TIME ZONE EFFECTS:
THE IMPACT OF HUMAN RESOURCE PRACTICES AND CULTURAL INTELLIGENCE ON GLOBAL TEAM OUTCOMES

By

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ABSTRACT

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Inspite of the rapidly growing global workforce, human resource practices have not been developed to address the challenges of working in the global context. Research on virtual teams has long highlighted both physical as well as temporal distance as unique aspects of geographically distributed work that can have important implications for human resource management theory and practice. Differences in time zone, as well as high levels of cultural diversity in global teams make this a unique work context. However, the strategic human resource management literature still remains inadequate to address the specific challenges of global work, and its affect on employees. The present work extends the human resource management and virtual team literatures to develop a model of human resource practices for global teams, and specifically examines the impact of time zone difference and cultural intelligence on the relationship between human resource practices and global team outcomes.

The conceptualized model is tested using matched multilevel data collected from global team employees and their supervisors. The results highlight the role of time zone difference and cultural intelligence on global team and employee outcomes. While cultural intelligence has a greater impact on the performance of global teams, the degree of time zone difference has more significant effects on individual employees' work-family conflict and stress. Additionally, the

findings emphasize the role of training for global team performance, and the importance of flexible working practices and control over working hours for individuals who work within these teams. These findings are discussed with respect to academic and managerial implications.

DEDICATION

in loving memory of
the precious people I lost during the course of this dissertation.

My dear friend and brother-in-law, Sanjay Mishra.
For all the good times we shared. And for your very endearing, unflinching conviction that, somehow I would be the best in whatever I did!

And my father, Dr. K. C. Misra.
For teaching me that the true essence of a scholar is not just a curious mind. But the ability to use the learning that you are fortunate enough to have, to find a place in the hearts of the people whose lives you might have touched as you strive to make a difference in this world.
And for living life as a true example of his own teachings.
I know you will always look out for me, wherever you are. And help me carry on –
'With my mind without fear; my head held high' – and never to forget – 'a smile on my face'.

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CHAPTER 1: INTRODUCTION

In this dissertation, I aim to fill an existing gap in the study of human resource (HR) policy and practice, and extend current knowledge to develop new insights into how HR policy and practice is experienced by employees who work as part of global teams, and its effects on their team performance, as well as individual work-family conflict and stress outcomes.

The growing prevalence of global workforces as a way to organize work makes it a relevant and important issue to study today. Global work differs from traditional work primarily along two characteristics: (1) geographical distance among individuals engaged in coordinated work (2) heavy reliance on technology-mediated communication to coordinate work, due to lack of face-to-face interaction among these individuals. Working in the global context requires that employees located in different time zones across the world coordinate work virtually with their counterparts in order to accomplish their tasks. In the modern-day global work context, most often, employees complete interdependent tasks and work as part of global teams. Current HR practices need to be planned and undertaken with sufficient awareness of, or regard for, the unique demands of work in a global context.

There are significant differences in the job demands and ways in which the work of global team employees is organized compared with employees in traditional work settings. Global work is characterized by inconsistent working hours, conflicting time zones, and different cultural, as well as behavioral expectations from employees. Working in this environment and having to face these unique challenges may affect the performance, stress and other outcomes of global team employees. Of special interest in this study, is the effect of this unique work environment on the work-family lives of global team employees.

Human resource practices have not been developed to address these differences or the specific needs of these employees. Workers in a global context are guided by the same policies and practices that are implemented for the rest of the organization, and little has been done to explore the effectiveness of workplace practices for the performance of global teams. Additionally, even though a large proportion of the white-collar workforce works within a global virtual work environment, little empirical research has examined individuals' experiences with global work and the effects of workplace practices on their work-family lives, and stress.

This dissertation study unpacks the impact of HR policy and practices on global teams by examining several aspects related to their work. First, the study contributes to the human resource management literature by exploring the effects of HR practices on global team performance and employee stress outcomes. Significant gaps exist in the area of research on human resource practices in a global work context. Much of the literature on HR practices has either focused on impact on organizational or unit-level performance; or when the international human resource management literature does include global workers, it has focused on expatriates' isolated experiences when they travel abroad to work in a different location of their multinational parent company (see Tahvanainen, 2000, Yang, 2007; Harvey and Moeller, 2009 for examples). Little or no research has been done to study the effects of HR practices on people coordinating work virtually across the globe.

Moreover, while the impact of HR practices on organizational performance has been studied widely in different contexts, research on the implications of such practices for individual or team performance has been limited (see Appelbaum, Bailey, Berg and Kalleberg, 2000; Batt and Valcour, 2003; White, Hill, McGovern, Mills and Smeaton, 2003, for exceptions). For example, extant literature on human resources practices has identified and empirically

established a set of "best practices" that have been shown to enhance overall organizational performance in production facilities (MacDuffie, 1995; Huselid, 1995; Ichniowski, Shaw and Prennushi, 1997).

Additionally, the set of practices included in the "best practices" paradigm were appropriate for production-level workers in the blue-collar work environments in which most of these studies were done (for example, HR practices such as skill-based pay are more likely to be used in manufacturing settings) (Lawler, Ledford, and Chang 1993). The applicability of these practices to modern-day white-collar professional employees is limited. For example, the use of traditional rewards systems is difficult in the case of global teams and global team employees, due to lack of visibility of members (Handy, 1995; Mohrman, 1999); and best practices such as formal training or problem-solving teams that require regular face-to-face meetings cannot be implemented for global workforces. More research is needed to assess the application of these "best practices" to technical, professional and managerial employees in a service economy (Batt, 2002; Batt and Valcour, 2003). This becomes especially relevant with an increased thrust in the economy towards the use of service and knowledge workers. The set of "best practices" proposed must assess, and include HR practices relevant to white-collar professional jobs (Mohrman, Mohrman and Cohen, CEO Working Paper).

Also, studies of HR policy and practices have not assessed the impact of these practices on negative outcomes for individuals. Ramsay, Scholarios and Harley (2000) pointed out that the HR "best practices" that enhance organizational performance may have a negative impact on employees by making them work harder. The principle behind the "best practices" approach to HR policy is that enhanced employee motivation; increased employee discretionary power; and better problem-solving skills among employees result in overall higher productivity (Appelbaum,

Bailey, Berg and Kalleberg, 2000). However, sometimes, employees may have to work longer hours to address problems and employee discretion translates into extra effort on the part of the employee. Discretionary power comes with increased responsibilities that may impact individual employees negatively and create an additional burden on them so as to increase their stress. While there is little empirical evidence on this, some research has pointed out that HR "best practices" may increase the stress of individual employees while aiding organizational productivity (Ramsay et al., 2000; White et al., 2003).

Second, my study will focus on another unique yet crucial aspect of modern-day global work: the temporal distance among members. Owing to this, and consequent time differences between members, global team employees face additional challenges related to their work as well as family lives. Practically no research has been done to assess how global team employees balance their work and family demands. Given the nature of their work, global team employees have to work non-standard hours to coordinate work with their counterparts across different parts of the globe, located in different time zones. Because working in the global context necessitates working and coordination across different time zones, it can have important implications for the work-family lives of these employees, as they sometimes have to work during nights or weekends to adjust to the time differences across locations of counterparts. For example, if one global team employee is located in the east coast in the continental United States (US), and has to coordinate work with a counterpart (who could be another employee, client, or manager) is located in Asia (e.g. China, Malaysia or India), these two people have to work across a more than 10-hour time difference. This means that during the normal working day for the Asian counterpart, it is still late evening or night for the employee in the US and the US-based global team employee has to work after-hours, which may interfere with his or her family life.

Conversely, if an employee is located in Malaysia for example, and has to coordinate work with US-based counterparts, a working daytime in Malaysia is still the previous night in the US and this may cause disruptions to the family lives of the global team employee located in Malaysia. Research in the areas of human resource practices or work-family life has not addressed these aspects of work in a global environment - an environment that is increasingly becoming part of everyday work life.

The degree of time zone difference between global team employees and their work counterparts will impact their work-family issues as they have to work with additional time constraints and would have more need to coordinate work during nights or weekends, owing to this difference in time zone. The greater the degree of time zone difference, the greater will be the need for adjustment of working hours and schedules (for example, a more than 8 hour time difference means day in one place and night in the other). Therefore I propose that the impact of HR practices on the work-family conflict in the context of global team employees will depend on the extent of time zone difference that they coordinate with.

Last but not least, this study addresses the cultural diversity associated with working in a global context. Specifically, I propose to examine whether individuals' cultural intelligence will moderate the relationship between HR practices and global team performance. Companies can no longer afford to assume that practices within their own country will translate well into other cultures as well; or what works for a manager or employee in Chicago will work just as effectively in the Czech Republic, Beijing or India (Mohrman, 1999; Kirkman, Gibson, Shapiro, 2001). Working in the global context often requires coordination with several members from another country/culture and this can significantly affect the implementation of policies and programs as well as employee effectiveness (see Kirkman and Shapiro, 1997; Gibson, 1999;

Kirkman, Gibson and Shapiro, 2001). Working with people from different cultures is an additional challenge faced by global team employees, as they have to change their behavior frequently in order to be able to communicate effectively with counterparts from different countries and cultures; learn (and unlearn) their language, manners and cultural norms. While people working in collocated environments also might have to work with people from diverse cultures, the cultural diversity aspect is further highlighted in the context of global work because employees have to work with the additional constraints of lack of face-to-face and technology-dependent communication. Global team employees have to work with counterparts from diverse cultural backgrounds from a distance – sometimes not having had the opportunity to meet them at all. Moving back and forth between different cultural expectations while working from a distance is an additional aspect that global team employees have to deal with, which may affect their performance, as well as make their jobs stressful.

Ang and Van Dyne (2008) developed the concept of cultural intelligence quotient or CQ to measure the level of an individual's cultural intelligence. Cultural Intelligence (CQ) is defined as a person's capability to function effectively in situations characterized by cultural diversity (Ang, Van Dyne, and Koh, 2005; Earley and Ang, 2003; Earley and Mosakowski, 2005; Earley, Ang, and Tan, 2006). An individual's cultural intelligence is an indicator of their ability to function effectively, and engage in culturally diverse work groups, as well as their ability to cope with cross-cultural interactions. As such, a person's cultural intelligence level would indicate how appropriately and effectively they are able to interact with people from other cultures. According to them, an individual's CQ determines how effectively he or she can perform in a multicultural environment. As such, I propose that individuals' CQ may mitigate

some of the negative effects of global team work and hence moderate the effects of HR practices on global team performance.

In sum, inconsistent work hours, conflicting time zones, and different cultural as well as behavioral expectations, are unique challenges faced by people working within global teams and may impact their performance and stress levels, as well as their work and family lives.
In the next section, I list the specific research questions I will address in this dissertation and comment on the theoretical as well as empirical contributions of my study.

Research Questions

The primary objective of this dissertation is to answer the following question: How do time-zone differences and individuals' cultural intelligence impact the effects of HR practices on the performance of global teams, and the stress and work-family conflict of global team members? More specifically, in this study, I will address the following research questions:

1. How do human resource (HR) practices affect global team performance, and individual employee outcomes such as work-family conflict and stress in the global virtual work context?;
2. How do time zone differences (TZD) moderate the relationship between HR practices and the performance, stress and work-family conflict of global team employees?; and
3. How does Cultural Intelligence (CQ) moderate the relationship between HR practices and the global team performance?

First and foremost, my study will focus on an important aspect of global work: the temporal distance among members. I propose that that the extent of time zone differences will moderate the relationship between HR practices and the work-family conflict of global team employees. Owing to the time difference between global team members and their work counterparts, employees face additional challenges related to their work as well as family lives, as they sometimes have to work with others during nights or weekends to adjust to the time differences across global locations.

Second, my study will address the cultural issues associated with working in a global work context. Specifically, I propose to examine whether cultural intelligence moderates the relationship between HR practices and global team performance. Cultural intelligence (or CQ) of individuals has been shown to enable them perform better in working with people from different cultural backgrounds. I propose that the collective CQ (or group-level CQ) of global team members will have synergistic effects on their team performance. High levels of cultural intelligence among team members will enhance the way in which they coordinate work with each other, as well with outside parties, so that they are able to perform better in a global work environment. The ability to work with people from different cultural backgrounds is particularly salient in the global work environment, and a global teams' collective CQ will enable them have an advantage in this type of environment. Individuals working within these 'advantaged' groups will have an edge, and potentially be able to perform their job better.

Study Contributions

This study aims to make several contributions to the field of research in human resources management and practice, as well as research in the area of virtual teams. First, it examines the effects of HR policies and practices for individual-level outcomes such as employee stress and work-family conflict in a globally dispersed virtual work setting. Second, it extends current understanding of individuals' experiences in doing global work, by specifically examining the effects of time zone difference and cultural intelligence on the performance of global teams. Third, it also explores the impact of time-zone differentials on the work-family conflict and stress of global team employees. Finally, it also extends our current understanding of HR practices to include knowledge workers.

The study has important implications for the practice of human resource management. Globalization, growth of the service sector, and outsourcing trends mean that employees have to work virtually and coordinate with overseas partners across different time zones. This study will allow more in-depth understanding of how global teams experience HR policies and practices, depending on the time differentials between them. With global teams having to coordinate work across different time-zones included in the study, we will be able to learn how working in this context influences the performance of these teams, as well as the work-family lives, and stress-levels of members of these teams.

Through this dissertation study, I hope to ignite fresh inquiry into current understanding of global workforces and the role of HR policy and practice for the management of global teams. By providing new empirical evidence on the effects of HR policies and practice for global teams and the employees that work as part of global teams, I hope to generate further research interest

in the design of effective workplace practices for this growing section of the workforce. My dissertation aims to extend existing knowledge in the field of strategic and international human resource management theory and practice. Currently, the human resource management literature focuses on links between human resource practices and organizational or group-level outcomes, such as financial performance and productivity (see Batt and Valcour, 2003 for an exception). By studying the effects of HR practices on the individual outcomes such as stress and work-family conflict of individuals working in the globally dispersed work context, I aim to extend the application of strategic HR theory to individual outcomes, and include individuals' experiences in the specific global work context. Moreover, I contribute to international human resource management by adding to existing knowledge on the performance and effectiveness of global teams that have to coordinate work across different time zones. To my knowledge, existing studies have not assessed the impact of HR practices on the performance of global teams.

The results of this study will not only inform organizations and their managers about the design and implementation of human resource practices to make global team employees more effective, but also has important implications for employee well-being. By understanding how HR practices might affect global team performance and employee stress levels, HR managers and employers in general could implement policies and practices so as to enable global teams perform efficiently, help global team employees achieve better balance between their work and family lives, as well as lead a healthier and less stressful life. A healthier and productive workforce not only signifies direct gains in productivity for the employers and society, but also indirect gains through lower healthcare costs, fewer missed workdays, and less turnover.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL EXTENSION

I draw from the human resource management (HRM), virtual team, and work-family literatures in order to examine the challenges faced by global teams, and individuals that work as part of global teams; and aim to explore the development of human resource policies and practices for this specific group of employees. To begin, I define global teams, examine the challenges of global team work, and provide a clarification of what the global work context means for the purposes of my study. I primarily focus on two unique aspects of global team work: (1) time zone difference and (2) the role of cultural intelligence among global team members. Next, I review the existing HR management, virtual team, and work-family conflict literatures, and extend it to the specific case of global teams and employees that work as part of these teams.

Global Teams: Definition and Work Context

Many names have been given to virtual work that involves people working from separate locations to accomplish common tasks. New forms of working in today's economy include local and regional virtual teams, global virtual teams, teams in which some members telecommute (i.e. work from home), so on and so forth. Within these different forms of virtual work, there is further classification based on geographical distance (Bell and Kozlowski, 2002; Cascio and Shurygailo, 2003; Chudoba, Wynn, Lu and Watson-Manheim, 2005 for typologies of virtual teams; and Ebrahim, Ahmed, and Taha, 2009 for a review). The geographical distance dimension also points to another aspect of virtual teams, i.e. the temporal aspect. When individuals

working from different locations come together, they are not only separated spatially, but also have to span across different time zones as they accomplish common, interdependent goals (see Ebrahim, Ahmed, and Taha, 2009 for a comprehensive review on virtual teams).

While some teams are virtual, with members working remotely but from the same location (e.g. telecommute or work virtually from different work locations in the same area); other virtual teams have members located in different geographical locations, separated by physical as well as temporal distance (e.g. work from different national or global locations). In order to clarify the focus of my dissertation, it is important to discuss how I define global virtual work and which type of global teams I include in my study.

The focus of my study is global teams that comprise of individuals who coordinate work within their teams, as well as with counterparts in different locations across the globe. As such, although these teams maybe collocated, members have to operate in a global virtual work context characterized by high physical as well as temporal distance, since part of their work is organized to be accomplished along with counterparts located in different time zones. These 'counterparts' could be other employees from within the organization located abroad, clients, suppliers, supervisors, or managers etc. Below, I review different types of teams that can be formed along the two defining dimensions of virtual work: physical and temporal distance. I conclude with a definition for the specific type of global team that this study examines.

Existing research on distributed work points to different, but mostly overlapping definitions of virtual teams. A review of the different definitions available helps clarify what constitutes global teams in the context of my study, and narrows the definition to include a certain group of employees. One of the oldest and frequently used terms to describe work that is done virtually is "distributed work" (see McDonough et al, 2001; Bell and Kozlowski, 2002;

Chudoba et al, 2005; Hinds and Keisler, 2005 for examples). While this term denotes virtuality by implying physical separation among people who do the work, it runs the risk of being misunderstood as work that necessitates only geographical separation. In reality, distributed work potentially involves more than just physical distance. For example, cultural diversity and technology-mediated communication become obvious yet important challenges to be faced by individuals working in the global virtual context. For example, in their study of the challenges and performance of global, virtual, and collocated new product development (NPD) teams, McDonough, Kahn and Barczak (2001) differentiate between three types of teams in their sample according to the extent of physical distance among members, and also highlight the inherent cultural diversity in such teams. According to the authors,

> "*Collocated NPD teams are comprised of individuals who work together in the same physical location and are culturally similar; Virtual NPD teams are comprised of individuals who have a moderate level of physical proximity and are culturally similar. One example of a virtual team is where team members are located in different parts of the same country. Another example is where team members are in the same building but on different floors. Global NPD teams are comprised of individuals who work and live in different countries and are culturally diverse.*" (2004: 111)

As elaborated in the above definition, the most common characteristics of global teams conceptualized are geographic dispersion, temporal distance, and national (or cultural) diversity. The following classification provides the spectrum of different types of teams based on the two primary dimensions that define global virtual work: (1) the temporal dimension, and (2) the

spatial dimension. Both aspects inherently involve cross-cultural diversity as well as requirements for technology-based communication.

1. Collocated Teams. At one end of the spectrum is the "ideal" type of team that consists of members who are neither spatially nor temporally distributed. Most interactions are face-to-face in these teams.
2. Local Virtual Teams. These are teams that are separated spatially, but not temporally. For example, some employees have the option to work from home (telecommute), or may be at a client site within the same time zone. These teams, although working virtually, have no temporal distance between them. Team members are located within the same city/region and share the same time zone.
3. Regional Virtual Teams. Regional Virtual Teams comprise members with little geographical separation, and members are located in different parts of a Continent. Although they are geographically distributed, the temporal distance is relatively low, and members work within low time zone differences. For example, within the Continental USA and Canada employees coordinate work only between the 5 primary time zones (namely Hawaiian Standard Time, Pacific Standard Time, Mountain Standard Time, Central Standard Time, Eastern Standard Time, and Atlantic Standard Time). As such, the maximum time difference between the 5 primary time zones in this geographical region is 6 hours.
4. Global Virtual Teams. Global Virtual Teams on the other hand are at the other end of the spectrum, and comprise of individuals working across significantly different time zones. Such teams are characterized by high spatial as well as

temporal distance. For the purpose of this study, a time-zone difference of 4 hours is considered low (as in the case of regional virtual teams in (3) above); 5-7 hours is considered medium (as in the case between continental USA and Europe, or Hawaiian Standard time and Atlantic Standard Time for example); and more than 7 hours is considered significantly high (as in the case of USA and Asia and Australia; or between Europe and certain parts of Asia and Australia). This category has an overlap with Regional Virtual Teams, but is differentiated by the addition of employees having to coordinate across Continents and with time zones that have greater than 5 hours time difference.

5. Hybrid Teams. In reality, it has been seen that the existence of any of the types of virtual teams described above in its pure form is rare (Griffith and Neale, 2001; Fiol and O'Connor, 2005; Cousins, Robey and Zigurs, 2007; Staples and Webster, 2008). Generally, teams comprise of some individuals who may coordinate work locally, while others may do so regionally or globally, resulting in variations in the amount of temporal coordination handled by different team members. Another way that variation might occur is in the different degrees of virtuality faced by different team members. In other words, one virtual team member may work across a 10-hour time difference for part of the time, as well as engage in collocated work rest of the time; and another team member may spend most of their time coordinating across a 3-hour time difference and work within their collocated team for the rest of the time. At an extreme, a hybrid team may also have some members who work only within their collocated team.

This dissertation focuses on category (5) above, i.e. hybrid global teams. Studies of global workforces need to address the variation in the constitution and makeup of global teams, and since hybrid teams are the rule rather than the exception in the global work context (Griffith and Neale, 2001; Fiol and O'Connor, 2005), it is important to examine the experiences of employees that work within these teams. Klein and Barrett's (2001) study of globally dispersed teams elucidates the specific challenges faced by hybrid global teams and their members.

The Hybrid Global Team

More specifically, the sample of employees included in this dissertation coordinate their work globally, but functions as part of a collocated team. The global coordination done by these employees is necessitated by the fact that they have to work with counterparts from across the world (either a client, a supplier, another overseas employee, or a manager), with whom they have to coordinate their work on a day-to-day basis. But the primary workgroup that they belong to, operates from within the same location. In other words, for purposes of my study, the global team is a collocated team, with members who coordinate either part of whole of their work with overseas counterparts across different time zones.

Global Teams: Role of Time Zone Difference and Cultural Intelligence

As highlighted in the earlier section, the global work context is defined by physical and temporal distance between members. These characteristics make the global work context a unique work environment, and affect the implementation of workplace policies and practices.

Coordinating work with counterparts without any face-to-face interaction could have a differential impact on the effectiveness of human resource practices. In other words, the implementation of these practices in a global work environment would not have the same effect as in a collocated environment, because of the time difference between members, and other unique aspects of the global work context owing to physical separation. For example, geographical distribution brings with it culturally diverse individuals who work together for common, interdependent goals. This highlights the role of cultural intelligence in global team work.

In this dissertation, I focus on these two important aspects of global team work: time zone difference and cultural intelligence. Below, I discuss the potential impact of Time Zone Difference (TZD) and Cultural Intelligence (CQ) on global teams and employees that work as part of these teams. More specifically, I highlight the effects of TZD and CQ on (1) the performance of global teams, and (2) the stress and work-family outcomes for individuals working within these teams. I begin with a discussion of the effects of Time Zone Difference.

Time Zone Difference and Global Teams

While recognized as an important aspect of distributed work, the effects of temporal distance on employees and the ways in which it influences their work has not been explored. The effects of the time difference faced by members of global teams can have multiple effects both on global teams as well as the individuals working within these teams. In this dissertation, I explore the different aspects of temporal difference inherent in global work, and develop a conceptual framework to test its effects on global teams and their members.

The temporal distance between global team members and their counterparts is defined by the time zone difference between them. For purposes of this study, time zone difference is defined as a multi-dimensional construct to capture both the temporal as well as the physical distance aspects of global team work. It is equivalent to the total amount of time spent by a global team employee coordinating with different time zones during a normal work week. In other words, the conceptualization of in this dissertation time zone difference includes the amount of time difference between an employee and their global counterpart, as well as the proportion of the total working hours they spend working with that counterpart.

A distinction between the amount of time difference as well as the proportion of time spent coordinating with different time differences becomes salient in the case of the type of hybrid global teams that are the focus of this study. Members of hybrid global teams engage in collocated work for part of their normal working time, and coordinate work with counterparts in different time zones for rest of their working time (the standard being a 40-hour work-week). As such, both the extent of time difference that they coordinate with, as well as the amount of time they spend doing this global coordination work as opposed to collocated work, needs to be assessed. Both aspects will impact the way a member of a hybrid global team experiences their work, as well as implemented HR practices.

It is important to note here that in knowledge-based coordinated work, interdependency of tasks is high (Janz, Colquitt, and Noe, 1997). Employees seldom work in isolation, and the performance of one person affects the performance of another who is in the same group. This becomes especially true in the case of coordinated global work characterized by time zone differences, because the time lags associated with such work get exacerbated. With interdependent tasks, if one person in a workgroup has to wait for a counterpart located in a

different time zone, workflow gets severely affected. This will not only affect the performance of the person who is waiting, but slow down the whole group. Therefore, owing to inherent time zone differences between employees and other counterparts, the global work context is particularly sensitive to delays in workflow, and impacts team performance as a whole.

An additional challenge posed by time zone difference is the demand on working hours of global team members. Owing to coordination required in their daily work execution, global team members need to adjust their work hours and schedule to match that of their counterpart(s) located in different time zones. This coordination and adjustment of schedule could have important implications for the work-family lives of global team members, as they might need to work nights or weekends to get work done or coordinate work across a different time zone (e.g. take a phone call at odd hours, deliver an output in time, attend a conference call, etc.). Moreover, the time lags associated with global team work could add to the length of working hours of members, as well as require them to work inconsistent hours. All of which could have an adverse impact on their work-family life.

Further, the effects of HR practices on global teams could be significantly different owing to their unique working environment. For example, the effect of communication would differ owing to the different modes of communication required in virtual work (i.e. primarily technology aided communication), and the time zone differences involved. Research on virtual teams has highlighted the disadvantages of communicating virtually as opposed to face-to-face (Cascio, 2000; Johnson et al, 2001; Hossain and Wigand, 2004; Kankanhalli et al , 2006; Rice et al., 2007). This could have a differential impact on global team performance as opposed to effects for teams that are engaged in purely collocated work.

Similarly, training could have a different impact on performance outcomes in a global work environment. Virtual team members need special training in order to perform well (Ryssen and Godar, 2000). While traditional strategic HR theory suggests that training improves employee performance by enhancing individuals' skills and motivation, only specific types of training would have this positive effect in the global work context. General skills-related training would not be sufficient, and specific types of training would need to be developed for increasing global team performance. For example, in order to be effective and perform well, global team employees would need additional training in communication technology, time-management skills, cultural issues, conflict management, interpersonal skills development to deal with a culturally diverse environment etc. Also, the advantages of formal classroom training have to be foregone in the global work context. It would be an additional challenge to find a convenient time to deliver any online formal training, owing to the fact that employees coordinate work across different time zones and as such, face challenges meeting requirements during their normal work hours. Even within hybrid global teams that are collocated, finding a common schedule that works for every team member becomes a chanllenge because employees have to cooridnate with others in different time zones, and as such, may not always be available to meet for hours of training. Any formal or 'classroom training' would have to be largely delivered virtually.

Cultural Intelligence and Global Teams

Apart from the challenges of temporal distance, an additional defining characteristic of global work is the inherent cultural diversity among members that can act as a deterrent to the effectiveness of global teams. Chudoba et al. (2005) showed how cultural diversity negatively

affected performance in virtual teams. Research has also shown how cultural differences could impact team performance owing to problems of development of trust and shared meaning among members (Boutellier et al., 1998; Bell and Kozlowski, 2002; Griffith et al., 2003; Munkvold and Zigurs, 2007; Poehler and Schumacher, 2007; Badrinarayanan and Arnett, 2008). Virtual teams have been shown to be more prone to have lack of trust and understanding among members, and higher levels of conflict owing to cultural differences between members (Cascio, 2000; Kirkman et al., 2002; Rosen et al., 2007; Baskerville and Nandhakumar, 2007).

Although cultural diversity might exist even in collocated teams, the degree of cultural diversity in a global work environment is higher, and is a given characteristic. Also, unlike in purely collocated work, global team employees have to work with the additional disadvantage of lack of face-to-face interaction with counterparts, primarily using virtual modes of communication to get work done. As such, the individual cultural knowledge of global team employees, and their ability to interact well with people from other cultures will help them perform better and remain effective in the global work environment.

The concept of Cultural Intelligence, or CQ, has been developed by Ang and colleagues (2004; 2005; 2008) as an individual trait, along the lines of Emotional Intelligence (EQ). However, theoretically, CQ could be derived at different levels of conceptualization - as a group-level trait much like ‘group culture’ or ‘group climate - or even at the firm-level (Ang and Inkpen, 2008; Shokef and Erez, 2008) . Consequently, the cultural intelligence, or CQ level of a team or workgroup could have similar effects on the performance of the group, as does individual cultural intelligence. In other words, the advantages of individual cultural intelligence could be extended to the team-level.

In the case of global teams, the cultural intelligence level of a particular team will determine its overall performance – teams with higher CQ will perform better than those with low CQ levels. In their investigation of multicultural teams with MBA students, Shokef and Erez (2006) found a positive correlation of mean CQ levels on team performance. Extending their own work, Shokef and Erez (2008) proposed that high team-level CQ will increase team performance, as team members develop trust and mututal understanding over time. Also, multicultural teams have been shown to learn from the experience of working within such a team, and the opportunity could help them perform better. When global team members are culturally aware and sensitive, they will perform better in the global environment. If group members are culturally sensitive and awareness about different cultures exists among members, other group members can learn from their colleagues, ask questions about particular cultures and raise awareness, as well as set an example of cultural intelligence to peers. All the above factors will contribute to enhanced perormance for the team.

Once again, the arguments related to human resource practices and global team performance also apply to the cultural intelligence of global team employees. Global teams often have several members from another country/culture and this can significantly affect the implementation of policies and programs as well as team effectiveness (see Kirkman and Shapiro, 1997; Gibson, 1999; Kirkman, Gibson and Shapiro, 2001). Cultural diversity has been shown to affect people working with each other, owing to the challenges of different preferred modes of communication and interpretability of information (Grosse, 2002; Behfar, Kern and Brett, 2006). Having to deal with people from different cultures sometimes causes stress owing simply to differences in working styles. This problem is heightened with the use of virtual modes of communication and lack of face-to-face contact, as there is a risk of information

getting “lost in translation”. Differences in understanding and interpretation of work-related problems could cause conflict and stress among employees as they try to accomplish their tasks. It also adds to the time and effort that global employees have to put in to complete their tasks.

In the specific case of communication or training, both of these HR practices could be affected by the cultural intelligence of global team members. For example, higher levels of cultural intelligence could ease communication with culturally diverse counterparts. More often than not, cross-cultural communication has been associated with lower performance in teams (Marquardt and Horvarth, 2001; Schmidt, 2007). High levels of cultural awareness and sentivitity could help mitigate some of the negative effects on global team performance. On the other hand, specific training, directed towards the skills necessary to operate in a global work environment will aid the performance of global teams. Higher levels of cultural intelligence will further enhance the ability of global teams to perform well, as they will be better equipped with the skills necessary to operate in a cross-cultural environment.

To review, both Time Zone Difference and Cultural Intelligence (CQ) will alter the effects of HR practices in the global work context, as opposed to the traditional collocated work context in which existing theories of strategic human resource management have been developed and tested. Further, in the global work context, where employees coordinate work across different time zones, team-level performance becomes important as time-related setbacks faced by one member could affect the entire team, delaying group processes and outputs. Similarly, team-level cultural intelligence can have synergistic positive effects on the performance of groups with high cultural intelligence, and vice versa.

Human Resource Practices and Global Teams: Limited Research

While global teams are growing in number and importance (Kanawattanachai and Yoo, 2002), human resource policies and practices have not been responsive enough to the changing dynamics of the workplace. The human resource management literature remains limited to traditional organizational settings, wherein work is conducted in different offices within a country, and is yet to fully explore the global work context. When examined, research in this area has been restricted to strategic HR for multinational corporations, or the unique experiences and implementation of, HR practices for expatriate employees (e.g. Dowling, Festing and Engle, 2008; Schuler and Jackson, 2005; Vance and Paik, 2010).

Little research has been done about the management of, and the implementation of human resource practices for global teams (Axtell, Fleck, and Turner, 2005; Kirkman, Rosen, Tesluk, and Gibson, 2004). The few initial studies that do exist, provide only theoretical or conceptual arguments for the practice and implementation of human resource practices in the context of virtual teams in general, and the case of global teams, or global team employees has been relatively ignored (see Rahschulte and Steele, 2011; Hertel et al, 2005; Hinds and Kiesler, 2002; Gibson and Cohen, 2003; Axtell et al., 2005; Powell, Piccoli, and Ives, 2004 for reviews). Further, within the field of virtual teams, researchers lament the fact that empirical studies including global teams have been limited, and that many aspects of virtual team processes and outcomes remain unexamined (Ebrahim, Ahmed and Taha, 2009; Martins, Gilson and Maynard, 2004).

One of the key elements of these processes is the design and implementation of effective human resource practices for global teams and their members. Development of effective HR

practices to manage global teams would enable modern-day organizations to utilize their human resources effectively not only to improve job satisfaction and retention among their employees, but also strategically align human resources with organizational goals to build success in a global business environment. As such, current HR practices need to be planned and undertaken with sufficient awareness of, and regard for, the unique differences and needs that working in a virtual, global context demands.

First, the global work context more often than not, necessitates the use of technology to enable communication among employees. While the use of technology-mediated communication is not a unique condition for virtual work (for example, some collocated teams may also communicate using virtual technology), it remains the most important way that members of virtual teams can communicate and coordinate work (Griffith and Neale, 2001; Fiol and O'Connor, 2005). Second, and no less important, is the cultural diversity inherent in global team work. Once again, while collocated teams might or might not be diverse and cross-cultural, global teams are necessarily so, as they include participants from different countries and cultures. In order to be effective, human resource practices must take into account these unique aspects of global team work.

Apart from other differences between virtual and conventional work (e.g. technology-mediated communication and long distance coordination), an additional issue is that the human resource management practices that work effectively for employees in collocated settings within the organization, do not need to account for time zone differences between employees and their global counterparts (Mohrman, 1999; Kirkman, Gibson, Shapiro, 2001). As highlighted earlier, global team employees work across significant time differentials, and the HR practices implemented for employees engaged in purely collocated work may produce different outcomes

(wherein the additional aspect of time zone differentials is not taken into account). The challenges faced by global teams and their members are heightened by the fact that they have to adjust to the different working schedules of their counterparts located across the globe. Neither the study of human resource management policies and practices, nor the virtual team literature has addressed these specific challenges.

Human Resource Practices and Individual Outcomes: Limited Research

Another issue with existing research on human resource practices has been its lack of attention to individual employee outcomes. Research that links human resource practices to employee outcomes has been limited. One of the reasons cited for this has been that it is difficult to examine cross-level effects between practices that are implemented at the organizational-level to individual employees. Methodological as well as measurement issues related to analyzing effects of organizational level practices on individual-level outcomes pose a problem for the conduct of empirical studies on this topic (Guest, 1997; Gerhart, Wright, McMahan and Snell, 2000; Wright, Gardner, Moynihan, Park, Gerhart and Delery, 2001). As a result, research in the area of human resource management has largely focused on organizational or unit-level outcomes. Batt and colleagues (Batt, 2002; Batt and Valcour, 2003) have shown how HR practices affected individual outcomes such as turnover and quit rates, and a few researchers have examined the effects of "high performance" or "high commitment" HR practices on other individual outcomes such as work-family balance (Batt and Valcour, 2003; Berg et al, 2003). However, in general, research on the effects of HR practices on individual outcomes has been severely limited.

Also in general, apart from being examined for their effects on organizational productivity, strategic HR practices or "best practices" have been mostly examined in traditional work arrangements including both blue and white-collar employees, and little has been done to assess the impact of these HR practices on those employees who have to work virtually. In the next section, I review the human resource management literature as applied to virtual teamwork, and identify gaps therein. I first discuss the impact of human resource practices on the performance of global teams (a group-level outcome). Then, I move on to discuss implications of human practices for members of global teams, focusing on their work-family conflict and stress (individual-level outcomes).

Human Resource Practices and Team Performance: The Case of Global Teams

The strategic human resource management literature has established a positive link between the use of certain human resource practices and organizational performance (MacDuffie, 1995; Huselid, 1995; Ichniowski, Shaw, and Prennushi, 1997; Appelbaum et al, 2000; Cappelli and Neumark, 2001). The vast majority of empirical research on this topic is also focused on organizational performance, and most studies show that HR practices either increase organizational or department-level performance (MacDuffie, 1995; Huselid, 1995; Berg, Appelbaum, Bailey and Kalleberg, 1996; Ichniowski, Shaw and Prennushi, 1997; Appelbaum et al, 2000). Extensive research over the last decade or more in this area has shown that a work environment which focuses on improved employee skills and motivation, and provides employees' with the opportunity to participate in decision-making results in increased employee

productivity. The enhanced skill and motivation helps employees perform better, as well as increase overall organizational performance (Huselid, 1995).

In the case of global teams, group-level performance is affected by several unique factors. Global teams comprise of white-collar knowledge-workers (Bal and Teo, 2001; Kirkman et al, 2004), who are guided by common goals, and engage in completing interdependent tasks (Bal and Teo, 2001; Gassmann and Von Zedtwitz, 2003; Shin, 2005; Hertel et al., 2005; Rezgui, 2007). Coordinated teamwork requires that employees communicate effectively with each other, and meet the deadline-driven demands of team-based work. This can add to the work intensity of team-members because they have to respond to requests from the team, communicate effectively with all members of the team, and do so in a timely fashion. The interdependent nature of tasks could affect the team's performance since it depends on several factors such as timeliness of members' outputs, effective coordination among team members, as well as the quality of output. All members may not be equally effective in their communication or coordination skills, and the ability to meet deadlines can severely affect the group's performance owing to coordination issues. Further, participative decision-making could contribute to group conflict and it may take longer for teams to arrive at a consensus. Next, getting additional skills and formal training, as the high-performance paradigm advocates, also requires more effort on part of the employee owing to the time spent in these activities over and above normal job requirements, and can come in the way of group coordination. Since coordinated teamwork involves interdependent tasks, team-work suffers whenever employees have to take time away from their daily work activities to get trained. All of the above factors put team-performance at risk, with the implementation of human resource practices such as

participative decision making or formal on-the-job training, especially in a team-based knowledge work setting.

Further, white-collar employees, such as knowledge workers, face a work environment that comprises deadline-driven projects and the time pressures to complete tasks could further contribute to the intensification of work. The frequency of communication required in team work as well as participative decision- making can also be a source of work intensity. This can affect the group-level performance of the team.

Human Resource Practices and Individual Work-Family Conflict: The Case of Global Teams

One important area of research in human resource practices has been the study of their effects on the work and family lives of individuals. With the number of dual-earner families on the rise, longer working hours required of working couples and the simultaneous need to care for children, the elderly and the sick (Kossek, Colquitt, and Noe, 2001; Kossek and Nichols, 1992), addressing the family pressures of individual employees have become a serious workplace concern. As such, research attention has been drawn to the use of HR practices as a means to enhance the work-family needs of individual employees (Perry-Smith and Blum, 2000; White et al, 2003; Berg et al, 2003; Batt and Valcour, 2003). Also, a relatively large body of research has examined outcomes associated with flexible work arrangements, and it has documented significant positive outcomes for employees (Kossek and Ozeki 1998; Adams and Jex, 1999; Baltes et al.1999; Golden, 2001; Goldenhar, 2001).

For the specific case of global team professionals, the nature of work and time differentials may have a significant impact on the work-family lives of members. Research has

shown that job demands such as long hours, overtime and coworker conflict reduce work-family balance (Greenhaus and Buetell, 1985; Frone, Russell, and Cooper, 1992). Group-working practices and modern-day team structures also have a negative effect on the work-family balance of employees (see Batt and Valcour, 2003 for a review). For the specific case of globally working professionals, the unique challenges of working as part of the global work context and the inherent time differentials may have a significant impact on the work-family lives of members. In the global virtual work context, communication takes place primarily through the use of technology and distributed work systems. Additionally, virtual work requires global employees to develop specific interpersonal skills to coordinate with counterparts, with the added disadvantage of a lack of face-to-face interaction. In addition to the work-related aspects, global employees have to also balance their own personal life situations. Work-life balance in the context of global employees takes on the new dimension of necessitating working at odd hours (sometimes nights and weekends) in order to adjust to differences in time zones with globally separated counterparts.

Conflict in work and time demands facing global team employees, owing to both spatial and temporal distance among members, makes the concept of work-family conflict particularly salient for them. "Work-family conflict" is one of the most important variables of interest in the work-family literature. Established research on work-family conflict has discussed the different sources of role conflict when an individual is required to perform both work and family roles (Katz and Kahn, 1978; Greenhaus and Beutell, 1985). Derived from a scarcity hypothesis that assumes a fixed amount of time and human energy, role theory suggests that individuals who participate in multiple roles (such as in two different types of jobs, or in two different types of roles, e.g. in the work and family domains) inevitably experience conflict. Greenhaus and

Beutell (1985) identified three sources of role conflict in their seminal review of work-family conflict studies: time-based conflict (Kahn et al., 1964; Pleck et al., 1980); strain-based conflict (Pleck et al., 1980); and behavior-based conflict (Schein, 1973). According to Greenhaus and Beutell (1985), competing expectations from performing work-roles and family-roles may cause individuals to experience at least one or more of the three types of conflict identified by them. From a role theory perspective, all three sources of conflict identified by Greenhaus and Beutell (1985) can significantly affect individuals working in a global context. First, time-based conflict arise may arise from the number of hours worked, overtime and shift work, or the lack of consistency of work schedules (Keith and Schafer, 1980; Pleck et al., 1980). Given the nature of their work, these employees have to adjust their work schedules; work nonstandard hours; work with inconsistent schedules related to requirements of their counterparts in different locations; and work nights and weekends to coordinate with counterparts in different time zones - all of which contribute to time-based conflict. Global team employees' situation in the family role could also be a source of time-based conflict. Marital status, number and ages of kids, spousal employment patterns could impact the work-family conflict of global employees (Pleck et al., 1980; Keith and Schafer, 1980; Greenhaus and Kopelman, 1981; Beutell and Greenhaus, 1982).

Secondly, several factors contribute to the strain-based conflict experienced by global employees. Because global employees have to work nights and odd hours, they must undergo strain and psychological disturbances related to sleeping hours, longer, extended hours at work, and also long hours at the computer or phone. Continually working with technology can affect both the physical and mental well being of employees (Kraut et al, 1998). Working odd and extended hours creates strain that may hamper the global employees' ability to perform their family roles.

Third, global employees potentially face behavior-based conflict owing to the nature of their work. Studies have suggested that behaviors that are expected to be exhibited at the workplace may be incompatible with those expected at home, and thus become a source of behavior-based conflict for employees (Bartolome, 1972; Burke, Weir, and DuWors, 1979; Greiff and Muntor 1980). Apart from having to behave differently at work and within family norms, there is additional pressure on global employees because they have to work harder to get along with their global and most times, multicultural counterparts. Virtual work does not allow for the advantages of face-to-face communication that might enable interpersonal relationships in a work environment. Working virtually constrains the ability of global employees to resolve potential conflicts at work on a first hand basis, as they have to rely on long distance and technology-mediated communication to discuss issues. People who engage in virtual work need to possess certain capabilities in order for them to work effectively with their counterparts. First, they need sufficient task-related knowledge and skills. They also need to have the skills to work collaboratively in the virtual space. Researchers believe that they need lateral skills to work with people quite different from themselves. Global team employees need to have a tolerance for ambiguity to deal with the unstructured communication that characterizes much of virtual work. For example, both the personality dimensions and skills of virtual team members have been identified as important for the effectiveness of a virtual team (Gibson and Cohen, 2003).

Additionally, the lack of face-to-face interaction has been cited as a severe limitation for their work productivity (Munck, 2001; Hooks and Higgs, 2002) that needs to be made up by global team employees (see Van Dyne, Kossek and Lobel, 2007 for a discussion on group-level face-time use). The use of technology to get flexibility at the workplace comes with certain disadvantages, and global team employees need to engage in proactive behaviors to manage the

lack of face-to-face interaction. For example, face-to-face interactions have the obvious advantage of facial cues, body language and the opportunity to sort out issues immediately, which is absent in a virtual interaction. Gibson and Cohen (2003) discuss the advantages of face-to-face communication as opposed to interacting virtually with the aid of technology. Arriving at consensus has been shown to be more difficult in virtual team settings (Hollingshead and McGrath, 1995). Global team employees may have to talk more, or talk loudly, and need to be in constant negotiation mode, so that they can convince other members over email or phone about their task-related goals.

Another factor affecting the behavior-based work-family conflict is the cultural differences that are incumbent upon all global team employees to manage. While traditional collocated teams may also consist of members from diverse cultural backgrounds, the global work context often has several members from another country/culture and this has significant implications for global employees (see Kirkman and Shapiro, 1997; Gibson, 1999; Kirkman, Gibson and Shapiro, 2001 for examples). Working with people from different cultures might cause additional pressures for global employees, as they have to change their behavior frequently in order to be able to communicate effectively with counterparts from different countries and cultures; learn (and unlearn) their language, manners and cultural norms. Moving back and forth between different cultural expectations creates both behavior-based conflict, as well as strain-based conflict.

As such, global team employees are potentially faced with all the three sources of work-family conflict espoused by Greenhaus and Beutell (1985). Extra and inconsistent work hours, conflicting roles as well as behavior expectations and time pressures all add to the role conflict experienced by global employees and can impact their work-family conflict.

Human Resource Practices and Individual Stress: The Case of Global Team Employees

While the "best practices" identified by the human resource management literature have been shown to affect organizational performance positively, one of the later criticisms of this line of research has been that these set of HR practices may also have negative effects on individual employees, especially in the knowledge-work setting characterized by teamwork. Teamwork means that employees have to be available whenever the team decides to meet, even if the timing may not be suitable to the needs of individual employees. This can have negative effects on the well being of employees (White et al, 2003) because it creates a temporal "bind" (Hochschild, 1997) as employees adjust their time schedules to meet demands from their teams. Participative decision-making also comes with its associated negative effects for employees. Just like autonomy means greater responsibility and intensive work, participation also implies more responsibility and an intensification of work, especially among white-collar employees. Employees achieve the greater productivity by going the extra mile, and contributing their "discretionary effort" (Appelbaum et al, 2000), which may cause additional stress for them.

Ramsay et al. (2000) have shown that the widely held assumption that the positive performance outcomes from high-performance HR practices flow via positive employee outcomes like enhanced employee motivation is questionable. These and other researchers have pointed out that enhancing employee motivation could contradictorily cause higher job stress for employees (Ramsay et al., 2000; White et al., 2003). "High performance" HR practices such as communication, training, and participation in self-managed teams – practices that have been shown to enhance employee discretion and motivation - can contribute to the intensification of work because they necessitate employees to take their own decisions and contribute more to the

workplace. Moreover, new ways of working with the implementation of 'high performance HR practices', alongside the implementation of new forms of technology have changed the job demands of workers. Teamwork requires workers to make more decisions and to develop more interpersonal skills; and continuous improvement techniques, such as problem-solving groups, demand greater analytical skills among workers.

While some changes in human resource practices at the workplace have improved working conditions and brought about more job autonomy for workers as well as opportunities to participate in decisions, than previous work systems, there is also evidence that these changes have led to higher levels of work pressure and work strain (Gallie, 2002; Cappelli et al., 1997). In addition, some studies find that the pace of technological change promotes work intensification and the psychological strain of workers (Green and McIntosh. 2001; Green 2001; Green, 2002). The negative effects of work intensification on individual employees have been well documented (Green 2002; Fagan and Burchell, 2002). The intensification of work, especially the time pressures associated with it, directly impacts the stress levels of individual employees. Higher pace of work, which includes both having to work at high speeds as well as meeting tight deadlines, can also create job stress (Burke, 1989; Green and McIntosh. 2001; Green 2001; Green, 2002).

In sum, researchers have argued that the positive aspects of 'high performance HR practices', while mostly beneficial for the organization, can negatively impact individual employees by increasing their stress (Ramsay, Scholarios and Harley, 2000; White et al, 2003). For example, although autonomy is supposed to enable workers accomplish their tasks in ways more suitable to them, greater autonomy among white-collar employees also means that they work more hours and experience an intensification of work (Greenan and Mairesse, 2002).

These arguments point to the reasons high performance HR practices, or "best practices" may result in more intensive work and time pressures for individuals. The impact of HR practices on individual employees is two-fold and sometimes contradictory: while they enhance organizational performance by increasing employee motivation and skills, such that employees become more productive; they can have a potential negative impact on individual employees, as well as the teams that they work in. This problem is especially applicable to the case of global teams, which are characterized by unique work environment (such as the lack of face-to-face communication, cultural diversity, time zone difference, interdependency of tasks and deadline-driven work).

Extending Theories of Human Resource Management to Global Teams

Relevant HR Practices for Global Teams

Drawing from multiple perspectives (namely the human resource management and virtual team literatures), I propose to include the following human resource practices in my study of global team employees. (1) Communication, (2) Training (3) Flexible Working Practices, and (4) Autonomy or Control over Work Schedule. My choice was based on relevance of a practice to the knowledge-based work carried out by global team employees, as well as relevance of a practice to the virtual nature of work carried out by such employees.

The two aspects of global virtual work that is the focus of this dissertation guide the choice of relevant HR practices for global teams: (1) time zone difference; and (2) cultural intelligence. Differences in time zones that global team employees have to work with could

significantly affect the implementation of different HR policies and practices for this group of employees.

First, a lack of opportunity for face-to-face interaction necessitates the use of technology-mediated communication among global teams. Communication among global team members and their overseas counterparts needs to be accomplished virtually; therefore the implementation of communication practices for global teams is not the same as practices for traditional collocated teams. Second, formal and informal training provided to employees needs to be tailored for global teams, because of the unique challenges of the global work environment. For example, specific training to deal with different cultures, and for better time management help global team employees remain effective on their jobs. These types of training are specifically helpful for employees working in the global context, as opposed to their collocated counterparts.

Also, global team employees need to be trained to manage technology and use technology to communicate effectively on a day-to-day basis. As such, technology training needs to be included as part of skills training for global team employees. Finally, time zone difference has important effects on the schedule of global team employees. Having to adjust schedules to different time zones may require global team members to work nights or weekends, and after normal working hours. They may also need to work longer hours as well as work inconsistent schedules due to the different time zones in which their work counterparts may be located. Most importantly, since they have to coordinate work with people situated in different time zones, global team employees have lesser control over their working hours and schedule than collocated team employees. These issues related to time zone difference has important implications for the implementation of flexible work practices as well as work schedule for global team employees. The flexible workplace practices that are implemented for the rest of the

organization may not be necessarily effective for global team employees, owing to the unique challenges of time zone difference.

Additionally, cultural intelligence has significant implications for global teams, more than traditional collocated teams. The unique work context requires global team employees to work with people from different countries and cultures. While even traditional teams could be culturally diverse, the global work context is necessarily so and can be expected to have a great extent of cultural diversity among working counterparts. Hence cultural sensitivity and intelligence have a significant role to play for the effectiveness of global teams. Workplace policies and practices must be implemented with this aspect in mind. For example, cultural training could help global team employees perform better at their jobs, and is more important for global team emplioyees rather than their collocated counterparts. Also, cultural diversity could pose additional challenges for communication across different time zones. Communicating with people from different cultures could be especially challenging when it is coupled with lack of face-to-face interaction. Therefore cultural intellligence of employees has important implications for global teams.

I choose the HR practices that have specific implications for the global work context, based on the unique effects of time zone difference and cultural intelligence discussed above. Additionally, I examine the select HR practices that have been highlighted both in the virtual team and human resource management literatures. The human resource management literature highlights the success of best HR practices developed along the principles of autonomy (or opportunity to participate); communication; skills and training (Appelbaum et al, 2000; Huselid, 1995; Batt, 2002). More importantly, autonomy, training, and opportunity to participate in decision-making have been shown to affect the work-family lives of individual employees (see

Batt and Valcour, 2003). Additionally, the virtual team literature also points to workplace practices such as communication and training that are important for the conduct of group-level coordinated virtual work. I also examine the effect of flexible work practices and control over work schedule, since these practices are directly related to the role of time zone difference in a global work context.

As already mentioned, a review of the virtual teams literature pointed to scholars' lament that the practice of human resource management for virtual teams, and the employees that work as part of such teams, has been not adequately researched (Axtell, Fleck, and Turner, 2005; Kirkman, Rosen, Tesluk, and Gibson, 2004). However, researchers have identified the need for the same, and some conceptual work on HR practices in virtual teams has been developed. For example, Hertel, Geister, and Konradt (2005) outline a five-phased approach to human resource management in virtual teams, and identify specific aspects of human resource practices that need to be considered in each phase. The framework not only provides a guideline to the specific human resource practices that are important for virtual team work, but also highlight the reasons each practice would support coordinated work in a virtual environment.

I use Hertel et al's (2005) framework to guide my selection of human resource practices for my study. Since much of virtual work involves multiple actors, and is done in a team setting, Hertel's framework is based on the different phases identified in a team lifecycle. It is important to note that since all these HR practices could be simultaneously present at one point in time, unlike Hertel et al (2005), I examine HR practices at one point in time, and not through the different phases of the team process. Below I present a list of the relevant human resource management concept.

1. Communication
2. Training
3. Flexible Working Practices
4. Work Schedule

In the following chapter, I draw from the human resource management and virtual team literatures reviewed in the previous paragraphs, and analyze their implications for global teams and employees. More specifically, I examine the effects of HR practices (such as communication, training, flexible working practices, and work schedule) on the performance, work-family conflict, and stress outcomes of global teams. I also discuss the implications of time zone difference and cultural intelligence for global team performance and employee stress. Finally, based on these theoretical frameworks, I derive the specific hypotheses that will be tested in this study.

CHAPTER 3: PROPOSED MODEL AND HYPOTHESES

The previously described concepts build the foundation for developing a conceptual framework for understanding the global team work context. In this section, I develop a model to study relationships between HR practices, individual and team-level outcomes for global teams; and specifically examine the effects of time zone difference and cultural intelligence in this work context. I then develop relevant hypotheses to test proposed empirical relationships among the study constructs. An empirical model of the effects of HR practices on global team and individual employee outcomes are depicted in Figure 2.

Effects of HR Practices on Global Team and Individual Employee Outcomes

My selection of HR practices for purposes of this study is based on those that have been commonly used in the human resource management and virtual work literatures. I select those HR practices I consider specifically important to understand the outcomes related to work-family conflict and stress experienced by global employees, as well as their team-level performance: (1) Training; (2) Communication; (3) Flexible Work Practices; and (4) Work Schedule.

I propose that the effects of HR practices (such as Training, Communication, Flexible Work Practices, and Work Schedule) on the Performance of global teams, and the Stress, and Work-Family Conflict of individual employees working as part of these teams, will be moderated by (1) the Time Zone Difference between them; and (2) their level of Cultural Intelligence. Please refer to Figure 2 for a graphical representation of the overall conceptual model to be tested in this study.

Below, I first discuss the direct effects of HR practices on global team performance, and global employee stress. Then, I review the concepts of time zone difference (TZD) and cultural intelligence (CQ) and develop theses to illustrate how both TZD and CQ moderate the hypothesized relationships between HR practices and global team performance and individual stress outcomes. In so doing, I also analyze the role of work-family conflict as a mediator between HR practices and individual global employee stress. The first HR practice I discuss in the global work context is: Communication.

Communication

Technology-mediated Communication and Global Team Performance

Perhaps the most widely studied area in the context of distributed or virtual work relates to the use of technology for communication that is necessitated by and helps in the accomplishment of work from different locations (Jarvenpaa and Ives 1994). Even though technology-mediated communication (e.g. the use of emails, telephone and video-conferencing) is unavoidable and remains the most common method of communication in a globally dispersed virtual work setting, research in this area documents the many disadvantages of such modes of communication (see Gibson and Cohen, 2003; Kirkman, Rosen, Gibson, Tesluk and McPherson, 2002; Rico and Cohen, 2005 for some examples).

For example, Baltes, Dickson, Sherman, Bauer and LaGanke (2002) find that the use of computer-mediated technology is anything but ideal for group decision-making. In their study, computer-mediated decision-making was found to be less effective than face-to-face communication as it takes more time, and allows for less information exchange. In addition, a

separate body of research has also discussed the advantages of face-to-face over technology-mediated communication in virtually dispersed work contexts (e.g. Gibson and Cohen, 2003; Andres, 2002; McDonough, Kahn and Barczak, 2001; Straus and McGrath, 1994).

Since globally dispersed work necessitates the use of technology-mediated communication, the resultant ambiguity in communication, and limited ability of global teams to exchange information with their counterparts and supervisors could interfere in their daily task execution and affect their performance. The problems associated with technology-mediated communication include time lags, communication lapses, and lack of face-to-face discussions, all of which can create confusion and ambiguity in what is expected of an individual working within a globally dispersed environment. An additional element of the globally dispersed work context is the time zone difference between employees and their work counterparts.

Technology-mediated communication across different time zones can have significant negative effects on employee performance since it has higher potential for ambiguities, hampering decision-making and problem-solving; can be the cause for significant delays in communication; and could take more time for interpretation, thereby making it increasingly difficult for global teams to accomplish their work in a timely and efficient manner. More often than not, members communicate virtually even within hybrid global teams, where the teams are collocated but coordinate with overseas counterparts (Klein and Barrett, 2001). Owing to the nature of their work, which necessitates separate online coordination with global counterparts, hybrid global team members are prone to communicate with a mix of face-to-face and virtual modes within their own teams as well.

In this study I include two aspects of technology-mediated communication in globally dispersed work environments: Communication richness and Communication Overload. I use the

term “communication richness” to refer to the use of “richer” media along the lines described by Daft and Lengel (1984). According to Daft and Lengel’s widely applied media-richness theory, the media classifications in order of decreasing richness are (1) face-to-face; (2) telephone; (3) personal documents such as letters or memos; (4) impersonal documents; (5) numeric documents (1986: 560). One of the ways in which the potential negative effects of technology-mediated communication on virtual work can be reduced in is by having “media richness”. Media richness refers to the “ability of a medium to change understanding of information within an interval of time” (Daft and Lengel, 1984: 560).

According to the media richness theory (Daft and Lengel, 1984), using richer media and a mix of face-to-face and technology to communicate and coordinate work can mitigate the disadvantages of having to work virtually from geographically dispersed workspaces, and enhance global team performance (Maznevski and Chudoba, 2000). The negative effects of technology-mediated communication on virtual work can be offset by the richness of media used (Carlson and Zmud, 1999; Hinds and Kiesler, 1995; Jarvenpaa, Rao and Huber, 1988; May and Carter, 2001; Burgoon, Bonito, Ramirez, Dunbar, Kam and Fischer, 2002). With newer technologies available for current day global work, and the use of both visual as well as electronic media to communicate, the disadvantages of virtual communication can be significantly reduced. In fact, the use of modern technology enables groups of individuals to be able to work effectively from virtual locations and can aid in their task performance as seen in the case of employees working as part of virtual teams, as well as individual teleworkers (Baker, 2002; Burgoon et al., 2002; Kossek, Lautsch, and Eaton, 2006). Additionally, virtual work has been shown to be executed optimally with the use of a mix of face-to-face and technology-mediated communication (Kirkman, Rosen, Tesluk and Gibson, 2004) and the use of visual

technology such as video conferencing has been shown to be a key determinant for the effectiveness of distributed work processes (Lurey and Raisinghani, 2001; Baker, 2002). When richer media is used, coordination among group members can be enhanced, thereby resulting in better overall team performance. Jarvenpaa and Leidner (1999) found that regular and timely communication was key to building trust and commitment in virtual teams. Conversely, a lack of richness in communication media will reduce the performance levels of global teams.

On the other hand, the volume and frequency of information exchanged (e.g. repeated email communication) could cause work interruptions and take time away from global team employees' primary work tasks. I use the term "communication overload" to describe excessive amounts and frequency of virtual communication. The use of technology-mediated communication works well only in moderation and research has shown that virtual employees perform best when a combination of face-to-face and technology-mediated communication is used to coordinate among team members. For example, while technology-mediated communication is a necessary aid for virtual work, the excessive use of email to communicate has been shown to have a negative impact on the effectiveness of virtual team employees (Levine, Lynch, Miyake, and Lucia, 1989; Czerwinski, Horvitz, and Wilhite, 2004). Even though it allows for multi-tasking, constant checking and responding to emails takes away focus of the employee from their current task at hand, and interferes with their work performance (Hollingshead, 1996; Graetz, Boyle, Kimble, Thompson and Garloch, 1998; Cappel and Windsor, 2000). Email is an impersonal document and many times has numeric documents such as charts and reports sent as attachments, which require some length of time to decipher and use. As such, email communication ranks low on the richness scale identified by Daft and Lengel (1984), and when used incessantly, would serve to divert global team employees from their work

and affect their performance negatively. Early research by Kraut and Attewel (1997) cited by Kiesler and colleagues (1997; 2002) has shown that the use of technology-mediated communication, especially email, can cause information overload as well as interruptions in communication. The added volume of emails, as sometimes employees are copied on everything that is remotely related to their work, adds to their workload as well as causes disruptions in the handling of their core job functions (Gillam and Oppenheim, 2006). Excessive use of email while allowing employees to handle multiple tasks at the same time, also increases the pace of work as well as takes away time from the primary work tasks of the employee (Czerwinski, Horvitz, and Wilhite, 2004). Examples of excessive use of email include using email to communicate more frequently than necessary, or for a major proportion of the workday even when not necessary, or when work could be completed more quickly over the phone.

I propose that the required use of frequent email and other forms of technology-mediated communication will not only have a negative impact on the performance of global employees, but this effect will be compounded in global teams, since these teams consist of numerous employees affected by communication overload. Coordination among team members will be affected by the time pressures faced by coworkers owing to time zone differences, and the completion of shared goals could be delayed. In addition, as explained in the previous pages, media richness also has a potential effect on global team performance. Specifically, based on media richness theory outlined earlier, the lack of media richness is associated with lower performance of employees, and vice versa. For example, the use of email or written communication will result in lower employee performance than face-to-face communication, owing to the potentially lower level of shared understanding and coordination possible with the use of less rich media to conduct work.

Shared understanding and mutual trust has been shown to be a key determinant of virtual team performance (Jarvenpaa et al, 1998; Kanawattanachai and Yoo, 2002; Malhotra and Majchrzak, 2004; Peters and Karren, 2009; Sarker, Ahuja, Sarker, and Kirkeby, 2011). Shared understanding of the tasks at hand and team goals, help those virtual teams to perform better than teams that do not have this advantage. Moreover, Mitchell and Zigurs' (2009) review identified several themes of trust in virtual teams. Among them, communication was found to be one of the most important antecedents of trust in virtual teams – both the type and frequency of communication determined levels of trust in these teams. Developing a shared meaning of team goals, and improved trust between members enables virtual team members to achieve those goals more efficiently.

More recently, researchers have identified the development of transactive memory systems within virtual teams, as an important determinant of virtual team performance (Soo Young, Heeseok, and Youngjin, 2010; Lewis and Herndon, 2011; Maynard, Mathieu, Rapp, and Gilson, L. L.; 2012). Transactive memory is the shared knowledge of "who knows what" in a group or team environment. Wegner (1986) introduced the concept of transactive memory systems in groups and defined it as a combination of the knowledge possessed by each group member and a group level awareness of "who knows what". He argued that this system provides group members with access to a level of knowledge that no one member could remember. Moreland and colleagues (Moreland and Argote, 1995; Moreland, Argote, and Krishnan, 1998; Liang,; Moreland and Myaskovsky, 2000) have identified the development of transactive memory systems as a clear advantage for teams. This system combines the knowledge possessed by individual team members with a shared awareness of 'who knows what'. So when team members need information, but cannot remember it themselves or are uncertain about the

accuracy of their memories, they can turn to one another for help. A transactive memory system thus provides access to more and better information than any single team member could possess alone. When individuals work together as part of a team, for the achievement of specific, interdependent tasks, transactive memory systems develop through the communication (Hollingshead, 1998) among team members. As team members become aware of each other's expertise, they turn to each other for help, in order to achieve team goals efficiently. Therefore, participation in teams designed to achieve specific tasks, leads to the development of transactive memory systems, as members are able to relate to each other and work closely towards the achievement of interdependent goals. A transactive memory system is useful because it can serve as an external storage device (like a library) for everyone linked by the team.

Both communication overload and a lack of communication richness could limit the development of a transactive memory system among virtual team members. When team members have to respond to frequent emails, or use virtual modes of communication excessively, their ability to keep track of 'who knows what' is reduced, and they are not able to take advantage of a transactive memory system that has been shown to aid virtual team performance. Use of less rich communication media could also contribute to this disadvantage, owing to its limited ability to enable flow of information across members. For example, telephone or email (a less rich medium of communication) is more prone to ambiguous as well as delays in communication flow, compared to face-to-face communication. Consequently, teams with high levels of communication overload, as well as low levels of communication richness are less able to achieve their team goals effectively.

The quality, not quantity, of communication and information flow, is important for the development of trust and shared understanding, as well as transactive memory among virtual

team members. Both an overload of communication, as well as a lack of communication richness affect the quality of communication negatively, and as such, potentially reduce team performance.

In sum, communication overload as well as a lack of communication richness in the global team environment creates barriers to the development of trust and shared understanding between members, as well as the achievement common team goals. I propose that the inherent lack of media richness and frequent use of technology mediated communication (communication overload) experienced by global team employees, coupled with the challenges of group-coordination and trust, and delayed communication, will have a negative impact on the performance of the team as a whole.

Hypothesis 1-A: Technology-mediated communication will have a negative relationship with the team-level performance of globally dispersed employees.

Communication and Global Team Performance: The Moderating Role of Time Zone Difference

I further argue that the extent of time zone difference will moderate the effects of technology-mediated communication on the performance of global teams. The lack of communication richness and frequent use of technology-mediated communication (communication overload) reduces the performance levels of global teams. This problem is heightened when members face a high degree of time zone difference with counterparts. Not only does the ease of communication reduce owing to greater physical distance between counterparts, and limited possibility of face-to-face communication, but also the risks of time

lags and delays in communication increases as individual members have to coordinate with counterparts in places with higher time zone differential (resulting in a higher "degree of virtuality"). For example, with a 13-hour time difference between US and Japan, a member of a global team in the US has to wait for one additional working day to receive emails from a Japanese counterpart and vice versa. This will have a greater negative impact on the overall performance of the US team, as opposed to if the member were working with a counterpart in the UK (with a 5-hour time difference). Owing to greater time zone difference, the member has to face potentially longer delays in communication, to be able to complete their own tasks. In effect, this could impact the group goals, and ability to meet group deadlines. The interdependency of tasks in global teams makes the time zone difference problem a significant reason for delays in task completion and affects team performance negatively.

Hypothesis 1-B: Time Zone Difference (TZD) will moderate the relationship between technology-mediated communication and global team performance, such that the negative relationship is stronger for higher levels of TZD.

Communication and Global Team Performance: The Moderating Role of Cultural Intelligence

Individuals working as a part of a globally distributed environment face several different challenges owing to the nature of their work and coordination requirements with counterparts who may work from different parts of the world. One of these primary challenges pointed out in the virtual team literature is the lack of face-to-face communication, as well as the need for global employees to communicate with counterparts from different cultures. While a

multicultural environment may be considered otherwise 'normal' in today's global economy even within a collocated work environment (for example, a culturally diverse team), the collocated environments are not necessarily multicultural. On the other hand, global workforces, by definition, are almost necessarily multicultural. Consequently, one of the challenges faced by individuals working in this environment has to do with communication with their counterparts from different cultures in order to accomplish their tasks. Moreover, this communication has to be accomplished virtually, using technology-mediated communication such as email, telephone, or video conferencing, etc.

In order to do this, apart from requiring adequate skills to work with virtual communication technologies, global employees need to work with different cultures and therefore require additional skills to communicate with their colleagues and counterparts from across the globe. Awareness about, and an understanding of different cultures outside of their own would particularly help global employees to be able to coordinate their tasks better and potentially affect their work performance. While HR practices provide a resource from the organizational environment that could aid the performance of global employees, cultural awareness and knowledge is a resource that if possessed and utilized properly, could also aid in global team performance.

Communication, especially long distance communication poses challenges when cultural norms affect the type and ways people prefer to communicate. For example, Montoya-Weiss, Massey and Song (2001) highlight how the use of technology-mediated communication that could have an adverse impact on virtual team outcomes. Similarly, national culture also appears to affect interaction among virtual workers, such that members from individualistic cultures tend to challenge majority positions more than members from collectivist cultures (Tan, Wei, Watson,

Clapper and McLean, 1998). Cultural differences have also been found to negatively impact coordination and communication among people working virtually (Maznevski and Chudoba, 2000; Leidner and Kayworth, 2008). A high cultural intelligence quotient (CQ) among global team members will become an aid for global employees to be able to do their work with greater ease by reducing some of the disadvantages of communication with people from different cultural backgrounds.

I further argue that the CQ levels of individual members of global teams will have a synergistic effect on the group-level CQ. When individuals with high CQ come together, they create a learning environment for different cultures; create expectations for fellow-members to be culturally aware; as well as set a standard for cultural sensitivity within the team. Also, members have access to colleagues with cultural awareness and can go to them with questions regarding a particular culture, or about how to deal with a counterpart from a particular culture. If members have a high CQ, they not only spread the awareness but also act as role models and 'resident experts' for culturally sensitive information that may aid their group members to understand their global work environment and perform better.

Therefore I hypothesize that an enhanced cultural knowledge would better equip global team employees to deal with their counterparts from different cultural backgrounds, and affect their overall team performance, as group members' cultural knowledge is shared. Also, a knowledge and ability to work with different cultures enables global team employees to tackle situations unique to the global work environment (e.g. manage potential conflict with counterparts owing to lags o communication, enable them to work better with people from diverse cultures, and to interpret and communicate better with people from diverse cultural backgrounds). Given that global team employees already face the disadvantages of a lack of

face-to-face communication, and are physically separated from their counterparts, higher cultural intelligence among team members could mitigate some of the negative effects of working in this environment. As such, cultural intelligence or CQ acts as an important moderator in the global work environment I have conceptualized in this study.

In sum, in the global work context, team members' cultural intelligence quotient will moderate the effects of human resource practices on global team performance. More specifically, I propose that the negative effects of technology-mediated communication on the global team performance will be moderated by the cultural intelligence quotient (CQ) of the team. In other words, the negative effects of communication on the performance of global teams will be reduced when members' collective cultural intelligence (CQ) level is high.

Hypothesis 1-C: Cultural Intelligence (CQ) will moderate the relationship between technology-mediated communication and the performance of global teams, such that the negative relationship is weaker for high levels of CQ.

Training

Training and Global Team Performance

An important aspect discussed in research on geographically distributed work is the temporal coordination among employees (Montoya-Weiss et al., 2001). As global team employees grapple with issues related to distributed time and space, they require additional skills to handle their tasks effectively (e.g. proficiency with the technology used for communication; ability to coordinate across different time zones as they deal with asynchronous communication; ability to work with people from different nationalities and cultures; and specific skills to deal

with problems that may arise owing to the virtual nature of the work, as well as manage conflict owing to the physical distance between work counterparts). Specific training provided to enhance these unique skills required of employees that work in a globally dispersed setting would help them perform better. For example, Gibson and Cohen (2003) argue for the development of specific "training programs for virtuality" to be designed for virtual employees. In addition to regular training to enhance their work-related skills, I argue that training related to development of time management skills, interpersonal conflict management, team building, specific training for working with different cultures, and on how to achieve better work-family balance (termed 'work-family training' for the purposes of my study) will help employees' ability to work as part of a global team setting, and hence improve their performance.

Several studies have pointed to the contribution of training to better performance among virtual teams in general (e.g. Tan, B., Wei, K, Huang, W., Ng, G., 2000), and the specific case of geographically dispersed teams (e.g. Kaiser, P., Tullar, W., and McKowen, D., 2000). For example, it has been shown that early and consistent training of individuals working as part of globally dispersed virtual teams enhances their performance (Kaiser et al., 2000; Van Ryssen and Godar, 2000). Research on this topic has also highlighted the importance of technical as well as interpersonal training for better performance and satisfaction outcomes among employee who do coordinated virtual work. Training in technology-mediated communication, or technical training (Townsend, DeMarie and Hendrickson, 1998; Kirkman, Rosen, Gibson, Tesluk, and McPherson, 2002); interpersonal skills (Warkentin and Beranek, 1999; Kirkman et al, 2002); and problem-solving techniques (Kirkman, Rosen, Tesluk and Gibson, 2004) have been shown to be key antecedents for the performance of teams engaged in virtual work. The primary reasons attributed to the enhanced performance are the development of shared understanding, trust,

cohesion, and a heightened sense of collaboration among team members that these specific types of training bring about among team members. More specifically, training in communication technology and problem-solving techniques to be used in order to do virtual work, help team members overcome the unique challenges of distributed work, as well as help members' shared understanding of their work-related goals, and the ways in which they can best achieve them. Interpersonal skills training, apart from the obvious impact of building trust and cohesion among members, specifically helps team members in the cross-cultural interactions inherent in globally dispersed work. Training for interpersonal skill development gives employees an advantage to deal with the lack of face-to-face interaction in this work setting, so that they can work better with others.

Apart from these, the following types of training could also help global employees carry out their daily tasks, and perform better in a globally dispersed virtual work context. First, time management skills will help employees develop the skills necessary to deal with the inconsistent schedules and longer work hours that are characteristic of globally dispersed work environments. Second, work-family training programs could provide specific tips to global employees on how to better manage their work-family conflict issues given the unique demands on their schedule. Work-family training programs could empower employees to take advantage of the work-family policies and programs by creating employee awareness about the available programs, and giving them tips about how to use these programs to their advantage. One of the reasons cited for lack of use of work-family programs in organizations is the lack of awareness among employees about the availability of these programs (Eaton, 2003). Apart from specific tips that could be provided as part of work-family training programs designed to suit the specific needs of global employees, building awareness through such programs would also empower employees with the

necessary information about how to utilize the work-family benefits available to them from their employer. Last but not the least, training to work with different cultures (e.g. diversity training) will help employees develop necessary skills to communicate effectively with their counterparts from different geographical locations, and build productive working relationships among them. I propose that all of these types of training would enable global employees to function more effectively and perform better by providing them with the necessary skills to deal with the different, yet unique, aspects of their work.

It is important to note that the different types of training highlighted above, are effective as they create a shared understanding, high degree of cohesion, trust and collaboration among group members. As such, the training provided to global employees will have an overall group effect. In other words, in a global work context, teams that comprise of members who have received specific types of relevant training will have a better performance than teams that consist of members who have not received such types of training. As such, the more related training provided, the better the team-level performance of global employees will be.

Hypothesis 2-A: There will be a positive relationship between specific training modules (such as technical, time-management, interpersonal, diversity and work-family training) developed for globally dispersed employees, and their team-level performance.

Training and Global Team Performance: The Role of Cultural Intelligence

Next, I examine the moderation impact of CQ on the effects of training on global team performance. I hypothesize that the moderation impact of CQ on the relationship between training and the performance of global teams is that of an enhancer. In other words, CQ will increase the positive effects of training on the performance of global employees. Having a high

level of cultural intelligence will enable global team employees to better perform their work in a diverse environment. Cultural intelligence helps individuals to better understand the challenges of cultural differences and makes them better equipped to work with people from diverse backgrounds. When individuals' CQ level is high in a work group, they will be able to learn from each other, and work better in a global work environment. The cultural knowledge and proficiency, along with other types of related training geared towards the uniqueness of the global work context (e.g. technical, interpersonal, diversity, time management and work-family training), will have a combined positive effect and enable global teams to perform better. In the presence of training to work in a global work context, global teams that possess higher sensitivity to cultural differences will have an advantage, as these teams will be better equipped to deal with counterparts from diverse countries and cultures. Additionally, members can learn from each other and have enhanced resources in the form of culturally aware team-mates for interpreting culturally diverse interactions with counterparts from other parts of the world, which is an inherent characteristic of global work environments. A higher degree of cultural sensitivity and awareness (high CQ) will give global teams an advantage to perform better than those teams that have lower CQ.

> *Hypothesis 2-B*: Cultural Intelligence (CQ) will moderate the relationship between training and global team performance, such that the positive relationship is stronger for high levels of CQ.

Flexible Work Practices and Global Team Employee Stress

Research has long highlighted the importance of work-life flexibility practices as an effective human resource management tool and discussed ways in which the implementation of work-life flexibility practices could be improved (Kossek and Ozeki, 1999; Perry-Smith and Blum, 2000; Reilly, 2001; Batt and Valcour, 2003; Eaton, 2003; Kossek and Van Dyne, 2008; Kossek, Baltes and Matthews, 2011). Work-life flexibility policies and practices give employees the prerogative to adjust when, where, and how they work in order to balance their work and personal lives. Blair-Loy and Wharton (2004) discuss the specific challenges to the implementation of work-life flexibility practices for the global workforce. Their analysis of workplace flexibility policies and practices shows that the usability of these policies depends on the team workload and coworker support. However, the fact that work-life flexibility practices are particularly important for a global workforce remains. Since they work irregular schedules, and coordinate work across different time zones, the ability of global team employees to adjust their work schedules could significantly impact their work performance and overall well-being.

Flexibility practices such as flexible work hours, compensatory time off, flexible start and finish times, paid time off, telecommuting, personal days or personal time off to take care of family demands, could all contribute to reduction in demands on the time of global team employees, and help them contribute more to their working time at hours that are convenient to them. I propose that this flexibility in work hours will help global employees' in their work roles since they can focus their attention on their job at the times that they are completely 'available' (both mentally and physically) to engage in their work. In addition, global employees benefit

from paid vacation and sick days as these would not only help them get rejuvenated before they get back to work, but also help them to relax and reduce their stress levels.

Moreover, flexible working practices like the ability to flex start and finish times around some core hours, or the ability to get compensatory time off and/or compressed work weeks, help employees coordinate within their work groups to adjust working time and space, so that the convenience of group members are taken into account, and team work is facilitated. Flexible working practices also allow group members to specify deadlines around the hours worked by members and coordinate so that these deadlines can be met in time. This type of coordination is of greater importance where there are time lags involved in meeting deadlines across different time zone differences. As such, the knowledge and practice of flexible practices will help groups function more effectively and reduce strain from the irregular working hours that global team employees are expected to maintain.

In general, research has shown a direct negative effect of flexible policies and practices on the work-related stress of individual employees (e.g. Halpern, 2005). Job stress occurs when the demands of an individual's job conflicts with their other roles and responsibilities, such as being with family (Katz and Kahn, 1978; Greenhaus and Beutell, 1985). Specific to the case of distributed or virtual work, a study by Hill, Ferris and Martinson (2003) with a sample from IBM employees showed that the overall perceived stress was higher among employees who worked from a virtual office than those who worked from a home office.

Given the nature of their work, global team employees have to adjust their work schedules; work nonstandard hours; work with inconsistent schedules related to requirements of their counterparts in different locations; and work nights and weekends to coordinate with their counterparts in different time zones - all of which contribute to stress from a lack of time –

always a limited resource. Because global team employees have to work nights and odd hours, they must undergo additional strain and psychological disturbances related to sleeping hours; long, extended hours at work; and also long hours at the computer or phone. Continually working with technology can affect both the physical and mental well being of employees (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay, and Scherlis, 1998).

Flexible working practices such as flexible work hours, compensatory time off, flexible start and finish times, paid time off, telecommuting, personal days or personal time off to take care of family demands, could reduce the job stress of these employees by providing the flexibility to pace their work, and organize their time so that they are better able to meet the demands of their work and family roles; as well as take time off to unwind (Hill et al, 2003; Halpern, 2005).

Hypothesis 3-A: There will be a negative relationship between flexible work practices (such as flexible start and finish times, comp time off, compressed work week, personal time off, and paid vacation days) and the individual-level stress of global team employees.

Work Schedule

Work Schedule and Global Team Employee Stress

Research on new ways of working has commented on issues of time and work control in the hands of employees, especially those who work as part of teams. For example, the extent to which work groups are self-managed, i.e. members have control over their tasks and work schedule determines the amount of work-related conflict experienced by members (Thomas and

Ganster, 1995; Tausig and Fenwick, 2001; White et al., 2003). In the global work context, the source of these conflicts could be due to several reasons. First, participation in a global work context causes time-related conflicts as members have to coordinate their work across different time zones. Second, it is normal for one employee to coordinate with different counterparts located in a variety of time zones simultaneously. Third, a global team employee, more often than not, works on different projects at the same time, and this requires the employee to handle different tasks (in the case of a hybrid team, one or more of which may require global work). Of course, time-based expectations as well as the workload from each different project do not necessarily match. For example, an information technology analyst may handle one project which develops a software product in an overseas location, and also be required to help out with fixing development code bugs locally (i.e. work within a project that requires only collocated work). The workload expectations from implementing each of these projects are clearly not the same. Moreover, for the specific case of global team employees, the time requirements from this mix of tasks (requiring both local and global coordination), creates further complications for the employee. The workload expectations from different types of projects maybe conflict with each other and create extra work for employees. Additionally, the different projects require different time commitments from the employee (both in terms of the number of hours as well as the timing of the employee's workday).

These time pressures and deadline driven work adds to the workload of a global employee significantly. The problem is further aggravated in the case of global employees, since these employees not only do they have to adjust to the work schedules of their counterparts located across the globe with significant time lags–these time lags ranging from anywhere between 0, 3, 7, 10 or sometimes 14 hours. But even within their workgroup, waiting for a job to

be finished before an employee can accomplish their share of the task can be frustrating by itself. This, added to the time lags involved in global work, could make this a significant source of additional work pressure for global employees by adding crucial hours to their work schedule, or making them work at odd hours. All of these factors could potentially add to the stress levels of global team employees. The factors mentioned above complicate matters further in a coordinated knowledge-work environment, which is characterized by interdependency of tasks and outputs. Adding to work hours, having to work nights and weekends, or having to face delays in hearing back from global counterparts, create bottlenecks for the global employee to meet their own deadlines and goals. As such, I propose that the nonstandard work schedule (including both work hours and timing of workday) inherent in global work will potentially contribute to the strain faced by global team employees.

Therefore, the extent to which global employees have control over their work and schedule will significantly affect their stress levels. It is important to note here that the concept of schedule control has been distinguished from flexible work practices (see Kelly and Moen, 2007 for an example). While flexible work practices refer to general policies and practices that enable employees to take time off from work, it may not necessarily provide employees the latitude to decide when and how they do their work (Kelly and Moen, 2007). Control over work has been shown to have affect individuals' work-family conflict (Thomas and Ganster, 1995; Hill, Hawkins, Ferris, and Weitzman, 2001) as well as stress and health outcomes (Karasek, 1979; Karasek and Theorell, 1990; Schnall, Belkic, Lansbergis, and Baker, 2000; Belkic, Landsbergis, Schnall, and Baker, 2004). Based on Karasek and Theorell's job demands-control model (Karasek, 1979; Karasek and Theorell, 1990), the demands–control model proposes that high work demands and little control over how work is done causes psychological and physical

strain for employees. This effect is highlighted under circumstances where there are high work demands with little control (Karasek and Theorell, 1990). The work-design literature and other recent research (see Batt and Valcour, 2003 for an example), therefore, suggests that employees who enjoy greater autonomy at work will experience lower work-family conflict and will show less likelihood of experienced stress and burnout on the job. Employees who have less flexibility at work—including longer work hours and more travel—are likely to report higher work-family conflict and more probability of burnout.

Some recent research by Bailyn and others, also suggests the clear benefits of a standard work schedule (as opposed to long working hours that bleed into the evening and night) on the experienced strain of employees (Bailyn 1993; Bailyn, Rapoport, and Fletcher 2000; Perlow 1997). Bailyn's research group undertook intervention projects at three corporations in the early 1990s. In the instance of a team of product development engineers at Xerox, the work culture emphasized long hours and "face time" as a sign of commitment to work and career. Long meetings, documentation requirements, and the interference of supervisors in the day-to-day work of the engineers meant that the real work of product development often took place before or after daytime work hours. The long hours interfered with employees' home lives and engendered a vicious circle of longer hours, high stress, and low productivity. A design change allowing development engineers more choice with the timing of their workday led to a major increase in daytime productivity and a significant reduction in total work hours.

In the case of global employees, the extended hours of work, and having to work nights and weekends due to time zone differences create unique demands and allow for limited control over working time. A nonstandard work schedule (including both aspects – i.e. the timing of their workday, as well as length of work hours) is particularly relevant for global workforces,

and increases their stress. Having to work non-standard hours (including their work hours and timing of work day) to adjust to different time zones will increase the stress levels of global employees.

Hypothesis H4-A: There will be a positive relationship between the (nonstandard) work schedule and the individual-level stress of global team employees.

Flexible Work Practices, Work Schedule and Global Employee Work-Family Conflict

Global employees' working hours and schedule will have a significant impact on their work-family life. Where and when individuals do their work determines how much time they can spare for their personal lives. And this can have a direct, significant effect on their work-family conflict for several reasons.

First, autonomy or control over when they work has been shown to affect the work-family conflict of employees. Ample empirical evidence exists to show that control over one's work schedule can mitigate the negative effects of work on the work-family balance of employees (Thomas and Ganster, 1995; Tausig and Fenwick, 2001; White, Hill, McGovern, Mills and Smeaton, 2003). Byron's (2005) meta-analytic review identified "hours worked" as well as "control over work schedule" as important work-related antecedents of work-family conflict. The extent to which employees have the freedom to manage their own work hours and schedule, rather than having to follow directions, will have an impact on their work-family conflict.

A related aspect of control over working time is the actual timing of the workday. Having to work non-standard hours (example, nights and weekends) can also have a significant effect on the work-family conflict of individuals. While a standard work schedule has been

traditionally set at sometime between dawn and dusk, many jobs require that employees work longer hours bleeding into the night; start their work beyond dusk; or work through the night. All of these scenarios could potentially have a negative effect on the work-family conflict of employees, or where the employee is a single individual not living as part of a family unit, can affect their personal life outside of work. For example, research on call centers and working longer hours has shown that employees have lower work-family balance (Valcour, 2007; Bohle, Willaby, Quinlan, and McNamara, 2011). Similarly, research related to shift-work has shown a negative impact on the work-family lives of the shift-workers (Voydanoff, 1988, 2002; Keene and Quadagno, 2004; DiMilia, Bohle, Loudoun, and Pisarski, 2008).

Human resource practices like flexible work hours, compressed work weeks, compensatory time off and personal leave will reduce the work-family conflict and perceived work-related stress of global virtual employees (Baltes, Briggs, Huff, Wright and Neuman, 1999; Halpern, 2005). Global employees, having to work virtually, and from different time zones, potentially experience multiple forms of role conflict. Flexible work practices affect the job stress faced by employees by reducing the role conflict associated with demands from their work and family roles.

Flexible work practices can also have a direct impact on the work-family conflict of global employees. HR practices such as flexible work hours, compensatory time off, flexible start and finish times, paid time off, telecommuting, personal days, or personal time off to take care of family demands, would all contribute to reduction in time-related conflict faced by global employees. In addition, these employees would benefit from paid vacation and sick days as these would not only help their time conflicts, as they can spend more time with their families and take care of their personal roles, but also help them to relax and reduce the strain from the

demands of competing work and family roles (Greenhaus and Beutell, 1985; Kelloway, Gottlieb, and Barham; 1999).

While flexible work practices have a direct effect on the performance of employees, they can also impact their performance indirectly. Research has established the negative effects of work-family conflict on the job performance of employees (see Allen et al. 2000 for a review). Flexible work practices can have a positive impact on the work-family conflict of employees, as well as a direct positive impact on their performance. However, the negative impact of work-family conflict on job performance cannot be ignored.

The Mediating Role of Work-Family Conflict

Research in the work-family domain highlights the stress and health-related outcomes of experienced work-family conflict by individuals (see Allen, Herst, Bruck, and Sutton, 2000 for a review). An imbalance between the work and family demands faced by employees causes psychological strain (Frone, Russel and Cooper, 1997; Kossek and Ozeki, 1998; Adams, 1999; van Steenbergen and Ellemers, 2009), since employees are unable to strike a balance between their individual time and energy resources. Additionally, studies have shown how work-family conflict mediates the relationship between organizational variables and employee stress. For example, Judge and Colquitt (2004) show how work-family conflict mediates the relationship between organizational justice and employee stress; Marks (1998) has shown how work-family conflict acts as a mediator between care-giving and well-being outcomes for receivers; and Lingard (2005) has tested for effects of work-family conflict on the stress of construction

workers. As such, there seems to be ample evidence to suggest that the experienced work-family conflict among employees will impact their stress levels negatively.

Putting together evidence that points to the negative outcomes of work-family conflict on the psychological stress experienced by employees; and research that points to the negative consequences of work schedule on the work-family conflict of individuals, I argue that work-family conflict will mediate the effects of flexible work practices and work schedule on the experienced stress levels of global employees.

Further, I also argue that work-family conflict will mediate the effects of flexible work practices and work schedule on the ability of global employees to work within groups. For one, the negative effects of work-family conflict on the job performance of individuals have been long-documented (Frone, Russel, and Cooper, 1992; Frone, Yardley, and Markel, 1997; Allen et al., 2000). Additionally, the coordination effects of work-family conflict on work groups have also been studied (see Batt and Valcour, 2003 and Bailyn, 1993 for examples). When individuals are unable to manage their work-family demands, they also have trouble adjusting to team-related timelines. For example, making it to meetings with group members could be a challenge for an individual who faces work-family conflict. Moreover, the strain from their personal work-family demands can make individuals irritable and this may also affect their interactions with group-mates, and cause conflict. Given that (1) issues related to flexible work practices and work schedule cause work-family conflict; and (2) work-family conflict impacts their stress, I propose that work-family conflict will mediate the effects of flexible work practices and work schedule on the stress levels of global employees, who also face the unique challenge of managing time across the globe.

Hypothesis 3-B: Work-family Conflict will mediate the effect of Flexible Work Practices (such as flexible start and finish times, comp time off, compressed work week, personal time off, and paid vacation days) on the individual-level stress of global team employees.

Hypothesis 4-B: Work-family Conflict will mediate the effects of Work Schedule on the individual-level stress of global team employees.

Flexible Work Practices, Work Schedule and Global Employee Work-family Conflict: The Role of Time Zone Difference

I hypothesize that the extent of time zone difference will moderate the effects of flexible work practices and work schedule on the work-family conflict of global employees. As global employees have to coordinate across different time zones and hence work nonstandard hours, most often than not, their work hours "bleed" into evening, weekends and nights. This can cause disruptions in their personal life and affect their work and family lives adversely. The higher the extent of time zone difference and hence degree of virtuality, the higher the negative impact on the work-family lives of global employees expected.

As such, I propose that the effect of flexible work practices (FWP) and work schedule on work-family conflict will be moderated by the extent of time zone difference between them and their counterparts. More specifically, time zone difference will have a substitution effect on the positive relationship between FWP and W-F Conflict of global employees. In other words, the positive effect of FWP on W-F conflict will be reduced when the extent of time zone difference is high. While flexible work practices will allow employees to spare more time for their family and personal lives, having to coordinate between high tome zone differences will reduce their

ability to do so as they have to work nights and weekends and at other odd hours owing to the nature of their work demands and time adjustments required of these employees.

Hypothesis 3-C: Time Zone Difference will moderate the relationship between flexible work practices and work-family conflict of global employees, such that the negative relationship is weaker for higher levels of TZD.

I also hypothesize that the negative effects of work schedule on the work-family conflict of global employees will increase with high time zone difference. The nonstandard work hours inherent in the global work context get accentuated when the time zone difference between global employees and their counterparts is high. Greater time zone differentials with work counterparts put global employees at a further disadvantage in terms of the timing of their work hours, and pose additional challenges. These challenges may affect global employees' work hours severely as they have to coordinate work across the world, putting pressure on them to work after normal working hours (nights or weekends), as well as adding to the length of their working hours owing to the simultaneous increase in expected time lags.

Hypothesis 4-C: Time Zone Difference will moderate the relationship between (nonstandard) work schedule and work-family conflict of global employees, such that the negative relationship is stronger for higher levels of TZD.

CHAPTER 4: RESEARCH DESIGN AND METHOD

This chapter discusses and provides the rationale for the research design and methodology employed to test the proposed research questions. The chapter is divided into three sections: (1) rationale for research method; (2) data collection procedure; and (3) sample and measures.

Rationale for Research Method

In order to collect data on the identified measures in the hypothesized model, I implemented a multi-source multi-level approach in my research design. A combination of data from multiple sources (supervisors and individual employees), was used for the empirical analyses. More specifically, to test the hypothesized relationships outlined in the empirical model, I use survey data collected both at the individual level from employees, and matched group-level data on Cultural Intelligence and Performance collected from supervisors.

Social science researchers have more often than not found it difficult to gain entry and obtain data from companies. Moreover, specific steps need to be followed in order to achieve estimated response rates. Some of the ways to improve response rates that researchers recommend are preparing a professionally looking instrument, keeping it to a reasonable length, following up with e-mails and telephone calls, using a financial incentive, and having the instrument endorsed by a respectful organization. In this dissertation, I have incorporated these suggestions as far as possible.

The data for the study was obtained via a survey questionnaire sent to global employees and their supervisors from a cross-section of companies that have global operations. Both global employees and their supervisors completed the employee and supervisor portions of the survey so as to provide multi-level, multi-source data for the empirical testing of the hypothesized model and research questions. Depending on the choice of company management, the survey was administered either online, or with a paper and pencil version. Appropriate IRB Approval was obtained for both versions of the survey instruments and consent forms (IRB# 10-1289). Choosing an option between the web survey and paper-and-pencil versions of the survey was based on convenience of participants, as indicated by management. Since employees and their supervisors were based out of a single location (and coordinated work with global counterparts virtually), it was sometimes easier to administer a paper-and-pencil version of the survey, given the matched design of the survey.

The employee survey questionnaire focuses on employee experiences as part of the global work environment, and was restricted to only 56 questions, which was estimated to take no more than 15-20 minutes to complete. Employees were asked to respond on their perceptions about HR practices, and their individual work-family conflict, and stress outcomes. Additionally, I also collected demographic information with the employee survey.

A separate survey was administered for supervisors, which asked supervisors to report on the cultural intelligence and performance levels of the work-groups that reported to them directly. The supervisor survey included only 13 questions, estimated to take no more than 5-7 minutes to complete for each work-group.

Criteria for selecting research sites was: (1) companies that have global operations, and locate their employees across the globe, so that employees have to work virtually in order to

accomplish their tasks; (2) companies that employ global employees i.e. employees who work across different time zones to accomplish their routine work-related tasks; (3) accessibility to the company to conduct research, and willingness of the management to allow employees to be surveyed; (4) ability to sample a sufficient number of global employees and their supervisors, to capture variability in key constructs; and (5) restrict sample to companies that have global operations, but located within similar macro-level work environments, (e.g. choosing companies in one country or industry will allow me to control for macro environmental forces).

I also collected contextual information on my specific study sites through personal and phone meetings with senior management at participating organizations. Apart from informing me about the context of my study sites, these meetings provided necessary information for administration of the survey. Specifically, I utilized these conversations to (1) explain the research design and negotiate how to implement the survey in the particular organization; (2) share detailed information about the data gathering process with top management as well as other managers as necessary; (3) discuss steps in the research process and negotiate identification of supervisor-work-group matches and develop a system to code surveys to identify the matches while keeping responses confidential; and (4) last but not the least, procure employee lists and obtain what job classes and titles can be included in the study. The single-most important criterion for inclusion in the study sample was based on coordination of at least part of participants' work with counterparts in different time zones. The targeted sample was drawn in each of companies from an employee list procured from the management from each of the research sites.

Data Collection Procedure

To collect survey data, I followed Dillman's (1978) procedure that is based on a series of specifically timed mailings including an initial survey distribution along with a cover letter, an e-mail reminder sent out after one week after the initial mailing, and, three weeks after the original e-mail, and repeat survey questionnaires sent to all non-respondents. Following this method over a 2-month period, I gathered quantitative data from global employees and their supervisors, using both a web and paper-and-pencil version. The data collection procedure consisted of the following steps:

1. Site contact and entry: First, I spoke with managers at participating sites to collect contextual information about each research site. The key criterion for inclusion of a site was access to surveying global employees, and variability in time zone among these employees. Identification of participating sites and gathering contextual information was done phone calls with top management, and with follow-ups visits to the actual research site. During these calls/visits, I gathered contextual information on how global employees function in that particular organization. These visits/conversations with top management were necessary to gain the trust and cooperation of management for administration of my survey. I also procured employee lists, organization charts, and other organizational-level information during these conversations. As mentioned earlier, I used these conversations to negotiate the research design, and obtained a usable target sample for my study (including appropriate supervisor-subordinate matches).

2. Quantitative Data: I designed and administered a survey to a group of employees who were selected from the global employee list made available by management during the site contact phase above. In order to make it convenient for respondents, and provide options to management for the methods of survey administration, I used two types of survey instruments: (1) an online version using Qualtrics' survey software, and (2) a paper and pencil version. Since the sample in this study, is by definition, accustomed to working virtually, using appropriate survey software to administer the web survey to employees and supervisors was convenient and effective; allowed significant cost control; and immediate access to data as it came in.

As a result of steps (1) and (2) above, I identified three organizations that were willing to participate in the study, and each organization administered the survey within a single unit of the company located within India. One of the participating companies chose to implement the web version of the survey through Qualtrics', and two companies implemented the paper and pencil version to enable ease of matching and collection from supervisor and employees. All three companies operated within the information technology industry. Location within a single country and industry allowed me to control for several macro-environment factors that could impact the study design and effects.

Sample and Measures

Sampling Strategy and Data Sites

Data were collected from three companies operating in the information technology products and services industry. The information technology industry takes maximum advantage of today's global work context. Companies that perform operations related to information technology (products, services, or other activities such as support and consulting) have to operate globally, and coordination between their employees with others across different time zones, is almost a given. As such, this industry was well suited and appropriate to test the hypotheses drawn in this dissertation related to employee experiences in working across different time zones.

The Information Technology Industry in India

India is the largest provider of information-technology services in the global market and software services are India's largest export (ACM Report, 2006). Liberalization and reforms in trade policy in the early 1990s, coupled with a large skilled workforce, who are fluent in English, has made India the dominant market for global software products and services (Sahay, Nicholson, and Krishna, 2003; Farrell, Khanna, Sinha, and Woetzel., 2004; ACM Report, 2006). The United States has dominated the software and information-technology industry, is the largest client for such services (Sahay et al., 2003; Laplante, Costello, Singh, Bindiganaville, and Landon, 2004), and is projected to continue to retain its dominance with the largest share of revenues in this industry. However, the global offshore outsourcing market is also projected to

grow commensurately (Carmel and Tjia, 2005; ACM Report, 2006), with India and China leading the global offshoring business.

Given this trend, the Indian subcontinent is an important context to understand the nature and practice of globally dispersed work, and employs a large proportion of the global workforce. As such, it is an appropriate setting to conduct a study on global workforces, and well-suited to test the hypotheses proposed regarding global employees in this study. Moreover, the Indian subcontinent is one of the largest suppliers of knowledge-workers to the global work context, and this makes it even more suitable for a study of global team employees engaged in knowledge work. Many features of this new 'knowledge economy' have important effects on the work ethic prevalent among the organized workforce in the country.

The Indian Work Context

It is important to note that while sample respondents coordinated work with others in different countries/time zones, they were themselves located in India (except 3 employees in Company C were located in Malaysia). The countries that respondents coordinated with were divided into the three primary international business zones: (1) AMS (The Americas); (2) EMEA (Europe, Middle East and Africa); and (3) APJ (Asia Pacific and Japan). Countries included within these three zones are (1) North and South America, Mexico; (2) France, Germany, Poland, Romania, Spain, Switzerland, United Kingdom; and (3) Australia, Japan, Korea, Malaysia, Singapore. All these countries had at least a 2.5 hour time difference with India (Note: conversely, the three respondents who were located in Malaysia, coordinated with counterparts in India, making their time zone difference also equivalent to 2.5 hours).

Since the data sites for this dissertation were located in India, it is important to understand some of the unique features of this country with respect to the work context, and other socio-economic aspects. First, the Indian economy comprises of a high proportion of knowledge-based workers. It is common for a member of the formal labor force in India to hold at least a college degree, and possess at least one or more technical skill (Ministry of Human Resources 2011 publication, India). Also, sometimes people may hold multiple degrees, with an engineering or medical degree being highly valued amongst the educated youth. Second, with the opening of the economy in the early to late 1990s, and growing partnerships with global businesses, the Indian workforce has seen an onslaught of young workers entering the labor force. It is not unusual to find very young men and women straight out of college, or even while they are working on their college degree, to be working full-time in entry-level knowledge-based jobs. Third, it is important to note that while English is not the national language, it is an informal medium of instruction in schools and colleges, making it easier for the Indian native to engage in global work.

Next, I turn to the sociological aspects of work in India. First, India has a diverse workforce as one its unique features. There are at least fourteen official languages in the Indian subcontinent, not to mention the hundreds of dialects used by people across the different states of the nation (CIA World Fact Book). There is a marked difference in the cultures of North and South India; as well as between the 29 different states and 9 union territories – people in different regions speak different languages, have varied food habits, and local customs and sensibilities differ quite markedly. In effect, one could expect to see a workforce with high levels of diversity in religion, language, and value systems. While people are very religious, and the majority makes religious observances sincerely, religious differences are not an issue at the

workplace. However, this means that a lot of religious holidays are observed in India. So apart from the usual weekend, there is a long list of local and national holidays that are strictly observed, so offices remain closed.

Another characteristic of the Indian work context is probably the most important for purposes of this study: the collectivistic culture of India (Hofstede, 1980) affects the behavior of employees at the workplace and makes it easier for them to adapt workplace policies. The individual is not the priority – it is the community or the group that dominates the cultural mindset of Indian employees. Therefore, individual decision-making is subjugated by managerial decisions or organizational mandates. Also, the culture in India is characterized by high power distance, and low individualism (Hofstede, 2006). Society is hierarchical, and this has a spillover effect – people abide by their seniors, and are more conforming than confrontational.

Data Site A. The first company where data was collected is a Fortune 100 information technology corporation headquartered in California, USA that provides products, technologies, software, solutions and services to consumers, small- and medium-sized businesses (SMBs) and large enterprises, including customers in the government, health and education sectors. Sample was drawn from the Strategy and Global Analytics Division located in Bangalore, India. I call this Company A. The global analytics division of Company A has a total of about 1500 employees, of which about 500 employees coordinate across different time zones, in different degrees. The employees of this division in Company A are involved in hard-core analytics, research and reporting work for businesses across the globe. They are predominantly analysts, consultants and program managers who do analytics, research and reporting across Marketing, Supply chain, Go-To-Market and Finance competencies.

Teams that coordinate across different time zones to a significant degree were identified with the help of the Human Resource Manager, and the paper-and-pencil version of the employee survey was sent to 125 employees, who worked within 25 teams (i.e. each of the teams consisted of 5 members each). To get matched team-level data, the paper version of the supervisor survey was sent to 25 managers who led these teams.

This purposive sampling helped identify and group participants according to preselected criteria relevant to the research questions (i.e. individuals who coordinate work across different time zones). Questionnaires were distributed to identified participants (managers and team members), providing a clear perspective regarding the survey - that it was meant to promote academic work and collaboration. Management emphasized to potential respondents that participation was voluntary, and responses were strictly confidential, and can be accessed only by the researchers. Management also communicated definitively to respondents that participation in the study would have no bearing whatsoever on their performance or role within the organization.

Following initial explanation provided by management, I met with senior managers during the site visit to explain details of survey administration and answered follow up questions from supervisors. A copy of the consent form approved by IRB was discussed with supervisors in order to explain the strict academic and confidential nature of the study. After follow-ups to collect complete sets of supervisor-employee matched responses, participants from 20 teams (including 100 employees and 20 managers) returned completed surveys, yielding an 80% average response rate (please refer Table 1 for the actual number of surveys distributed, and response rates for all three sites).

Data Site B. Company B, headquartered in New Delhi, India, is a rapidly expanding organization engaged in a range of software development and information technology services. With the help of its 700+ employees, Company B provides offshore development and outsourcing services to more than 125 clients in North America and Europe. Approximately 300 employees in Company B are actively engaged in coordinating work with clients and counterparts in different time zones. Employees in Company B are engaged predominantly in software development work. They take requirements, process design and other documents, as well as develop the program code for development of software as per client needs. They coordinate with clients to gather requirements, understand design and processes, as well as meet delivery specifications. They also coordinate with other employees from the company located at the client site.

As Table 1 shows, the online version of the employee and supervisor survey was sent to 101 employees and 9 supervisors respectively. Once again, purposive sampling was used to identify individuals working in teams that operate globally. The HR manager provided a list of employees with their emails, and surveys were emailed to potential respondents via the Qualtrics website. 46 employees and 8 managers (across 8 teams) returned completed surveys, yielding an average response rate of 49.1% at Company B.

Data Site C. Company C, like Company A, is also headquartered in Bangalore, India. It provides IT-related and other Strategies, Innovative Solutions and Knowledge Services to Pharmaceutical, Biotech and Device Organizations and the Consumer Health Industry for its client base across the globe. The company's core expertise covers the areas of Clinical Research and Support, Pharmaceutical Marketing and Medical Communications, Multimedia/Technology Solutions and Outreach Services. Company C employs about 60 employees, about 30 of whom

operate in the global context. These employees are predominantly engaged in marketing, communication and IT-related support work for clients in the Pharmaceutical, Medical Devices and Biotech industry.

Once again, a purposive sampling technique was used to identify 21 employees and 5 managers as potential respondents. Once again, management clarified to participants that the purpose of the survey is solely for academic learning and collaboration, and emphasized that responses would have no bearing on their role within the organization or performance. 20 employees and 4 managers (across 4 teams) returned completed surveys, yielding an average response rate of 92.3% at Company C.

The overall response rate across the three companies was 69.2% (refer Table 1).

Sample Demographic Information

Table 2 provides a summary of the demographic profile for the sample used in this dissertation. Of the total 166 employee survey responses received, 29.5% are female, and 70.5% are male. Company A has the highest proportion of female respondents (38%), while Company B has mostly male respondents (87%). Majority of the respondents are single (53%), and 72.9% do not report having many kids under 18 years of age living with them. Respondents are mostly aged between 25-35 years (65.1%), and have at least a post-graduate degree (63.9%). The sample comprised of individuals with an average organizational tenure of a little less than 3 years (mean=32.8 months); tenure within their department of little less than 2 years (mean=20.5 months); and have worked with their present supervisor for an average of little more than 1 year (mean=15.5 months). While the tenure levels may seem lower than usual, this is typical in the IT

industry, which is characterized by project-based work within the organization, as well as frequent job changes, and high turnover rates among IT professionals (Ang and Slaughter, 2004).

Measures

Please refer Appendices C and D for a list of all survey items used in the employee and supervisor survey respectively.

Communication. Communication was measured using the two dimensions suggested by Roberts and O'Reilly (1974) for communication in a virtual work environment: Communication Overload and Lack of Communication Richness.

Communication Overload was measured using four items modified from Roberts and O'Reilly's (1974) scale used to assess employees' experiences with organizational communication patterns. Items were modified to reflect a global work setting, with virtual communication modes. Respondents were asked to what extent they felt "that you receive more information than you can efficiently use", "do you have more information than you can consistently handle for making the best possible work-related decisions", "do you receive more information than what is necessary to meet the requirements of your job", "does your job require you to respond to emails on an hourly basis". Responses were given on a 5-point Likert scale ranging from 1=never or not at all to 5=all of the time or always.

Lack of Communication Richness was similarly measured using four items modified from Roberts and O'Reilly's (1974) scale used to assess organizational communication. Once again, items were modified to reflect a virtual work setting, within global employees. The first three items asked respondents whether they felt that "the use of email communication hinders your ability to complete your tasks on time", "the use of other virtual communication (like

telephone, audio/video conferencing) hinders your ability to complete your tasks on time", "written communication (like emails and attachments) are sometimes difficult to interpret and fail to provide the necessary information for you to take job-related decisions". Responses were given on a 5-point Likert scale ranging from 1=strongly disagree to 5=strongly agree. For the fourth item, respondents were asked, "how often do you use face-to-face communication to get your work done". Responses were given on a 5-point Likert scale ranging from 1=never to 5=all of the time.

Training. To measure training received by global employees, I used items based on Appelbaum et al.'s (2000) scale to measure formal and informal training. Items were adapted to fit the virtual work done by global employees, and assessed aspects of training that were important in the global work context. Five items were used to ask respondents whether they received particular types of training from the organization in the past year: "In the last year, did you receive training from your organization to effectively use the different types of communication technology available to you?", "In the last year, did you receive time-management training from your organization to enable you better manage your workday?", "In the last year, did you receive interpersonal-skills training from your organization to enable you work with others?", "In the last year, did you receive diversity training from your organization to enable you work with others?", "In the last year, did you receive work-life training from your organization to enable you balance your work and personal life?". Responses were given on a 5-point scale ranging from 1=never to 5=more than 10 (working) days.

Flexible Work Practices. Six items from the Galinsky Report (2004) were used to measure flexible work practices for global employees. The first set of three items were related to flexible scheduling and asked respondents how often they used certain workplace flexibility

practices: “How often do you use compensatory time off or “comp time”—i.e., receive compensation in the form of extra time off when you work overtime?”, “How often do you compress your workweek (i.e. work longer hours on fewer weekdays and take the rest of the week off)?”, “How often do you take some personal time off, i.e. part or a whole day off to attend to important family or personal needs without having to lose pay or use your vacation time? (e.g. maybe to attend a school conference, or to take care of a sick child or other family member)”. Responses for these items were given on a 5-point scale ranging from 1=never to 5=every week. An additional item asked respondents how often they used a daily flex practice: “How often do you vary your work start and quit times, around set core hours?” Responses for this item were given on a 5-point scale ranging from 1=never to 5=everyday. A fifth item asked respondents’ about their use of vacation time: “To what extent are you able to use ALL your paid vacation days?” Responses for this item were given on a 5-point scale ranging from 1=never to 5=always. The sixth item used to measure flexible work practices assessed the prevalence of a work-from-home option available to respondents: “I am able to work from home or remotely when I need this sort of flexibility”. Responses for this item were given on a 5-point scale ranging from 1=strongly disagree to 5=strongly agree.

Work Schedule. My measurement of work schedule in the global work context attempts to capture several different aspects of globally dispersed work hours. Owing to the unique nature of their work context (i.e. geographically and temporally distributed), an assessment of work hours for global employees involves multiple dimensions. The first dimension is the actual length of hours worked (I call this “work hours”). The second dimension is “timing of workday”. The nonstandard hours they have to work, lends another dimension to the work schedule of global employees. Since it involves weekend and night-time work, as well as

cyclical work that depends on responses from counterparts in different time zones, globally dispersed work, almost always, includes nonstandard working hours, which are outside the normal working day between dawn and sunset. A third dimension of working hours in the global work context is the control over schedule that employees in this work context may or may not have. Given they work non-standard hours, having control over their work schedule is an important aspect for global employees.

I used eight items to measure the different dimensions of "work schedule" in the globally dispersed work context. Items were adapted from past research in the organizational context to fit the global work context. The first dimension (work hours) was assessed with a single item that asked respondents the number of hours they worked during an average workweek ("On an average, how many hours do you work in a typical week?"). Five items were used to measure "nonstandard hours" and asked respondents if they worked consistent hours or no. ("Over the last one month, would you say you have worked consistent hours (i.e. work for the same number of hours every day)?", "Would you say you work cyclically – e.g. different number of days/hours every week, because you may have to wait for work to be completed by your overseas partners?", "Do you frequently work weekends because your coworkers are located in other time zones?", "Do you frequently have to work during evenings or night-time, because your coworkers are located in other time zones", "To what extent has this (i.e. working during evenings or weekends) improved during the last month?". Responses were given on a 5-point scale ranging from 1=strongly disagree or not at all to 5=strongly agree or totally. Lastly, "control over schedule" was assessed using two items: "To what extent do you have control over scheduling your own work hours?", Overall, how well does your schedule of work hours meet your own personal needs (for example, you may work 9 to 5 or you may work 8 to 3; or you may

have to work weekends)?". Responses were given on a 5-point scale ranging from 1=not at all to 5=totally.

Work-Family Conflict. I used 10 items from Netemeyer, Boles, and McMurrian (1996) to measure work-family conflict. Work-family conflict has been conceptualized as a bi-directional construct, since individuals' conflict might arise from either work or home sources. Netemeyer et al. (1996) used five items to assess individuals' work-to-family conflict, whereas another five items were used to measure conflict that stemmed from individuals' role within the family (family-to-work conflict). Work-to-family conflict included the following items: "The demands of my job often conflict with my family life", "The amount of time I spend working makes it difficult to fulfill my family responsibilities", "The burden of my job makes it difficult to fulfill my family responsibilities", "Because of work responsibilities, I often have to make changes to family plans", and "Things I want to do at home do not get done because of job demands". On the other hand, Family-to-work conflict was measured with the following five items: "I have to put off doing things at work because of demands on my time at home", "Things I want to do at work don't get done because of family demands", "Family demands often interfere with my job", "My family responsibilities often interfere with getting my work done", and "Burden from my family responsibilities interferes with my ability to perform my job". Responses were given on a 5-point scale ranging from 1=strongly disagree to 5=strongly agree.

Stress. Four items were used to assess employees' experienced stress levels in the global work context. The first item was developed for this dissertation and assessed overall stress: "On a scale of 1 to 7, how high would you say, is your stress level on an average work day?" Responses were given on a 7-point scale ranging from 1=extremely low to 7=extremely high. Another three items adapted from Berg and Kalleberg (2002) asked respondents to rate their

daily levels of on-the-job-stress: “My job is stressful”, “On a typical day how often do you feel depressed about work?”, and “On a typical day how often do you feel stressed by your job?” Responses were given on a 5-point scale ranging from 1=strongly disagree or never to 5=strongly agree to always.

Time Zone Difference. A new measure was developed for this dissertation to measure time zone difference between global employees. In order to be meaningful, the measure had to capture both the amount of time difference as well as the amount of working time spent with each time zone. Time Zone Difference was measured with a single item that asked respondents to calibrate their work-week according to the amount of time they spent working with people in different time zones (“On an average during the last month, what proportion (%) of your weekly working hours did you spend coordinating with people in different time zones? (Please NOTE: Total must add up to 100%)”. More specifically, the time zone measure included a table with different time zone differences on the rows (starting with a zero-hour difference to a 24-hour difference), and % notations in a single column. Respondents were then asked to divide 100% of their weekly working time and indicate the proportion spent coordinating with counterparts in each of the time zone difference. The total of the column was restricted to add up to 100%. For example, an individual that worked 50% of the time with other collocated employees, and another 50% with others in a 12-hour time difference, denoted 50% in the zero-hour difference row, and 50% in the 12-hour difference row. Similarly, another individual that coordinated 30% of the time with others situated in a 3-hour difference, and 70% of the time with others in a 10-hour time difference zone, denoted 30% in the 3-hour row, and 70% in the 10-hour row. Responses were given as percentages, and a weighted average index was used to calculate

individual-level time zone difference: Time Zone Difference= [(% of hours*time zone diff 1) + (% of hours*time zone diff 2) +….(% of hours*time zone diff n)]/100.

Team Global Work. A related measure to the time zone difference variable was also computed to measure the overall amount of "Global Work" that team members engaged in. Since respondents belonged to hybrid global teams, an assessment of the teams' overall global work content was also necessary. In other words, in hybrid global teams such as those included in this dissertation, some members were collocated, and some coordinated work across different time zones, while others did not. Additionally, the amount of time zone difference that members worked with was also different. To clarify further, apart from each global team member having to coordinate their work with external counterparts across different time zones, teams were composed of members who engaged in different amounts of global work. Some did only collocated work (=0% global work), while others worked across different time zones to a great extent (anywhere between 1 to 100%).

In order to separate out the effects of collocated versus global teams work, I computed a team-level dichotomous "Global Work" Variable to measure the proportion of time that members engaged in any kind of coordination with a different time zone. This involved three steps: (1) An individual-level Global Work measure was calculated based on the time zone difference measure (the percentage of the respondent's workweek that they spent coordinating with a >0-hour time zone difference was their "global work"). The computation yielded a percentage ranging between 0-100; where 0% indicated complete collocated work, and 100% indicated complete global work; (2) A dichotomous variable was created based on step 1, where 0=0% global work and 1=>0% global work; and lastly (3) This percentage was aggregated at the team-level to yield the aggregate team-level "Global Work" score.

Team Performance. Four items adapted from Becker, Billings, Eveleth, and Gilbert (1996), were included in the supervisor survey to assess team-level performance. Apart from indicating absolute team performance, supervisors or team leaders were asked to indicate how employees in their team fared with respect to other teams. "Please rate the overall quality of work done by the employees in your workgroup/team, whom you supervise", "Please rate the overall quantity of work done by the employees in your workgroup/team, whom you supervise", "Please rate the overall performance of the employees in your workgroup/team, whom you supervise", "Relative to other employees you may work with, how would you rank the Average performance of the employees in your own workgroup/team?". Responses to the first three items were given on a 7-point scale ranging from 1=very unsatisfactory to 7=very satisfactory. For the last item, used to indicate relative performance, responses were given on a 3-point scale: 1=low; 2=medium; and 3=high.

Team Cultural Intelligence. Ang and Van Dyne's (2008) short version the Cultural Intelligence (CQ scale) to assess overall CQ was included in the supervisor survey to measure team-level CQ. The scale includes nine items used to assess individuals' knowledge and understanding of other cultures, as well as their behavioral modifications to adapt to different cultures. Supervisors were accordingly asked to assess the group-level of CQ of their teams, using the following items: "Would you say that the employees you supervise enjoy interacting with people from different cultures.", "Would you say that the employees you supervise are sure they can deal with the stresses of adjusting to a culture that is new to them", "Would you say that the employees you supervise know the cultural values and religious beliefs of other cultures.", "Would you say that the employees you supervise know the legal and economic systems of other cultures.", "Would you say that the employees you supervise know the rules (e.g., vocabulary,

grammar) of other languages.", "Would you say that the employees you supervise are conscious of the cultural knowledge they use when interacting with people with different cultural backgrounds.", "Would you say that the employees you supervise check the accuracy of their cultural knowledge as they interact with people from different cultures.", "Would you say that the employees you supervise change their verbal behavior (e.g. accent, tone) when a cross-cultural interaction requires it.", "Would you say that the employees you supervise change their non-verbal behavior when a cross-cultural interaction requires it". Responses were given on a 7–point scale ranging from 1=strongly disagree to 7=strongly agree.

Other Variables. Respondents were asked to provide additional information on their personal as well as organizational status. Some of these variables provided background information, while others were collected since they were related to individuals' work experiences, could act as significant controls.

Demographic Variables. Respondents were asked to provide information on their age, level of education, gender, marital status, number of kids, and regarding their childcare and elder care responsibilities. The items were chosen based on their status as commonly used demographic factors, or owing to their relatedness to primary independent and dependent variables in the hypothesized model. For example, number of kids, or eldercare responsibilities could impact individuals' work-family conflict levels.

Age has six possible response categories: (1) less than 25 years, (2) 26-35 years, (3) 36-45 years, (4) 46-55 years, and (5) 56-65 years and (6) more than 65 years. Gender was requested with two categories: (1) male and (2) female. Education had five possible answers to reflect generalizability to worldwide education systems: (1) less than high school, (2) high school plus a certificate degree, (3) some college, (4) undergraduate college degree, and (5) post graduate

degree. Marital status had five response categories: (1) single/divorced/widowed, (2) married, (3) married with kids, (4) significant other and (5) prefer not to answer. A related question asked respondents about the work status of their partner: "If you're married, does your partner work?" Answers were provided using three response categories: (1) yes, (2) no, (3) prefer not to answer. Number of kids was asked with a single question: "How many children under the age of 18 currently live with you at your home, at least 3 days a week?" To assess childcare and elder care responsibilities respondents were asked, "How often are you involved in caring for and teaching these children, an activity outside your work?", and "How often are you involved in caring for any elders, an activity outside your work?" Responses were given on a 5-point scale ranging from 1=never to 5=always.

Work-related Variables. Three items were used to assess an individuals' tenure within the organization. Respondents were asked to indicate how many years/months they have worked (1) for the present organization (organization tenure); (2) in the present department/work group (department tenure); and (3) with the present supervisor (supervisor tenure). For the analysis, all the tenure items were converted to months. Respondents were also asked to name the present department they worked in and their job title. Once again, these items were chosen owing to their potential relatedness with other variables, as well as to provide information regarding for group-level analyses. In the analysis, three organization dummy variables were created depending on (1) whether or not the respondent belongs to organization A; (2) whether or not the respondent belongs to organization B; and (3) whether or not the respondent belongs to organization C. The country variable was also recoded as a single dichotomous item where 1=India and 0=other.

CHAPTER 5: DATA ANALYSES AND RESULTS

This chapter reports the empirical findings from the data analyses, providing a foundation for the discussion, conclusion, and recommendations for future research that will be presented in the next chapter. The first part of this chapter reports the assessment of the measures using confirmatory factor analyses. The second part presents findings from hypothesis testing using multiple regression analyses, and further analysis of the moderating effects of time zone difference, and cultural intelligence, followed by the summary.

I use a combination of multiple linear regression and structural equation modeling (SEM) techniques to test the hypothesized relationships in the analytical model. Moderated linear regression analysis approaches will be used to test hypotheses. Prior to testing the hypotheses, I estimate the measurement model using SEM to perform a confirmatory factor analyses (CFA) of the adapted measures. CFA provides a test of the convergent and discriminant validity of each factor, as well as for construct reliability.

The moderating effects of Time Zone difference and Cultural Intelligence will be tested by developing interaction terms among variables of interest. The test for mediation by work-family conflict will be done following the principles outlined by classic and current research on the topic (Baron and Kenny, 1986; Edwards and Lambert, 2007; Preacher, Rucker and Hayes, 2007). Accordingly, for partial mediation to occur, the direct effects of HR practices on the employee stress outcome should be suppressed with the introduction of the work-family conflict variable into the empirical model. Additionally, a moderated mediation technique will be used to estimate the simultaneous effect of Time Zone difference on the mediated model (Edwards and Lambert, 2007; Preacher et al, 2007; Hayes 2009).

Analyses Methods

Multiple regression analysis employing 2-way interaction terms will be used as a means to examine the hypothesized relationships. Although this study includes two dependent variables, and at first glance use of a technique that allows simultaneous estimation of multiple dependent variables (such as structural equation modeling) seems appropriate, I chose to use multivariate regression techniques to analyze data. My selection of this technique was based on its flexibility and adaptability, since this study involves more than ten predictors, which include six independent variables, several control variables, along with one mediator, and two moderator variables resulting in at least six interaction terms for estimating each hypothesized model. Regression analysis allows us to objectively assess "the magnitude and direction (positive or negative) of each independent variable's relationship" to the dependent variable (Hair, Anderson, Tatham, and Black, 1998: p. 161). Interaction terms in the model are selected on the basis of theoretical and empirical importance in terms of their relationships to the dependent variable. All analyses were performed using the SPSS software package (except EQS was used to estimate measurement models for the conduct of confirmatory factor analyses).

Regression Analyses

In order to test for individual contribution of predictor variables, as well as whether the addition of a mediator, or moderator variable (interaction terms) contributes to model fit and predictive power, I chose to use multiple regression techniques. For mediated models, independent variables and their interactions were entered sequentially by group step 1. main predictor variables, step 2. mediator or moderator variable, step 3. interactions between main

predictor variables and the moderator to examine if addition of these variables and interactions improve prediction of (1) global team performance, and (2) global employee individual stress.

I recognize that there are limitations in regression analysis. First, multiple regression does not allow simultaneous analysis with multiple dependent variables. Second, it has no direct means of accommodating measurement error in estimating the effects of independent variables. Owing to these problems, structural equation modeling techniques are more desirable for the simultaneous analyses of multiple dependent variables. However, in order to benefit from structural equation modeling, elimination of variables and larger sample sizes are required, because the number of parameter estimates more than doubles due to simultaneous estimation with two dependent variables and the inclusion of measurement models. Since the main purpose of this study is simultaneous analysis of the effects of a set of independent variables rather than analysis with multiple dependent variables, I chose regression analysis as a main tool for data analyses.

Prior to the regression analysis, confirmatory factor analysis was conducted to examine the reliability and validity of the scales. SPSS software and EQS software were used for the purpose. Convergent and discriminant validity was assessed by examining the model fit of confirmatory factor models as well as variance extracted and shared among factors. The confirmatory factor analyses to establish valididy of the measures employed in the study with structural equation modeling showed that measurement error was not causing serious problems. This provided further support for the use of multiple regression.

The results of the confirmatory factor analyses (CFA) identified a total of seven constructs to measure the four HR practices hypothesized model. The data indicated two factors each that best represented the Communication, Flexible Work Practices, and Work Schedule

construct. Training was a single factor as initially hypothesized. The results of CFA established the internal consistency and validity of these constructs, as well as of the other constructs of interest in the study (namely Work-family Conflict, Performance, and Stress).

Measurement Models

Confirmatory Factor Analysis

Confirmatory factor analysis was conducted in order to examine convergent and discriminant validity of hypothesized constructs. Each subset of constructs was tested in a measurement model, where constructs were modeled as first-order latent constructs and correlated with each other. All measurement items were examined for normality before the confirmatory factor analysis. Significant departures from normality were not found in items. Further, normality is not a critical assumption in factor analysis (Hair et al., 1995).

Tables 3 and 4 show scale reliabilities and item factor loadings of retained items, based on the analysis with the complete data set (N=166 for all variables). To check for unidimensionality of constructs, all items of independent variables (communication, training, flexible work practices, and work schedule) were subjected to a focused confirmatory factor analysis, since they could be grouped under one underlying construct "human resource practices". The central aim of this task is to examine the underlying structure in all items across the human resource practices constructs. According to the conceptual model hypothesized, the 22 items were anticipated to load onto 6 distinct factors (i.e. communication overload, lack of communication richness, training, flexible work practices, work hours and consistency of schedule). I conducted a step-wise factor analysis, to examine the underlying factor structure for

each construct. This strip-down approach involved examining 2 related constructs at a time to extract the best-fitting factor structure. The results of this solution are presented in Table 3. As shown in Table 3, a 7-factor solution produced a better structure and also supported the previous factor analysis and theoretical conceptualization of human resource practices. I named the 7 resulting factors for human resource practices according to the items that constituted them: (1) Communication Overload (comov), (2) Lack of communication richness (comrich), (3) Training (trg), (4) Flexible Work Practices (flxprac), (5) Flexible Work Policies (flxpol), (6) Work Hours (wkhrs), and (7) Timing of workday (timeday). All items loaded highly on the expected factors (except two which were about 0.22, all factor loadings were above 0.41). Except for lack of communication richness and training, scale reliabilities of other constructs were lower than the threshold of 0.70 (Nunnally, 1978). I decided to analyze the constructs inspite of relatively low scale reliabilities (particularly in the case of flexible work policy which was a two-item measure) in order to give more weight to conceptual and theoretical considerations rather than empirical data. Additionally, since the factor loadings were reasonably high, I used this criterion to retain the conceptual constructs.

For the work-family conflict (mediator), cultural intelligence (moderator) and performance and stress (outcome) variables, the 4 factor solution produced the best structure and supported the previous factor analysis and conceptual model. The results of this solution are presented in Table 4. All items highly loaded on the expected factors (above the threshold of .40) except work-family conflict items that separated into two factors. Although this separation was not a surprise (indicating distinction of work-to-family conflict from family-to-work conflict), to achieve the most representative and parsimonious set of factors possible, work-family conflict was kept as one factor in subsequent analyses (scale reliability of all 10 items

comprising the work-family conflict construct was 0.89). There were no cross loadings among other items (above the threshold of 0.20), supporting the hypothesized factor structure based on theory.

Convergent and Discriminant Validity

Composite reliability and variance extracted for each construct were computed in order to assess whether the constructs are sufficiently represented by the specified indicators and the resulting constructs measured by them are distinct each other. Based on Fornell and Larcker's (1982) formula, the composite reliability of a construct was calculated as:

$$\text{Construct Reliability} = \frac{(\Sigma \text{ standardized loadings})^2}{(\Sigma \text{ standardized loadings})^2 + \Sigma\, \varepsilon j}$$

And the variance extracted was calculated as follows:

$$\text{Variance extracted} = \frac{\Sigma\, (\text{standardized loadings}^2)}{\Sigma\, (\text{standardized loadings})^2 + \Sigma\, \varepsilon j}$$

where εj is the measurement error for each indicator.

The measurement error is 1.0 minus the reliability of the indicator, which is the square of the indicator's standardized loading (Hair, et al., 1998: p. 612).

The construct reliability and variance statistics are shown in Table 5. All construct reliability measures demonstrated high reliability (over the threshold of .70). There was also evidence of discriminant validity for all concepts with one exception, satisfying the Fornell and Larcker's (1981) criterion for discriminant validity that variance extracted for each construct should be higher than the variance shared with any other construct. The one exception where the

discriminant validity was not established was between work-family conflict and stress, indicating that these constructs were overlapping. However, the discriminant validity measures were borderline (variance extracted =0.36 and 0.47 respectively, whereas variance shared was equal to 0.50), and did not indicate that the constructs were redundant.

Overall, these results suggest that measures adequately represent the constructs in the hypothesized model. Consequently, by taking the means of their indicators, the composite measures of 11 constructs were created for the use in the subsequent multivariate regression analyses. When "properly" constructed, summated scales can represent multiple aspects of concepts and maintain parsimony in the number of variables in multivariate models as well as reduce measurement error to some extent (Hair, et. al., 1998). The results of factor analyses presented here provided empirical support for the proper construction of summated scales from items specified on the basis of theoretical definition.

Test of Hypotheses

This section presents empirical findings from regression analyses that tested hypotheses regarding relationships among human resource practices, team performance, cultural intelligence, work-family conflict, and stress, variables. It begins with the examination of the data for regression analysis, including testing the assumption of multivariate analysis and influential outliers, followed by the findings related to hypothesis testing by multiple regression analysis and the summary of the mediating and moderating effects.

Examination of Assumptions

Multivariate normality was assessed by screening the residuals (differences between obtained and predicted DV scores) through the normal probability plots of the residuals. Residual plots are used to examine normality of sample distribution. Non-normal data with high skewness could affect regression parameters, and it is especially useful for me to check for normality assumptions of multivariate techniques owing to the relatively small sample size (N=166). Small sample sizes are sensitive to normality assumptions of multivariate regression, and hence I chose to closely examine normality and influential outliers in my data.
The plotted residuals values fell roughly along the line with no substantial or systematic departures, except few around 0.5 in the performance model. The scatterplot of studentized residuals versus standardized predicted values also showed that residuals are normally distributed around each predicted DV value in all models. The overall shape of the scatterplot also indicated the linearity of relationship between predicted DV values and residuals as well as the homoscedasticity of the residuals with no pattern of increasing or decreasing residuals.

Influential Outliers

To identify influential observations, three types of diagnostic statistics were examined: Studentized deleted residual, Mahalanobis distance, Cook's Distance. Each of the statistics provides different information about outliers. Studentized deleted residual informs us about the deleted residual – "how far the point is from the regression line with case i deleted" and Mahalanobis distance is "a measure of the distance between the specific case's values on the predictor variables and the centroid of the IVs" while Cook's Distance which informs us about "the overall influence of the single case on the regression equation (Cohen, Cohen, West, and

Aiken, 2003). Although some outliers were indicated, the relatively low values of Cook's distance indicated that the impact of outliers might be small in magnitude. Further, a case-by-case removal of outliers did not have any significant impact on model coefficients.

Multicollinearity

The degree of multicollinearity and its effect on the regression results were examined in two steps. First, the correlation matrix, variance inflation factor (VIF), and tolerance values were assessed. Then, these values were compared with the condition index, which "presents the collinearity of combinations of variables in the data set" (Hair, et. al., 1998). As expected from the discriminant factor analysis, work-family conflict and stress shared reasonably high correlation (0.59). However, it is below the threshold value of .90, and no VIF values exceeded the threshold of 10.0. Consistent with these values, no condition index was greater than the threshold value of 30.0, suggesting no serious multicollonearity in the regression results.

Regression Analyses

The correlation for independent and dependent variables is reported in Table 6a, and for demographic and control variables is reported in Table 6b. The regression analysis was performed using a complete set of data for each model (N=166).

Effects of HR Practices on Global Team Performance

Table 8 presents the results of hierarchical regression analysis in which performance is the dependent variable. Since performance was a group-level outcome reported by supervisors,

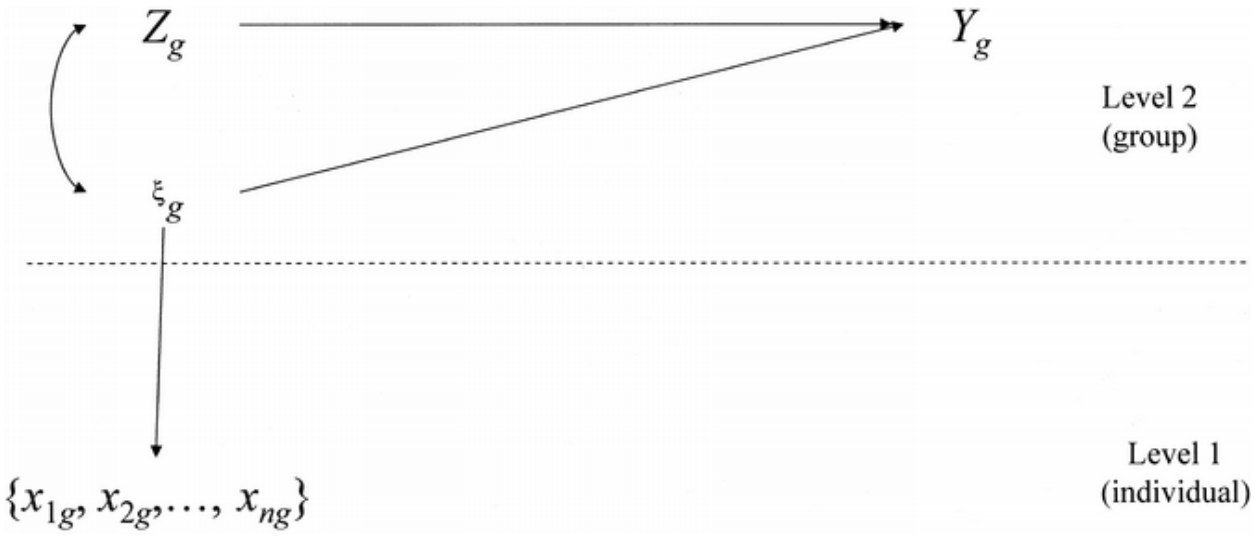
the regression was conducted using adjusted predictors as suggested by Croon and van Veldhoven (2007). See also Lüdtke, O., Marsh, H. W., Robitzsch, A., Trautwein, U., Asparouhov, T., and Muthén, B. (2008) for a review of the technique. Multi-level modeling techniques have long been used to estimate cross-level effects between lower-level and higher-level variables. However, all types of multilevel models have been used to predict outcome variables at the lowest level (for example individual) using predictors at the lower (individual) as well as higher (group) level. Neither hierarchical level modeling (HLM), nor SPSS mixed-models currently estimate outcome variables at the higher level using lower-level predictors, such as in my hypothesized model. In the empirical model I have specified, performance has been assessed at the group-level, using supervisor ratings of employee workgroups, whereas HR practices as well as work-family conflict predictor variables have been collected at the individual level from employees themselves.

Simple aggregation of individual-level variables to predict group-level outcomes are not appropriate, and result in biased estimates (Croon and van Veldhoven, 2007). Further, my data did not provide evidence for aggregation. Please refer to Table 7 for the intra-class coefficients - ICC (1), ICC (2) - and within-group agreement (rwg) values for independent variables. The values did not provide support for the data to be directly aggregated. Except for training, none of the ICC (1) values exceeded 0.20. Further, the ICC (2) values also did not reach the 0.70 benchmark for aggregation (Klein, Bliese, Kozlowski, Dansereau, Gavin, and Griffin, 2000).

Croon et al. (2007) suggest that in order to correctly specify models with higher-level outcomes, regression techniques can be used, but after adjusting the individual-level predictors, based on the group means of the outcome variable, as well as group size. In essence, their suggested technique is based on the principle that the individual-level predictors could be viewed

as group-level ‘latent’ variables. Estimates of this ‘latent’ variable is made using group sizes, the group means, and between group variances of the predictor and outcome variables, as well as the grand means of the variables of interest. This group-level ‘latent’ variable can then be used to predict the group-level outcome. A detailed discussion of how to calculate the adjusted predictors and perform an “Adjusted Regression Analysis’ is given in their 2007 publication that has been recently used to estimate mixed models with higher-level outcome variables (Croon and van Veldhoven, 2007). The article has been cited 39 times according to Google Scholar and Proquest search engine results. The citations have discussed the technique, as well as applied it to different samples. For example, Lüdtke et al.’s (2008) review of this technique found similar results in simulations with different group sizes.

FIGURE 1: Graphical representation of estimation of multi-level model with group-level outcome (from Croon and van Veldhoven, 2007).



In the Croon and van Veldhoven model (2007), the outcome variable Y_g, is defined at the macro-level and is predicted by a direct effect of another macro-level variable, Z_g, and an indirect effect through a micro-level mediating variable, x_g. Figure 1 presents the model to be estimated. According to the Croon and van Veldhoven approach, a latent variable, ξ_g, is defined at the macro-level and the individual scores on x_g are treated as reflective indicators for the unobserved group scores. The performance of the Croon and van Veldhoven model has been tested in various situations such as one in which all variables in the model are dichotomous, or a mix of dichotomous and continuous variables. The method seemed to perform well with the estimated parameters approximating the population parameters (Marsh, Balla and McDonald, 1988; Goldstein and Rabash, 1996; Bauer, Preacher and Gil, 2006).

Table 8 shows the values of R^2, standard errors, model significance, and standardized regression coefficients with their significance levels for dependent variable: Global Team Performance. Model 1 examines the direct effects of communication overload, lack of communication richness, and training predictors (adjusted to reflect team-level) on team-level performance. Model 2 examines the direct effects of adjusted individual-level predictors communication overload, lack of communication richness, and training variables, and adds the time zone difference variable, to be tested as a possible moderator. Finally, Model 3 introduces interaction terms between communication overload, lack of communication richness, training and time zone difference in the full estimated model with global team performance as the dependent variable. This is done by adding time zone difference as a moderator to Model 1. It is important to note that while the predicted independent variables (perceived human resource practices) were adjusted to reflect the team-level, time zone difference is an objective measure of time zone difference faced by each team member, and is not a perceived variable. Hence it was

not adjusted to the team-level. Instead, I controlled for a team-level global work variable to capture unobserved group-level effects that would be caused by the level of collocated versus global work that a particular global team engaged in. Other control variables (organization tenure and supervisor tenure) were aggregated to the team level to control for team-level effects.

As seen from Table 8, team global work (a control variable), was consistently significant in all 3 models. Expectedly, the more global work that a team is engaged in, the lower their performance. Organization tenure and supervisor tenure also had a consistent negative effect on global team performance. This might indicate that while working with the same supervisor and within the same organization for a longer time meant that they had to work harder. Columns 1 to 3 in Table 8 also show that organization 2 was significant in all the three models. The negative coefficients ($b=-0.410$; -0.464; and -0.639, $p<0.05$) show that the performance of teams in organization 2 were lower compared to organization 1 (the omitted category).

Hypotheses 1-A proposed that technology-mediated communication will have a negative relationship with the global team performance. Controlling for team-level global work, both communication overload, and the lack of communication richness had a positive effect on team performance ($b= 0.231$ and 0.171; $p<0.05$). Communication overload was an assessment of experienced overload of information as reported by global team employees, and measured whether they felt that they had to deal with more information than they could handle. Lack of communication richness was a measure of perceived difficulties related to the use of email, phone and other technology, and asked global team employees whether technology-mediated communication acted as a hindrance to the completion of their work. As such, I hypothesized that both overload and a hindrance to work would result in lower performance of global teams.

However the finding that both of these measures had a positive effect on global team performance was contrary to what was hypothesized. Team-level performance improved, even when employees perceived that they received more information than they could handle (communication overload) or that the use of technology to communicate posed difficulties for their work (lack of communication richness). One reason why this could happen is that when global team employees feel overloaded with information, or face difficulties due to communication via technology, it essentially means that they are having to do more work, deal with higher loads of information exchange, and put in more effort to meet group goals – and having to do this using technology to communicate amongst each other as well as with their overseas counterparts.

The higher levels of effort and coordination among members results in increased team performance. Even though overload and hindrance to work is reported by individuals, the team goals supersede individual interests, and more information exchange (communication overload), as well as perceived hindrance from frequent email and other technology-mediated communication (lack of communication richness) does not affect team performance negatively. Rather, teams that have members exchanging more information than they can handle, and communicating via email and other technology, perform better in the global work context.

This finding fits with the earlier discussion of the Indian work context. Within a collective, hierarchical society such as India, the collective goal takes precedence over individual perceptions; employees are subservient to mandates from the organization in general, take directions from supervisors and try to please them by working harder (Huang, 2009; Kelly, 2009). In the work-culture of the new economy in India, it is not uncommon to find employees

working late hours and doing everything they can to perform well and meet deadlines as they strive to benefit from the recent changes in the workplace owing to an open economy.

Hypothesis 2-A proposed that there will be a positive relationship between training and global team performance. Once again, a contrary finding was seen and training had a negative relationship with global team performance ($b = -0.265$; $p<0.05$). With more training, global team performance actually reduced. While training takes away hours that employees could otherwise spend working at their daily tasks, it remains to be seen whether these negative effects were mitigated by a presence of cultural intelligence among team members, as I have hypothesized in the study.

Moderated Regression Analysis: Time Zone Difference and Global Team Performance

Hypotheses 1-B proposed that Time Zone Difference (TZD) moderates the relationship between technology-mediated communication and global team performance, such that the negative relationship is stronger for higher levels of TZD. Columns 2 and 3 of Table 8 present the results for the test of moderation by time zone difference. To satisfy the criteria for moderation, the results show that time zone difference had a significant effect on global team performance (0.178; $p<0.05$ in column 2). Also, column 3 showed that communication overload had a significant interaction effect with time zone difference. The estimated interaction coefficient is positive ($b = 0.297$; $p<0.10$), meaning that, at higher levels of time zone difference, the impact of communication overload on global team performance is positive. In other words, as the time zone difference increases, higher levels of communication overload result in higher

team performance. While this is contrary to the prediction in hypothesis 1-B, it is consistent with the earlier finding that communication overload increases global team performance.

Figure 1-B (corresponding to hypothesis 1-B) is a graphical representation of this effect. Figure 1-B shows that compared to low levels of time zone difference, the positive effect of communication overload on global team performance is stronger at high levels of time zone difference. Having controlled for the amount of global work teams engage in, when time zone difference is high among teams, communication overload does not seem to come in the way of global team performance.

Once again, this finding is contrary to what one might expect. However, the ability of global teams to work with technology may improve as they are required to coordinate more and more across time zones, and hence a perceived overload of communication does not lower their team performance. The perceived overload of information exchange among members means that they are putting in extra effort to accomplish group goals, which helps their teams perform better. And more so when they are separated by higher degrees of time zone difference from their working counterparts. Individual team members, faced with higher time zone coordination, deliver outcomes inspite of communication overloads, and as such, their teams benefit from the higher levels of information exchanged. Hence team performance improves significantly. In contrast, at low levels of time zone difference, a perceived overload of communication and information exchange still enhances team performance, but is not as influential.

Moderated Regression Analysis: Cultural Intelligence and Global Team Performance

Hypotheses 1-C proposed to test the moderating effects of Cultural Intelligence on the effects of technology-mediated communication on global team performance. Results of the adjusted regression analyses for team-level performance outcomes with CQ as a moderator are presented in Table 9. (It is important to note that because of the relatively high correlation among some of the variables in this analysis, the regression coefficients were greater than 1.00 in some cases – for example, the correlation between performance and CQ is 0.42). The results in Table 9 show that as expected, CQ had a significant positive effect on global team performance ($b= 0.997$; $p<0.05$). This meant that teams with high CQ performed significantly better. Also, communication overload and training had a significant direct effect on CQ, as shown in column 1.

Column 2 of Table 9 shows partial support of hypothesis 1-C. Hypotheses 1-C proposed that Cultural Intelligence (CQ) will moderate the relationship between technology- mediated communication and the performance of global teams. Only communication overload had a significant interaction effect with CQ. CQ moderates the relationship between communication overload and global team performance, such that the positive relationship is weaker for high levels of CQ. While the direct effect of communication overload is positive ($b=1.686$; $p<0.05$), the interaction effect with the addition of CQ is significant and becomes negative ($b= -0.280$; $p<0.05$).

Please refer to Figure 1-C for a graphical representation of this effect. Figure 1-C shows that compared to teams with high-levels of CQ, the positive impact of communication overload on global team performance is stronger in teams that have low-levels of CQ. In other words, the

lower the team-level CQ, the greater the effect of communication overload on global team performance. In sum, perception of communication overload among members seems to be more helpful for the performance of teams with low cultural intelligence than for teams with high cultural intelligence.

To explain further, at low levels of CQ, as communication overload increases, performance of global teams increases. In other words, the more team members perceive an overload of communication and information exchange, the better the team performance. Even at high levels of CQ, communication overload enhances team performance. However, when CQ levels are low in teams, the positive effect of communication overload on global team performance is intensified.

This finding could mean that in a global work environment, when teams have lower CQ levels, perceptions of communication overload results in better team performance, but this is not necessarily true when team CQ levels are high. At high levels of CQ, communication overload makes little difference to the performance of the workgroups. However, when CQ levels are low, members' perceptions of communication overload and more information exchange than they can handle, means they contribute more to the team and helps their teams perform well. Table 9 also shows support for hypotheses 2-B, but in an unexpected direction. Hypotheses 2-B predicted that Cultural (CQ) Intelligence will moderate the relationship between training and global team performance, such that the positive relationship is stronger for high levels of CQ. As seen from Figure 2-B, CQ moderates the relationship between training and global team performance. However, the relationship is stronger for groups with low levels of CQ, rather than for groups with low levels of CQ ($b = -0.213$; $p<0.01$). Once again, this may be due to the fact that training makes a bigger difference to groups with low levels of CQ, whereas groups with

higher levels of CQ perform well as it is, and training related to the development of skills for global work, has lesser impact for these groups.

Next, I discuss the Direct Effects of HR Practices on the Individual-Level Stress outcomes of global employees. Results of this analysis are presented in Table 10.

Effects of HR Practices on Global Employee Individual Stress

Table 10 shows results from hierarchical regression analyses using individual-level predictors (flexible work practices; work hours; work-family conflict) on an individual-level outcome (employee stress). Flexible Work Practices were measured with two variables (flexible work policies such as vacation and leave policy; and flexible work practices included practices such as flextime, compressed workweek, and personal time off). Similarly, two variables (actual work hours and the timing of workday) denoted global employees' Work Schedule.

Table 10 includes the values of R^2, standard errors, model significance, and standardized regression coefficients with their significance levels. Model 1 (see column 1) examines the direct effects of flexible work practices, flexible work policies, work hours, and timing of workday variables. To test for mediation effects, Model 2 introduces work-family conflict and estimates direct effects of all variables in Model 1 with work-family conflict as the dependent variable. Model 3 adds work-family conflict to Model 1 as a predictor variable, again with stress as the dependent variable.

Table 10 shows that supervisor tenure had a significant negative effect on both stress and work-family conflict. This finding is in line with conventional arguments that relationship developed with supervisors over time enables the individual win the confidence of their

supervisor and get their support. Both general supervisor support (House, 1981), as well as work-family specific supervisor support (Hammer, Kossek, Yragui, Bodner and Hanson, 2009; Thomas and Ganster, 1995) have been shown to reduce employee work-family conflict and stress. The longer an employee works with a supervisor, they are more likely to have better support and hence felt work-stress reduces. Additionally, the results in Table 10 show that in comparison with organization 1 (the omitted category), employees in both organization 2 and 3 report higher levels of stress, regardless of work-family conflict. While employees in all three organizations did similar types of work, organization 2 and 3 were significantly lower in size than organization 1, and this could be reason why employees are able to feel and report their work-related stress. The level of global work that individuals engaged in did make a difference to their work-family or stress outcomes.

Hypothesis 3-A proposed that there will be a negative relationship between flexible work practices and the individual-level stress of global team employees. Table 10 shows partial support for hypothesis 3-A. While flexible practices did not make a difference, flexible work policies had a significant negative effect ($b = -0.170$; $p<0.05$), showing that policies such as vacation time or telecommuting options reduces the stress of employees working in global teams. Hypothesis 4-A proposed that there will be a positive relationship between the (nonstandard) work schedule and the individual-level stress of global team employees. Once again, Table 10 shows partial support for hypotheses 4-A. Work hours had a significant positive effect ($b = 0.338$; $p<0.01$) on the individual-level stress of global team employees, indicating that working long hours and with an inconsistent schedule increases individuals' stress when they work within global teams.

Table 10 also provides reasonably high evidence for the work-family conflict mediation outlined in hypotheses 3-B and 4-B. Hypotheses 3-B proposed that Work-family Conflict will mediate the effect of Flexible Work Practices (such as flexible start and finish times, comp time off, compressed work week, personal time off, and paid vacation days) on the individual-level stress of global team employees. In order for mediation to be supported, four conditions must be satisfied (Baron and Kenny, 1986): (a) Flexible Work Practices should have a significant effect on Stress in Model 1; (b) Flexible Work Practices should have a significant effect on Work-Family Conflict in Model 2; (c) Work-Family Conflict should have a significant effect on Stress in Model 3; (d) the relationship between Flexible Work Practices and Stress in Model 3 should be nonsignificant (indicating complete mediation) or significantly smaller (indicating partial mediation) than the relationship between Flexible Work Practices and Stress in Model 1.

A closer examination of Table 10 shows partial support for Hypothesis 3-B. All conditions for mediation are satisfied for flexible work policies (positive and significant beta values in Models 1 and 2), but not for flexible work practices. Additionally, work-family conflict has a significant positive effect on stress in Model 3 ($b= 0.452$; $p<0.01$). The results show that work-family conflict completely mediates the effects of flexible work policies on the stress of global team employees in this sample. For flexible work policies the beta values in Model 1 and 3 are $b= -0.170$; $p<0.05$, and $b= -0.076$; non-significant respectively. This means that the effects of flexible work policies on stress are completely mediated by work-family conflict. Therefore hypotheses 3-B is only partially supported (only flexible work policies have a significant impact on employee stress), with complete mediation by work-family conflict.

Next, Table 10 shows only partial support for Hypothesis 4-B, which proposed that work-family conflict will mediate the effects of Work Schedule on global employee stress. Only one measure of work schedule (work hours) had significant positive effects on both employee stress and work-family conflict, this direct effect was not completely mediated, but significantly reduced with the addition of work-family conflict into the model ($b= 0.338$; $p<0.01$ in Model 1; $b= 0.134$; $p<0.10$ in Model 3).

Therefore I conclude that work-family conflict partially mediates the effects of work hours on employee stress. This result means that the length of work hours and control over work hours increased the stress of global team employees. And this was due to the increase in their work-family conflict. As opposed to the actual work hours and how much control they had over their work hours, the timing of work day (which measured whether or not they worked consistent schedules over the week) mattered less to the work-family conflict of global team employees.

HR practices and Global Employee Stress: Time Zone Difference as a Moderator

Hypotheses 3-C and 4-C proposed that time zone difference will moderate the relationship between human resource practices and the work-family conflict of global team employees. Moderation tests have to be conducted on the mediated model, including work-family conflict as the mediator and stress as the outcome. This is because, the direct effects of human resource practices on employee stress are hypothesized to be mediated by work-family conflict and estimating the moderation effects of time zone on this mediated model will partial out the moderation effects on both the direct and indirect effects of HR practices on employee

stress. This will allow for simultaneous estimation of the complete model (including the mediator and moderator); comparability of results; and avoid the risk of model misspecification.

While simple moderation analyses can be conducted using regression techniques, mediated moderation requires additional considerations. Such as whether it is a mediated moderation (such that the. time zone difference moderator is transmitted through the work-family conflict mediator variable), or a moderated mediation model, such that the meditation is evidenced through the moderator variable. More recent research on the topic has advocated the integration of moderation and mediation, and suggested different ways to analyze such effects (see Edwards and Lambert, 2007; Hayes, 2009 for examples).

In order to test the moderation hypotheses involving time zone difference as a moderator, along with work-family conflict as a mediator between human resource practices and stress outcome variables, I use the approach suggested by Edwards and Lambert (2007). The paper used bootstrap estimates of estimated regression coefficients from moderation models (including interaction terms between moderator and independent as well as mediator variables) to partial out the direct as well as indirect effects of the moderator variable. Such analyses allows for simultaneous test of moderation effects of time zone difference on all hypothesized relationships in the mediated model (in this study, these paths are between flexible work practices, work schedule, and work-family conflict; and between work-family conflict and stress).

Hypothesis 3-C and 4-C proposed respectively that, Time Zone Difference will moderate the relationship of flexible work practices and work schedule with the work-family conflict experienced by global employees. The mediated moderation regression to test the above hypotheses included several steps. First, hierarchical regression models including interaction terms with the moderator variable are estimated (see Table 11). Second, the significant

moderation effects are identified, and the coefficients for the First, Second, Direct, Indirect and Total Effects for Moderation are calculated using the coefficients from Table 11. Tables 12 and 13 present the results for two significant moderated variables identified – Flexible Work Policies and Work Hours respectively. Both these variables have a significant interaction with time zone difference ($b = 0.052$, and $b = –0.080$; $p<0.05$ respectively), providing partial support for Hypotheses 3-C and 4-C.

The calculation of moderated mediation effects is done in the following way. In Table 12, for rows labeled low and high, table entries are simple effects computed from Equations using coefficient estimates for Flexible Work Policies from Table 11. "Low" and "High" time zone effects are calculated based on -2.754 and 2.754 for low and high time zone difference (i.e. one standard deviation above and below the mean of the centered time zone difference variable). Differences in simple effects are computed by subtracting the effects for high time zone difference from the effects for low time zone difference. Tests of differences for the first stage, second stage, and direct effects are equivalent to tests of the direct and mediated effects of flexible work policies on stress, as reported in Table 11. To clarify, the direct effect is equivalent to the direct effect of flexible work policies on stress. The first stage effect is equivalent to the direct effect of flexible work policies on work-family conflict (the mediator). The second stage effect is the effect of work-family conflict on stress. Finally, the tests of differences for the indirect and total effect were based on the bias-corrected confidence intervals derived from bootstrap estimates of the direct, first and second stage effects.

Table 12 shows that the effect between flexible work policies and stress is moderated in the second stage (i.e. through work-family conflict). The relationship between flexible work policies and work-family conflict (first stage) is not moderated by time zone difference.

Similarly, Table 13 shows that work hours are moderated in both the first and second stages. Therefore the relationship between work hours and work-family conflict (first stage) as well as that between work-family conflict and stress is moderated by time zone difference.

Figures 12-A to 12-E plot the mediated moderation effects of time zone difference on work-family conflict and stress. The results of Figure 12-A through 12-E show differences in simple slopes for low and high time zone difference. Figure 12-A shows that, for the first stage of the indirect effect, the relationship between flexible work policies and work-family conflict was only slightly different for low and high time zone difference (as previously noted, this effect was not significant). Figure 12-B shows that the relationship between work-family conflict and stress was steeper for high time zone difference, and stress was higher for high time zone differences, at all levels of work-family conflict. However, the indirect and total effects depicted in Figures 12-C and 12-E, respectively, indicated a less steep slope between flexible work policies and stress for high time zone differences, and a higher intercept for low time zone difference. This meant that while high time zone difference accentuated the negative effects of work-family conflict on stress, the presence of flexible work policies mitigated some of the negative effects of high time zone difference on the stress of global employees.

The effects of work hours on stress were similarly analyzed as shown in Figures 13-A through 13-E. Once again, the negative effect of work-family conflict on stress was increased with a high time zone difference [see Figure 13-B]. Figure 13-A showed little difference between low and high time zone difference. Figure 13-D shows that the negative effect of non standard work hours on the stress of global employees is enhanced when they work with high time zone difference counterparts.

CHAPTER 6: DISCUSSION AND CONCLUSION

Human resource practices have traditionally been examined for their positive effects on organizational and unit-level productivity, dealing with employees working within a single location. However, with the growth in the global economy in recent years, workplace practices have not been developed to adequately address the unique needs of the global workforce. In particular, the effectiveness of HR practices for global employees who coordinate work across different time zones has not been explored. By synthesizing the human resource and virtual team literatures, in this dissertation, I have developed a conceptual framework to obtain a more comprehensive view to understand the effects of HR practices for global teams. I conducted an empirical test of the conceptual model within three organizations in the information technology industry, and collected survey data from their global team employees and supervisors located in the Indian subcontinent.

My conceptual model for global teams proposed that two aspects of global work will moderate the relationship between HR practices, global team performance, and employee stress: Time Zone Difference and Cultural Intelligence. The model was tested with a sample of 166 individuals engaged in global work, who were nested within 32 global teams. Matched data on the performance and cultural intelligence of these teams were also collected from 32 supervisors. Based on the empirical findings from the data analyses presented in Chapter 5, this Chapter discusses the major findings and contributions of the study, implications for theory and practice, and makes recommendations for future research on the important topic of global work.

A Model of HR Practices in the Global Work Context

An assessment of the existing human resource and virtual team literatures point to several gaps. While the former highlights the importance of a set of 'best practices' to enhance organizational outcomes, the latter emphasizes group processes and technology-related challenges faced by teams as they engage in virtual work. Strategic human resource perspectives have highlighted arguments related to organizational and unit-level outcomes, largely ignoring the impact of HR practices on individual employees. On the other hand, the virtual team literature, while identifying the need for HR practices to facilitate virtual work, has not only similarly focused on the group-level, but also ignored the effects of time zone differences on global virtual work. The 'soft-skills' aspect of virtual work is only being explored recently, and in past work, researchers have paid insufficient attention to how working virtually across the globe might affect employee and team-level performance and well-being.

Expanding recent efforts to synthesize the human resource management and virtual work perspectives (e.g., Huselid, 1995; Appelbaum et al., 2000; Maznevski and Chudoba, 2000; Gibson and Cohen, 2003; Mohrman and colleagues, 1999, 2003; Batt and Valcour, 2003), this dissertation examined the role of time zone differences and cultural intelligence on the effect of HR practices on global team performance, as well as global employee stress, and work-family conflict. Applying Greenhaus and Beutell's (1995) theory of role conflict, I developed a model that emphasizes work-family conflict and stress as important outcomes of global work. The model also included time zone difference and cultural intelligence to examine my arguments that the level of global team performance and other outcomes are better explained when the effects of

human resource practices are considered in combination with the time zone difference between global employees and their working counterparts, as well as their cultural intelligence levels.

With the model involving four human resource practices (communication, training, flexible working practices, and work schedule); three employee outcomes (work-family conflict, stress, and team-level performance) outcomes, as well as two moderators (time zone difference and team-level cultural intelligence), this study asked: (1) how do human resource (HR) practices affect global team performance and employee outcomes such as work-family conflict and stress in the global virtual work context?; (2) how do time zone differences (TZD) moderate the relationship between HR practices and the performance, stress and work-family conflict of global team employees?; and (3) how does Cultural Intelligence (CQ) moderate the relationship between HR practices and global team performance?

To shed light on these questions, 11 hypotheses were developed, which were tested using a sample of 166 global team employees and 32 supervisors.

Major Findings of the Study

The empirical findings support the study's central propositions that the effects of HR practices on global team and employee outcomes are contingent upon the degree of time zone difference that they work with, and the level of cultural intelligence of global team members. The results further suggest that one of the primary effects of human resource practices is on the work-family conflict of global team employees. Furthermore, the findings highlight the importance of flexibility practices and control over work schedule as important determinants of global team performance and employee well-being.

The most important finding of the study, stated in one sentence would be: flexible working practices and control over working hours matter significantly for global team employees, as they have to coordinate their work across different time zones. The direct effect of flexible work practices and work hours on global team employee stress found consistent support. Also, the degree of time zone difference moderated these effects on the work-family conflict and stress of global team employees. The study shows that the negative effects of higher time zone difference coordination could be mitigated with the use of flexible working practices such as vacation and work-at-home policies, as well as allowing global employees greater control over their working hours.

Even though global team employees have to coordinate work across different time zones which necessitates the use technology-mediated communication, this does not make as much of a difference to the global team outcomes, as much as flexibility in working hours and time does to the individuals working as part of these teams. This was an important finding of this study. Additionally, the study also found that the greater the time zones difference that global team employees have to work with, the greater the impact of flexible work practices and work hours on global employee stress.

Secondly, the study shows that time zone difference matters for the global work context, as it impacts those who work in this scenario. Not only does it affect the relationship between flexible work practices, work hours and global employee stress, it also has an impact on performance of global teams. The use technology-mediated communication has a positive effect on the team-level performance of global employees. In other words, when global team members perceive that they receive more emails and have to exchange more information than they can handle, this 'communication overload' improves the performance of their team. Moreover, this

effect gets further enhanced when these employees have to coordinate work across higher degrees of time zone difference. The more the extent of time zone difference that global teams need to coordinate with, the more the use of technology-mediated communication makes an impact, and improves global team performance. This counter-intuitive finding regarding communication and global team performance helps us understand some of the nuances of global virtual work. Normally, when employees perceive an overload of information, more than they can handle, or when they report that the use of technology hinders their ability to complete their work tasks, this would indicate that employees are stressed at work not able to perform their job well, and result in lower performance. Feelings of work overload have been linked to lower job performance (Jex, 1998; De Cuyper and De Witte, 2006). However, this is not the case for global virtual work. In this unique work context, when employees belonging to global teams report overload of information and hindrance to their work owing to the use of technology to communicate, the performance of their teams are still high, because of the increased work effort they put in. While communication overload and lack of communication richness may be perceived as problematic by individuals working within global teams, their team goals have to be delivered regardless, and employees put in the required effort to maintain team performance.

Thirdly, the study identifies work-family conflict as a major issue for employees engaged in global work. Having to work irregular hours and nights and weekends, in order to adjust with the work schedules of counterparts across different time zones has a negative effect on the work-family lives of global employees. The impact of flexible work practices and work schedule is high in the case of global team employees because of the work-family conflict caused by this unique work context. Work-family conflict is a big reason why global team employees report that their work is stressful, and the implementation of flexible work policies and practices, as

well as a control over schedule goes a long way to help global team employees manage their stress.

Finally, this study also finds that cultural intelligence has important implications for global team performance. Because of the high cultural diversity inherent in the global work context, the level of cultural intelligence possessed by global teams has a positive impact on their performance. Even with specific types of training provided for working in the global environment, cultural intelligence still matters. Interestingly enough, the training is more effective for groups with low cultural intelligence. The results of this study show that while training is important for global team performance, it matters more for those teams that have low cultural intelligence, rather than teams that have high cultural intelligence. This is an interesting finding which tells us that training is effective when teams have low cultural intelligence to start with. Global teams with high cultural intelligence levels are already well-equipped to perform well in the global work context, and as such, providing specific training to members of these teams is less important. Also, the study found that cultural intelligence moderates the effect of communication overload on global team performance. Specifically, the results show that when global teams have low cultural intelligence, they depend on higher levels of communication and information exchange in order to be able to perform well in the global work context.

Study Contributions and Implications

Theoretical Implications

The study makes several important contributions to research on global teams. In spite of recognition that human resource practices have not been developed for virtual teams and for

individual employee effectiveness, the effects of HR practices on global virtual teams or employees have not been sufficiently examined. This study not only provides evidence for time zone effects, but also examines how HR practices and time zone difference jointly influence global team performance, and individual employee work-family conflict and stress outcomes. This is an important contribution to the virtual teams research as well as for research that attempts to fill a gap between strategic HR (macro-level) and individual-employee (micro-level) perspectives. Additionally, it also provides empirical evidence for the crucial role played by cultural intelligence for global team performance.

This dissertation makes several important contributions to theoretical development in the field of human resource management. First, the study examines the impact of time zone difference on the global workforce. A large part of the current workforce engages in global work today, and it is important to understand how working across international boundaries and coordinating work across different time zones affects employees. By assessing the impact of time zone difference on how HR practices affect individual and team-level outcomes for global employees; this study sheds new light on the factors to be considered in today's global economy, especially for the multitude of individuals engaged in such global work.

Second, apart from examining the effects of human resource practices for individual employees, this study also extends current literature on virtual teams to the globally dispersed work context characterized by time zone difference. By exploring the effect of HR practices on global team performance, as well as the joint effects of cultural intelligence and global team performance outcomes, the study highlights factors that impact the performance of employees engaged in virtual work, separated by time zone. To this end, the study makes an important contribution to the virtual teams literature, currently focused on local and regional virtual teams.

Third, the study contributes to research in the work-family area by extending the notion of work-family conflict to the experience of employees who work across different time zones. While the effect of work-family conflict on individual employee outcomes has been examined, this study extends it to the global work context by including a sample that works with different time zones.

Finally, the study also adds to current research on cultural intelligence by examining it in the global work context and assessing its impact on global team performance. It adds to existing empirical evidence that cultural intelligence is an important element of global work and makes a difference to the effectiveness of global teams. Cultural intelligence has been developed as an individual-level construct and recent research has examined its application to the team-level, highlighting its importance for multicultural team effectiveness (Shokef and Erez, 2008). This dissertation applies the concept of cultural intelligence to global teams and empirically tests it with data collected from supervisors at the team level. The findings show that cultural intelligence could be extended to be seen as a team trait, which has a significant impact on global team performance.

Practical Implications

Some tentative managerial implications can also be drawn from the findings of this study. First, results from the study help us identify effective HR policies and practices that can be implemented for global teams and the employees that work within these teams. With insights from the study, specific HR policies and flexibility practices could be designed and implemented for better management of time zone differences and cultural diversity inherent in global workforces. For example, flexible working practices such as work-at-home policies, and control

over working time and hours need to be developed for global team employees, so that they can be more effective at the workplace and experience less work-stress.

Second, the study provides data for coaching global team leaders, and identifies specific training to be developed for global team employees so that they can perform well, and be more effective. Specific training modules such as work-family training, and time-management training, could be used to shape HR strategy and can be integrated into existing training for global team employees to enable them perform well. Similarly, the study points to the importance of cultural intelligence for global teams. For organizations to remain competitive in a globalized world, the development of cultural intelligence among global team employees needs to become a priority, through appropriate training and other methods. Training had a significant impact on groups with low levels of cultural intelligence, and as such, training could make a big difference to global team performance, especially when team members lack cultural intelligence.

Last but not the least, the study highlights the role of degree of time zone difference for the performance, work-family conflict and stress outcomes of global team employees. Having to deal with high degrees of time zone difference is difficult and has negative outcomes for global team employees. Wherever possible, a distribution of work such that global employees have to deal with a mix of time zone difference would help the situation. In other words, developing teams with some members dealing with a high time zone difference and some with a low time zone difference could help group outcomes, by reducing the time lags associated with global work. The role of technology-mediated communication is interesting and managers need to understand that high levels of communication may help global team performance, but it is effective only when time zone differences are high. For members dealing with low time zone difference, or when they are collocated, face-to-face meetings need to be scheduled whenever

possible. Also, groups with high levels of cultural intelligence do well regardless. But when teams have low cultural intelligence, managers should encourage members to communicate and exchange information more frequently, as this seems to help them perform better.

Limitations and Future Research Directions

This dissertation, like any other study, has limitations, leaving unanswered questions and providing opportunities for future research. First, since some of the variables in this study (such as team performance and cultural intelligence) are the outcome of a process that occurs over the time, I acknowledge that longitudinal research is desirable for more accurately examining the determinants of team performance. The current relationships among HR practices and cultural intelligence are likely to influence future team performance. Also, these relationships may significantly vary and evolve over different phases of team development. I recognize that the current model has limitations in addressing team performance as it develops over time. With the use of longitudinal samples, researchers could explore how these relationships evolve over time and ultimately influence employee effectiveness in the long run.

Second, the sample includes only self-reported data on HR practices. This may pose such potential problems as selection bias, and subjective judgment by respondents. An ideal sample would require multi-source data on HR policies and practices, using subjective and objective data in combination. A related issue is that the study included self-reported work-family conflict and stress as dependent variables. Both these constructs are closely related aspects of individuals' experience. Future research might consider adding multiple sources for work-family

conflict data, such as spousal reports or reports from other family members of the focal respondent.

Finally, since this is the first study to investigate hypothesized relationships, the study focused on sample within one country (India) to avoid the contamination of results by unobserved heterogeneity due to country differences. However, the empirical results derived from a sample of global team employees based only in India may raise the concern that findings are country-specific. Comparative study across multiple countries will give us more insights about concurrent effects of socio-economic and institutional factors on global employee outcomes. Since the present study revealed that some of the results are context-specific, conditioned by local and national-level cultures, the conclusions from this study remain specific to the socio-economic work context of India, and limit the generalizability of the findings. Adding data from other countries with employees engaged in global work will allow comparisons as well as extend the findings to other contexts.

Further, although employees in my sample coordinate work with global counterparts, they are themselves not geographically distributed (i.e. they work within hybrid teams). Collecting data from teams that have employees who are located across different countries and time zones would make the study more generalizable to the global workforce and different types of global teams. Also, using a case study approach, one can investigate complex relationships among various context-specific factors, meanings of these relationships, and procedures. A case study also can provide insights from extreme cases that are left beyond the findings of quantitative analyses.

In spite of these limitations, this dissertation makes a significant contribution to the study of individuals working across the globe, who not only have to conduct their work virtually, but

also work during nonstandard hours to accommodate different time zones. To my knowledge, quantitative studies using a global employee sample are few and far between. This study is a definite step towards our understanding of employee effectiveness in the important and fast growing global work context. I believe that this study will expand our knowledge and trigger further research on related issues.

APPENDICES

APPENDIX A: TABLES

TABLE 1: Survey Response Rates

Site*	**Survey Version**	***# ee* Sent (1)**	***# sup* Sent (2)**	**# total Sent (3=1+2)**	***# ee* Collected (4)**	***# sup* Collected (5)**	**# total Collected (6=4+5)**	**Response Rate (6/3*100)**
A	Paper-Pencil	125	25	150	100	20	120	80.0%
B	Web-Survey	101	9	110	46	8	54	49.1%
C	Paper-Pencil	21	5	26	20	4	24	92.3%
Total		247	39	286	166	32	198	69.2%

* Data were collected from company sites located in India.
 # ee Denotes total number of employee surveys sent/collected.
 # sup Denotes total number of supervisor surveys sent/collected.

TABLE 2: Sample Demographic Profile

Demographic Profile of Employees Across the Three Data Sites (All numbers are in percentages)

Age (in yrs)	A	B	C	All
< 25	8.0	80.4	0	27.1
25-35	87.0	19.6	60.0	65.1
36-45	5.0	0	35.0	7.2
≥ 46	0	0	5.0	0.6

Education	A	B	C	All
High sch./ tech.	4.0	6.5	0	4.2
Some College	0	6.5	5.0	2.4
Undergrad degree	20.0	54.3	20.0	29.5
Post-grad degree	76.0	32.6	75.0	63.9

Gender	A	B	C	All
Male	62.0	87.0	75.0	70.5
Female	38.0	13.0	25.0	29.5

Org. Tenure (in months)	A	B	C	All
≤ 11	17.0	76.1	15.0	33.1
12-24	26.0	21.7	20.0	24.1
25-48	26.0	2.2	20.0	18.7
49-72	13.0	0	15.0	9.6
≥ 73	18.0	0	30.0	14.5

Dept. Tenure (in months)	A	B	C	All
≤ 10	25.0	71.7	20.0	37.3
11-20	28.0	23.9	15.0	25.3
21-30	23.0	4.3	20.0	17.5
31-50	19.0	0	20.0	13.9
≥ 51	5.0	0	25.0	6.0

Supervisor Tenure (in months)	A	B	C	All
≤ 5	22.0	56.5	10.0	30.1
6-11	21.0	21.7	10.0	19.9
12-20	28.0	19.6	20.0	24.7
21-40	26.0	2.2	30.0	19.9
≥ 41	3.0	0	30.0	5.4

Number of Kids under 18	A	B	C	All
No Kids	71.0	91.3	40.0	72.9
At least 1 kid	29.0	8.7	60.0	27.1

Marital Status	A	B	C	All
Single	40.0	93.5	25.0	53.0
Married/Sig. Other	58.0	2.2	75.0	44.6
*Prefer not to answer**	2.0	4.3	0	2.4

Partner Work Status	A	B	C	All
Doesn't Work	50.0	76.1	60.0	58.4
Working	44.0	2.2	35.0	31.3
*Prefer not to answer**	6.0	21.7	5.0	10.2

** treated as missing value*

TABLE 3: Factor Loadings of Human Resource Practice Items

	comov	comrich	trg	flxprac	flxpol	wkhrs	timeday
Communication Overload							
comov2	.560						
comov3	.789						
comov4	.431						
Lack of Communication Richness							
comrich2		.908					
comrich3		.725					
comrich4		.425					
Training							
trg1			.683				
trg2			.822				
trg3			.805				
trg4			.763				
trg5			.715				
Flexible Work Practices							
fwp2				.348			
fwp3				.574			
fwp4				.469			
fwp5					.223		
fwp6					.573		
Work Schedule							
rsched2*						.483	
sched5						.407	
rsched8*						.840	
rsched3*							.264
sched4							.445
sched6							.642
Scale Reliability	***.60***	***.71***	***.87***	***.44***	***.23***	***.57***	***.40***

* Reverse-Coded Item

Extraction Method: Principal Axis Factoring, Rotation: Promax with Kaiser Normalization

All loadings less than .20 are not shown in the above Table.

TABLE 4: Factor Loadings of Work-Family Conflict, Stress, Performance, and CQ Items

	wfconf	fwconf	(wfconf)	stress	perf	cq
Work-to-Family Conflict						
wfc1	.742					
wfc2	.798					
wfc3	.851					
wfc4	.704					
wfc5	.725					
Family-to-Work Conflict						
fwc1		.491				
fwc2		.841				
fwc3		.698				
fwc4		.913				
fwc5		.803				
Work-Family Conflict Scale						
(wfconf1)			.752			
(wfconf2)			.825			
(wfconf3)			.844			
(wfconf4)			.705			
(wfconf5)			.792			
(wfconf6)			.483			
(wfconf7)			.465			
(wfconf8)			.541			
(wfconf9)			.491			
(wfconf10)			.437			
Individual Stress						
stress1				.670		
stress2				.693		
stress3				.690		
stress4				.302		
Team Performance						
perf1					.630	
perf2					.861	
perf3					.998	
perf4					.485	
Team Cultural Intelligence						
cq2						.659
cq3						.794
cq4						.744
cq5						.675
cq6						.888
Scale Reliability	***.90***	***.86***	***.89***	***.81***	***.85***	***.75***

Extraction: Principal Axis Factoring; Rotation: Promax with Kaiser Normalization. Loadings less than .20 not shown.

TABLE 5: Convergent and Discriminant Validity of Study Constructs

Construct	Construct Reliability	Variance Extracted	Highest Variance	Average Variance
Independent Variables (Human Resource Practices)				
Communication Overload (comov)	.59	.39	.07	.04
Lack of Communication Richness (comrich)	.76	.52	.10	.03
Training (trg)	.84	.51	.24	.07
Flexible Work Practices (flxprac)	.51	.36	.07	.03
Flexible Work Policies (flxpol)	.57	.51	.34	.08
Work Hours (wkhrs)	.63	.37	.34	.12
Timing of Workday (timeday)	.42	.25	.24	.09
Mediator and Outcome Variables				
Work-Family Conflict (wfconf)	.84	.36	.50	.18
Stress (stress)	.77	.47	.50	.18
Performance (perf)	.81	.53	.14	.06
Cultural Intelligence (cq)	.73	.31	.14	.06

Note: All models were estimated by the maximum likelihood method using EQS software. Construct reliability and variance extracted are based on Fornell and Larcker's (1981) formula. Highest variance shared is the highest variance shared with between this construct and any other construct in the model. Average variance shared is the average variance shared between this construct and all other constructs in the model.

TABLE 6a: Descriptive Statistics and Correlations of Independent and Dependent Variables

		1	2	3	4	5	6	7	8	9	10	11	12
1.	Communication Overload	1.00											
2.	Lack of Communication Richness	.08	1.00										
3.	Training	-.02	-.02	1.00									
4.	Flex Practices	.12	.08	.09	1.00								
5.	Flex Policy	.03	-.04	-.002	.09	1.00							
6.	Work Hours	.01	.15	-.16*	-.01	-.48**	1.00						
7.	Timing of Workday	.22**	.001	-.23**	.01	.05	.07	1.00					
8.	Work-Family Conflict	.11	.16*	-.13	-.07	-.40**	.54**	.06	1.00				
9.	Stress	-.01	.14	-.08	-.10	-.40**	.47**	-.05	.59**	1.00			
10.	Cultural Intelligence	.05	.02	-.07	.08	.05	-.05	.12	-.08	-.13	1.00		
11.	Performance	.08	-.04	.04	.08	.15	-.04	.13	-.17*	-.17*	.42**	1.00	
12.	Time Zone Difference	.09	-.08	-.18*	.01	.08	.04	.28**	.03	-.09	.15	.09	1.00
	Mean	*2.81*	*2.45*	*1.89*	*1.75*	*3.68*	*2.44*	*2.90*	*2.17*	*2.94*	*4.77*	*4.98*	*2.89*
	Std. Dev.	*0.62*	*0.90*	*0.97*	*0.59*	*0.75*	*0.69*	*0.85*	*0.76*	*0.86*	*1.07*	*0.49*	*2.75*

N = 166

* Correlation is significant at p < .05 (2-tailed)

** Correlation is significant at p < .01 (2-tailed)

TABLE 6b: Descriptive Statistics and Correlations of Control Variables

		1	2	3	4	5	6	7	8	9	10	11
1.	Organization Tenure	1.00										
2.	Department Tenure	.69**	1.00									
3.	Supervisor Tenure	.56**	.68**	1.00								
4.	Age	.50**	.46**	.49**	1.00							
5.	Education	.17*	.12	.17*	.30**	1.00						
6.	Gender (male)	.14	.05	.04	.05	.04	1.00					
7.	Number of Kids	.30**	.33**	.35**	.36**	.11	.02	1.00				
8.	Marital Status (married)	.43**	.40**	.40**	.51**	.29**	.15	.53**	1.00			
9.	Partner Work Status	.25**	.20*	.12	.25**	.33**	.35**	.32**	.77**	1.00		
10.	Child Care	.30**	.29**	.33**	.32**	.12	.13	.81**	.47**	.31**	1.00	
11.	Elder Care	.25**	.15*	.18*	.14	.09	-.01	.24**	.21**	.13	.30**	1.00
	Mean	*2.48*	*2.26*	*2.51*	*1.81*	*4.52*	*0.30*	*0.27*	*0.46*	*0.35*	*1.81*	*2.75*
	Std. Dev.	*1.41*	*1.26*	*1.26*	*0.58*	*0.77*	*0.46*	*0.45*	*0.50*	*0.48*	*1.33*	*1.18*

N = 166 (except for marital status *N*=162, and partner work status *N*=149)
* Correlation is significant at p < .05 (2-tailed)
** Correlation is significant at p < .01 (2-tailed)

TABLE 7: Intra-class correlations and group agreement values

Construct	ICC (1)	ICC (2)	r_{wg}
Indpendent Variables (Human Resource Practices)			
Communication Overload (comov)	.08	.32	.81
Lack of Communication Richness (comrich)	.08	.31	.60
Training (trg)	.34	.73	.53
Flexible Work Practices (flxprac)	-.01	-.05	.82
Flexible Work Policies (flxpol)	.11	.38	.72
Work Hours (wkhrs)	.09	.35	.76
Timing of Workday (timeday)	.17	.52	.64
Mediator and Outcome Variables			
Work-Family Conflict (wfconf)	.11	.40	.71
Stress (stress)	.15	.48	.70

TABLE 8: Adjusted Regression: Moderating Effects of Time Zone Difference on Team Performance

	Global Team Performance	Global Team Performance	Global Team Performance
Control Variables			
Organization = 2	-0.410**	-0.464***	-0.639***
	(0.181)	(0.182)	(0.143)
Organization = 3	-0.082	-0.028	-0.094
	(0.159)	(0.162)	(0.157)
Global Work	-0.365***	-0.403***	-0.011***
	(0.003)	(0.003)	(0.003)
Organization Tenure	-0.542***	-0.539***	-0.169**
	(0.059)	(0.059)	(0.070)
Supervisor Tenure	-0.299**	-0.299**	-0.229***
	(0.070)	(0.069)	(0.071)
Independent Variables			
Communication Overload	0.231***	0.218***	-0.475
	(0.137)	(0.136)	(0.363)
Lack of Communication Richness	0.171**	0.206***	0.053
	(0.094)	(0.096)	(0.149)
Training	-0.265**	-0.157	
	(0.093)	(0.101)	
Moderator			
Time Zone Difference (TZD)		0.178**	-0.878
		(0.028)	(0.336)
Interaction Variables			
TZD*Communication Overload			0.297**
			(0.132)
TZD*Communication Richness			0.051
			(0.045)
constant	5.306***	4.983***	7.568***
	(448)	(0.471)	(1.003)
p	*0.000*	*0.000*	*0.000*
R-squared	*0.35*	*0.36*	*0.40*

Note: Estimates are coefficients from Adjusted Regression Analyses using best linear unbiased predictors (BLUP) based on group-level means of the Dependent Variable (Performance) and individual-level Moderator (Time Zone Difference).
N=166 (number of teams=32). *** p < .01, ** p < .05, * p < .10

TABLE 9: Adjusted Regression: Moderating Effects of Cultural Intelligence on Team Performance

	Global Team Performance	Global Team Performance	Global Team Performance
Control Variables			
Organization = 2	-0.410**	-0.475**	-0.154
	(0.181)	(0.179)	(0.194)
Organization = 3	-0.082	-0.098	0.091
	(0.159)	(0.156)	(0.168)
Global Work (team-level)	-0.365***	-0.009***	-0.007**
	(0.003)	(0.003)	(0.003)
Organization Tenure (team-	-0.542***	-0.195***	-0.100
	(0.059)	(0.064)	(0.067)
Supervisor Tenure (team-level)	-0.299**	-0.144**	-0.151**
	(0.070)	(0.069)	(0.067)
Independent Variables			
Communication Overload	0.231***	0.360**	1.686**
	(0.137)	(0.136)	(0.629)
Lack Communication Richness	0.171**	0.158*	-0.149
	(0.094)	(0.095)	(0.382)
Training	-0.265**	-0.093	0.785**
	(0.093)	(0.103)	(0.322)
Moderator			
Cultural Intelligence (CQ)		0.097**	1.128**
		(0.039)	(0.419)
Interaction Effects			
CQ*Communication Overload			-280**
			(0.123)
CQ* Lack of Communication			0.067
			(0.083)
CQ*Training			-0.213***
			(0.072)
constant	5.306***	4.673***	-0.401
	(448)	(0.508)	(2.133)
p	*0.000*	*0.000*	*0.000*
R-squared	*0.35*	*0.37*	*0.43*

Note: Estimates are coefficients from Adjusted Regression Analyses using best linear unbiased predictors (BLUP) based on group-level means of the Dependent Variable (Performance) and individual-level Moderator (Time Zone Difference).
N=166 (number of teams=32). *** p < .01, ** p < .05, * p < .10

TABLE 10: Hierarchical Regression Analysis (Individual Stress)

	Stress	Work-Family Conflict	Stress
Control Variables			
Organization = 2	0.163*	-0.021	0.172**
	(0.186)	(0.159)	(0.168)
Organization = 3	0.136*	-0.032	0.150**
	(0.211)	(0.180)	(0.191)
Global Work	-0.001	0.051	-0.025
	(0.002)	(0.002)	(0.002)
Organization Tenure	0.146	0.102	0.100
	(0.055)	(0.047)	(0.050)
Supervisor Tenure	-0.148*	-0.191**	-0.062
	(0.060)	(0.051)	(0.055)
Gender (men)	0.102	0.045	0.081
	(0.133)	(0.113)	(0.120)
Number of Kids	0.063	0.153**	-0.007
	(0.143)	(0.121)	(0.131)
Independent Variables			
Flexible Work Practices	-0.087	-0.049	-0.065
	(0.097)	(0.083)	(0.088)
Flexible Work Policies	-0.170**	-0.207***	-0.076
	(0.092)	(0.078)	(0.085)
Work Hours	0.338***	0.451***	0.134*
	(0.101)	(0.086)	(0.100)
Timing of Workday	-0.017	0.014	-0.024
	(0.073)	(0.062)	(0.066)
Mediator			
Work-Family Conflict			0.452***
			(0.086)
constant	2.712***	1.832***	1.775***
	(0.594)	(0.505)	(0.559)
p	*0.000*	*0.000*	*0.000*
R-squared	*0.32*	*0.37*	*0.45*

Note: Estimates are from hierarchical regression with individual-level stress. *N=166.* *** p < .01, ** p < .05, * p < .10

TABLE 11: Mediated Moderation Results: Individual Stress

	Stress	Work-Family Conflict	Stress
Control Variables			
Supervisor Tenure	-0.021	-0.084*	-0.037
	(0.051)	(0.047)	(0.050)
Gender (men)	0.153	0.033	0.110
	(0.124)	(0.115)	(0.122)
Marital Status (married)	0.177	0.103	0.199
	(0.145)	(0.134)	(0.144)
Number of Kids	-0.084	0.251*	-0.096
	(0.146)	(0.136)	(0.146)
Organization = 2	0.349**	-0.078	0.324**
	(0.168)	(0.156)	(0.165)
Organization = 3	0.370**	-0.098	0.296
	(0.190)	(0.177)	(0.187)
Independent Variables			
Flexible Work Practices	-0.100	-0.145	-0.039
	(0.090)	(0.115)	(0.122)
Flexible Work Policies	-0.086	-0.179	-0.210*
	(0.086)	(0.112)	(0.121)
Work Hours	0.183*	0.546***	0.428**
	(0.103)	(0.130)	(0.155)
Timing of Workday	-0.018	0.077	0.031
	(0.069)	(0.092)	(0.097)
Work-Family Conflict (Mediator)	0.507***		0.331**
	(0.089)		(0.128)
Time Zone Difference (TZD) (Moderator)	-0.014	0.067	0.013
	(0.021)	(0.145)	(0.161)
Interaction Effects			
TZD*Flexible Work Practices		0.035	-0.034
		(0.031)	(0.033)
TZD*Flexible Work Policies		-0.002	0.052**
		(0.025)	(0.027)
TZD*Work Hours		-0.015	-0.080**
		(0.028)	(0.034)
TZD*Timing of Workday		-0.026	-0.026
		(0.022)	(0.024)
TZD* Work-Family Conflict			0.055*
			(0.031)
constant	-0.250**	-0.114	-0.229**
	(0.115)	(0.107)	(0.114)
p	*0.000*	*0.000*	*0.017*
R-squared	*0.44*	*0.38*	*0.49*

Note: Estimates are from hierarchical regression with individual-level stress.
N=162. *** p < .01, ** p < .05, * p < .10

TABLE 12: Mediated Moderation Stress: Analysis of Simple Effects - Flexible Policies

	Stage		Effect		
	First	Second	Direct	Indirect	Total
Time Zone Difference					
Low	-0.175	0.179**	-0.354**	-0.031**	-0.386**
High	-0.184	0.483**	-0.066**	-0.089**	-0.155**
Differences	-0.009	0.304	0.288**	-0.058	0.230**

Note. N = 162. *** p < .01, ** p < .05, * p < .10

TABLE 13: Moderated Mediation Stress: Analysis of Simple Effects – Work Hours

	Stage		Effect		
	First	Second	Direct	Indirect	Total
Time Zone Difference					
Low	0.588***	0.179**	0.648**	0.105**	0.753**
High	0.504***	0.483**	0.208**	0.243**	0.451**
Differences	-0.084	0.304*	-0.440**	0.138*	-0.302**

Note. N = 162. *** p < .01, ** p < .05, * p < .10

APPENDIX B: FIGURES

FIGURE 2: Conceptual Model of HR Practices and Global Team Outcomes - The Role of Time Zone Difference and Cultural Intelligence

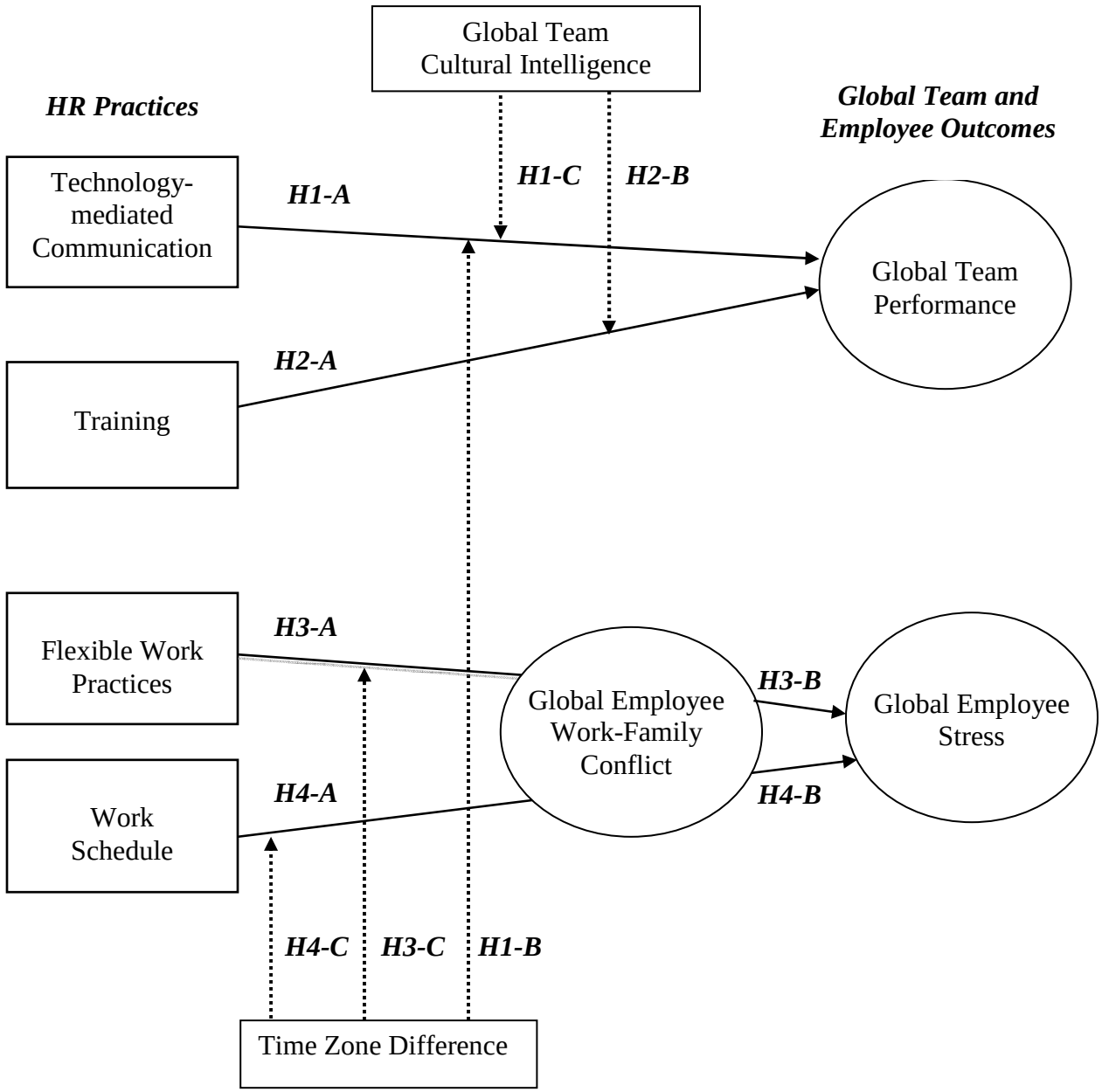


FIGURE 1-B: Moderation Effect of Time Zone Difference on Communication Overload and Global Team Performance

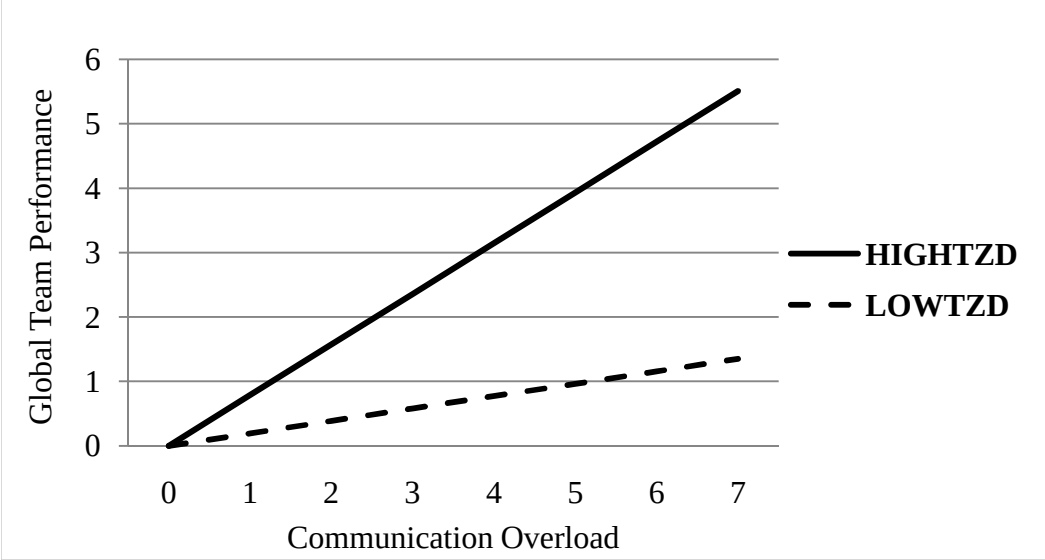


FIGURE 1-C: Moderation Effect of Cultural Intelligence on Communication Overload and Global Team Performance

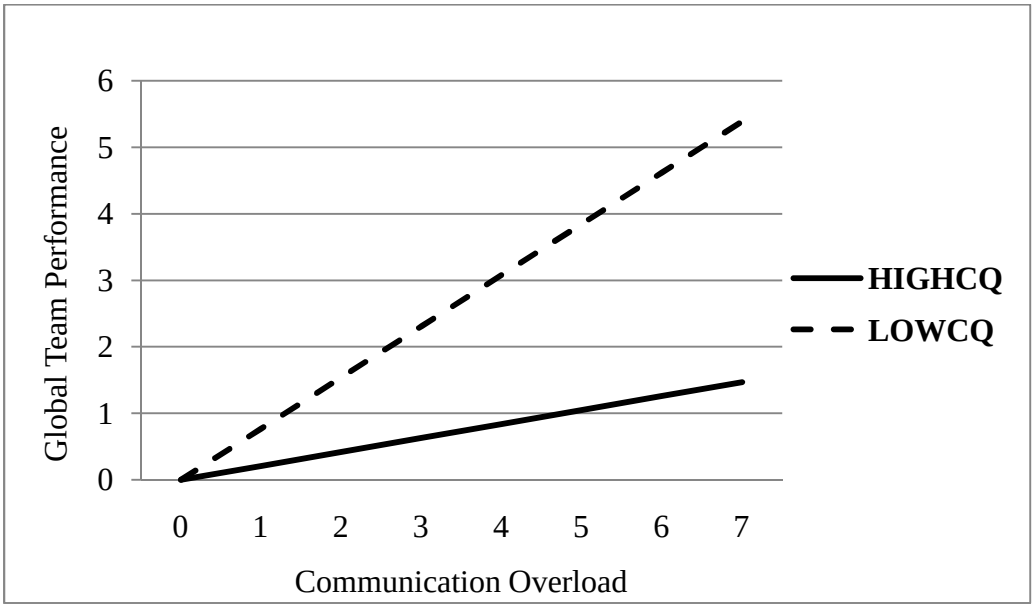
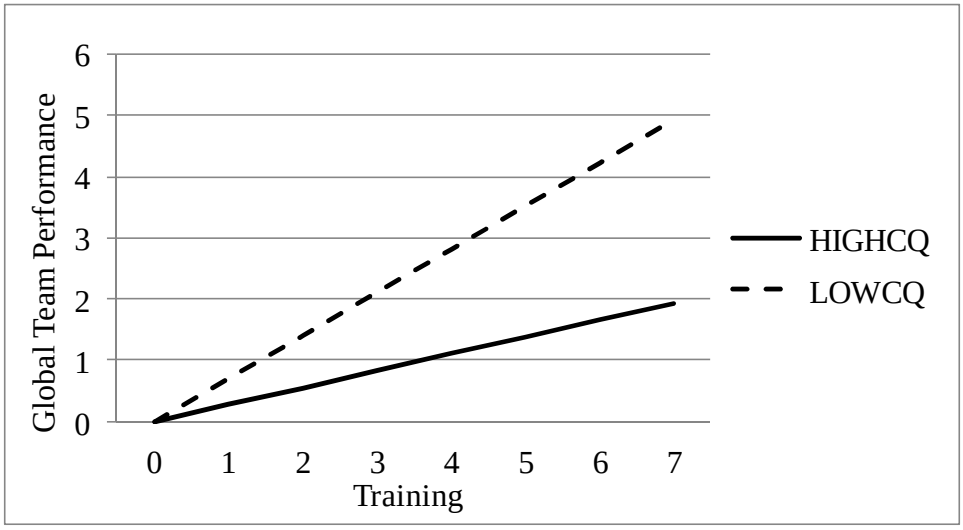


FIGURE 2-B: Moderation Effect of Cultural Intelligence on Training and Global Team Performance



FIGURES 12-A to 12-E: Moderation Effect of Time Zone Difference (TZD) on Flexible Work Policy (FLXPOL), Global Employee Work-Family Conflict, and Stress

Fig. 12-A: First Stage - FLXPOL

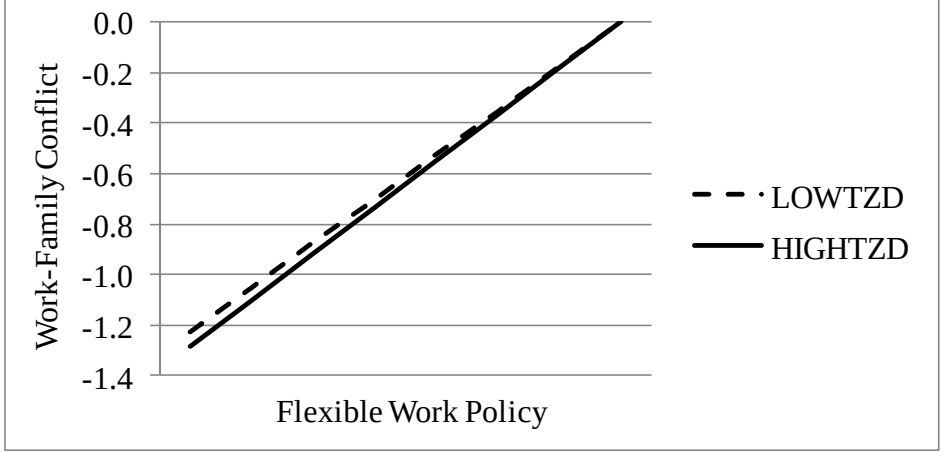
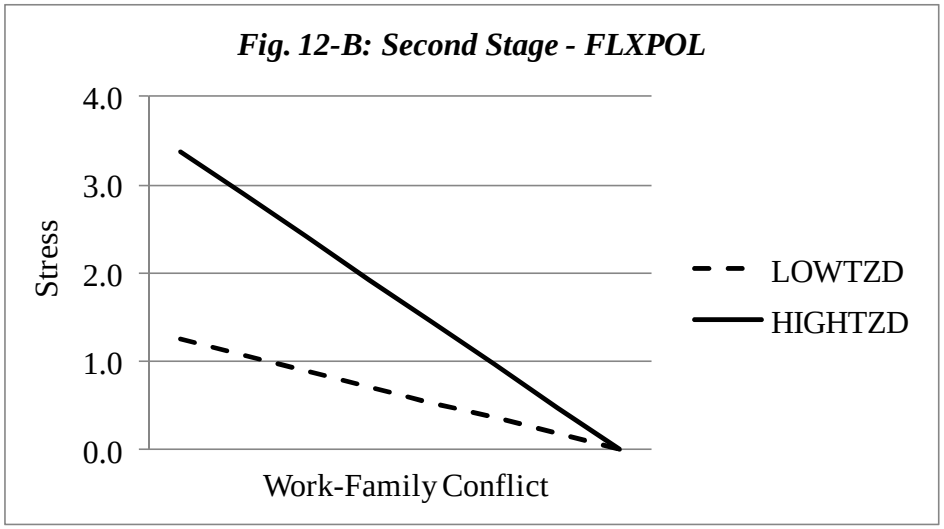
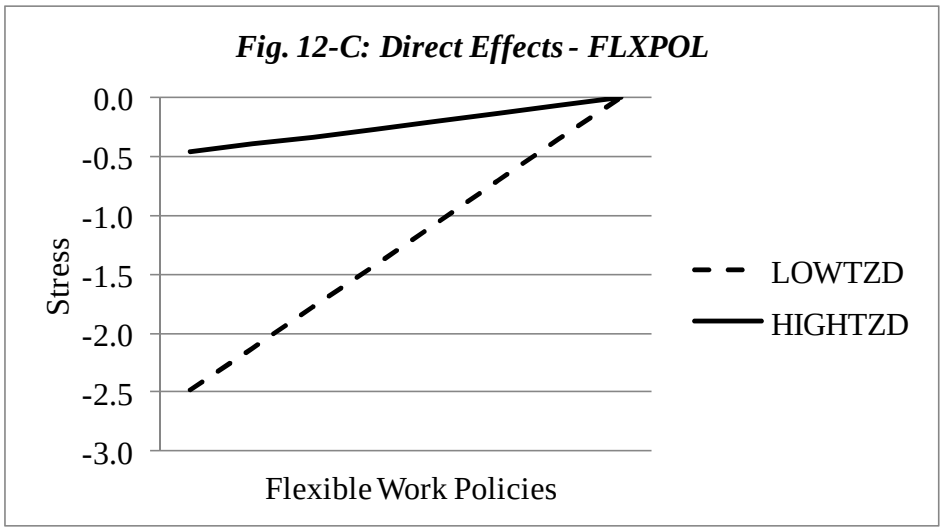
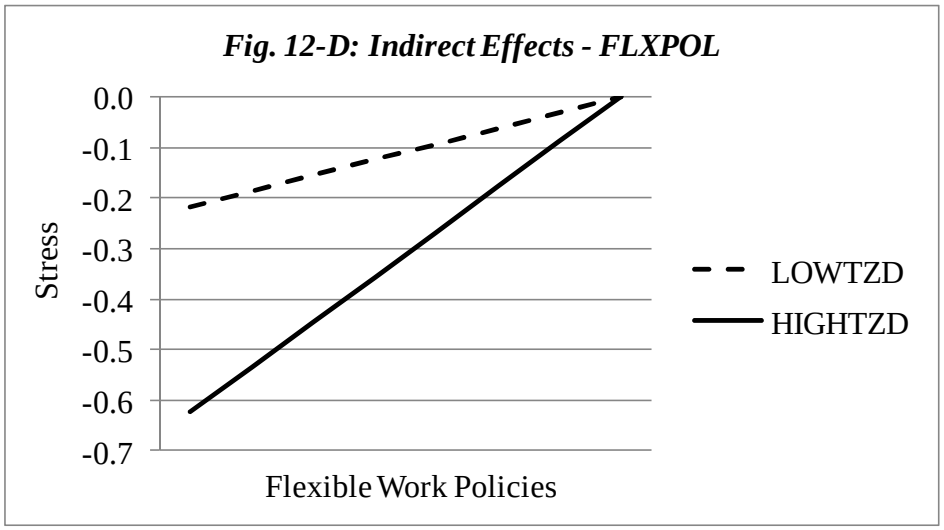


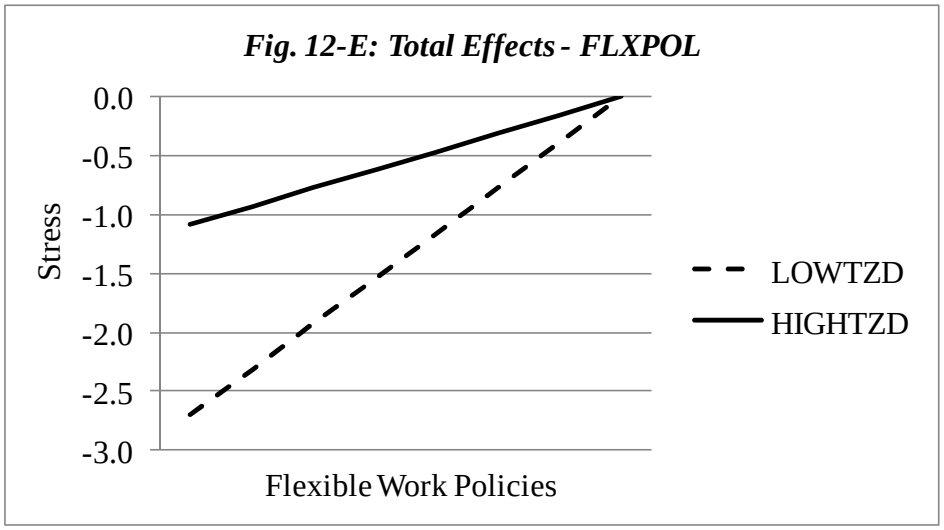
Fig. 12-B: Second Stage - FLXPOL



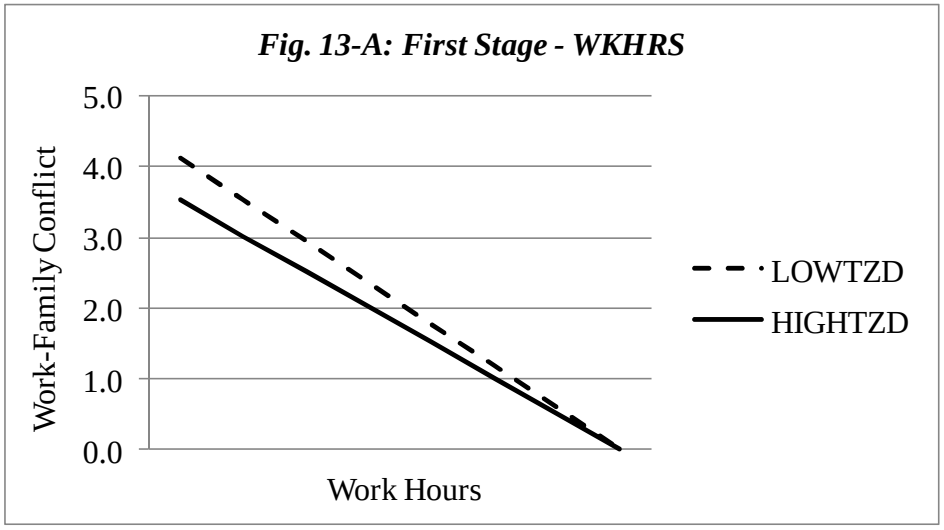
FIGURES 12-A to 12-E continued

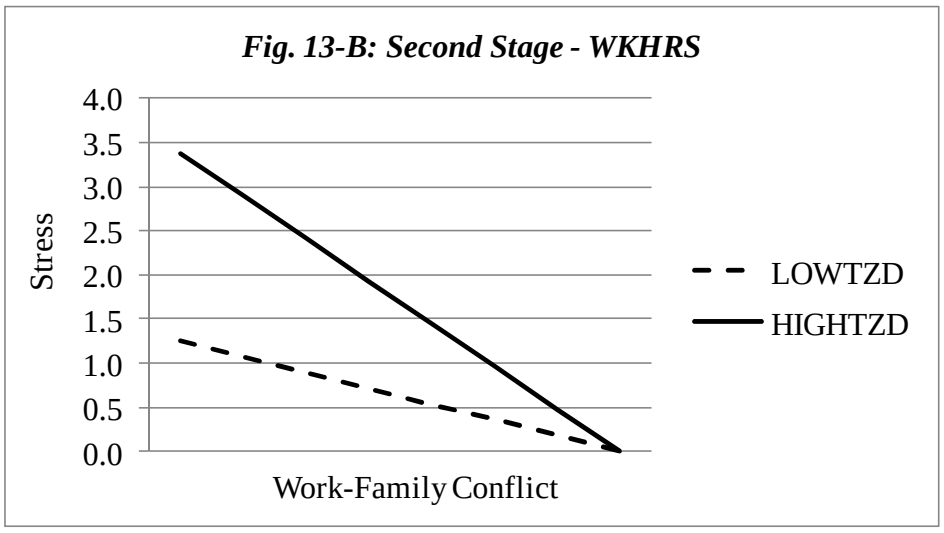




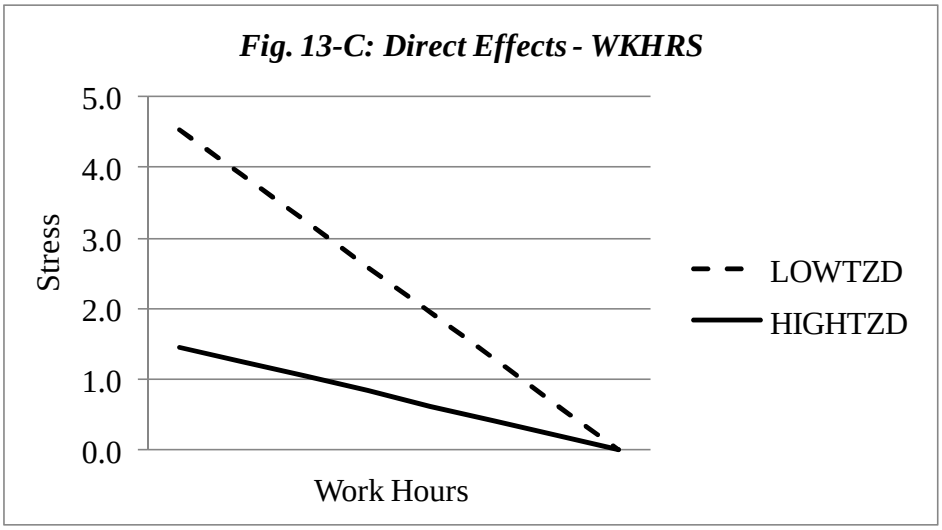


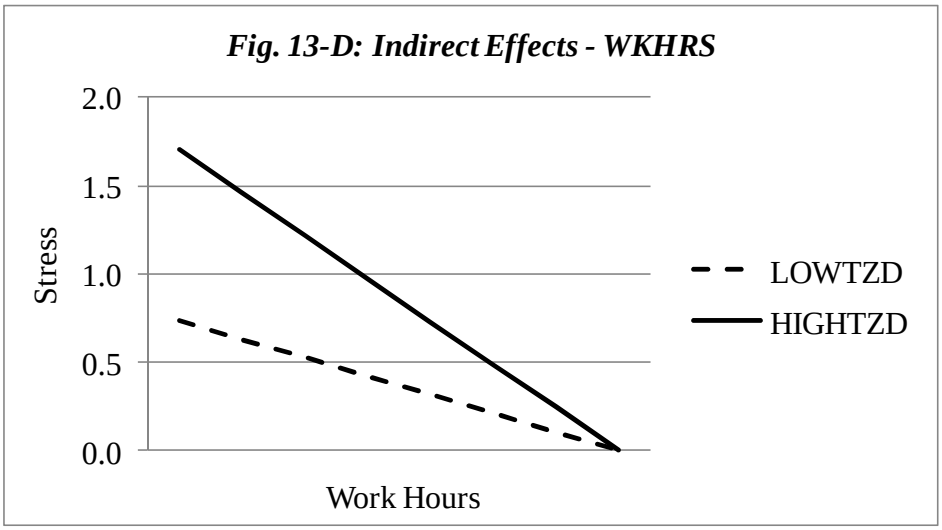
FIGURES 13-A to 13-E: Moderation Effect of Time Zone Difference (TZD) on Work Hours (WKHRS), Global Employee Work-Family Conflict, and Stress

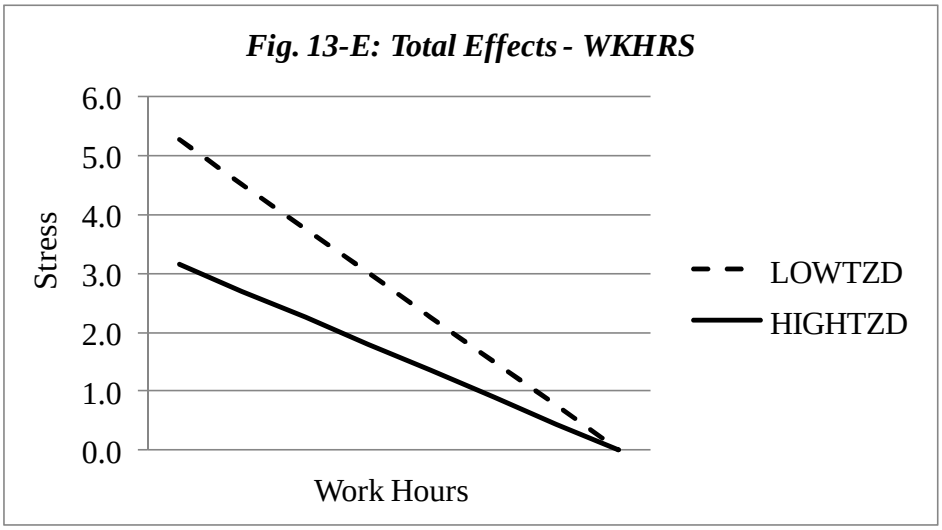




FIGURES 13-A to 13-E continued







APPENDIX C: EMPLOYEE SURVEY ITEMS

Communication Overload (adapted from Roberts & O'Reilly, 1974):
* Notes items used in final analyses

1. To what extent does your job require you to respond to emails on an hourly basis?
2. During a typical workday, to what extent do you receive more information than what is necessary to meet the requirements of your job (for example you could be being copied on all emails, or receiving other types of information not directly related to the work you are doing)? *
3. In a typical work week, how often do feel that you receive more information than you can efficiently use? *
4. In a typical work week, how often do you have more information than you can consistently handle for making the best possible work-related decisions? *

Lack of Communication Richness (adapted from Roberts & O'Reilly, 1974):

1. To what extent would you say you use face-to-face communication (meet with others) to get your work done?
2. Would you say that the use of email communication hinders your ability to complete your tasks on time? *
3. Would you say that the use of other virtual communication (like telephone, audio/video conferencing) hinders your ability to complete your tasks on time? *
4. Would you say written communication (like emails and attachments) are sometimes difficult to interpret and fail to provide the necessary information for you to take job-related decisions? *

Training (adapted from Appelbaum, E., T. Bailey, P. Berg and A. L. Kalleberg, 2000):

1. In the last year, did you receive training from your organization to effectively use the different types of communication technology available to you? [Please indicate total number of training days in past year. if you have worked for less than a year in this organization, indicate total number of days after you joined]. *
2. In the last year, did you receive time management training from your organization to enable you better manage your workday? *
3. In the last year, how many days of interpersonal-skills training did you receive from your organization to enable you work with others? *
4. In the last year, how many days of diversity training did you receive from your organization to enable you work with others? *
5. In the last year, how many days of work-life training did you receive from your organization to enable you balance your work and personal life? *

Flexible Work Practices (adapted from Ellen Galinsky Report, 2004):

1. How often do you vary your work start and quit times, around set core hours?
2. How often do you use compensatory time off ("comp time")—i.e., receive compensation in the form of extra time off when you work overtime? *
3. How often do you compress your workweek (i.e. work longer hours on fewer weekdays and take the rest of the week off)? *
4. How often do you take some personal time off, i.e. part or a whole day off to attend to important family or personal needs without having to lose pay or use your vacation time? (e.g. maybe to attend a school conference, or to take care of a sick child or other family member). *
5. To what extent are you able to use ALL your paid vacation days? *
6. I am able to work from home or remotely when I need this sort of flexibility. *

Work Schedule (adapted from Barnett; Gareis, and Brennan, 1999; Ellen Galinsky Report, 2004; Berg, Misra and Kato, 2005):

1. On an average, how many hours do you work in a typical week? (Please indicate # of hrs/week).
2. To what extent would you say you have control over scheduling your own work hours? (reverse coded) *
3. Over the last one month, would you say you have worked consistent hours (i.e. worked for the same number of hours every day)? (reverse coded) *
4. Would you say you work cyclically – e.g. different number of days/hours every week, because you may have to wait for work to be completed by your overseas partners? *
5. How frequently do you work weekends to coordinate work with others located in different time zones? *
6. How frequently do you have to work during evenings or night-time, to coordinate work with others located in different time zones? *
7. To what extent has this (i.e. working during evenings or weekends) improved during the last month? (reverse coded)
8. Overall, how well does your schedule of work hours meet your own personal needs (for example, you may work 9 to 5 or you may work 8 to 3; or you may have to work weekends)? (reverse coded) *

Work-Family Conflict (Netemeyer, Boles, and McMurrian, 1996):

1. The demands of my job often conflict with my family life. *
2. The amount of time I spend working makes it difficult to fulfill my family responsibilities. *
3. The burden of my job makes it difficult to fulfill my family responsibilities. *
4. Because of work responsibilities, I often have to make changes to family plans. *
5. Things I want to do at home do not get done because of job demands. *

6. I have to put off doing things at work because of demands on my time at home. *
7. Things I want to do at work don't get done because of family demands. *
8. Family demands often interfere with my job. *
9. My family responsibilities often interfere with getting my work done. *
10. Burden from my family responsibilities interferes with my ability to perform my job. *

Stress (Berg and Kalleberg, 2002):

1. On a scale of 1 to 7, how high would you say, is your stress level on an average work day? *
2. My job is stressful. *
3. On a typical day how often do you feel stressed by your job? *
4. On a typical day how often do you feel depressed about work? *

Time Zone Difference (new measure developed for dissertation):

1. On an average during the last month, what proportion (%) of your weekly working hours did you spend coordinating with people in different time zones? *
   (Total must add up to 100%). For example, you could say -30% of hours per week coordinating with people in SAME time zone; 50% with 1-hour difference; 20% with 7-hour difference, and fill the grid given.

Team Global Work (new measure developed for dissertation from time zone difference):

1. Item derived from time zone difference variable above. Dichotomous variable calculated denoting 0= employee does 100% collocated work and 1= employee does global work. Variable is then aggregated to team level to denote average 'team global work'. *

Other Work Related Items:

1. What country are you currently located in? *
2. What is the name of the department you currently work in?
3. What is your present job title?
4. How many years have you worked for your present organization? [If less than a year, please indicate number of months]. *
5. How many years have you been working with your current department/work group? [If less than a year, please indicate number of months]. *
6. How many years have you been supervised by your current supervisor/team lead? [If less than a year, please indicate number of months]. *

Demographic Items:

1. Please tell us your Age. *
2. Please tell us about the Highest Level of Education you have completed. *
3. Please indicate your Gender. *
4. Please indicate your Marital Status. *
5. If you're married, does your partner work? *
6. How many children under the age of 18 currently live with you at your home? *
7. How often are you involved in caring for and teaching these children, an activity outside your work? *
8. How often are you involved in caring for any elders after work? *

APPENDIX D: SUPERVISOR SURVEY ITEMS

Team Cultural Intelligence (Ang and Van Dyne, 2008):

1. Would you say that the employees you supervise enjoy interacting with people from different cultures.
2. Would you say that the employees you supervise are sure they can deal with the stresses of adjusting to a culture that is new to them. *
3. Would you say that the employees you supervise know the cultural values and religious beliefs of other cultures. *
4. Would you say that the employees you supervise know the legal and economic systems of other cultures. *
5. Would you say that the employees you supervise know the rules (e.g., vocabulary, grammar) of other languages. *
6. Would you say that the employees you supervise are conscious of the cultural knowledge they use when interacting with people with different cultural backgrounds. *
7. Would you say that the employees you supervise check the accuracy of their cultural knowledge as they interact with people from different cultures.
8. Would you say that the employees you supervise change their verbal behavior (e.g. accent, tone) when a cross-cultural interaction requires it.
9. Would you say that the employees you supervise change their non-verbal behavior when a cross-cultural interaction requires it.

Team Performance (adapted from Becker, Billings, Eveleth, and Gilbert, 1996):

1. Please rate the quality of work done by the employees you supervise. *
2. Please rate the quantity of work done by the employees you supervise. *
3. Please rate the overall performance of the employees you supervise. *
4. Relative to other employees you work with, how would you rank the Average performance of the employees in your workgroup? *

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REFERENCES

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