p (2-tailed)	.020		.000	.003	.000	.126	.025	.002	.197
	N	74	74	73	74	73	74	74	74	74
Item3	Correlation	.272*	.454**	1	.400**	.394**	.290*	.298*	.289*	.131
	p (2-tailed)	.02	.000		.000	.001	.013	.01	.013	.268
	N	73	73	73	73	72	73	73	73	73
Item4	Correlation	.141	.344**	.400**	1	.302**	.234*	.321**	.269*	.167
	p (2-tailed)	.231	.003	.000		.009	.045	.005	.02	.155
	N	74	74	73	74	73	74	74	74	74
Item5	Correlation	.12	.536**	.394**	.302**	1	.079	.282*	.428**	.031
	p (2-tailed)	.311	.000	.001	.009		.507	.016	.000	.797
	N	73	73	72	73	73	73	73	73	73
Item6	Correlation	.141	.179	.290*	.234*	.079	1	.189	.16	.506**
	p (2-tailed)	.231	.126	.013	.045	.507		.106	.173	.000
	N	74	74	73	74	73	74	74	74	74
Item7	Correlation	-.043	.260*	.298*	.321**	.282*	.189	1	.277*	.216
	p (2-tailed)	.715	.025	.01	.005	.016	.106		.017	.065
	N	74	74	73	74	73	74	74	74	74
Item8	Correlation	.117	.358**	.289*	.269*	.428**	.16	.277*	1	.217
	p (2-tailed)	.32	.002	.013	.02	.000	.173	.017		.063
	N	74	74	73	74	73	74	74	74	74
Item9	Correlation	-.147	.152	.131	.167	.031	.506**	.216	.217	1
	p (2-tailed)	.21	.197	.268	.155	.797	.000	.065	.063	
	N	74	74	73	74	73	74	74	74	74

*. $p<0.05$ level (2-tailed). **. $p< 0.01$ level (2-tailed). Cronbach's alpha= 0.75

Note: (Item 1 = Employee Satisfaction; Item 2 = Performance Improvement; Item 3 = Increased Retention/Decreased Turnover; Item 4 = Increased Promotion From Within; Item 5 = Increased Creativity and Innovation; Item 6 = Reduced Interpersonal Conflicts; Item 7 = Increased Supplier Diversity; Item 8 = Improved Client Relations; Item 9 = Decreased Complaints and Litigations)

Descriptive statistics, Levene's test for homogeneity of variances (F-tests), and *t*-tests were used to test the four hypotheses related to expectations of diversity and inclusion initiatives. An examination of the data in Table 15 shows that IT professionals who are who are nonwhite, male, in a higher position, and have earned no more than a bachelor's degree had more positive expectations of diversity and inclusion in their respective organizations compared to their counterparts. Although the mean values obtained show differences between the subgroups which is inconsistent with the null hypotheses for this study as stated in chapters 1 and 3, the question now becomes how significant are these differences: Are there any significant differences in the mean values or are these differences due to chance occurrences? Statistical tests were used to answer these questions.

Table 15

Descriptive Statistics for Expectations

Groups	Subgroups	*N*	Mean	*SD*	*SE* Mean
Race	Nonwhite	11	4.5455	2.06706	.62324
	White	63	4.1905	2.55177	.32149
Gender	Female	16	3.4375	2.15928	.53982
	Male	58	4.4655	2.52854	.33201
Education	Less Educated	45	4.4222	2.56275	.38203
	More Educated	28	4.0000	2.38824	.45134
Position	Lower Position	33	4.1515	2.48899	.43328
	Upper position	40	4.3500	2.51712	.39799

To statistically test the fifth null hypothesis which states that there are no significant differences in expectations of diversity and inclusion initiatives between nonwhites and whites, the results of Levene's test in Table 16 were used to determine the extent of homogeneity of variances between perceptions scores of white and nonwhite IT professionals. The result showed an F-value of 1.484 and a *p*-value of 0.227 suggesting that there are no significant differences in the variances; and as such the t-value of 0.436 was used. Since this *t*-value is associated with a *p*-value of 0.664 which is greater than α=0.05, the conclusion is that the test value failed to reject null hypothesis 5. The hypothesis is supported by these data because both white and nonwhite IT professionals do not differ significantly in their expectations of diversity and inclusion efforts in their respective organizations.

To test the sixth null hypothesis which states that there are no significant differences in expectations of diversity and inclusion initiatives between females and males within the IT industry, the result of Levene's test in Table 16 was used to determine the extent of homogeneity of variance between expectation scores of female and male IT professionals. The result which shows an F-value of 1.255 and a *p*-value of 0.266 suggested that there was no significant difference in the variances; therefore, we use the *t*-value of -1.482 which is associated with a p-value of 0.143. Since this *p*-value is greater than α=0.05 the conclusion is that the test value failed to reject null hypothesis 6. Therefore, the hypothesis is supported by these data suggesting that male and female IT professionals have similar expectations of diversity and inclusion initiatives in their respective organizations.

Table 16

Independent Samples T-test for Expectations

		Levene's Test for Equality of Variances		*t*-test for Equality of Means						
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Diff.	*SE* Diff.	Lower	Upper
Expectations Race (nonwhite, n=11 vs. white, n=63)	Equal variances assumed	1.484	.227	.436	72.000	.664	0.355	0.814	-1.267	1.977
	Equal variances not assumed			.506	15.849	.620	0.355	0.701	-1.133	1.843
Expectations Gender (female, n=16 vs. male, n=58)	Equal variances assumed	1.255	.266	-1.48	72.000	.143	-1.028	0.694	-2.411	0.355
	Equal variances not assumed			-1.62	27.461	.116	-1.028	0.634	-2.327	0.271
Expectations Education (Less, n=45 vs. More, n=28)	Equal variances assumed	1.459	.231	.702	71.000	.485	0.422	0.601	-0.777	1.621
	Equal variances not assumed			.714	60.494	.478	0.422	0.591	-0.760	1.605
Expectations Position (Lower, n=33 vs. Upper, n=40)	Equal variances assumed	.128	.721	-.337	71.000	.737	-0.198	0.589	-1.373	0.976
	Equal variances not assumed			-.337	68.669	.737	-0.198	0.588	-1.372	0.975

To test the seventh null hypothesis which states that there are no significant differences in expectations of diversity and inclusion initiatives between those with less compared to those with more education within the IT industry, the result of Levene's test in Table 16 was used to

determine the extent of homogeneity of variance between expectation scores of IT professionals with less education and those with higher education. The result (*F*-value of 1.459; *p*-value of 0.231) suggested that there was no significant difference in the variances, and so the *t*-value of -0.702 was used. This *t*-value is associated with a *p*-value of 0.485 which is greater than α=0.05 and as such our conclusion is that the test value failed to reject null hypothesis 7. Since the hypothesis is supported by these data, the suggestion is that IT professionals who have a Master's degree or higher have similar expectations of diversity and inclusion initiatives as those with less than a Master's degree.

To test the eighth null hypothesis which states that there are no significant differences in expectations of diversity and inclusion initiatives between those in lower positions compared to those in upper positions within the IT industry, the Levene's test result in Table 16 was used to determine the extent of homogeneity of variance between perceptions scores of IT professionals in lower positions and those in upper positions. The result (*F*=0.128; *p*=0.721) suggested that there was no significant difference in the variances and as such we the *t*-value of 0.737 was used. This *t*-value and the associated *p*-value of 0.337 which is greater than α=0.05 leads us to conclude that the test value failed to reject null hypothesis 8. The hypothesis is therefore supported by these data and this suggests that expectations of diversity and inclusion efforts do not differ significantly by position or status in the organization.

Summary

In this chapter, the steps taken to conduct analysis of the data and to obtain study results were discussed. The major results showed that there were no statistically significant differences in perceptions and expectations on the basis of race/ethnicity, gender, level of educational attainment, and position held in IT organizations. All four demographic dimensions studied

were each broken into two subgroups. The subgroups (white and nonwhite for race/ethnicity, male and female for gender, less educated and more educated for education, lower and upper position for position) were compared against each other for each of the dimensions in order to investigate the extent of their differences with regard to perceptions and expectations of diversity and inclusion efforts.

CHAPTER 5

Discussions, Recommendations, and Conclusions

Overview

The purpose of this study was to examine if significant differences exist in the perceptions and expectations of people in the IT industry with regard to diversity and inclusion efforts based on demographic characteristics of the members, such as race/ethnicity, gender, education, and position. In this chapter, the findings are presented and study results discussed. The study found that there were no significant differences in the perceptions and expectations of diversity and inclusion efforts based on four dimensions studied. In all cases, there were weak to moderate correlations between the perception as well as expectation survey items. The results obtained are in agreement with the hypotheses for this study. In addition to the study results, limitations as well as recommendations both for future research and practice are discussed in this chapter.

Discussion

There were eight research questions addressed in this study. All of the research questions were restated into null hypotheses. The first research question was: What are the differences in perceptions of diversity and inclusion in IT organizations based on race/ethnicity of group members? This question was restated into null hypothesis 1 which states that there are no significant differences between nonwhites and whites in their perceptions of diversity and

inclusion in IT organizations. The statistical analysis used was a *t*-test. The test result failed to reject hypothesis 1 thus the data supported the hypothesis indicating that there were no significant differences in perceptions of diversity between white and nonwhite IT professionals. Therefore, the data seems to suggest that there are no significant differences in perceptions of diversity and inclusion based on race/ethnicity.

The second research question asked: What are the differences in perceptions of diversity and inclusion in IT organizations based on gender of people in the organization? The question was restated into hypothesis 2 which states that there are no significant differences between females and males in their perceptions of diversity and inclusion in IT organizations. T-test analysis failed to reject hypothesis 2 suggesting that male and female IT professionals do not differ significantly in their perceptions of diversity and inclusion efforts. Therefore, the data appears to suggest that there is no significant difference in perceptions of diversity and inclusion on the basis of gender.

The third research question was what are the differences in perceptions of diversity and inclusion in IT organizations based on education attainment? The question was restated into hypothesis 3 (there are no significant differences between less educated and more educated persons in their perceptions of diversity and inclusion in IT organizations). The *t*-value and the associated *p*-value obtained failed to reject hypothesis 3. Since the hypothesis is supported by the data, it was concluded that the IT professionals with no more than a bachelor's degree have similar perceptions of diversity and inclusion as those with a master's degree or higher. This enables us to further conclude that there seems to be no significant differences in perceptions of diversity and inclusion on the basis of level of educational attainment.

The fourth research question was: What are the differences in perceptions of diversity and inclusion in IT organizations based on position occupied? This question was restated into hypothesis 4 which states that there are no significant differences between persons in lower positions and those in upper positions with respect to their perceptions of diversity to enable the hypothesis to be tested using statistical means and therefore provide an answer to the question. Using *t*-tests, it was found that the result obtained failed to reject the hypothesis and so it was concluded that perceptions of diversity and inclusion do not differ significantly by position held in the organization. This enables research question 4 to be answered by concluding that there appears to be no significant differences in perceptions of diversity on the basis of position held or hierarchical status in the organization.

The fifth research question - what are the differences in expectations of diversity and inclusion in IT organizations based on race/ethnicity of group members? This research question was restated into hypothesis 5 which states that there are no significant differences between nonwhites and whites in their perceptions of diversity and inclusion in IT organizations. The statistical analysis used was a t-test. The test result failed to reject hypothesis 5 suggesting that the data supported the hypothesis, which is indicative of the fact that there were no significant differences in expectations of diversity between white and nonwhite IT professionals. Therefore, in answer to research question 5, the conclusion is that the data seems to suggest that there are no significant differences in expectations of diversity and inclusion based on race/ethnicity.

The sixth research question was: What are the differences in expectations of diversity and inclusion in IT organizations based on gender of people in the organization? This question was restated into hypothesis 6 (there are no significant differences between females and males

in their perceptions of diversity and inclusion in IT organizations). *T*-test analysis result obtained failed to reject hypothesis 6 suggesting that male and female IT professionals have similar expectations of diversity and inclusion efforts in their respective organizations. Therefore, based on the data, it was concluded that the results tend to suggest that there is no significant difference in expectations of diversity and inclusion on the basis of gender within IT organizations.

The seventh research question asked what are the differences in expectations of diversity and inclusion in IT organizations based on education attainment. The question was restated into hypothesis 7 (there are no significant differences between less educated and more educated persons in their expectations of diversity and inclusion in IT organizations). The *t*-value and the associated *p*-value obtained failed to reject hypothesis 3. Since the hypothesis is supported by the data, it was concluded that the IT professionals with a master's degree or less have similar perceptions of diversity and inclusion as those with a master's degree or higher. This enables us to further conclude that there seems to be no significant differences in perceptions of diversity and inclusion on the basis of level of educational attainment. Therefore, to answer research question 7, the conclusion is that there appears to be no significant difference in expectations of diversity and inclusion based on level of education.

The eighth research question asked what are the differences in perceptions of diversity and inclusion in IT organizations based on position occupied. The research question was restated into hypothesis 8, which states that there are no significant differences between persons in lower positions and those in upper positions with respect to their expectations of diversity and inclusion within the IT industry. Using *t*-tests, it was found that the result obtained failed to reject the hypothesis and the conclusion was that expectations of diversity and inclusion do

not seem to differ significantly by position held in the organization. Therefore, in response to research question 8, the conclusion is that there appears to be no significant differences in perceptions of diversity and conclusion based on position held, organizational status, or hierarchical level of the persons in the organization.

In summary, the major findings from this study is that there appears to be no significant difference in perceptions and expectations of diversity and inclusion efforts in IT organizations based on race/ethnicity, gender, level of educational attainment, and position of the group member. Although this result is surprising given the demographic differences within the IT industry, it seems to be in line with some of the expressions by individuals within the industry in their feelings that more weight should be attached to what a group member has to offer to the organization rather than on demographic factors. For instance, one of the comments by a respondent in this survey was: "IT workers judge each other in logical terms, not racial or ethnic. What you do will always be placed above what you are in the IT world. Our currency is logical respect". Other comments by respondents are shown at Appendix F.

Also, the result obtained is not entirely inconsistent with some of the findings that have been reported in the diversity and inclusion perception literature. Although several studies have found that there are differences based on demographic characteristics of group members, such as differences in attitudes and perceptions based on the respondent's cultural background (Dillinger & Landrum, 2002), and differences even within a single culture especially where several sub-cultures exist (Tuz & Gumus, n.d), there are cases were the result has shown no differences. For instance, in their study of student perception of diversity issues in IT, Woszczynski et al. (2006) found no significant differences based on gender, age, work

experience or disability status although they found significant differences in perceptions based on ethnicity and college major.

The major finding is at variance with earlier findings by Kossek and Zonia (1993) from their study of a large public university that perceptions of diversity and diversity climate are affected by hierarchical level (position or status) in the organization, race/ethnicity, and gender as well as Hicks-Clarke and Iles (2000)' findings that gender and management level affected diversity climate. Villamil (2007) found that women and minorities endorsed diversity management more than men and European Americans. Also, Tuz and Gumus, (n.d) reported that higher education attainment, managerial role, and experience abroad led to higher positive perception of diversity although findings by Gaze (n.d.) suggested that receptivity to diversity and diversity management varies among gender and ethnic groups. A study by Aries (2004) found differing perceptions about the meaning and management of diversity among hospital managers, line workers, and patients.

In terms of expectations, although when all items were considered there were no significant differences in expectations, it was found that there were some differences in expectations of managers/supervisors compared to those of staff members. If the top four items picked the most by the respondents are considered, it was found that staff members tended to expected benefits in terms of increased employee satisfaction, performance improvement, increased creativity and innovation, and improved client relations, whereas managers/supervisors tended to choose increased employee satisfaction, reduced interpersonal conflicts, increased promotion from within, and decreased complaints and litigations. This is particularly interesting considering the equal size of respondents in both subcategories under

the variable "Position." Also, this has some important implications for management in IT organizations.

The ranking of expectations in Table 17 reveal an interesting pattern of similarity among all the groups. This suggests that there seem to be a semblance of unity within IT organizations of what is expected within the groups for themselves or their organizations as benefits from diversity and inclusion efforts. Employee satisfaction, and performance improvement topped the rankings for all groups and subgroups whereas increasing supplier diversity followed by decreasing complaints and litigations were ranked the lowest.

Table 17

Rankings of Expectations

Ranking	Race/Ethnicity	Gender	Education	Position
1	Employee satisfaction	Employee satisfaction	Employee satisfaction	Employee satisfaction
2	Performance Improvement	Performance Improvement	Performance Improvement	Performance Improvement
3	Improve Client Relations	Increase Retention	Increase Promotion	Increase Retention
4	Increase Promotion	Improve Client Relations	Increase Retention	Increase Creativity
5	Increase Retention	Increase Promotion	Reduce Conflicts	Improve Client Relations
6	Increase Creativity	Reduce Conflicts	Decrease Complaints	Increase Promotion
7	Reduce Conflicts	Increase Creativity	Improve Client Relations	Reduce Conflicts
8	Decrease Complaints	Decrease Complaints	Increase Creativity	Decrease Complaints

Table 17 (Continued)

Ranking	Race/Ethnicity	Gender	Education	Position
9	Increase Supplier Diversity	Increase Supplier Diversity	Increase Supplier Diversity	Increase Supplier Diversity

Also remarkable is that items relating to performance improvement (increase productivity, and improves bottom line with 52% and 49% respectively) which were at the bottom of the list in a survey conducted by SHRM (earlier shown in Table 6) were ranked second on the list in this survey. The percentage of responses for this item is nearly equal in both cases in that overall 51.2% of the respondents chose performance improvement in this study (Appendix E question 12). In other cases, a wide disparity existed between the percentage of respondents for items such as increasing retention (45% in this study versus 76% for SHRM survey); decreasing complaints and litigations (33% versus 68%); increasing creativity and innovation (39% versus 59%); reducing interpersonal conflicts (40% versus 58%); and improves client relations (43% versus 55%). Participants in the SHRM survey were HR professionals whereas in this survey, the participants were IT professionals. This suggests that while holding expectation of employee satisfaction or increasing morale constant for both groups, the topmost expectation of diversity and inclusion among IT professionals seem to lean toward improvement in performance, productivity, and the organization's bottom line whereas HR professionals seem to favor outcomes related to improvement in the organization's corporate image and culture, easier recruitment, and decreased complaints and litigation.

Employee satisfaction with a72% response rate was ranked first in this survey while the corresponding item on the SHRM survey which is improving employee morale was second

with a 79% response rate. However, it is interesting to note that although increasing creativity and innovation was ranked about the same way (number 6) in both surveys, the percentage of responses in the SHRM survey for this item was 59% which is twenty percentage points higher than the 39% for similar item in this study. A comparison of the response rate for corresponding items in both surveys is shown in Table 18.

Table 18

Comparison of Present Survey with SHRM Survey

Items	Present Survey (IT)	SHRM Survey (HR)
Employee satisfaction	72%	
Improves employee morale		79%
Performance Improvement	51%	
Improves organization's bottom line		49%
Increases productivity		52%
Decreases complaints and litigation	33%	68%
Increases creativity	39%	59%
Decreases interpersonal conflict	40%	58%
Improves client relations	43%	55%

Note. Response rates were based on Table 6 and Appendix E

There was difficulty in determining how many persons that actually received the survey with a view to calculating a response rate. This is because the researcher was not allowed access to the emails that were sent out by AITP to its members to solicit their participation in

the study. According to the association's contact person, there are about 2,500 members. However, it is not known how many participants were active and how many of them actually received the instrument. Therefore, a response rate was not calculated. Even if it is low, a low rate response does not necessarily lead to non-response error (Ciu, 2003) or affect the validity of the data collected (Templeton, Deehan, Taylor, Drummond, & Strang, 1997) so long as the non-response effects are tested and corrections made to the original data to maximize validity. In this study, the number of respondents covering six race/ethnic groups, all two major gender classifications, four levels of educational attainment, five position classifications, five age classifications, and eleven business or occupation groups showed that data collected reflected the perceptions and expectations of a wide spectrum of the demographic groups within the IT industry. This compensates for the seemingly low response rate and provides support for generalizing the results of this study to the wider population in the United States.

With regard to the distribution or spread of respondents within each group, the disproportionate number of respondents in each of the categories may have impacted the results. For instance, among the race/ethnic groups, 81.8% were Whites, 9% were Blacks, with the remaining for all the other groups. For gender, nearly 73% of respondents were male. Close to half (47%) of the respondents have graduate degrees, and 69% were at least 50 years old (33% for 50-59, and 36% for 60+ age groups). Although this may appear to be a limitation, it also depicts the characteristic nature of the IT industry in terms of the demographics. Minority and female underrepresentation is still an issue that has gained attention in the literature. For instance, underrepresented minorities are said to make up close to 7 percent of engineering and technology professionals in the technology industry even though they make up 27 percent of the nation's population (Worthen, 2009).

Although there are improvements occurring, the IT industry is still male-dominated, with more whites than any other racial or ethnic group in the management and executive ranks. The industry is also dealing with the issue of an aging population just like in the general workforce. The only surprise here is with the low number of Asian respondents considering their inroads into the IT industry. Therefore considering the racial and gender demographic composition of the IT industry, this limitation may not seriously detract from the generalizability of the results of this study given the fact that the demographic characteristics of the participants is not so much different than the general population of the IT industry as it is today in the country. Even then, caution still needs to be exercised in using the results within the context of the identified limitations.

Recommendations for Future Research

Diversity and inclusion in the IT industry is very important against the backdrop of increasing diversity in all dimensions in the national workforce and the society generally. There are now more opportunities to interact with someone from a different demographic group than ever before. In the course of transacting with team members, contractors, customers, vendors, consultants, interns, creditors, partners, team members, collaborators, and suppliers, the IT professional may have to deal with diversity and inclusion issues. Also, as the world is now more than ever before one global village, IT has been the backbone for ensuring that communications and transportation systems that support global interactions and collaborations are working in full force to provide the needed support to the organization's business transactions. Needless to mention that without IT, outsourcing and offshoring cannot function as intended and IT remains the only option on which several businesses are turning to for tools with which to enhance their survival in an extremely fierce and competitive marketplace.

Therefore, for future research on this topic, it is recommended that effort be made to ensure that a higher response rate cutting across even more demographic groups is achieved. Although a broad spectrum of people from over ten business/occupational groups within the IT industry was reached for the purposes of this study, it is necessary to ensure that the respondents cut across the groups in sizeable numbers so that results do not weigh heavily on situations in one group to the detriment of others, especially when variables such as perceptions and expectations are being considered. Therefore, as much as, efforts are made to increase the response rate, care should be taken to choose target participants from where the demographics will closely mirror the population of interest so that the generalizability of the results is not jeopardized.

Future research should also consider adding other variants of demographic dimensions into the equation. As mentioned earlier, age and business or the occupational group should be introduced to see how that plays out to influence perceptions or expectations and whether that impacts the overall results when comparing highly visible demographic characteristics against the less visible characteristics. Also, future research should investigate how each of these dimensions affects the other and what their effects are on perceptions and expectations of diversity and inclusion. This can be done by investigating the interaction effects between the dependent variables, especially if there are multiple variables and factors to consider.

Recommendations for Applications to Practice

As seen from the findings, when staff members were compared with those of managers/supervisors, although perceptions may appear similar, expectations between the groups differ. Perceptions relate to feelings about the diversity and inclusion climate in the organizations whereas expectations relate to what each individual or group expects to benefit or

what benefits they expect the wider organization to garner from diversity and inclusion efforts. Thus, technology managers and human resource development professionals need to work seriously to understand perceptions to help them know where to direct their focus and/or know where corrections are needed. This would enable benefits to be maximized to fulfill the expectations of organizational members. Also, this is a very important step in managing a diverse workforce (Ozgener, 2008).

Diversity and inclusion programs, if well designed and implemented, could potentially influence the perceptions, behaviors, attitudes, and knowledge of organizational members (DeMuse & Hostager, 2001). Therefore, it is recommended that in designing diversity and inclusion programs, efforts should be made to look at the demographic make-up of the organization not only in terms of the highly visible dimensions such as race/ethnicity or gender where more attention has traditionally been focused but that age, as well as other less visible dimensions such as educational level, positions held, tenure, and the business or occupational group should be considered. This is because each of these dimensions has their own peculiarities and characteristics that influence how the programs and expected benefits (either to the members or the organization) will be perceived. Understanding how multiple dimensions affect perceptions and expectations is very important. For instance, it is important to understand how a person from one race with a certain amount of education and in a certain position would perceive diversity if the person is a male or a female and whether that is different for people who have just joined the organization, have been around for ten years or those nearing retirement. This analysis takes into consideration a complex mix of variables such as race/ethnicity (possibly national origin), gender, position or status, and tenure (possibly, including age).

Conclusions

This study was to investigate the perceptions and expectations of diversity and inclusion in the IT industry based demographic dimensions, such as race/ethnicity, gender, education, and position. From the results and analysis, it was found that there are no significant differences in perceptions and expectations of diversity and inclusion initiatives in IT organizations irrespective of the group member's race/ethnicity, gender, level of education, and position (status). This finding is consistent with the hypotheses for this study. Even with this result, it needs to be realized that some differences do exist in perceptions and expectations of diversity and inclusion efforts among the groups studied as can be seen from the mean values in Tables 12 and 15.

Technology managers and human resources practitioners within the IT industry might use the results from this study to think about how the environments in which they operate could affect their diversity and inclusion programs and activities. For example, managers could look beyond the traditional notions of diversity in terms of race/ethnicity and gender to look at the concept more broadly within the context of the people in the organization. With an understanding that people with higher education and in comparatively lower positions (irrespective of their race or gender) may have increased promotion from within the organization as a major expectation, for instance, managers could then be in a better position to advise top leadership of the organization on how to motivate and retain top talent. According to Tudor (2001), "It is important for leaders to have a good grasp of the types of diversity they are dealing with as they compose and lead their teams---because knowing what you are dealing with is a key to managing diversity well" (p.5).

It is important to understand the various dimensions as well as the categorizations of diversity in order to maximize the gains from workforce diversity and inclusion. For instance, results obtained by Jehn et al. (1999) found that informational diversity positively influenced group performance, mediated by task conflict and that social category diversity positively influenced group member morale, whereas values diversity decreased satisfaction, intent to remain (that is, tenure or retention), and commitment to the group. An understanding of these facts by technology managers and HR practitioners in the IT industry will place them in a vantage position when composing teams and work groups in order to increase the potential for success and attainment of maximum productivity to the benefit of their organizations.

It is important that the findings of this study be considered cautiously within the context of the limitations earlier identified as well as the suggestions put forward for future research and applicability to practice. Although focused on the IT industry, the findings could also find applications by managers and human resources practitioners in any other industry.

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APPENDIX A: IT DIVERSITY AND INCLUSION SURVEY

Instructions**:**

This survey is to collect data for my doctoral dissertation. The focus of the research is on diversity and inclusion in the information technology industry. Knowledge gained through this project will help technology managers and human resource development professionals implement diversity and inclusion initiatives in their organizations and also add to the body of knowledge on this important topic. Participation in this survey is voluntary and will take no more than 30 minutes of your time. If you decide to participate, please complete the questionnaire and return to the researcher by email (to be provided).

Demographic Information:

Race/Ethnicity

American Indian/Alaskan Native
Asian/Pacific Islander
Black/African American
Hispanic
White
Others (please specify)

Gender

Female
Male
Others (please specify)

Position

Staff
Manager/Supervisor
Executive
Owner
Others (please specify)

Educational Attainment
- HS or less
- Associate degree or some college
- Bachelor's degree
- Master's or professional degree
- Doctorate

2. Diversity information and programs (including education and training) are available in my organization.

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

3. Opportunity for involvement various work systems is available in my organization.

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

4. Top leaders in my organization demonstrate a visible commitment to diversity and inclusion as stated in our mission, goals, and strategies

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

5. We respect and tolerate differences in people in my organization.

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

6. Equal access to opportunities (positions, career development, support groups, etc) is available for all employees in my organization.

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

7. Representation of different demographic groups exists at all levels of the organization.

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

8. There is a provision to accommodate for physical and developmental abilities in my organization.

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

9. I trust my organization's policy on fair treatment for all internal and external stakeholders.

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

10. We have in place an equitable system for incentives, recognition, and reward

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

11. There are employee support groups, networks, or affinity groups in my organization

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

12. Diversity and Inclusion efforts of my organization have helped to achieve ------ (choose all that apply)

- Employee satisfaction
- Performance improvement
- Increased retention/decreased turnover
- Increased Promotion from within
- Increased Creativity and innovation
- Reduced interpersonal conflicts
- Increased supplier diversity
- Improved client relations
- Decreased complaints and litigation
- Others (Please specify)

APPENDIX B: INSTITUTIONAL RESEARCH BOARD (IRB) LETTER

Institutional Review Board

Terre Haute, Indiana 47809
812-237-3088
Fax 812-237-3092

July 11, 2010

Suanu Bliss Wikina
Department of Technology Management
College of Technology
Indiana State University
Dr. Cynthia Thompson
Department of Graphic Communication and Technology Studies

RE: DIVERSITY AND INCLUSION IN THE INFORMATION TECHNOLOGY SECTOR: EXAMINING PERCEPTIONS, EXPECTATIONS, AND DEMOGRAPHIC DIMENSIONS (IRB# 11-001)

Dear Suanu Bliss Wikina:

The IRB has determined that your proposed study listed above, pursuant to Indiana State University's *Policies and Procedures for the Review of Research Involving Human Subjects* and 45 CFR 46, falls within an exempt category and is therefore considered exempt from Institutional Review Board Review. You do not need to submit continuation requests or a completion report. Should you need to make modifications to your protocol or informed consent forms that do not fall within the exempt categories, you will have to reapply to the IRB for review of your modified study.

Your study falls within the following exempt categories:

☐ 45 CFR 46.101 (b) 1 Educational Research	☐ 45 CFR 46.101 (b) 4 Existing Data
☒ 45 CFR 46.101 (b) 2 Survey Research	☐ 45 CFR 46.101 (b) 5 Evaluation Research
☐ 45 CFR 46.101 (b) 3 Survey of Public Officials	☐ 45 CFR 46.101 (b) 6 Consumer Research

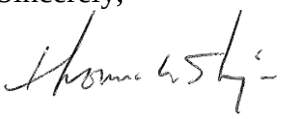
Internet Research: You are using an internet platform to collect data on human subjects. Although your study is exempt from IRB review, ISU has specific policies about internet

research that you should follow to the best of your ability and capability. We are including the section on internet research from ISU IRB policy.

Informed Consent: All ISU faculty, staff, and students conducting human subjects research within the "exempt" category are still ethically bound to follow the basic ethical principles of the Belmont Report: a) respect for persons; 2) beneficence; and 3) justice. These three principles are best reflected in the practice of obtaining informed consent.

If you have any questions, please contact the Office of Sponsored Programs at 812-237-3088, or irb@indstate.edu, and your question will be directed to the appropriate person. I wish you well in completing your study.

Sincerely,



Thomas L. Steiger, Ph.D.
Chair, Institutional Review Board

cc: Dawn Underwood, IRB Administrator

L. Internet Research

Non-exempt research using the Internet has unique characteristics that are not directly addressed by the Federal regulations. Currently, the Internet is used primarily for two research activities – recruitment of subjects and survey administration. Most human subjects protection issues that arise in conducting research activities on the Internet concern privacy and consent. For a thorough discussion of the pertinent issues, refer to "Ethical and Legal Aspects of Human Subjects Research on the Internet," prepared for DHHS by The American Association for the Advancement of Science (http://www.aaas.org/spp/dspp/sfrl/projects/intres/main.htm)

The ability to consent is difficult to ascertain over the Internet. Generally, this ability is related to age, but may be relevant to other vulnerable populations (e.g., decisionally impaired, incarcerated). Also, email-based activities are far less secure than website-based activities. Software exists to enhance the privacy of both types of activities. ISU strongly recommends that researchers work with a vendor that specializes in Internet-based research to minimize risks in these areas.

Internet-based studies may not include minors as subjects unless the IRB waives written parental permission and informed consent.

Whether the purpose is recruitment, survey administration, or some other purpose, Internet-based materials must include the following items, to the extent applicable. These items are to be included in addition to all information that is normally required for informed consent:

1. email addresses of the investigator and IRB

2. no claim about the superiority, safety, or effectiveness of procedures, interventions, devices, or any other materials used in research;
3. a description of the process for completing the on-line research activity
4. information on subsequent contacts that will be made if the individual agrees to participate
5. no promise of anonymity
6. information regarding procedures for protection of information that the subject provides over the Internet
7. a statement that there will be no future email contacts or an opt-out message that permits individuals to have their names removed from any future mailings. If future contacts are planned, the information must state the number and frequency of such contacts.
8. instructions to delete the email message that originated the contact

After reading information about the study, the individual must be required click a button either to indicate his or her wish to continue or to leave the site and opt out of participation. After clicking the button, the subject will be taken via a link to the study task. If the individual opts out, clicking the button will exit the site.

Generally, Internet-based surveys do not require written documentation of consent. If the IRB does require such documentation, the following additional procedures must be used:

1. The "agree to participate" button must contain a message, or there must be a separate statement right above the button, that indicates that clicking the button means the subject has read the statement, printed a copy for his or her files, and agrees to participate in the study or be considered for recruitment for the study and accepts that personal information will be electronically supplied to the researcher to document his or her participation (such as name, e-mail name, and date).
2. There must be a mechanism by which information is returned to the researcher that identifies the person who is participating. This documentation must be kept by the researcher for at least three years beyond the end of the study.

The following apply to all types of study materials:

1. Individuals must be able to easily print a readable copy of information about the study and the informed consent documentation (if required) for their own records.
2. The printed version of all information must carry the approval and expiration of approval dates for the study as determined by the IRB. The researcher should replicate the text of the stamps on the electronic version of the study materials.
3. The IRB must be able to access the document on-line before approval will be given.

APPENDIX C: TEXT OF E-MAIL TO PROSPECTIVE SUBJECTS

Hello:

I am a doctoral student at Indiana State University and now conducting a study for my dissertation with a focus on the perceptions of diversity and inclusion among members of the information technology (IT) industry. I need your assistance to participate in the study by completing an online survey and if possible to forward this to other IT professionals in your organization so they can also participate in this study. I will appreciate if this can reach 20-30 IT professionals in your organization. Please note that I am requesting you to do this as a favor for me and that your organization will not have any knowledge of who participates or not. All information gathered in the course of this study will be held in strict confidence.

This study will be beneficial to society in that knowledge gained from this project will help technology managers and human resource development professionals, especially those in the IT industry, implement viable diversity and inclusion initiatives in their organizations. Also, results obtained will add to the body of knowledge on this important topic. The study is for educational purposes only. Participation in this survey is voluntary and will take 10 - 15 minutes to complete. You can reach me via email or by phone at 202-445-0365.

Please use the following link to access the survey. Remember to click on DONE to ubmit your responses on completion. http://www.surveymonkey.com/s/S7L3NSD.

Thank you so much..

Suanu Bliss Wikina
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PhD Technology Management Program
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Professor, School of Technology
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ccthomps@ncat.edu

APPENDIX D: PILOT TEST SURVEY

Diversity & Inclusion Survey

1. D&I Survey - Pilot Test

This is a pilot test of a survey instrument I am developing for my doctoral dissertation research. Participation in this pilot test is voluntary. You are not required to disclose any vital personal information but note that any information provided will be handled with care; confidentiality and privacy will be respected. My intention is to measure differences in perceptions and expectations of diversity and inclusion in technology organizations and will analyze the data to find the basis for any significant differences that may occur. I thank you in advance for taking the time to respond to this survey. I do welcome your feedback.

*

1. Demographic Information

Race/Ethnicity	Gender	Age	Position	Educational Attainment	Industry or Business Sector	Department

Other (please specify)

*

2. Availability of diversity information, programs, education and training

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

*

3. Presence of participatory work systems and opportunity for involvement

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

*

4. Top leaders demonstrate a visible commitment to diversity and inclusion as stated in our mission, goals, and strategies

○ Strongly Disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Strongly Agree

*

5. We respect and tolerate differences

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

*

6. Equal Access to opportunities (positions, career development, support groups, etc) for all employees

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

*

7. Representation of different groups exist at all levels of the organization

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

*

8. The views of people like me are respected and included in vital activities

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

*

9. I trust the organization to treat me fairly

Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree

10. Diversity and Inclusion efforts of my organization has helped to achieve ------ (choose all that applies)

- Employee Satisfaction
- Performance Improvement
- Increased Retention/Decreased Turnover
- Increased promotion from within
- Increased creativity and Innovation
- Reduced Interpersonal Conflicts
- Increased Supplier Diversity
- Improved Client Relations
- Decreased Complaints and Litigation
- Others (please Specify)

Other (please specify)

APPENDIX E: SURVEY RESULTS

Question1: Demographic Information

Race/Ethnicity

Answer Options	Ameri. Indian / Alaska Native	Asian/ Pacific Islander	Black /African American	Hispanic	White	Others (please specify)	Response Count
*	2	2	9	3	90	4	110

Gender

Answer Options	Female	Male	Others (please specify)	Response Count
*	30	80	0	110

Educational Attainment

Answer Options	High School S or Less	Assoc. Degree or Some College	Bachelor Degree	Master's or Prof. Degree	Doctor-ate	Response Count
*	0	16	45	40	7	108

Position

Answer Options	Staff	Manager Supervisor	Executive	Owner	Others (please specify)	Response Count
*	35	35	11	10	17	108

Age

Answer Options	Less than 25	26 - 39	40 - 49	50 - 59	60+	Response Count
*	1	11	22	35	38	107

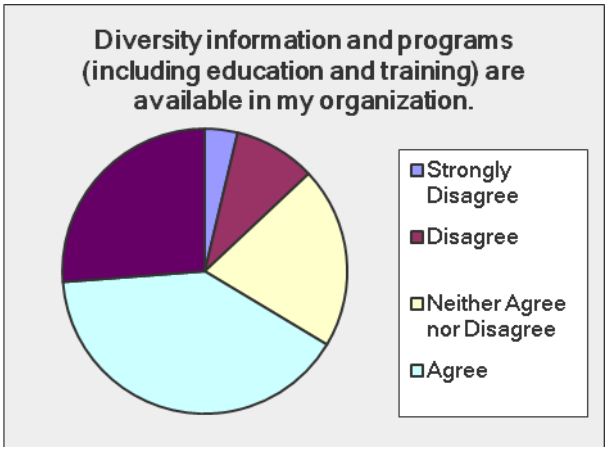
Business Group

Answer Options	Educ.	Finan. Svcs.	Constr.	Mfg.	Energy	Health-care	Retail	Govt	Non-profit	Real Estate	Transpor-tation	Hospi-tality	Others (please specify)	Response Count
*	24	13	1	7	0	5	6	8	6	0	3	2	32	107

Other (please specify)

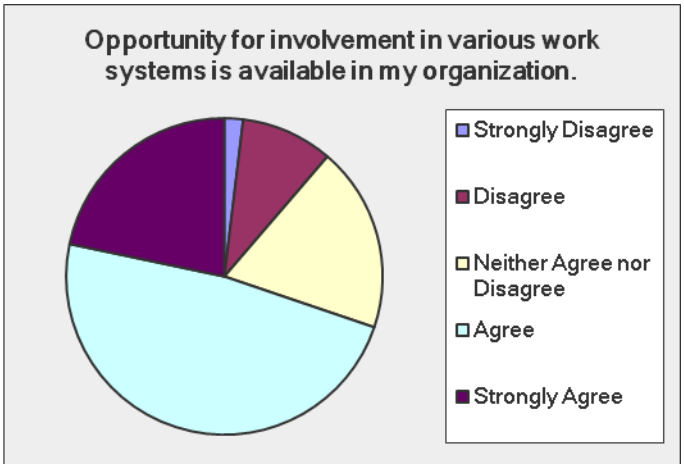
Question 2 - Diversity information and programs (including education and training) are available in my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	3.7%	4
Disagree	9.3%	10
Neither Agree nor Disagree	20.6%	22
Agree	40.2%	43
Strongly Agree	26.2%	28
answered question		107
skipped question		4



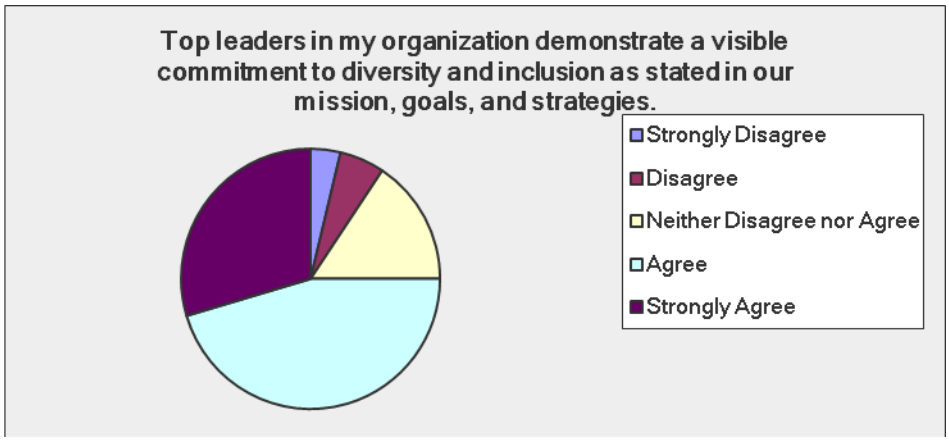
Question 3 - Opportunity for involvement in various work systems is available in my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	1.9%	2
Disagree	9.4%	10
Neither Agree nor Disagree	18.9%	20
Agree	48.1%	51
Strongly Agree	21.7%	23
answered question		106
skipped question		5



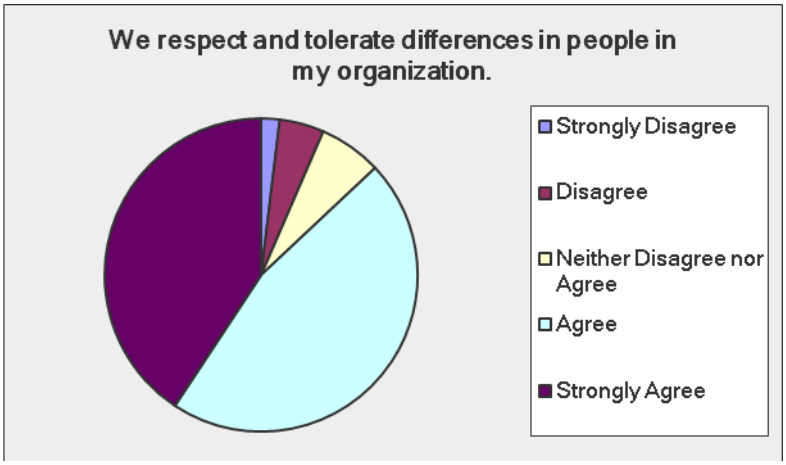
Question 4 - Top leaders in my organization demonstrate a visible commitment to diversity and inclusion as stated in our mission, goals, and strategies.

Answer Options	Response Percent	Response Count
Strongly Disagree	3.7%	4
Disagree	5.6%	6
Neither Disagree nor Agree	15.7%	17
Agree	45.4%	49
Strongly Agree	29.6%	32
answered question		108
skipped question		3



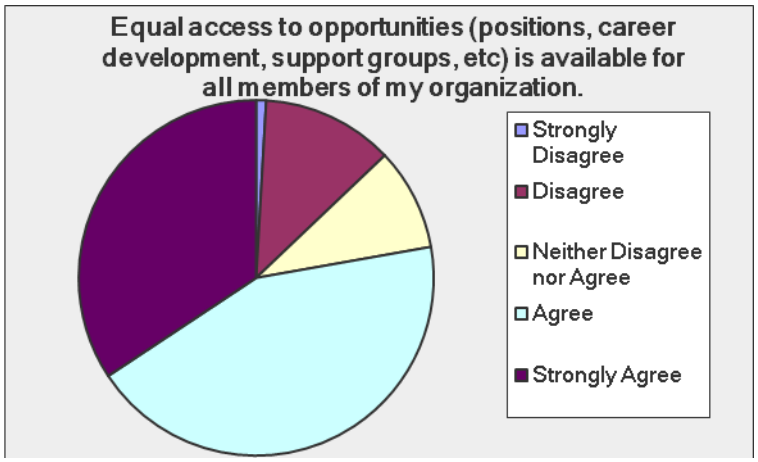
Question 5 - We respect and tolerate differences in people in my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	1.9%	2
Disagree	4.6%	5
Neither Disagree nor Agree	6.5%	7
Agree	46.3%	50
Strongly Agree	40.7%	44
answered question		108
skipped question		3



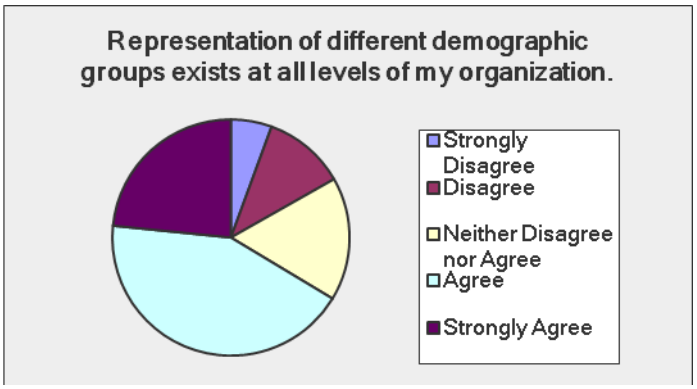
Question 6: Equal access to opportunities (positions, career development, support groups, etc) is available for all members of my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	0.9%	1
Disagree	12.0%	13
Neither Disagree nor Agree	9.3%	10
Agree	43.5%	47
Strongly Agree	34.3%	37
answered question		108
skipped question		3



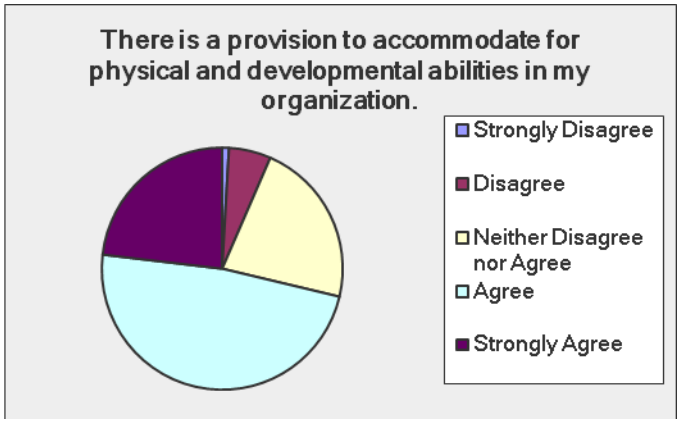
Question 7 - Representation of different demographic groups exists at all levels of my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	5.6%	6
Disagree	11.2%	12
Neither Disagree nor Agree	16.8%	18
Agree	43.0%	46
Strongly Agree	23.4%	25
answered question		107
skipped question		4



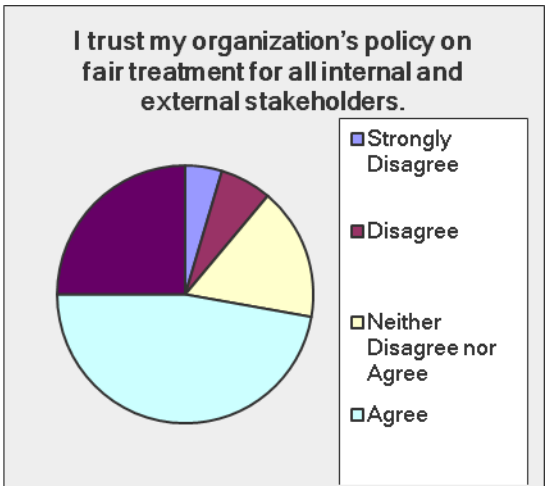
Question 8 - There is a provision to accommodate for physical and developmental abilities in my organization.

Answer Options	Response Percent	Response Count
Strongly Disagree	0.9%	1
Disagree	5.6%	6
Neither Disagree nor Agree	22.2%	24
Agree	48.1%	52
Strongly Agree	23.1%	25
answered question		**108**
skipped question		**3**



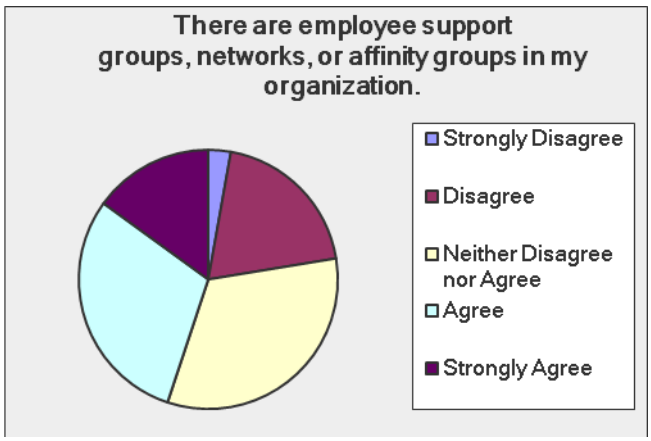
Question 9 - I trust my organization's policy on fair treatment for all internal and external stakeholders.

Answer Options	Response Percent	Response Count
Strongly Disagree	4.6%	5
Disagree	6.5%	7
Neither Disagree nor Agree	16.7%	18
Agree	47.2%	51
Strongly Agree	25.0%	27
answered question		108
skipped question		3



Question 10 - We have in place an equitable system for incentives, recognition, and reward.

Answer Options	Response Percent	Response Count
Strongly Disagree	6.5%	7
Disagree	14.0%	15
Neither Disagree nor Agree	24.3%	26
Agree	39.3%	42
Strongly Agree	15.9%	17
	answered question	107
	skipped question	4



Question 12 - Diversity and Inclusion efforts of my organization has helped to achieve (choose all that apply)

Answer Options	Response Percent	Response Count
Employee Satisfaction	72.0%	59
Performance Improvement	51.2%	42
Increased Retention/Decreased Turnover	45.1%	37
Increased promotion from within	40.2%	33
Increased creativity and Innovation	39.0%	32
Reduced Interpersonal Conflicts	40.2%	33
Increased Supplier Diversity	19.5%	16
Improved Client Relations	42.7%	35
Decreased Complaints and Litigation	32.9%	27
Others (please Specify)	14.6%	12
Other (please specify)		16
answered question		82
skipped question		29

APPENDIX F: PARTICIPANTS' COMMENTS

Question 12 - Others
The problem is that we don't have a lot of minorities applying for IT jobs. The geek types that want to be programmer/analysts and coders are usually white or Indian. My group judges each other on how well we solve problems and derives solutions and so ethnicity and race aren't really a factor. Geeks are somewhat united in that way - we put function above form.
Inclusion is not practiced in our unit.
IT workers judge each other in logical terms, not racial or ethnic. What you do will always be placed above what you are in the IT world. Our currency is logical respect.
i am retired
I really didn't see diversity or inclusion efforts with my company when I was employed there for 25 years.
I don't have any data back up these selections, and suspect that for most people the presence of these programs does not make a conscious difference in their work life. There are times that I resent ... to a very large degree these type activities. For the last several years, the tables have been turned where "we" are now the minority and "fairness" is only needed if you are non-white, non-male. "Work ethic", ability-to-work-as-a-team-player, and capitalism do not have a color, sex or an age... We are spending an inordinate amount of our national resources on measuring and evaluating tired requirements and an insufficient amount of energy in educating our young people about the value of hard work, the value of continuing education and how to compete in a global economy.
Discrimination against majorities
I don't have the numbers to determine the cause and effect.
Who says it improves? You should reexamine how you wrote this survey. It is slanted a little towards diversity being a good thing.
Knowing that you are helping folks that need assistance.

Negate most of the verbs, then I might agree.

I did not know if 'organization' meant our AITP Organization, or my former work organization.

How would the person answering these questions know if D&I efforts have achieved these goals? These are goals of D&I, but unless we see statistics, it is just conjecture which is subjective...and based upon false information.

We do this because it is right to do. I don't think that it actually improves any of the above. It does not detract from them either.

We have always been an equal opportunity employer - merit based.