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# A Case Study of Cross-Cultural Complexities and Interpersonal Conflict Faced by Project Managers in Multicultural Software Development Project Teams

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A Case Study of Cross-Cultural Complexities and Interpersonal Conflict Faced by  
Project Managers in Multicultural Software Development Project Teams

by

Hilary Titakum Aza

A Dissertation Presented to the  
College of Arts, Humanities, and Social Sciences of Nova Southeastern University  
in Partial Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy

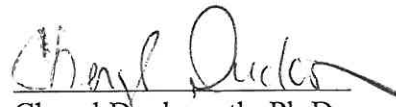
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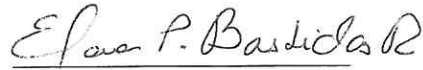
**Nova Southeastern University**  
**College of Arts, Humanities, and Social Sciences**


This dissertation was submitted by **Hilary Titakum Aza** under the direction of the chair of the dissertation committee listed below. It was submitted to the College of Arts, Humanities, and Social Sciences and approved in partial fulfillment for the degree of Doctor of Philosophy in Conflict Analysis and Resolution at Nova Southeastern University.

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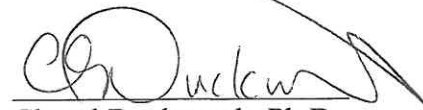
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Date of Final Approval

  
Cheryl Duckworth, Ph.D.  
Chair

## Dedication

This dissertation is dedicated to my lovely family. To my wife, Verra, thank you for being the cornerstone of our home and for encouraging me, especially during my low moments. I love you. To my prince and princess—Ryan and Ryal—thank you for excusing Daddy for not giving you the time you deserved. To my parents, I owe you all I am today. Words could never express how blessed I am to have you as my parents. To my siblings—Cy, Jacky, Tayong, Injoh, and Zang—thanks for believing in me. Though it's been a long, tedious, and painful journey, your support and encouragement have been instrumental and priceless in seeing me through. To you all, I dedicate this work.

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## List of Acronyms

<b>PMI</b>	Project Management Institute
<b>PMP</b>	Project Management Professional
<b>PM</b>	Project Manager
<b>PMBOK</b>	Project Management Body of Knowledge
<b>ANSI</b>	American National Standards Institute
<b>IEEE</b>	Institute of Electrical and Electronics Engineers
<b>ABI</b>	Abstract Business Index
<b>UAE</b>	United Arab Emirates

## Abstract

The problem of cross-cultural complexities is a hindrance to effective multicultural team leadership across many industries. Cultural differences among project team members cause conflict, misunderstanding, and poor project performance. The absence of competent leaders is a problem because business in the future will rely increasingly on the use of multicultural project teams. The purpose of this qualitative exploratory case study was to explore the challenges faced and the cultural competencies needed by project managers leading multicultural software development project teams to successfully manage and resolve cross-cultural interpersonal conflict amongst project team members. The researcher collected data using semi-structured interviews with the population of 12 project managers recruited from the Project Management Institute's credentialed project management professionals LinkedIn group. Through a cross-case synthesis, the researcher identified common themes and aligned them with the two study constructs: cross-cultural interpersonal conflict resolution and multicultural skills. The findings of the research revealed that the project managers perceived challenges including language barriers, cycles of mistrust, and competitive attitudes when managing multicultural teams. In order to mitigate these difficulties, the participants reported that project managers require excellent communication, negotiation, and emotional intelligence skills. The contributions of this study to the field of conflict analysis and resolution include highlighting common cross-cultural complexities encountered in multicultural teams, as well as effective methods of minimizing, eliminating, or mitigating these issues and the resulting interpersonal conflict.

## Chapter 1: Introduction to the Study

The problem of cross-cultural complexities is a hindrance to effective multicultural team leadership across many industries (Ochieng & Price, 2009). Studies have revealed that cultural differences among project teams caused conflict, misunderstanding, and poor project performance. For example, Ogbodo (2014) found that in a multicultural software development project team, cross-cultural differences led to miscommunication and misperception that resulted in conflict. In another example, Ochieng, Price, Ruan, Egbu, and Moore (2013) found that in a project team setting, cultural variation led to perception variation. This difference in perception brought misunderstanding and uncertainty, and caused conflict that affected team performance. In a third example, Park and Kang (2012) found that culture affected project team performance as it affected a team member's understanding of and attitude towards tasks. The researchers also found that the cross-cultural complexities within a project team could be minimized by narrowing the cultural gap through understanding of the respective cultures of the team members. This would help move the project forward as each team member's work pattern would be better understood with an understanding of his or her culture.

### **Background**

Although project management has been around since the Egyptian era, structured project management has only been around for half a century. The period from the 1950's to the 1970's is believed to be the origin of modern project management (Carayannis, Kwak, & Anbari, 2005). During this period, the United States (US) Navy, the US Department of Defense, National Aeronautics and Space Administration (NASA), and

large engineering and construction companies made use of project management principles and tools to manage large budgets, and schedule-driven projects (Carayannis et al., 2005). Manufacturing and software development sectors began adopting and implementing sophisticated project management practices in the 1980's. Various industries and organizations began wide adoption of project management theories, tools and techniques in the 1990's (Carayannis et al., 2005). In October 1990, the American National Standards Institute adopted the Project Management Body of Knowledge (PMBOK) Guide as the North American standard for managing projects (PMBOK Guide, 2013). The PMBOK Guide, a Project Management Institute, Inc. (PMI) standards and guideline publication, provides guidelines for managing individual projects and defines project management related concepts, as well as describing the project management life cycle and its related processes. The PMBOK Guide contains the globally recognized standard and guide for the project management profession (PMBOK Guide, 2013).

According to the PMBOK Guide (2013), a project is a temporary endeavor undertaken to create a unique product, service, or result. The temporary nature of projects indicates that a project has a definite beginning and end. The project manager accomplishes this temporary endeavor through a project team and other stakeholders. Effective project managers acquire a balance of technical, interpersonal, and conceptual skills that help them analyze situations and interact appropriately (PMBOK Guide, 2013). The utilization of a culturally diverse project team to achieve the goals of a project presents challenges that have not been extensively explored, and that can lead to interpersonal conflict, causing poor project performance (Ogbodo, 2014; Ochieng et al., 2013). Furthermore, the skill requirements for a project manager in multicultural

information technology projects have not been widely studied in the past, especially in terms of their relative importance to overcome the challenges presented by a multicultural team (Keil, Lee, & Deng, 2013).

The introduction and background support the need to carry out this study as they call out the challenges faced by software development project managers as they manage conflict resulting from cultural differences in multicultural teams, and emphasize the need to explore the skillsets that would enhance the project manager's effectiveness at managing multicultural teams.

### **Setting**

To contextualize the problem, it is necessary to present a brief overview of its setting. In software companies, software is typically developed in project teams with each team developing an entire software or components of a larger software. The following are the essential members of a software project team in such a setting:

- A project manager who leads the team.
- A business user who provides the functional (business) requirements.
- A business analyst who writes the technical requirements.
- A developer who writes the software code.
- A tester who tests the code.
- A computer network infrastructure resource person such as the database administrator who ensures that the database is in good shape to support the software being written.
- An architect who designs the system.

People who make up teams usually come from various cultural backgrounds; therefore, they need to work as a unified team to complete the software development project successfully and within the allocated budget and time. Project managers have to lead at least two or three project teams at any given time and are responsible for coordinating each team and leading them through to successful delivery of the software.

One major and frequent source of conflict in a software development project team is the divergence in understanding project requirements and the sense of urgency given to project deliverables by team members from different cultures. The project manager's task is to keep the focus of the team on the goals of the project. Among other duties, keeping the focus involves facilitating team communication and resolving interpersonal conflict among culturally diverse team members. The focus of this study are the competencies that a project manager needs to resolve interpersonal conflict among the members of a culturally diverse team working on a software development project.

### **Statement of the Problem**

With the above introduction, background, and setting, the problem for this study can be summarized into two parts. The first part is the lack of understanding of the challenges posed to the project manager by culture in relation to interpersonal conflict within a software development team. The second part of the problem is the lack of project managers who are skilled at managing the cultural diversity of the project team members by maximizing the benefits of diversity and minimizing the eruption of conflict from it.

Cultural differences have been called out as leading causes of the fragmentation of a project team as such differences have been found to cause destructive interpersonal conflict within the team (Ochieng & Price, 2009). Other research findings have noted the



possibility of detrimental project failures resulting from interpersonal conflict instigated by cultural differences amongst the project team members (Park & Kang, 2012).

Researchers have suggested that the absence of competent project leaders to effectively mitigate and resolve project team conflict resulting from cultural differences within the team poses the risk of an ever-increasing number of project failures (Ochieng & Price, 2009).

Studies within the multicultural project delivery realm have shown that multicultural teams outperform mono-cultural teams (Ochieng & Price, 2009), and multinational organizations that rely on global growth have increasingly implemented the use of multicultural teams (Mitchell, 2009). With the increase of these multicultural teams, multinational organizations need to be more effective at managing a multicultural workforce through their project managers, paying specific attention to the cross-cultural interpersonal conflicts that emerge in order to ensure successful delivery of projects (Ahamer, 2012; Ochieng & Price, 2009).

Today, projects have dramatically increased in complexity, as project teams increasingly comprise of people from various cultural backgrounds that come together and integrate as a whole in order to deliver the project (Popescu, Borca, Fistis, & Draghici, 2014). To succeed at managing today's complex nature of projects in a multicultural environment, project managers require a certain skillset which are yet to be widely studied (Keil et al., 2013).

Tenzer & Pudelko (2015) identified language barriers and emotional intelligence (empathy) as key leadership challenges in multicultural team leadership, which require special skillsets from project managers. Research suggests these skills as fundamental to

the project manager's ability to successfully manage cross-cultural conflict within the project team (Tenzer & Pudelko, 2015; Note, 2016). While empathy has attracted the attention of many researchers from various disciplines, the focus has mostly been on individual empathy, versus that of the team. A team's collective empathy, which composes of cognitive, affective, and behavioral dimensions, has rarely been addressed in the literature.

Although the term "collective empathy" is partially or implicitly mentioned in the studies of emotional intelligence, the emotional capability of project managers has not been conceptualized or operationalized in the software development context (Akgun, Keskin, Cebecioglu, & Dogan, 2015). According to Note (2016), the core competencies of a good project manager are rooted in the project manager's ability to demonstrate emotional intelligence under pressure in a multicultural project team setting.

A study to investigate the cross-cultural uncertainty and complexity within multicultural construction teams in the United Kingdom and Kenya revealed that cross-cultural complexities pertaining to cultural differences required further research. Such research should have a focus on understanding how to minimize the possibility of interpersonal conflict resulting from the cultural differences of the project team members (Ochieng, Price, Ruan, Melaine, & Egbu, 2013). Furthermore, the authors noted that construction contractors intending to globalize their businesses are often faced with the challenge of transforming business models and discovering effective ways to integrate diverse multicultural construction teams.

In another study, the researchers linked cultural complexity with cultural values and called for further research to improve understanding of the relationships between

cultural values and leadership in multicultural groups. An understanding of the relationship between these two factors would be helpful to a project manager's ability to successfully mitigate and resolve conflict within the project team. (Boroş, Meslec, Curşeu, & Emons, 2010).

### **Scope**

The scope of this study was limited to the Software Development Project Manager. The study explored the challenges faced by the Project Manager in managing interpersonal conflict within a project team setting. Additionally, it explored the skills needed by the Project Manager to thrive within a multicultural project team. Other project team members listed in the setting section above are out of scope for this study; however, this may be a consideration for future studies.

The focus of this study on the project manager was necessitated by two factors (i) the lack of sufficient understanding of the cultural challenges presented by using multicultural teams, and (ii) the shortage of knowledge about the skills required by the software development project manager to overcome these challenges in order to be successful at delivering information technology projects. The project manager is the person charged with managing the project team and delivering software projects. Exploring the challenges that come with the use of multicultural teams, and the skillset required by the project manager to function in a multicultural team setting will equip the project manager with the necessary tools to be successful.

### **Rationale for the Study**

The first time I thought of this topic as a possible viable dissertation topic was when I worked as a project management consultant. As a consultant, I was expected to

perform at a level of excellence as soon as I was assigned to a client's project. Although the project teams I led increasingly comprised of team members from different countries, managing diverse teams did not immediately appear as a potential problem. However, I noticed a trend with my projects, which posed a high risk to success. Project team members had different communication styles and norms. To some team members, jokes were entertaining while other members perceived certain jokes as an attack on their cultural heritage. This misperception led to tension and conflict that caused communication to breakdown between team members. These issues became a challenge because team members needed to communicate and cooperate effectively for the project to be successful.

Since I had no training on intercultural dynamics and interpersonal conflict, these challenges potentially jeopardized my career. Therefore, I needed to overcome these challenges if I wanted to be successful in the fast-paced world of information technology project management. This need to equip myself with skills to better deal with intercultural dynamics and interpersonal conflict encouraged me to start reviewing existing literature in the area of intercultural project management. As I reviewed existing literature, I had two main goals. First, I wanted to educate myself on some of the common challenges that other project managers had experienced managing multicultural teams. Second, I wanted to find out how project managers had addressed such challenges in the past.

My review of literature uncovered the existence of three main problems. First, that software is increasingly being developed in distributed and multicultural teams (Jaakkola, Heimburger, & Linna, 2010; Park & Kang, 2012). This meant that the use of

multicultural project teams was on the rise and competent leaders were needed to manage these teams. Second, that cultural differences among project team members have caused destructive interpersonal conflicts which caused project failures in the past (Ochieng & Price, 2009; Park & Kang, 2012). Third, that the skill requirements for project managers to be successful with multicultural teams had not been extensively studied (Keil, et al., 2013). In response to these problems, I decided to pursue a PhD in the field of conflict. I also decided to focus my dissertation topic on exploring the cross-cultural challenges faced by project managers and the skills the project managers utilized to address these challenges.

### **Purpose of the Study**

The purpose of this qualitative exploratory case study was to (i) explore the cross-cultural complexities and their relationship to interpersonal conflict within a multicultural software development team and (ii) explore the skills needed by software development project managers to overcome these complexities. The study had three objectives to address the purpose of the study. The first was to understand some of the cross-cultural barriers faced by software development project managers as they lead multicultural project teams and resolve conflict within these teams. The second was to understand the strategies used by experienced project managers to effectively manage cross-cultural interpersonal conflicts within multicultural teams. The third objective was to make recommendations to practitioners and researchers based on the findings of this study.

To attain the above objectives, the study targeted the Project Management Institute's credentialed project management professionals LinkedIn group as its population. At the time of the study, this group had a roster of 82,157 certified project

management professionals. Data was collected from a sample of 12 participants using semi-structured interviews (Yin, 2014). The data collected was analyzed at the unit level using case description, Yin's cross-case analysis, and the Dedoose qualitative data analysis software.

The results of the study were instrumental in offering information for multicultural organizations to recognize and understand cross-cultural interpersonal conflicts among multicultural software development teams and to learn how to deal effectively with them in a beneficial way.

### **Research Questions**

The aim of this study was to address the following two research questions:

**RQ1.** What are the perceptions and experiences of software development project managers with cross-cultural complexities/challenges and causes of cross-cultural interpersonal conflicts in multicultural software development project teams?

**RQ2.** What are the perceptions and experiences of software development project managers with the multicultural skills needed to resolve cross-cultural interpersonal conflict effectively within multicultural project teams?

### **Significance of the Study**

The primary importance of this study was to contribute to the conflict and culture literature in the area of multicultural software development teams. To this effect, the study made four main contributions. First, the study provided a better understanding of the theories that framed the study by interpreting the findings of the study through the lens of the theories. Second, the study identified three common complexities faced by

project managers leading multicultural software development teams—language barriers, cycles of mistrust, and competitive attitudes. Third, the study identified three important skills needed by the project manager to succeed at leading multicultural teams—excellent communication, negotiation, and emotional intelligence skills. Fourth and lastly, the study made recommendations in chapter five for practical applications and future research to practitioners and researchers.

### **Definition of Terms**

**Case.** A case, as related to this study, refers to a Project Manager (Yin, 2014). This means the account of a project manager’s experience managing a particular multicultural software development project. Each project manager’s account may draw from their other experience managing multicultural teams.

**Culture.** Culture is a set of learned core values, beliefs, standards, knowledge, morals, laws, and behaviors shared by individuals and societies that determine how one acts, feels, and views oneself and others (Avruch, 2013; Mitchell, 2009; Peterson & Thomas, 2015).

**Cross-cultural complexities.** Cross-cultural complexities refer to the cultural characteristics of an individual that can hinder that person’s ability to integrate fully with a software development team and perform job tasks easily in an international or intercultural setting. These inabilities prevent the individual from working comfortably and effectively in different countries and with people from diverse cultures (Caligiuri & Lundby, 2015).

**Interpersonal Conflict.** Interpersonal conflict erupts when two or more individuals, who co-exist (communal sharing) for one reason or another, engage in

disagreement over differences in views, interests, goals, and over limited resources (Poulson, 2005).

**Cross-cultural interpersonal conflict.** Cross-cultural interpersonal conflict is an expressed struggle between at least two interdependent parties from different cultures who perceive incompatible goals, scarce resources, and interference from others in achieving their goals (Wilmot & Hocker, 2011).

**Multicultural software development project teams.** Multicultural software development project teams are mixed groups of people from various cultural backgrounds, working together within the triple constraints of time, budget, and resources to complete work tasks geared towards a common goal: new or enhanced software delivery. This usually entails a contribution from each project team member and ensures fair treatment for all irrespective of background (Caligiuri & Lundby, 2015; Wysocki, 2010).

**Software development project manager (PM).** A software development project manager is one who applies knowledge, skills, tools, and techniques within the triple constraints of time, budget, and resource to project activities to meet software requirements by producing new or enhancing existing computer code. This person undertakes the discipline of assessing the characteristics of software to be developed, choosing the best fit software development lifecycle, choosing the appropriate project management approach, and then choosing the appropriate team to ensure meeting the requirements defined for the software (Wysocki, 2010).



## Summary

Chapter 1 presented (a) the background of the problem, (b) the setting of the problem, (c) the statement of the problem, (d) the scope, (e) the purpose and rationale for the study, (f) the research questions, (g) the nature of the study, (h) the significance of the study, and (i) the definition of terms.

Chapter 2 will (a) present the theoretical framework for the study, (b) present, analyze, synthesize, and critique the appropriate literature related to the problem described in Chapter 1. Chapter 3 will describe the research methodology selected to respond to the problem and answer the research questions. Chapter 4 will present an analysis of the data collected from the participants through interviews. The dissertation concludes with chapter 5, which includes (a) the summary of the findings, (b) the conclusions drawn from the data presented in chapter 4, (c) the implications for practice, (d) the relationship of findings to the literature review, and (e) the recommendations for practice and future research.

## Chapter 2: Literature Review

This chapter contains a thorough review of research from the last six years on cross-cultural complexities, especially cross-cultural interpersonal conflict management and resolution in teams and in software development projects specifically. The goal was to review recent literature and research outcomes around the topic for this case study in various industries. The literature review entailed a critical and comprehensive analysis of the existing literature and identified gaps in the literature and the research methodologies. Identifying gaps in knowledge, context, methodology, and theory justified the need for the proposed study as a means of contributing towards filling the identified gaps.

Chapter 2 is divided into six sections. The first section or documentation describes a sample of the keywords searched for, the search approach, and the databases searched. The second section presents relevant and generalized literature reviewed on conflict, culture, and cross-cultural team dynamics while the third section presents literature review focused on the two constructs of the current study—cross-cultural interpersonal conflict and multicultural teams and multicultural competencies for software development project managers. The fourth section presents a summary of the themes that emerged from the literature review. The fifth section is the theoretical framework, which reviews four theories that framed the problem for the current study. The sixth and final section concludes the chapter and leads into chapter three. It is worth noting that the literature review revealed no studies that focused specifically on the project manager in the software development project realm.

## Documentation

In searching for relevant literature, a metadata-only and index terms search was performed using the Boolean search operators (AND, OR, \*, “”) in a number of academic databases. The databases searched were the Computer & Information Science database (IEEE database), the Business database (ABI/Information Complete database, Business Source Premier Database, Emerald Management e-Journals database, and the Science Direct database), and Conflict Resolution & Peace Studies databases (PsychINFO – ProQuest, ProQuest Social Science Journals – ProQuest, Sage Research Methods Cases – Sage Publications, and SAGE Research Methods Online – Sage Publications). To optimize the search on the ProQuest databases, all 28 ProQuest databases were searched for relevant literature. This ensured that the search spanned several disciplines, and in each database, an advanced search was performed on “cross-cultural” OR “multicultural” OR “cultural differences” AND Team\* OR collaborati\* AND software. Placing certain phrases such as “cross-cultural” in quotation marks ensured that those words were searched as exact phrases and not separately. The use of \* such as in collaborati\* ensured that relevant literature with all words related to this wildcard was pulled by the search. The key words searched for were taken from the two research questions for this study and included “Interpersonal Conflict AND Culture AND Teams OR Groups; Culture AND Team AND Performance”. As a preference, the search results were filtered for primary-only peer-reviewed articles from 2009 to 2015. The search focused on international and multicultural project management, looking for past studies in the multicultural software development project management realm. To expand the search further, once articles of interest were found in any database, the index headings were noted for those articles, and

a further search was performed with the same criteria for those index headings in the various databases. Furthermore, when an article of interest was found, similar articles were searched for by looking at additional articles that cited the article of interest. A look at the references also gave clues as to additional articles to be searched.

### **General Literature on Culture**

The literature review for this study began with a look at the existing literature on culture and how it relates to interpersonal conflict in a multicultural team setting. In reviewing the literature related to culture, three main themes emerged—cross-cultural complexities, culture and interpersonal conflict, and cross-cultural interpersonal conflict management and resolution. The literature review is organized below under these three themes.

#### **Cross-cultural Complexities**

Upon investigation, the literature identified on cross-cultural complexities revealed seven themes, namely: communication, collaboration, cultural awareness, leadership, team composition, cultural values, and cultural intelligence. As a reminder, the term “cross-cultural complexities” is defined in the context of this dissertation as the cultural characteristics of an individual that can hinder that person’s ability to integrate fully with a team, thereby possibly causing conflict (Caligiuri & Lundby, 2015). This definition served as the guide for researching existing literature in the area of conflict and culture.

**Communication.** The first theme, communication, was identified through one article. The article reported the findings of a study by Hovde (2014) that utilized case study design to investigate 19 participants. The study looked at the extent to which

cultural factors enhanced or constrained project work in a multicultural engineering team setting. The researchers found that in international projects, several factors challenged communication and posed a project failure risk.

According to the study, differing cultural assumptions, differing cultural communication styles, time issues, and differing levels of perception on power and influence affected the dynamics of communication within an international project team. To mitigate these challenges, the study found respect for team members (empathy), a common language, and cross-cultural understanding to be helpful in enhancing team communication and alleviating the project failure risks stemming from miscommunication and its associated cross-cultural complexities. Although the study explored the complexities associated with culture and conflict in a multicultural team, the researchers did not focus their study on any one specific realm of international project management. The study was focused on international project teams in general. This presents a context gap, which the current study addressed by focusing specifically on the software development project manager.

**Collaboration.** The second theme, collaboration, emerged from a single study. The study highlighted collaboration as an area of cultural complexity. In this case study involving participants from Ghana and the Netherlands, the researchers identified the conditions that would support the development of a culturally sensitive professional development program for polytechnic Heads of Department (Nijhuis, Voogt, & Pieters, 2012). In the findings, the researchers found that although different types of culturally sensitive strategies were developed, and the project team counted on culture to strengthen the conditions for curriculum development and implementation, culture instead proved

challenging as it constantly hampered collaboration between project team members. The researchers also found that international project teams frequently lacked cultural understanding to create conditions related to ownership and adequate project management. Consequently, misunderstandings and interpersonal conflicts between project members and stakeholders erupted and led to project implementation failures.

This study presents a knowledge and context gap in that the study focused on developing culturally sensitive strategies to support professional development programs without first identifying the cultural issues that required these strategies. This is a knowledge gap, which the current study addressed by exploring the cultural complexities that posed issues and caused conflict in the software development team. Additionally, the study focused on heads of polytechnic departments. This is a context gap addressed by the current study, which focused on the project manager for a multicultural software development project team.

**Cultural awareness.** Cultural awareness was the third theme revealed under cross-cultural complexities. This theme emerged from one study, which explored cultural awareness as another area of cultural complexities. In this qualitative phenomenological study by Humbert, Burket, Deveney, & Kennedy (2012), the researchers investigated the perspectives of occupational therapy students who had engaged in international, cross-cultural team learning and service experiences. The study's findings revealed that the more the participants tried to understand new cultures and compared those with their experiences, the more complex the comparison became. The students asked even more questions about the conflict between their own cultures and the new cultures with which they interacted. Their ability to connect with others while building relationships in

diverse cultural contexts depended on the conformity of their culture and the new culture they experienced. The students expressed conflict in trying to make sense of the new culture as it often challenged their personal beliefs and constructs. This conflict hindered the ability of the students to engage in effective team collaboration and learning.

This study presents three gaps—knowledge, context, and methodology gaps—that are addressed by the current study. The knowledge gap resulted from the fact that although the study revealed conflict between cultures, it did not identify the cultural complexity that led to the conflict. The current study addresses this gap by exploring the cross-cultural complexities that could lead to conflict and derail an international software development project. The context gap is evidenced by the fact that the study was limited to occupational therapy students. To address this gap, the current study investigated project managers that lead software development project teams. Finally, the methodology gap stemmed from the limitations of a phenomenological design. The current study addressed this methodology gap by using case study design.

**Leadership.** The fourth theme, leadership, emerged from three articles, which explored leadership as an area of cross-cultural complexities. The first article on leadership highlighted what it takes for a global leader to navigate cross-cultural complexities and foster team collaboration among culturally diverse team members (Dragoni & McAlpine, 2012). The article argued that in order to foster collaboration amongst people from all over the world, global leaders need to be effective at intentionally and skillfully promoting the type of multicultural orientation necessary for effective alignment, motivation, and meaningful engagement within a multicultural team. The article further argued that while it is important for global leaders to be sensitive to

the cultural needs of a multicultural team, it is equally important for the leaders to strike a balance between such needs and setting the direction for their teams. Focusing solely on leading the people and not the business could jeopardize the success of the business. Global leadership entails identifying business opportunities and developing strategies to leverage such opportunities. In a global environment, this would require greater cognitive sophistication.

This article presents both knowledge and context gaps. The study explored the skills necessary for global leaders to navigate cross-cultural complexities; however, it fell short of identifying the cultural complexities that require such skills. This is a knowledge gap addressed by the current study, which explored the cultural complexities that could affect the outcome of a multicultural engagement. The context gap relates to the fact that the study focused on global leaders in general. This gap is addressed by the current study since it explored the possible cultural complexities faced by experienced project managers that lead multicultural software development teams.

In alignment with the first article, the second article under the theme of leadership also focused on what it will take for a project manager to succeed with multicultural teams (Mittal & Elias, 2016). The scope was limited to the use of various power structures and their influence on multicultural team dynamics. In this study, the researchers investigated the impact exerted by cultural factors on the use of power by leaders. The researchers presented a conceptual framework to examine the interaction of the different cultural aspects with harsh and soft power bases.

In the findings, the researchers identified that soft power bases are more likely to be activated by managers in cultures that are collectivist, loose, long-term oriented, but



low on power distance and uncertainty avoidance. On the other hand, harsh power bases are expected to be chosen for influencing subordinates in cultures that are tight, short-term oriented, and high in power distance. The authors state that increasing globalization of industrial organizations and growing interdependencies among nations have brought the need to an even better understanding of cultural influences on leadership and organizational practices to the forefronts of cross-cultural leadership studies. Culture addresses the basic values and belief systems of humans. Therefore, since leadership revolves around influence, understanding the respective cultures in a team will influence a cross-cultural leader's effectiveness to influence followers (Mittal & Elias, 2016). An understanding of the team members' values and belief systems will help the leader decide whether to use soft or harsh power to influence the followers to success. Lack of such understanding and/or employing the wrong power type in the wrong situation could jeopardize the success of a multicultural engagement.

This study presents both knowledge and context gaps. The study presented a conceptual framework that investigated how the impact of the power structure influenced project managers for multicultural project teams. Though the study provided solutions for multicultural project teams, it did not identify possible cultural complexities. This is a knowledge gap addressed by the current study, which explored the cross-cultural complexities faced by software development project managers leading multicultural teams. Additionally, the study focused generally on project managers for multicultural teams not within the software development realm. This is a context gap addressed by the current study, which explored the experiences of the software development project manager managing multicultural teams.

The third and final article under the theme of leadership aligned with the first two articles in that it presented a leadership framework to enable the success of team leaders in global organizations (Derven, 2016). Since the teams led by these global leaders are made up of individuals from diverse cultures, the researcher emphasized the need for global team leaders to build a strong foundation of trust between the team members. Trust, according to the author, encompasses perception of intentionality, information, and interactions. An environment of trust paves the way for open exploration of disparate ideas. The author also cautioned that the unique nature of global virtual teams calls for a careful selection of a team leader. While it is imperative for a global team leader to be sound in technical skills, such a leader must possess soft skills such as skills that would allow the leader to be sensitive to and inclusive of the respective cultures represented on the team. The author warns that a global leader who lacks these soft skills is not only likely to fail, but will steer the global virtual team to failure. This article emphasizes the dependency of a global team leader's success on the use of soft skills.

Like the preceding article, this article presents both knowledge and context gaps. The study also presented a conceptual framework that prescribed skills needed by global team leaders to succeed with multicultural teams. This is a knowledge gap as the study fell short of identifying cultural complexities requiring the skills prescribed in the conceptual framework. The context gap relates to the focus of the study on global team leaders. The current study addresses this gap by narrowing its focus to the multicultural software development project manager.

**Team composition.** Team composition was the fifth theme under cross-cultural complexities, and was explored in one study. This one study was a quantitative study to

test the conditional effect of team composition on team performance in 73 cross-cultural project teams. The researchers, Mach & Baruch (2015), found that collective team trust affects team performance. The findings further suggested that cultural diversity in project team composition led to low levels of trust and team performance. The authors concluded that these findings would help practitioners understand the importance of considering the cross-cultural effect of a diverse project team when managing such a team.

This study presents knowledge, context, and methodology gaps. The knowledge gap relates to the single finding by the researchers of trust as a cross-cultural complexity that could affect team performance. The current study addresses this knowledge gap by going a step further and exploring additional cross-cultural complexities experienced by project managers leading multicultural software development project teams. The context gap relates to the study focusing on the multicultural project team. The current study addresses this gap through a scope that narrows down to the perspective of the multicultural software development project manager. The methodology gap resulted from the study method, which was quantitative. The current study addresses this gap by applying a qualitative method, specifically a case study design.

**Cultural values.** The sixth theme under cross-cultural complexities, cultural values, was explored by two articles. These two articles agree on the importance of cultural values as an influential factor on project success. The first article on cultural values was on a quantitative study to investigate how cultural values may affect project team success in Ethiopia (Jetu & Riedl, 2013). The study, which involved 10 participants, revealed that cultural values, personal or social, could have an impact on project performance. The researchers called for project managers to be cognizant of the fact that

cultural values influence the extent to which multicultural project team members embrace projects, and this in turn affects project performance. The authors recommend addressing cultural issues effectively upfront during project planning. Proper planning will help the project manager anticipate possible cultural issues that may crop up. This then allows the project manager to plan to address such issues accordingly when they surface. Planning to address cultural issues will help mitigate any culturally related risks that may cause project failures.

This study presents three gaps—knowledge, context, and methodology. The knowledge gap relates to the fact that the study identified one source of cultural complexities—cultural values. However, the study did not identify the social complexities that could result from cultural values. The current study addresses this gap by exploring the common cultural complexities faced by software development project managers leading multicultural teams. The context gap relates to the fact that the study focused project managers in general. This current study addresses this gap by narrowing its scope to the software development project manager in a multicultural team setting. The methodology gap has to do with the fact that study made use of a quantitative method. The current study utilized a qualitative study method, specifically a case study design.

The second study on cultural values was a mixed methods study by Chipulu, Ojiako, Gardiner, Williams, Mota, Maguire, Shou, Stamati, & Marshall (2014) to explore the impact of cultural values on the importance individuals attach to project success/failure factors. The study identified cultural values as one of the dependencies for individuals to attach importance to project success/failure factors. The researchers

indicated that this finding applies directly to the field of project management as it aids with the matching of practitioner cultural values to projects for greater projects success chances. The study, which involved 8 countries and 40 interviews of project practitioners, underscored the importance of culture in project management. The researchers stated that since projects are temporary, the existence of a significant cultural value difference is likely to remain for the duration of the project. This may cause a much greater impact on the performance of the project.

This study presents knowledge, context, and methodology gaps. Like the previous study, this study investigated the impact of cultural values on project teams and project outcomes. The study, however, presents a knowledge gap as it did not investigate the cultural complexities associated with cultural values. The current study addressed this gap by exploring the cross-cultural complexities experienced by the multicultural software development project managers as they relate to culture. The context gap resulted from the fact that the study focused on project managers in general around the world. This context gap is addressed by the current study as it is focused on the project managers for multicultural software development project teams in the United States. Finally, the study made use of a mixed methods approach. The current study addressed this methodology gap by making use of a qualitative case study approach.

**Cultural intelligence.** The seventh and final theme under cross-cultural complexities was cultural intelligence. Two studies explored cultural intelligence. The two studies agreed that the rise in globalization calls for cross-cultural leaders to possess cultural intelligence.

In the first study, which was a quantitative study that involved 191 participants from 29 countries to research the relationship between the different aspects of cultural intelligence—cognitive, meta-cognitive, and motivational behavioral, Konanahalli, Oyedele, Spillane, Coates, von Meding, & Obohon (2014) found that cultural intelligence exerts significant influence over motivation as pertains to interaction and work adjustment. The researchers concluded that with global companies and projects entering an era of increased internationalization, a lack of understanding of the impact of cultural intelligence on team performance could lessen the productivity of immigrant workers.

This study presents knowledge, context, and methodology gaps. The knowledge gap stemmed from the fact that the study identified cultural intelligence as a skill needed by project managers to succeed with multicultural teams. The study, however, fell short of identifying some of the cultural complexities that could be addressed by the possession of cultural intelligence skills. This gap was covered in the current study, which explored cross-cultural complexities from the perspective of the software development project manager for multicultural teams. The study focused on team members around the world, presenting a context gap. This context gap was addressed by the current study which focused first on the project manager for multicultural software development project teams, and secondly was limited to the United States. As a quantitative study, the study presents a methodology gap addressed in the current study which utilized qualitative case study.

The second article on cultural intelligence investigated the impact exerted by cultural factors on the use of power by leaders. The article presented a conceptual framework to examine the interaction of the different cultural aspects of harsh and soft

power bases (Mittal & Elias, 2016). In the findings, the researchers identified that soft power bases are more likely to be activated by managers in cultures that are collectivist, loose, long-term oriented, but low on power distance and uncertainty avoidance.

On the other hand, harsh power bases are expected to be chosen for influencing subordinates in cultures that are tight, short-term oriented, and high in power distance. The authors stated that increasing globalization of industrial organizations and growing interdependencies among nations have brought the need to an even better understanding of cultural influences on leadership and organizational practices to the forefronts of cross-cultural leadership studies. Culture addresses the basic values and belief systems of humans.

Therefore, since leadership revolves around influence, understanding the respective cultures in a team will influence a cross-cultural leader's effectiveness to influence followers (Mittal & Elias, 2016). An understanding of the team members' values and belief systems will help the leader decide whether to use soft or harsh power to influence the followers to success. Lack of such understanding and/or employing the wrong power type in the wrong situation could jeopardize the success of a multicultural engagement.

This study presents a knowledge and context gap. The knowledge gap pertains to the fact that the study investigated the impact of culture on the use of power by leaders. This excluded the exploration of the specific cross-cultural complexities that might influence the use of power. This gap is addressed in the current study since it explored the cross-cultural complexities presented by multicultural software development team members to the project manager. The context gap came from the focus of the study on

leadership as a whole. The current study has a scope narrowed to the project manager for multicultural software development project teams.

### **Culture and Interpersonal Conflict**

The literature review on cross-cultural complexities revealed conflict as one of the outcomes of dealing with cross-cultural complexities in a multicultural team environment. Most of the literature reviewed seemed to point to conflict between members of different cultures—interpersonal conflict. This section of the literature review focused on finding out what existing literature says about the impact of interpersonal conflict in a cross-cultural team setting. While this section focused mostly on reviewing literature on culture and interpersonal conflict, the review also extended to include literature that spoke to the general effects of interpersonal conflict on teams irrespective of the cultures of the team members. Two themes emerged from reviewing the literature on culture and interpersonal conflict—team effectiveness and team performance. The literature used the words interpersonal, relationship, and intragroup conflicts interchangeably.

**Team effectiveness.** One article explored team effectiveness- the first of two themes under culture and interpersonal conflict. To find out, and compare the effects of emotional and task conflict on teams, Bisseling & Sobral (2011) used quantitative research, surveying 366 team members and 20 team managers in Brazil and the Netherlands. The researchers concluded that cultural differences between the two countries influenced the way teams experienced intragroup conflict. The findings also indicated that cultural differences affected members' job satisfaction and group performance. With teamwork in organizations increasingly becoming the norm, not the



exception, the researchers concluded that culture is one of those circumstances that can affect cognitive representations of conflicts, influencing the relationship between conflict and team effectiveness and outcomes.

This study presents knowledge, context, and methodology gaps. Although the study revealed that cultural differences cause conflict, it fell short of identifying the common cultural complexities that led to conflict, thereby presenting a knowledge gap. The current study addresses this gap by exploring the common cultural complexities that, from the project manager's perspective, resulted in interpersonal conflict in a multicultural software development project team. The context gap resulted from the fact that the study focused on the general context of team. The current study addressed this context gap by focusing on the perspectives of the project manager for multicultural software development teams. Finally, methodology gap stemmed from the use of quantitative research methodology in the study; a gap addressed in the current study by utilizing qualitative case study design.

**Team performance.** Team performance, the second and final theme under culture and interpersonal conflict, was explored by eight studies. Overall, the studies confirmed the disruptive nature of conflict in a diverse team environment. The discussion below is presented according to the themes that emerged.

The first study was a quantitative study to investigate the relationship between diversity in team composition, relationship conflict, and team performance. The researchers surveyed 216 global participants in virtual teams. The findings revealed that team diversity led to relationship conflict, which in turn affected team performance (Wickramasinghe & Nandula, 2015). The study highlighted the important role of team

leaders in reducing the harmful effect of relationship conflict on team performance. Furthermore, the findings emphasized the need for team leaders to be trained on multicultural skills necessary to build cohesive teams that deliver on project goals.

This study presents knowledge, context, and methodology gaps. Although the study revealed that diversity in team composition caused relational conflict, the study did not reveal the common multicultural complexities that resulted in conflict. This is the knowledge gap addressed by the current study, which explored these cultural complexities from the perspective of project managers that have managed multicultural software development project teams. Additionally, although the study focused on the perspective of team leaders, it did not specifically focus on project managers for multicultural software development project teams. The current study addressed this context gap by focusing on those managers. The methodology gap relates to the use of quantitative surveys for the study; a gap which is addressed in the current study by making use of qualitative case study.

In a second study that explored team performance, Khan, Breiteneker, & Schwarz (2015) carried out a quantitative study, which involved 44 teams, to find out how diversity and well-established entrepreneurial personality traits influenced team performance in Austria. The study, which, confirmed the dysfunction relationship conflicts can cause in a diverse team environment. When a diverse team has severe disparity in their need to achieve, then this generally has a negative impact on team effectiveness and efficiency. According to the study, similarity in need for achievement could help teams cope more successfully when potential negative consequences erupt.

This study presents knowledge, context, and methodology gaps. The knowledge gap relates to the fact that the study focused on the role of diversity and personality traits in relationship conflict and team performance. Although the findings confirmed that personality traits and diversity caused relationship conflict, the study fell short of identifying the specific personality traits and/or aspects of diversity that led to relationship conflict. This is a knowledge gap addressed by the current study which explored perspective of the project manager on the cross-cultural complexities that caused conflict in software development project teams.

The context gap was two-fold. First, although diversity was identified as a cause of relationship conflict, the findings did not specifically attributed cultural diversity to the cause of such conflict. Second, the study was focused on teams in general with no specific emphasis on the software development project team. The current study addressed these two aspects of the context gap by specifically investigating the cultural complexities that caused conflict in a software development project team from the project manager's perspective. Finally, the methodology gap came from the use of quantitative research methods, which is a gap addressed in the current study by using qualitative case study research.

Maloney, Zellmer-Bruhn, & Shah (2015) theorized, in an article, that spillover coordination is the result of relational and cognitive social capital developed through team interaction. The authors also theorized that the design of the team and the context in which it operates influence the degree to which social capital develops. According to the authors, heterogeneity is a defining characteristic of global teams and represents the degree to which different nationalities, cultures, and geographic locations are represented

on a team. The article underscores that heterogeneous teams were hindered by conflict and strained interpersonal relations which led to poor performance. As a result, relational social capital may be difficult to form on global teams. With this in mind, the authors called for managers to be mindful of global team spillover effects, and intentionality in the way they design global teams to ensure realization of the benefits intended with the use of heterogeneous team.

This study presents knowledge and context gaps. The knowledge gap relates to the fact that, although the study emphasized team heterogeneity from a cultural perspective as a defining characteristic for global teams, it did not go as far as exploring the cross-cultural complexities associated with cultural team heterogeneity. The current study addresses this gap by exploring the project manager's perspective on the common cross-cultural complexities that define multicultural software development project teams. The context gap relates to the focus of the study on global teams in general. The current study addresses this gap by narrowing the scope of the investigation to the project manager for multicultural software development project team.

The fourth study was a quantitative one involving 1414 participants from 364 teams in Portugal, Germany, Switzerland, and the USA to investigate how team temporal constructs affected team satisfaction and performance (Standifer, Raes, Peus Passos, Santos, & Weisweiler, 2015). The study revealed a positive relationship between shared temporal cognition and team satisfaction and a direct, negative relationship between temporal conflict and team satisfaction. The study, which focused on the role of time in causing conflict in various Western cultures, let the researchers called for the need for teams to exercise consciousness of time and its relationship to team interaction and

satisfaction. Team leaders must acknowledge the importance of shared temporal cognition, otherwise face the negative consequences of conflict in a team setting. In conclusion, the authors called on team leaders to employ temporal awareness and shared temporal cognition in collaborative endeavors as a means to minimize conflict mindfully.

This study presents knowledge, context, and methodology gaps. The knowledge gap relates to the fact that although the study highlighted time as a common cause of conflict in teams when there was lack of shared cognition around time, the study fell short of identifying time as a cultural complexity. This gap is addressed in the current study, which explored the project manager's perspective on the common cross-cultural complexities that influenced software development project teams. This exploration would reveal whether time is a common complexity that caused conflict. The context gap resulted from the study focusing on global teams in general. The current study addressed this gap by focusing on the perspective of the project manager for multicultural software development project teams. The methodology gap relates to the use of quantitative methods for the study. The current study addresses this methodology gap by making use of qualitative case study as the method and design of investigation.

The fifth study, a quantitative study by Zhang & Huo (2015), explored how interpersonal conflict influenced project performance through negative emotions in construction projects in China. The study revealed that interpersonal conflict and negative emotions have inverse relationships with project performance. Although the Chinese traditional culture tends to avoid conflict, interpersonal conflict remains a challenge in construction projects, as it is unavoidable. The study described the effect of interpersonal conflict as having a detrimental influence on project performance. With project

performance being one of the most important indicators of project success, the authors called for managers to be conscious of this and make practical adjustments to minimize interpersonal conflict and prevent it from diminishing project performance. In order for managers to do this, the study emphasized the need for them to possess human factor skills such as political skills.

This study presents gaps in knowledge, context, and methodology. The knowledge gap results from the study focusing on the impact of interpersonal conflict on project performance in the Chinese culture without looking at the cultural complexities that might result in conflict. The current study addressed this gap by exploring the perspectives of project managers for multicultural software development teams on the cross-cultural complexities that they experienced to have caused conflict in their respective teams.

The context gap results from two aspects of the study. First, the study looked at conflict from a team perspective. The current study bridges this gap by focusing on multicultural software development project managers and exploring their perspectives on the common cross-cultural complexities that caused conflict in their teams. Second, this study was conducted in China and focused on the Chinese culture, and it did not mention the existence or absence of other cultures within the teams investigated. The current study bridged this aspect of the context gap by investigating project managers for multicultural software development project teams in the United States. The methodology gap relates to the application of a quantitative method to the study. This is a gap addressed in the current study by applying a qualitative method to investigate the experiences of project managers.

In a sixth study, Jiang, Flores, Lelawong, & Manz (2016) investigated the effect of power distance and collectivism on the relationship between empowerment and team performance through the mechanism of knowledge sharing and intragroup conflict. The authors argued that team empowerment could increase both knowledge sharing and intragroup conflict in working teams. According to the authors, knowledge sharing facilitates team performance, while intra-group conflict impairs team performance in a long run. The researchers concluded with the thought that team empowerment produced varying team performances across cultures due to the respective moderating effects of power distance and collectivism.

This study presents knowledge and context gaps. The knowledge gap refers to the fact that the study focused on the effects of power distance on intragroup conflict and team performance. The researchers did not conceptualize on the potential of cross-cultural complexities that could influence power structures and intragroup conflict. The current study addressed this gap by exploring the perspectives of project managers to find out their experiences with the cross-cultural complexities that influenced interpersonal conflict in their teams. The context gap relates to the fact that the study focused on the team in general. The focus of the current study narrowed down to the project manager for multicultural software development project team.

In a seventh study, Bergiel, Gainey, & Bergiel (2015) carried out a quantitative study involving 17 graduate business classes working on intense semester-long group projects. The study which received 295 responses from 90 teams, aimed at testing theoretically based hypotheses linking tasks and team-shared mental models with multiple dimensions of conflict and conflict asymmetry. The results of the study revealed

that in teams with shared mental models there was a reduction in all dimensions of conflict and relationship conflict asymmetry. Teams with different mental models, and/or values were more likely to have more personal disputes and disagreements on how to accomplish goals. These disagreements led to poor team performance. Shared values among team members led to a reduction in conflict and better team performance on the projects.

This study presents gaps in knowledge, context, and methodology. While the study revealed the eminence of conflict in teams with dissimilar mental models and values, the study fell short of mentioning whether the difference in mental models and values related to differences in cultures of team members that might have presented cross-cultural complexities. The current study addressed this knowledge gap by exploring the perspectives of project managers on the common cross-cultural complexities they experienced in their software development project teams. The context gap in this study stemmed from the fact that the study investigated graduate students, focusing on general group dynamics in relation to conflict and performance. The current study bridged this gap by focusing on project managers that managed software development teams. The methodology gap was a result of the application of quantitative methods to the study. The current study addressed this gap by applying qualitative case study approach to the investigation of project managers.

In the eighth and final study, the researchers found that the current trend toward globalization has forced organizations to use multicultural teams to continuously spike. This was the finding of a literature review performed by Yeager & Nfukho (2012) to explore ways in which individuals with diverse characteristics such as culture can



become successful team members. To overcome team issues of diversity, alleviate conflict, and improve performance, the researchers found that helping teams develop a sense of deep-level similarity could improve team performance. The study revealed that when teams shared mental models and task cognition, this reduced conflict and improved team performance on a joint initiative.

This study presents a knowledge gap. While the study underscored the importance for team members to possess a shared mental model in order to minimize conflict and improve performance, the study fell short of making specific recommendations on how this could be possible. The current study addressed this gap by exploring skills needed by the project manager to succeed at leading multicultural software development teams to establish a shared mental model, minimize cross-cultural interpersonal conflict, and improve performance.

### **Cross-cultural Interpersonal Conflict Management and Resolution**

The literature review under cross-cultural interpersonal conflict management and resolution took a general look at what the existing literature presents, without limiting the review to the realm of software development project management literature. Two main themes characterized the discussion under the existing literature for this topic—challenges faced in resolving conflict in multicultural teams and the competencies needed by leaders of cross-cultural teams to navigate those challenges and be effective at managing conflict in culturally diverse teams as well as leading such teams. The literature is therefore presented under these themes.

**Challenges faced.** This section of the literature review focused on the challenges to the conflict resolution efforts within multicultural teams. The literature reviewed on

challenges revealed three main themes—the issue of trust, the existence of language barriers, and competition. This section of the literature review groups the discussion under these three themes.

***Trust.*** The issue of trust was noted in three studies reviewed. All three articles agreed that lack of trust is a major source of interpersonal conflict and project failure in multicultural teams. In the first study, Silberzahn & Chen (2012) performed a meta-analysis on multicultural teams in single and multinational settings to examine the dynamics in culturally diverse teams. The focus of the study was on understanding the interaction dynamics among people from different nations in the context of multicultural teams. The findings revealed that multicultural teams with cooperative status hierarchies had higher mutual trust and psychological safety than multicultural teams with competitive hierarchies. It was also found that multicultural teams with cooperative status hierarchies would have lower relational and process conflict than those with competitive status hierarchies. The researchers concluded that the lack of trust in a multicultural group setting discouraged interpersonal communication, increased stereotypes, diminished loyalty, and increased the likelihood of interpersonal conflict.

This study presents knowledge and context gaps. The knowledge gap relates to the fact that the study focused on the role of trust, a cross-cultural complexity, on interaction dynamics within teams comprised of people from different cultures. The study was limited in that it focused only on trust. The current study addressed this gap by investigating additional common cross-cultural complexities that influenced interpersonal conflict in multicultural software development project teams. The context gap relates to the fact that although the study investigated multicultural teams, it did so by looking at

multicultural teams in general. The current study addressed this gap by narrowing the scope of the study to investigating the project manager for multicultural software development project teams in the United States.

In agreement with the first study, the second one pivoted trust as an issue of concern in a qualitative study that explored the kinds of communication challenges faced by management teams (Hedman & Valo, 2015). According to the researchers, the establishment of trust in a team setting can be facilitated by informal communication. Cultural differences can lead to mistrust and conflict, which can challenge the team's efforts to accomplish project tasks. The researchers interviewed seven participants from 7 different international companies and concluded that encouraging teams to spend time together doing something that is not work-related would enable the team members to get to know each other while establishing relationships and developing trust.

This study presents knowledge and context gaps. The focus of the study was on investigating how trust influenced communication in management teams. With study identifying only trust as a cross-cultural complexity in multicultural teams, the study is somewhat limited. This presents a knowledge gap, which the current study addressed by investigating the existence of additional cross-cultural complexities in the software development project team from the perspective of the project manager. The context gap relates to the fact that the study targeted international teams in general without a specific focus. The current study addresses this gap by focusing on the perception of the project manager for multicultural software development project teams.

The third and final study, which also agreed with the first two studies, found that distrust, lack of cooperation, and general unwillingness to work with others in a diverse

team setting could affect performance (Agrawal, 2012). According to this study, if maximum benefits are to be obtained from the use of multicultural teams, distrust needs to be overcome. Effective teamwork requires members to recognize the team as a unit with common goals, values and norms. The author called for organizations to make diversity management an ongoing initiative—organizations and their managers must create conducive environments that celebrate diversity and foster trust amongst team members.

This study presents knowledge and context gaps. The knowledge gap relates to the study finding trust as the only cross-cultural complexity that influences diverse teams. The current study addressed this gap by investigating the possible existence of additional cross-cultural complexities. The context gap relates to the study investigating diverse teams in general. The current study addresses the context gap by investigating the project manager for multicultural software development project teams.

***Language barriers.*** Three studies found language barriers to be a concern and source of interpersonal conflict in multicultural teams. Language was identified as a common area of human interdependence in a multicultural project setting. All three studies agreed on language barriers as a common source of interpersonal conflict in a multicultural team.

In the first quantitative study, Mesly, Lévy-Mangin, Bourgault, & Nabelsi (2013) investigated human interdependence and its significance on project management. According to the study, difficulties with language, including accents and fluency, constituted interactional obstacles that led to destructive outcome within a given team. The researchers further found that the use of various languages and different national

cultures created communication barriers that challenged the sharing of vital information amongst project team members. They concluded that, in multicultural teams, team members with different backgrounds, speaking different languages, and/or using contrasting body language or verbal cues are likely to unknowingly misinterpret other team member's actions and comments. This could potentially lead to threat, danger, or conflict.

This study presents knowledge, context, and methodology gaps. The knowledge gap is two-fold. First, the study identified language barriers as a cross-cultural complexity that affected project teams. This presents an opportunity for the current study to confirm whether project managers for multicultural software development project teams also found language barriers as a cross-cultural complexity that affected their project teams. Second, since the study identified only one cross-cultural complexity- language barriers, it is possible for the current study to investigate the existence of additional cross-cultural complexities. The context gap pertains to the fact that the study focused on the project team in general. The current study addressed this gap by focusing the scope of the study on investigating the perspectives of the project manager for the multicultural software development project team. The methodology gap relates to the use of quantitative methods for the study. This gap was addressed in the current study by applying a qualitative case study design.

A second study also found that language barriers had a negative impact on the development of virtual teams. A qualitative study by Au and Marks (2012), involving six countries, investigated the impact of perceived cultural differences in forging identity in virtual teams. The researchers found that language barriers prevented employees from

identifying with virtual team members. It was evident from the findings that stereotypes formed among virtual team members were often a reflection of the worse extremes of national stereotypes. The study indicated language barriers to be impactful on identification in terms of oral and written communication and the researchers concluded that language barriers are a critical issue in multicultural teams.

Cultural diversity is a common problem in virtual teams and it is often associated with language barriers. The researchers stated that linguistic differences can lead to loss of information and communication problems as team members attempt to decipher their colleagues' communications through their own cultural perspectives. This can lead to unhealthy racial and national stereotypes, which cause conflict between team members. The researchers called on team members to value and understand differences with colleagues from different cultures. This will only go to foster a common goal and identification in international virtual teams.

This study presents knowledge and context gaps. Like the previous study, this study identified language barriers as a cross-cultural complexity that influenced multicultural team dynamics and interactions. By identifying only one cross-cultural complexity, the study presents an opportunity for the current study to investigate the existence of additional cross-cultural complexities in the multicultural software development project team. Additionally, the study presents an opportunity for the current study to confirm language barriers as a cross-cultural complexity from the perspective of the project manager for the multicultural software development project team. As the study focused on virtual teams in general, it presents a context gap which the current

study addressed by focusing on researching the perspectives of the project managers for multicultural software development project teams.

In a third and final study, language differences led to negative stereotypes of members' intelligence and professionalism. This ethnographic field study in a Finnish multinational corporation explored the interrelation between language differences, media choice, and social categorization in global virtual teams (Klitmoller, Schneider, & Jonsen, 2015). Verbal media tends to increase the likelihood of social categorization based on language proficiency differences. A high level of common language within a team increases communication and reduces conflict. According to the study, in a multicultural team setting, team members with less proficiency in the common language tend to be more insecure and are often met with frustration and domination by members that are more proficient. Language differences have the potential to disrupt team functioning. The researchers conclude that language differences in a multicultural team not only reduce understanding but also lead to social categorization processes that could be destructive to team collaboration.

This study presents knowledge, context, and methodology gaps. The knowledge gap relates to the lone finding of language barriers as a cross-cultural complexity. This gap is addressed in the current study by investigating additional cross-cultural complexities in software development project teams as experienced by the project managers for these teams. The researchers focused their investigation on teams in general in a Finnish corporation, presenting a context gap. The current study addresses gap by narrowing the investigation to the project manager for software development project teams in the United States. The methodology gap results from the application of

ethnography field approach to the study. The current study addresses this gap by applying qualitative case study design.

*Competition.* Another challenge to the conflict resolution efforts within multicultural teams is the existence of competition. This issue was explored in three different studies. The first, a qualitative literature review, discussed envy from a multicultural team perspective. The authors concluded that envy is an institutional force that can sap peoples' energy and provoke inner conflicts that may prevent institutional flourishing (Canen & Canen, 2012). According to the study, team diversity can lead to competition and envy between team members from different cultures. Competition and envy then lead to lack of trust, which could result in conflict within a multicultural team. The study called for organizations to increase the use of multicultural leaders to lead multicultural teams. According to the study, the use of multicultural leaders will not just help build and strengthen trust, but will also mitigate and/or avoid the effects of envy in the workplace. The researchers called for multicultural education to be embedded in management curricula so that future leaders can be multiculturally educated.

This study presents knowledge and context gaps. The knowledge gap relates to the fact that it emphasizes the use of multicultural leaders to overcome the cross-cultural complexities identified by the study—envy, competition, and lack of trust, but without mentioning the skills required by them. The current study addressed this gap by investigating the skills needed by project managers for multicultural software development project teams. The context gap relates to the fact that the study focused on the multicultural team in general. The current study addressed this gap by focusing on



multicultural software development project teams and the project manager for such a team.

In agreement with the first study, researchers in a second study found that cultural diversity in a team led to interpersonal rivalry and conflicts that impeded the functioning of the team (Desivilya & Raz, 2015). This second study was a qualitative pilot study to research nationally and ethnically diverse nurses' teams operating in medical centers. The researchers found that competitive attitudes, in part, resulted from members of a common culture carrying out conversations in their native language which made team members from other cultures uncomfortable since they could neither understand the spoken language nor what was being discussed. The findings also indicated that the cause of competitive behaviors amongst team members was discrimination. For example, competition arose when team members perceived promotions as only reserved for a certain group and not them. The study showed a third source of rivalry within a multicultural team to solidarity and mutual support. When team members from a similar ethnic or national culture were perceived by other team members as loyal and supportive to each other, this encouraged other team members to also group with people they aligned better with culturally. This resulted in each side adopting a highly competitive, intransigent attitude, leading to a zero-sum conflict. The researchers called for more research on fostering coordinated diversity amongst multicultural teams.

In addition to fulfilling the call by this past study to research on ways to foster coordination in a multicultural team, the current study also addressed knowledge and context gaps identified in the study. Desivilya & Raz (2015) focused on rivalry as a cause of conflict that affected the proper functioning of a team of nurses. By focusing on

rivalry as to only cross-cultural complexity, the study fell short of identifying additional cross-cultural complexities like envy that could cause conflict and negatively affect the project team. This gap was addressed in the current study by first, confirming envy, and second, investigating additional cross-cultural complexities in the multicultural software development project team from the perspective of the project manager for this team. The context gap resulted from the fact that the researchers for this study investigated multicultural teams of nurses. The current study investigated the project managers for multicultural software development project teams.

The third and final study on the issue of competition presented two views—one that contradicts the first two studies, and a second view that agrees with them. This grounded theory study, which involved two different cultures, Indonesian-Chinese and Indonesian-Singaporean cultures, identified specific intercultural competences for Indonesian sojourners and local co-workers in Indonesian-Chinese and Indonesian-Singaporean work groups (Panggabean, Murniati, & Tjitra, 2013). The Indonesian participants expressed this characteristic with both admiration and resentment. On one hand, and in contrast to the first two studies, Indonesian co-workers highly admired Singaporeans' competitive nature because this obvious persistence allowed them to go beyond their comfort zones and resulted in a willingness to learn new things. On the other hand, and in agreement with the first two studies, this competitive nature engendered perceptions of secretive acts and destructive rivalries. A strong drive to excel in every way via competition and a fear of losing is recognized as prominent cultural aspect of Singapore.

This study presents context and methodology gaps. The context gap relates to the fact that the study investigated Indonesian-Chinese and Indonesian-Singaporean cultures, looking at work groups in general. The current study addressed this gap by studying the project manager for multicultural software development project teams. The methodology gap relates to the fact that the study made use of grounded theory design. The current study addressed this gap by making use of cases study design.

**Cultural competencies needed.** An investigation of existing literature in the area of cultural competencies categorized the discussion into three themes. According to the body of relevant literature, the skills needed to effectively lead multicultural teams and resolve conflict amongst members of these teams can be categorized under the themes of communication skills, negotiation skills, and emotional intelligence skills. The discussion is presented under these themes.

**Communication skills.** Three studies explored communication skills as a cultural competency area relevant to the success of a project managers that lead multicultural teams. In the first article on communication, which was a chapter item that summarized a book's major themes, the author cautioned that diversity is a highly sensitive and controversial issue in organizations and managers of diverse teams need to understand the relevance of diversity training to better manage it (Pompper, 2014). The author called for organizations to designate specific managers to address well-defined diversity goals and strategies. Furthermore, communication was cited as an integral component of diversity management which serves as a means to sustain workplace equity—managers must possess skills to foster effective communication within their diverse teams. According to this article, if managers fail to effectively manage team communication as part of

diversity management, this could lead to poor performance, inefficiencies, and employee absenteeism. The author also called for managers and organizations to continue to advance studies that would promote better understanding of management of diversity and communication.

The second article on communication, a chapter item, addressed diversity as the most important challenge facing managers today. In this article, Hamilton, Nickerson, & Owan (2012) stated that, with the changing demographic trends, changing labor supply patterns, immigration, and increased globalization in today's labor force, managers must adapt to effectively managing diversity in teams. According to the researchers, effective communication enables team members to perform the relevant joint tasks efficiently and engage in knowledge transfer to enhance productivity. Managers must learn new skills that will foster and enhance within-team communication or risk misunderstanding and diminishing productivity.

The third and final article under communication was a qualitative exploratory study that investigated internal crisis communication in a multicultural work environment from a manager's perspective. The study was focused on understanding how managers understood multiculturalism in the Danish workplace, and how they perceived it to be relevant for internal crisis communication (Ravazzani, 2016). The study found that managers need to understand the cultural backgrounds of employees in order to manage and communicate with the team members effectively. Additionally, the findings confirmed that although employee multiculturalism created challenges for internal communication, there are outweighing benefits to utilizing a multicultural workforce. The author calls for managers to promote sensitivity to cultural nuances by undergoing

cultural training. Such training would help managers remove cultural barriers to communication and prevent misunderstanding resulting from cultural differences that could lead to conflict and jeopardize international initiatives.

All three studies align with each other, calling for multicultural team leaders to possess communication and diversity skills to succeed at managing a diverse workforce. This alignment, however, presents a knowledge gap, which the current study addressed by either confirming or contradicting the need for a project manager to have communication and cultural diversity skills to manage culturally diverse teams.

*Negotiation skills.* A second skill needed to effectively lead multicultural teams and resolve conflict, revealed by the literature reviewed, is the skill of negotiation. Three studies explored negotiation. The first, a mixed methods study carried out in the construction industry, focused on reinventing the role of the project manager in mobilizing knowledge sharing in the construction industry (Kelly, Edkins, Smyth, & Konstantinou, 2013). The authors found that culture creates boundaries, which can prevent knowledge sharing. The project manager should create an environment that is conducive for knowledge sharing through negotiation amongst the various cultures represented on the project team. The researchers called for project managers to acquire negotiation skills that would allow them to negotiate through dialogue, teamwork, practice, and work organization by encouraging interaction among team members. They concluded that negotiation allows team members to improve understanding of their practice through knowledge sharing, and lack of effective negotiation skills by the PM could lead to project ineffectiveness.

A second study on negotiation skills was focused on management's perspectives on diversity management through flexible work arrangements. This qualitative study found that ethnic minority women often faced cultural, community, or religious demands that necessitated flexible work arrangements and managers need to foster a culture that values and accommodates diversity (Michielsens, Bingham, & Clarke, 2013). Managers need to be skilled at negotiating work schedules and swaps as a way to show that they value diversity. The study also indicated that while such negotiation skills are beneficial to the multicultural project team, the outcomes could pose a challenge to the organization itself. Flexible work arrangements could mean absenteeism and hence performance issues. Additionally, there is the risk of abuse. If the organization receives more flexible work arrangement requests than it can handle, the manager has to be able to filter out abuse, while negotiating to ensure accommodation for those that are truly in need of such time. This will prevent employer-employee tensions and perception of discrimination, which could lead to resentment and derailment of the team's tasks.

The third and final article on negotiation skills is a qualitative research paper, which studied equality, diversity, and inclusion (Bouten-Pinto, 2016). The focus of this study was to propose reflexivity as a means to managing diversity practice in organizations. The researcher called for managers to prioritize negotiation as a means to overcome cultural barriers to effective interactions among team members based on the team's perception of differences. The author advocated that managers must encourage reflexivity, collaboration, mutually beneficial relationships, and conducive environments that allow employees to feel free to negotiate on the issues that affect them and their work. Lack of excellent negotiation skills could alienate team members from different

cultures; an effect which could ripple through and affect a venture realized with a multicultural team.

The commonality between all three studies under negotiation is that they all pointed to the importance of, and need for managers of multicultural teams to possess strong negotiation skills. The second study however, presents in part, a downside to negotiation—negotiating flexible work schedules for the team members and striking to the balance to ensure work is done. This is a knowledge gap further explored in the current study to confirm the need for multicultural project managers for software development teams to possess negotiation skills. The studies also present a context gap as none of them researched project managers for multicultural software development project teams. This context gap is addressed in the current study.

*Emotional intelligence.* Three studies explored emotional intelligence and its validity as a skill needed to effectively lead multicultural teams and resolve conflict within these teams. The first study, which investigated the leadership competencies of expatriate managers working within the United Arab Emirates (UAE), indicated emotional intelligence to be a critical skill, which led to effective leadership (AIMazrouei & Zacca, 2015). This qualitative study found emotional intelligence to be an indispensable skill, which helped expatriate leaders improve interpersonal skills and adjust to differences and challenges posed by mother tongues among the workforce. The authors concluded that emotional intelligence equips the multicultural leader with the competence to manage diversity, avert conflict, frustration, and stress. According to the study, lack of emotional intelligence skills could lead to failure in managing multicultural organizations in the UAE.

The second study on emotional intelligence is a qualitative exploratory one that examined senior leadership behaviors across samples of Chinese, Indian, and Western Chief Executive Officers. The study indicated that successful Chief Executive Officers were characterized by executive maturity or emotional wisdom (Gutierrez, Spencer, & Zhu, 2012). According to the study, emotional wisdom is the practical side of emotional intelligence. The authors concluded this a critical skill to succeed in leading multicultural a workforce and resolving interpersonal conflict. Further conclusions of the study summed up emotional intelligence as a combination of maturity and strength of character that allows the leader to control his/her emotions and their effects on others. This second study agrees with the first one.

In contrast, Linderbaum & Jordan (2012) in a third and final study on emotional intelligence countered the notion that possession of emotional intelligence skills improves overall performance of the project manager. In this quantitative study, the researchers investigated the effects of emotional intelligence on project manager performance. The study found emotional intelligence to only improve relational performance of the project manager. The study found no evidence that emotional intelligence improved task related performance. The researchers argued that previous studies did not take into consideration context and nature of tasks and, therefore, cannot conclude that emotional intelligence improves the overall performance of the project manager.

Since the third study contradicts the first two ones, the former presents a knowledge gap further explored in the current study. The current study explores the experiences of multicultural software development project teams to identify the skills needed to successfully lead these teams. This would confirm or disqualify emotional



intelligence skills as skills necessary for the success of the project manager. The studies also present a context gap as none of them investigated project managers in the software development arena. This gap is addressed in the current study.

### **Literature Specific to the Two Study Constructs**

#### **Cross-Cultural Interpersonal Conflict and Multicultural Teams**

This section discusses the literature reviewed under cross-cultural interpersonal conflict and multicultural teams. The applicable literature reviewed revealed two themes, namely, challenges caused by cross-cultural complexities and the influence of cultural diversity on teams. The discussion below is organized by these themes.

**Challenges.** Two studies explored the challenges caused by cross-cultural complexities in multicultural teams. In the first study, which studied the issue of challenges posed by cross-cultural complexities in multicultural teams, interpersonal conflict was identified as the top challenge. This quantitative study investigated the effects of conflicts between developers, testers, and business analysts on software development efforts in the United States (Ogbodo, 2014). Characterized by closed-ended survey questions, the study revealed which cultural differences between project team members constituted a source of interpersonal conflict within the project team. Furthermore, interpersonal conflict in a multicultural software development project team was found to have resulted from cross-cultural complexities that led to misperception, which in turn caused miscommunication and interpersonal conflict (Ogbodo, 2014). Additionally, the findings of the study pointed out that interpersonal conflict could cause multicultural projects to fail.

In making recommendations for further research, Ogbodo (2014) called for similar studies in other parts of the world to extend the focus beyond the United States. Furthermore, the author recommended other studies with a qualitative approach and the utilization of open-ended questions to explore the cross-cultural complexities that could be a source of conflict in multicultural teams. These recommendations highlight knowledge and methodology gaps, which the current study addressed by applying qualitative case study approach to investigate project managers in the software development project teams' environment in the United States.

The second and final study that researched the challenges presented by cross-cultural complexities identified lack of collaboration and conflict as two challenges posed by cross-cultural complexities in multicultural teams. The study was a field case study involving Jamaican and Indian software development teams. In this study, the researchers examined the evolving use of boundary objects in cross-cultural teams. Specifically, the researchers examined the roles of software specifications and project management tools as boundary objects, mediating artefacts that provide a basis for negotiation and knowledge sharing between team members with diverse knowledge and cultural backgrounds working on the same project (Sapsed & Salter, 2004), and that would affect collaboration across knowledge boundaries between the two teams working together on a common initiative (Barrett & Oborn, 2010). The findings of this case study revealed that, while boundary objects showed the intended results at some point in the project, they failed to facilitate collaboration across knowledge boundaries and caused conflict. Members of the two national cultures involved in this research interpreted project requirements differently.

The researchers attributed their success to two reasons. The first reason was the curiosity by the Jamaican teams that motivated them to want to learn and gain knowledge from their Indian counterparts. The second reason related to the incentives offered by the leadership, which appeared to have encouraged the teams to complete the project. As the team missed some deadlines and pressure increased, team members began to lose their group identity and started identifying themselves more with members of identical cultures. This reifying of cultural boundaries along with negative stereotyping led to relational conflict through “culturizing” as cross-cultural differences emerged (Barrett & Oborn, 2010). The result was deteriorated performance of the project.

Additional findings revealed that facilitation of collaboration and knowledge sharing within a multicultural software development team goes beyond the mere use of boundary objects; it involves understanding the cultural complexities that each culture brings and addressing them systematically (Barrett & Oborn, 2010). The authors purported that, in an increasingly globalized world, the need to gain a richer understanding of knowledge sharing in culturally diverse software teams continues to be of critical importance and that the mere use of boundary objects can trigger cultural clashes and interpersonal conflicts, as different dynamics with the same objects can affect collaboration and reinforce boundaries.

Conflict can be detrimental to team collaboration and project delivery efforts. The authors suggested that future research should draw primarily on their theoretical approach to boundary objects concepts such as “culturizing”, and the implications of their findings in exploring knowledge sharing in other cross-cultural work teams (Barrett & Oborn, 2010).

The implication of this study to the current study is that it presents a knowledge gap, which is addressed in the current study by sorting the opinions of experienced project managers on the cross-cultural complexities, such as boundary objects and negative stereotyping, which could affect the ability of the project managers to resolve conflict within multicultural software development project teams.

***Influence.*** Four articles explored the influence of cultural diversity in teams. The first article examined the influence cross-cultural complexities and uncertainties could have on project team performance in multicultural construction teams (Ochieng, Price, Ruan, Egbu, & Moore, 2013). Through surveys and data analysis using NVivo qualitative research software, the authors found that cultural variation influences perception. Culture is responsible for variations in the perception of right or wrong. Variation can lead to conflict, which can negatively affect project delivery efforts.

In conclusion, the authors of this article stated that, although the findings of their study had universal applicability, it was important to conduct follow-up research to validate the potential of using the results of their study to establish frameworks for cross-cultural project management practice in different organizations and contexts. This is a knowledge gap presented by this study. The current study explored this gap by researching project managers for multicultural software development project teams to find out the impact of cultural variation on their teams. The current study further investigated the skills needed by the project manager to overcome the challenges—conflict—posed by cross-cultural complexities such as cultural and perception variations.

The second article on the influence of cross-cultural complexities on project teams is a quantitative study that examined the effect of transformational, transactional,

and passive leadership on the performance of multicultural teams in China (Meckl & Johanning, 2012). The study involved 42 multicultural teams with a total of 158 team members employed by German companies in China. In their findings, the authors holistically identified that cultural diversity influenced communication effectiveness and further reduced conflict. The authors also found that cultural diversity generally seemed to have a fundamental effect on the different team variables, while demonstrating a positive effect on team performance.

A suggestion for further studies made by the researchers was their call for future research to elaborate on the theoretical framework for cultural diversity (Meckl & Johanning, 2012). The authors referred specifically to the development of a uniform understanding of the concept of cultural diversity that may highlight a more concrete way to reveal the influence of cultural diversity in teams. This is a theory gap. Based on this recommendation for future research to focus on theoretical framework, the taxonomy for explaining the influence of cultural diversity in teams needs to be expanded (Meckl & Johanning, 2012), as embedded variables must be included and moderating effects must be integrated. The current study addressed this theory gap by applying four corresponding theories to the interpretation of cultural diversity as it relates to conflict from a team perspective.

In the first theory, Avruch (2013) shed light on the problem of this study in three ways. According to Avruch, culture is socially distributed across a population, psychologically distributed across a population, and the derivative of experience. Considering each software development project team to represent a population, Avruch's conceptualizations of conflict presented a lens through which the cross-cultural

complexities that caused interpersonal conflict in a multicultural software development project team were perceived.

In the second theory, Maslow (1970) and Burton (1979) presented a different but relevant perspective to the problem of the current study. According to these two thinkers of the Human Needs Theory, cultures are characterized by certain needs, which if absent, threatened, or scarce, can result in conflict. The present study considers the problem of cross-cultural complexities as it relates to interpersonal conflict by perceiving the psychological and emotional needs –empathy, emotional intelligence, communication challenges, and trust—of multicultural project team members through the lens of the Human Needs Theory.

The third theory, the Rational Choice Theory, is another lens through which to view the problem of this study. According to this theory, humans generally base their decisions on their strategic interests (Ritzer & Goodman, 2004; Scott, 2000). Following from the Human Needs Theory, when the project manager does not address the psychological and emotional needs of the project team members, the reaction of the team members in relation to conflict can be interpreted through application of the Rational Choice Theory.

Cross-Cultural Adaptation Theory is the fourth and final theory applied to interpret the problem investigated in this study. According to this theory, when strangers from different international cultures have a purpose-related encounter, deculturation and acculturation occur as the individuals try to adjust and adapt to their new teams (Kim, 2001). This theory applies to the current study in that it provides insight into how team members might adjust when they become part of each new project team.

Furthermore, based on the findings of their study, Meckl & Johanning (2012) recommended that with the expansion of the taxonomy for cultural diversity, the effects of leadership in multicultural teams should also be captured taxonomically (in this light, the authors suggested that a possible research question could determine whether leadership in multicultural teams only affects variables with a negative effect on team performance or also variables with a positive effect on a team's performance).

This study presents knowledge, context, and methodology gaps. One of the findings revealed by the study is that cultural diversity reduced conflict and improved team performance. This finding presents a knowledge gap as lends itself the opportunity for the project managers to validate this finding in the multicultural software development project team on which the current study focused. The context gap is represented through the fact that none of the multicultural teams investigated was specified as a software development project team. The current study addressed this gap by investigating the projects manager for multicultural software development project teams. Using quantitative methods for the study presents a methodology gap addressed in the current study through the use of qualitative case study design.

The third study that investigated the influence of cross-cultural complexities on project teams looked at how culture and other attributes could affect the complexity of globally distributed software development teams (Park & Kang, 2012). The researchers applied case study design to the study involving three team members from different sociocultural and academic backgrounds and found that culture negatively influenced the project delivery in a multicultural setting. Culture involves a project team member's prior experience, organization, and nationality (Avruch, 2013; Park & Kang, 2012). The

findings of this case study revealed that culture affected a team member's understanding and attitude towards tasks.

The researchers also found that the cross-cultural complexities within a project team could be minimized by narrowing the cultural gap through understanding of the respective cultures of the team members. An understanding of each team member's culture would help move the project forward by enabling a better understanding of his or her work pattern (Park & Kang, 2012). While this study suggested that bridging the cultural gap between members of a software development project team could translate directly into project success, the authors did not identify any specific cultural gap. Additionally, the study did not reveal skills needed to close the cultural gap between culturally diverse team members. This is a knowledge gap. To address this gap, the current study focused on exploring one such cultural gap, interpersonal cross-cultural conflict, and then finding out how best to bridge it. This study also presents a context gap, as it did not focus on the project managers for the multicultural software development project teams.

The fourth and final study on the influence of cross-cultural complexities on project teams was a mixed qualitative and quantitative study to investigate the effects of cross-cultural factors on heavy engineering projects in 31 heavy construction engineering organizations in the United Kingdom (UK) and Kenya (Ochieng, Price, Ruan, Melaine, & Egbu, 2013). The study, which focused on construction engineering, involved participants from the UK and Kenya. According to the researchers, today's diverse work environment challenges the traditional ways projects have been managed. The findings of



the study identified cross-cultural team performance as one of the factors that need to be improved upon in order to optimize project success in heavy engineering projects.

According to the researchers, as large domestic organizations continue to establish overseas subsidiaries, these ever-increasing globalization advances have resulted in the increased need for cross national construction activities. The results of this comparative study demonstrated that a wide spectrum of cultural variables could affect the performance of construction projects in a cross-cultural setting. In addition to maintaining team affiliations, aligning project goals, and monitoring project team performance, the authors pointed out that although the study focused on only two countries, geographical limitation should not prevent the applicability of the findings to other countries.

While the researchers found cross-cultural complexities to influence the performance on heavy construction engineering projects, they did not mention whether a project manager needed to possess specific multicultural competencies to mitigate any negative effects of cross-cultural factors on the outcome of a project. This is a knowledge gap that opens up the opportunity for the current study to investigate the experiences of experienced project managers about the possibility of multicultural competencies that would help minimize negative effects on the outcome of a software development project. An aim of the current study was to attempt to discover the project managers' perceptions on the most common cross-cultural complexities they have experienced, as well as explore the skills needed by the PM to mitigate these complexities.

## **Multicultural Competencies for Software Development Project Managers**

This section discusses the literature reviewed under multicultural competences for software development project managers. The applicable literature reviewed revealed two themes, namely, cultural differences and integration skills, and cross-cultural agility skills. The analysis below is organized under these themes.

**Cultural differences and integration skills.** Three articles explored cultural differences and integration skills. The first article that explored cultural differences and integration skills investigated the existence of behavioral and attitude differences between two cohorts working on the same team of a software development project that involved Information and Communication Technology (ICT) students (Richards & Bilgin, 2010). This quantitative study was performed by running a one-semester, cross-cultural software development project using anonymous online surveys to measure three temporal dimensions commonly used in time-at-work studies and seven cultural dimensions.

The findings revealed the existence of differences along the temporal dimensions of punctuality, time boundaries, and awareness of time use. The findings also revealed evidence of team members conforming to national cultural stereotypes (Richards & Bilgin, 2010). As practical implications, Richards and Bilgin called for education providers to carefully design, implement, and monitor cross-cultural learning opportunities to prepare graduates to fully integrate and work successfully in global teams. Additionally, the authors called for multinational organizations to ensure that their employees were prepared for the cultural complexities of today's workplace, and their leaders are ready to steer their employees toward successful integration into a global workforce.

According to the researchers, cultural differences could cause conflict and project failures, and as such, require leaders of cross-cultural teams to possess specialized skills to address cultural differences and/or mitigate/resolve conflict within the team. Such skills would help prevent project failures. Although the authors identified and pointed out the need for specialized skills, they fell short of naming the specific skills that would be vital. This knowledge gap justified the current study and was explored as part of it.

A second study that focused on cultural differences and integration skills was a field study that examined the influence of group composition in terms of cultural values on conflict management styles in groups (Boroş et al., 2010). The findings of this study revealed that, in horizontal collectivism, group members felt they were equal and connected; thus, cooperation was better, while contending and avoiding conflict management styles were uncommon. Comparatively, the findings also revealed that in vertical individualism, the avoidance style of conflict management was more frequently used. Additional findings showed that within-group similarity led to stronger cooperative conflict resolution strategies. According to the researchers, the absence of a cooperative conflict resolution strategy in cross-cultural initiatives could affect relationships and jeopardize collaboration on a joint venture. The study concluded that groups are more likely to adopt cooperation as a dominant conflict management strategy if all members feel they are equal and connected. The study further concluded that cultural values will most likely interact with other diversity dimensions in a multicultural group setting. As a result, managers should be aware of complex interactions and their effects on cooperation when designing teams. The likelihood of conflict and its impact were found by the researchers to be more likely diminished in a horizontal collectivism team.

In discussing the practical implications of their research, Boroş et al. (2010) concluded that the study called for managers to possess skills and experience that would allow them to focus on building a shared group identity. A shared group identity would bridge individual differences within groups, and reduce the possibility of potential destructive conflict. According to the researchers, managers must develop skills to enable them to minimize the obvious negative effects of complex interactions on cross-cultural projects and maximize cooperation when forming teams. This call by the authors for managers to develop specialized skills presents a knowledge gap. The current study addressed this gap by exploring the skills needed by project managers to be successful as leaders of multicultural software development project teams.

The third and final study that explored cultural differences and integration skills was the first phase of a three-phase research, which investigated software development and its global dimensions, focusing on the roles of multicultural and cross-organizational issues in software engineering (Jaakkola et al., 2010). In the findings of this first phase, the authors reported that culture, as it relates to global software engineering, is a relevant topic requiring more research. According to additional findings of the study, the need to study culture is particularly important as software development has become global due to acquisitions, offshoring, and international subcontracting. The researchers also found that global distribution of software development introduces new requirements to the software engineering process. The study revealed that the organizational and cultural differences of the development sub-teams in international teams should be taken into account, as they are a source of conflict that could derail global undertakings.

Another outcome of this first phase is the emergence and introduction of a multicultural three-layer software engineering working model, which the researchers desired to implement and test in their subsequent work. The layers of the software engineering process were based on the spiral model, the knowledge context layer, as well as the multicultural context layer (Jaakkola et al., 2010). In their analyses, the researchers underscored that globalization is a key trend in today's economy. The global distribution of software development has introduced the need to understand the cross-cultural complexities involved and manage them effectively in order to maximize the benefits intended with the use of cross-cultural teams.

According to the researchers, cross-cultural interactions are present in virtual and physical team interactions. Such interactions could lead to cultural differences in the way people from different cultures approach business and social etiquette, meeting protocols, formality and rituals, orientation to time, communication style, working methods, and decision making. These differences have projected the issues around cultural sensitivity to the forefront of success criteria for international software development and research. Business executives, project managers, and project team members are finding themselves in uncertain situations due to culturally dependent differences in communication protocol, language, and value systems. These leaders need to be empathetic toward team members from different cultures and the show of empathy will enable them to steer their multicultural teams towards better communication, overcome language barriers, and develop tolerance towards team members with different mother tongues.

Jaakkola et al. (2010) called upon leaders of cross-cultural transactions to be aware of, and sensitive to the different cultural backgrounds of their counterparts. The

authors further noted a need for project managers to acquire cultural competence, since such competence might help software project managers to achieve project goals and avoid potential culture-related risks, which could cause project failures. These skills would also help the project manager promote team creativity and motivation through flexible leadership. Understanding and adjusting to the existing cultural dimensions could make the software project manager a better negotiator.

In conclusion, the authors stressed the need for leaders of global organizations and international transactions to understand cross-cultural differences and to attain cultural competence in order to be successful leaders not just of multinational organizations but also of cross-cultural initiatives. This is a knowledge gap that falls in line with one of the goals of the current study—to explore cross-cultural skills needed by the project manager to be successful at leading multicultural software development project teams.

**Cross-cultural agility skills.** One study explored cross-cultural agility skills. It focused on the increasingly competitive and diverse nature of today's business environment. The study emphasized the need for cross-cultural agility as a key skill to be employable (Duus & Cooray, 2014). According to the researchers, education and training in today's economy must support students and leaders to develop cross-cultural agility and adeptness with an aim to enhance their employability. The authors pointed out that today's business environment is increasingly competitive and global, and it is imperative that graduates acquire the international skills they need to be competitive and employable across sectors and geographical locations.

The study identified global competencies to include the ability to work collaboratively with teams of people from a range of cultures and backgrounds, excellent communication skills, and the ability to embrace multiple perspectives. Students who gain such skills during their university education would be able to lead, integrate, and navigate themselves into international teams when they eventually obtain employment (Duus & Cooray, 2014). Although business schools have relentlessly focused on developing students' cultural awareness and international ethos, these students find themselves still wanting in the area of cross-cultural business interactions when they graduate. A possible reason is that business schools teach students through indirect experiences or case studies, videos, books, and articles which did not often lend the students the experience they needed in leading and coping with cultural teams (Duus & Cooray, 2014). The researchers considered that solving this problem would require direct experience-based learning activities that encourage cultural immersion and cross-cultural teamwork. Such an approach includes experiential, cross-cultural, and virtual-team projects in which global teamwork is enabled through internet-based platforms and involves geographically dispersed members who have no prior face-to-face interaction collaborating on common tasks and goals.

Learning by doing is a good empowering tool because it allows students to work across different time zones and engage with various cultural perspectives, business practices, working styles, and approaches (Duus & Cooray, 2014). In light of this school of thought, the authors described an experiential exercise they used to teach students cross-cultural competencies and the related outcome of this experiential cross-cultural exercise. This action-based exercise involved United Kingdom (UK) and Indian students

operating in their respective countries. The students had never met each other prior to the exercise. Their first interactions were virtual exchanges. In this exercise, the students were asked to take advantage of rising business opportunities in Delhi, India. They then, would come together to share and gather knowledge of the social, economic, legislative, and political factors in Delhi that would allow them to successfully identify and launch a new enterprise, working within a specified budget and timeframe (Duus & Cooray, 2014). The teams communicated through virtual social networking platforms such as Facebook, Skype, Google Docs, e-mail, and mobile apps. Through these platforms, they shared information and insights, discussed the issues, and reached agreements for their projects. The results from students' reflection journals indicated that the exercise was practical and enjoyable, built confidence in a range of skills, and prepared students for future employment and cross-cultural leadership.

This article supports the need for the current study in three ways. First, the study presents a knowledge gap by pointing out that a deficiency in multicultural skills could lead to unemployment in today's increasingly global business world. Second, the study presents a context gap focused on students that are yet to graduate and failed to address the need for such skills by professionals such as project managers for multicultural software development project teams who are already in the field and need these skills. Third, the study suggested a knowledge gap that learning-by-doing would corroborate the theory taught in class (Duus & Cooray, 2014). It is uncertain however, whether practical field experience would suffice to equip already practicing professionals with enough multicultural skills especially if they had no formal education that would be supplemented by on-the-job training. These three gaps are explored in the current study,



which asked practicing project managers leading software development project teams what they thought would be the skills needed to thrive in multicultural team leadership, and the best ways to be competent in these skills.

### **Gaps by Study Construct**

This section of the dissertation summarizes the gaps identified in the literature review. The gaps are summarized separately for each of the two study constructs—Cross-Cultural Interpersonal Conflict and Multicultural Teams, and Multicultural Competencies for Software Development Project Managers. Additionally, for each construct, the gaps are summarized under knowledge, context, methodology, and theory gaps. As a reminder to the reader, none of the studies reviewed focused on cross-cultural interpersonal conflict management and resolution as it relates specifically to the project manager for a software development project team.

#### **Cross-Cultural Interpersonal Conflict and Multicultural Teams**

This section presents a summary of the gaps identified in the literature reviewed under the construct of Cross-Cultural Interpersonal Conflict and Management Teams. Under this construct, each gap identified was classified as a knowledge, context, methodology, or theory gap. The summary of the gaps is also presented under these classifications.

**Knowledge gap.** Three different knowledge gaps emerged from the literature review under the construct of Cross-Cultural Interpersonal Conflict and Management Teams. First, existing studies explored cross-cultural complexities but fell short of linking these complexities to the need for specialized skills required by project managers to effectively deal with these complexities, minimize and resolve interpersonal conflict,

and boost collaboration and productivity in project teams (Ogbodo, 2014; Barrett & Oborn, 2010; Park & Kang, 2012; Ochieng, Price, Ruan, Melaine, & Egbu, 2013). Second, literature reviewed revealed that studies of a similar nature had been carried out in other industries, but not in the software development realm; thus, presenting a lack of knowledge in the software development realm (Ochieng, Price, Ruan, Egbu, & Moore, 2013; Meckl & Johanning, 2012; Ochieng, Price, Ruan, Melaine, & Egbu, 2013). Third and finally, other studies reviewed presented findings that contradicted a common trend in the findings of other literature related to the topic. For example, in contrast to the literature reviewed, Meckl & Johanning (2012) found that cultural diversity reduced conflict and improved team performance. This finding presented a knowledge gap as it presents the opportunity for the current study to validate this finding in the multicultural software development realm.

**Context gap.** The literature review revealed one context gap. According to the literature reviewed, some studies investigated multicultural project teams but did not focus specifically on the software development project team (Ochieng, Price, Ruan, Melaine, & Egbu, 2013; Meckl & Johanning, 2012; Ochieng, Price, Ruan, Egbu, & Moore, 2013). This presents a context gap in that no studies reviewed addressed software development project teams.

**Methodology gap.** Three methodology gaps were revealed by the literature. First, some studies were limited to quantitative research methods (Ogbodo, 2014; Meckl & Johanning, 2012). Second, another study was conducted as a single case study (Barrett & Oborn, 2010). Third and finally, other studies used other qualitative research designs

(Ochieng, Price, Ruan, Egbu, & Moore, 2013; Park & Kang, 2012). None of the studies reviewed utilized multiple case study design.

**Theory gap.** One theory gap was identified from the literature review. This gap emerged from one study, which called for future research to elaborate on the theoretical framework for cultural diversity. According to this study, since there is an expansion in the taxonomy/classification of cultural diversity, the effects of leadership in multicultural teams needs to be captured taxonomically as well for each class/bucket of culture. This will enable each class/bucket of culture to have its own related set of theory and literature (Meckl & Johanning, 2012). This aligns with Avruch's (2013) conceptualization that each group constitutes a bucket of culture. Based on this, the current study perceives the software development team as a big bucket of culture requiring a set of theories and literature that pertain uniquely to it. In this respect, the current study addressed this theory gap by exploring the cross-cultural complexities and skill requirements for project managers for multicultural software development project teams so as to add to the literature in this area.

### **Multicultural Competencies for Software Development Project Managers**

This section presents a summary of the gaps identified in the literature reviewed under the construct of Multicultural Competencies for Software Development Project Managers. Under this construct, each gap identified was classified as a knowledge, context, or methodology gap. The summary of the gaps is also presented under these classifications.

**Knowledge gap.** One knowledge gap was identified from the literature reviewed under the construct of Multicultural Competencies for Software Development Project

Managers. Existing studies identified the lack of specialized skills by managers leading multicultural initiatives (Keil, Lee, Deng, 2013; Boroş et al., 2010; Jaakkola et al., 2010; Duus & Cooray, 2014). Managers need to possess skills and experiences that would enable them build a shared group identity, minimize destructive conflict, and maximize cooperation in multicultural teams (Boroş et al., 2010). This constitutes a knowledge gap. This gap was addressed in the current study by narrowing the scope of the study to exploring the skills needed by project managers for multicultural software development project teams to build a shared group identity, minimize destructive conflict, and maximize cooperation in their teams.

**Context gap.** One context gap emerged from the literature review. According to the literature review, although existing studies investigated cross-cultural project teams, none focused specifically on the multicultural skills requirements of the software development project manager (Boroş et al., 2010; Duus & Cooray, 2014). The current study addressed this gap by focusing exclusively on the software development project team, exploring the experiences of project managers for these teams.

**Methodology gap.** The literature review revealed two methodology gaps. First, existing studies were conducted using quantitative methods (Richards & Bilgin, 2010). Second and finally, past studies were conducted through qualitative designs other than case study (Boroş et al., 2010). These constitute the methodology gaps.

### **Summary**

The first half of chapter two presented the literature review, which began by first taking a more generalized look at the literature under culture, conflict, and multicultural team dynamics, and then, delving subsequently into the literature review pertaining to the

two study constructs: (a) Cross-Cultural interpersonal conflict and multicultural teams, and (b) Multicultural competencies for software development project managers. The literature review revealed primary, secondary, and tertiary themes for the generalized literature review, and primary and secondary themes for each of the two constructs of the study. The secondary themes were subsidiaries of the primary, and the tertiary themes, subsidiaries of the secondary themes. The literature review presented gaps and/or opportunities that supported the need for the current study to explore the cultural complexities experienced by project managers, and the skills needed to overcome these complexities.

The generalized literature review yielded two primary themes, four secondary themes, and 15 tertiary themes. The primary themes revealed by the generalized literature review are culture and cross-cultural interpersonal conflict management resolution. Further research drew out cross-cultural complexities, and culture and interpersonal conflict as the two secondary themes under the primary theme of culture. A further review also revealed challenges faced and cultural competencies needed as secondary themes under the primary theme of cross-cultural interpersonal conflict management and resolution.

A much deeper look at the literature under the secondary theme of cross-cultural complexities, revealed seven tertiary themes, namely, communication, collaboration, cultural awareness, leadership, team composition, cultural values, and cultural intelligence. Likewise, a much deeper dive into the secondary theme of culture and interpersonal conflict revealed two tertiary themes—team effectiveness and team performance.

For the secondary theme of challenges faced, the literature review projected trust, language barriers, and competition as the three emergent tertiary themes. In the same manner, a deeper look at the literature review under the secondary theme of cultural competencies needed showed communication skills, negotiation skills, and emotional intelligence skills as the three tertiary themes in this area.

For the two study constructs, challenges and influence were the two secondary themes revealed by the literature under the primary theme of cross-cultural and interpersonal conflict and multicultural teams. Similarly, the literature review for the primary theme of multicultural competencies for software development project managers revealed two secondary themes—cultural differences and integration skills and cross-cultural agility skills. A summary of the gaps revealed 12 gaps identified for both study constructs.

Chapter three, research method, will cover (a) population and sampling, (b) case selection, (c) data collection, (d) data analysis, (e) validation/trustworthiness, (f) quality of the study, (g) ethical considerations, (h) expected contribution to the scholarship of conflict analysis and resolution, and (i) the role and background of the researcher.

### **Theoretical Framework**

The literature review highlighted culture and conflict as key elements in multicultural team dynamics. Although theories of conflict tend to oversimplify the complexity of conflict, they can also be very instrumental in analyzing, perceiving, understanding, and gaining perspectives into a corresponding conflict situation. With one focus of this study being interpersonal conflict within a multicultural software development project team setting, two conflict analysis theories—Human Needs Theory,

and Rational Choice Theory—were used to provide different perspectives on the problem explored in this study. The Human Needs Theory was selected because it relates human needs to conflict. The Rationale Choice Theory was selected because it relates human intentionality to conflict.

Additionally, as culture is a key factor in the current study, one theory of culture—Avruch's conceptualization of culture—and one intercultural communication theory—Cross-Cultural Adaptation Theory—were utilized to analyze the cultural aspect of the problem explored. The Cross-Cultural Adaptation Theory was selected because it speaks to cultural adaptability in a team setting. Avruch's was selected as an applicable theory in this study due to the three ways in which it theorizes conflict.

### **Avruch's Conceptualization of Culture**

The problem of this study was conceived using Avruch's (2013) conceptualization of culture. Avruch conceptualizes culture through three observations. First, culture is socially distributed across a population. Individuals in societies are distributed across many different sorts of social groupings—regional, ethnic, religious, class, occupational, and so on. Each of these groupings is a potential container for culture. This is particularly true in a multicultural software development project team. When team members of a multicultural software development project team complete one project, they move on to be part of a new team working on a different project. Although members of each team come from different international cultures, they eventually form a new team culture in each new team they join. Thus, they carry the culture of each team to their next teams. Each team that a project team member belongs to is therefore a container for culture. Their original international culture is also a bucket of culture, which

they bring with them to each of their project teams. These various cultures, which they acquire from each new team, combined with their original international cultures, pose cross-cultural challenges that can lead to interpersonal conflict and affect the success of the project. A solid grasp of this concept helps the project manager set expectations and lends him the tools to successfully lead multicultural software development project teams.

Second, Avruch theorizes that culture is psychologically distributed within individuals across a population. In other words, even members of the same social grouping do not internalize cultural representations or schemas equally. Some schemas are internalized superficially and are the equivalent of cultural clichés. Others are deeply internalized and invested with emotion or affect. The more deeply internalized and affectively loaded, the more certain cultural representations can motivate action. This theory directly links with the current study in that it presents a lens through which to analyze the problem investigated. As a team member moves from one bucket of culture to another, or from team to team, the cultures the team member acquired from each of the teams could influence the team member's original international culture. A resulting blending effect from a mixture of all these different cultures possessed by the team member could change the way the team member relates and reacts to interpersonal conflict. This blending effect could introduce other sources of different types of cross-cultural complexities that challenge the project manager's ability to lead successfully, a multicultural software development project team. The blending effect could occur faster with team members that internalize culture superficially, and could take longer with team members that internalize their original cultures deeply. An understanding of this allows



the project manager to know what to expect, and then helps the project manager become equipped to effectively lead project team members accordingly.

Third and finally, Avruch suggests that, because culture is the derivative of experience, it is deeply connected to ongoing or past social practice. Therefore, despite its traditional or customary base, culture is to some extent always situational, flexible, and responsive to the exigencies of the worlds that individuals confront. The relationship of this theory with the current problem is that the cultures acquired by the project member from each team blend with the project manager's original culture. The way the team member responds to conflict in a subsequent team will represent the result or derivative of the blend of the team member's original culture and the cultures acquired by the team member from the various teams. This blend of culture becomes the team member's new culture each time the team member joins a new team. This blend of culture results from a mix of the team member's traditional or customary culture base, ongoing, and past social practice or association in other teams. The new culture of the team member then determines how the team member reacts to interpersonal conflict at any given time. Irrespective of the team member's traditional or customary base, the team member's new culture renders his or her response to interpersonal conflict to be situational, flexible, and responsive to the exigencies of the worlds that the team member confronts.

### **Human Needs Theory**

Maslow (1970), a major thinker of the Human Needs Theory, coined his view of the theory from a different perspective. Maslow states that cultures are characterized by certain needs, which if absent, threatened, or scarce, oftentimes result in conflict. Such

needs include, but are not limited to, physiological, safety/security, love/affection, esteem, and self-actualization. Burton (1979), another major thinker of the Human Needs Theory, echoes Maslow's thought of the theory by aligning his definition with Maslow's. Burton suggests that humans are characterized by certain fundamental qualities, the absence of which can result in conflict. These characteristic and fundamental qualities of humans include identity, recognition, security/safety, belongingness/love, freedom, self-esteem, personal fulfillment, and distributive justice.

The Human Needs Theory is directly applicable to the problem of interpersonal conflict in a software development project team setting. In a multicultural project team, team members work with and depend on one another to deliver the software. To effectively collaborate, the needs of team members need to be met. Needs could be culturally motivated. For example, a team member from a culture where English is not the first language and working in a team where English is the common language could have problems communicating with other team members. What such a team member would need are empathy and patience from other team members. Other team members need to patiently allow sufficient time for this team member to communicate with them. If these needs are not met, it could constitute a cross-cultural complexity that would lead to misunderstanding and conflict. Another example is a team member from a culture where elders are respected and eye contact with elders is perceived as disrespectful. If such a team member happens to work in a multicultural team where communication requires eye contact, there could be misunderstanding and conflict as both sides have expectations/needs that conflict with each other when it comes to making eye contact.

The Human Needs Theory's linkage of human needs to culture, therefore, plays an underscoring role in bringing awareness as to how the needs of various cultures affect a software development project team's dynamics and the possible outcomes. With this understanding, the software development project manager must develop skills that help to properly and skillfully accommodate the various needs of team members in a way that prevents and resolves conflict, while ensuring the delivery of the project within the constraints of scope, budget and time.

### **Rational Choice Theory**

According to the Rational Choice Theory, humans generally base their decisions on their own strategic interests. This implies a philosophy of intentionality emanating from cost/benefit analysis of human behavior (Ritzer & Goodman, 2004; Scott, 2000). The Rational Choice Theory is applicable to the research problem in that decisions of team members could be culturally motivated. For example, if a team member with a different accent works in a team where the core team is made up of American born and raised team members, the difference in accents could pose communication barriers. The team members with an American accent could find it hard to understand the team member with a different accent and vice versa. This could cause misunderstanding, frustration, and conflict. If the team member with a different accent is from a culture that tends to be reticent, there could be a culturally motivated decision to shy away from speaking for fear of being misunderstood. On the other hand, if the team member is from an open and more outgoing culture, there might be a natural tendency for that team member to move past the language barriers and challenges with accents. This decision

will depend on the cultures of the team members affected, and is based on the team members' cultural backgrounds and experiences.

The project manager benefits from being very skillful in combining these diverse views into one common objective that is focused on the goal of the project. The rational approach, which relates the constructs of decision to choice, rationale, and strategic interest, is a fitting theory in framing the research problem for this dissertation. Because project team members make rational decisions based on their interests, these interests are based on their agendas and views, which are driven by their experiences; all of which can lead to competition with a negative impact on the objective of the project. This calls for the software development project manager to develop necessary skills to deal with the respective personalities within the software development project team, thus preventing, reducing, and resolving conflict, which impacts the outcome of the project.

### **Cross-Cultural Adaptation**

Kim (2001), a major thinker of the Cross-Cultural Adaptation Theory, states that when strangers from different international cultures have a purpose-related encounter, deculturation and acculturation occur. This is when individuals in such an encounter try to adjust their culture to adapt to the other culture in an effort to better communicate for the purpose of the encounter. Although communication is unique within each culture, there are also systematic similarities and differences between them. These differences and similarities are the result of dimensions of cultural variabilities such as individualism-collectivism cultures and low context-high context cultures (Gudykunst, 2003). Communicating with strangers has become more and more the norm as worldwide communication becomes rapid and frequent. Those in Western individualistic cultures

must come to an understanding about the values and expectations of those in the collectivistic cultures (Wilmot & Hocker, 2011).

A software development project is a purpose-related encounter that can draw a multicultural team to work together to accomplish the goals of the project. As a team member joins a new multicultural team, the team member's original or base culture begins to be affected by the culture or cultures of each new team. With each team being a basket of culture (Avruch, 2013), the team member acquires a new culture from each new team. With each newly acquired culture, the team member gradually builds a new culture, which is a blend of the team member's base culture and the cultures of all the teams, which the member has been part of (Avruch, 2013). According to the cultural adaptation theory, by acquiring the culture of each new team the member joins, the team member is letting go of aspects of his/her base culture—deculturation—and adapting to the new culture—acculturation—of each new team. This could affect the way the team member responds to interpersonal conflict in the software development project team. With this understanding, a capable and skillful project manager for a multicultural software development project team can quickly influence the cultural dynamics of the team and galvanize the team so that it quickly overcomes the cultural challenges, and focuses its attention on the project at hand.

In conclusion, it can be deduced that “culture always comes in the plural” (Avruch, 2013, p. 11). This implies that individuals carry multiple cultures ranging from ethnic, racial, national, or religious cultures to those contained in or derived from experience in the practices associated with occupational, professional, class, or social categories. The mere existence of cultural differences is usually not the primary cause of

conflict between groups; however, culture is always the lens through which differences are refracted and conflict pursued and understanding the concept of culture is a prerequisite for effective conflict analysis and resolution (Avruch, 2013). While the project managers for multicultural software development project teams need to understand the technical sense of culture, they must also be aware of how their team members might use and understand the term culture, especially when they find themselves working in multicultural social settings (Avruch, 2013).

### **Synthesized Model of the Theoretical Framework for Multicultural Project Teams**

This section presents a synthesized model of all the theories discussed in the theoretical framework above. The model provides a lens for the interpretation of the problem and findings of this study. A visual representation follows the definition of the model.

Members of a multicultural software development project team have cultural needs (Maslow, 1970; Burton, 1979) and belong to other groups (Avruch, 2013). Each of these groups has a unique culture (Avruch, 2013). Team members carry the culture of each group to their project teams. The various cultures possessed by a team member form the experiences through which that team member perceives things in their project team (Avruch, 2013). These differences in perception of things by various team members can cause interpersonal conflict.

Through deculturation and acculturation (Kim, 2001), team members undergo cultural adaptation where they suppress the cultures they brought to their project team and learn the new culture of the project team. The rate, level, and speed of deculturation and acculturation depend on whether a team member internalizes the cultures from

his/her various groups superficially or deeply, and on the extent to which the cultural needs of that team member are met. If a team member internalizes the culture of his/her other groups deeply, deculturation and acculturation will become a challenge, and the behavior of the team member in the project team becomes a derivative of the team member's experiences in his/her other groups. The team member's reaction to situations within the team will also be a derivative of a cost-benefit analysis based on how the individual internalizes culture (Ritzer & Goodman, 2004; Scott, 2000).

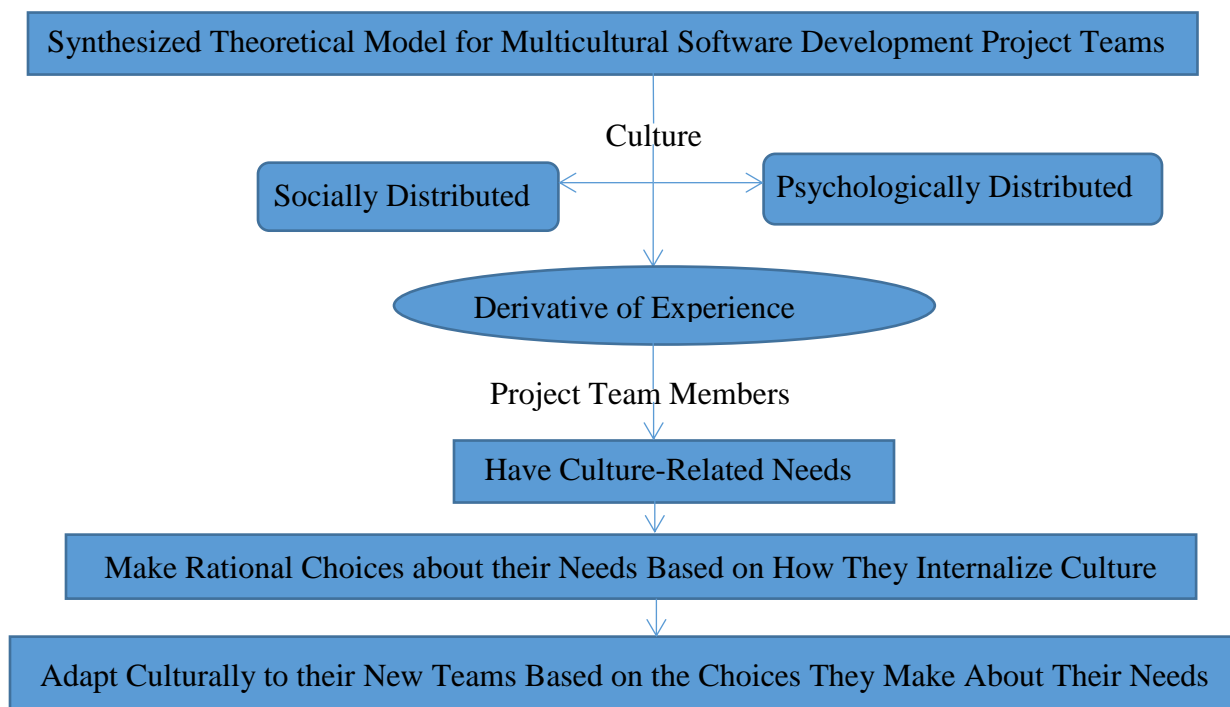


Figure 1. Synthesized Model of the Theories Discussed

### Conclusion

The literature review indicated the need to explore the topic of cross cultural project management. Today, projects have dramatically increased in complexity, as project teams increasingly comprise of people from various cultural backgrounds (Popescu, Borca, Fistis, & Draghici, 2014). Thus, project managers require a certain

skillset. The skills requirements for a project manager in multicultural information technology projects have not been widely studied in the past, especially in terms of their relative importance (Keil, Lee, & Deng, 2013). Chapter 2 concluded a theoretical framework of the theories that guided the study. These theories were synthesized into a model used to analyze the interview data for the study.

The literature review guided the scope of the current study to focus on cross-cultural impedances/challenges to team conflict resolution, and the skills needed by project managers to manage and resolve conflict resulting from the cross-cultural nature of today's software development project teams. The need for additional understanding in the area of cultural project management strongly validated the rationale for the current study. To attain the goals of this study, chapter three will review the research method—qualitative research—and design—case study.



### Chapter 3: Research Method

As a reminder to the reader, the research questions for this study were:

**RQ1.** What are the perceptions and experiences of software development project managers with cross-cultural complexities/challenges and causes of cross-cultural interpersonal conflicts in multicultural software development project teams?

**RQ2.** What are the perceptions and experiences of software development project managers with the multicultural skills needed to resolve cross-cultural interpersonal conflict effectively within multicultural project teams?

A qualitative research method and an exploratory case study design were used for this study because qualitative research methods provide a more profound perception of a social phenomenon than quantitative methods. This is because qualitative methods allow the researcher and participants greater latitude to interact, explore, and dissect the phenomenon to have a better understanding of it (Silverman, 2000). Additionally, according to Yin (2014), case study research is necessary and appropriate when the focus of the study is to retain a holistic perspective of a social phenomenon. Likewise, Swanborn (2010) stated that when the impetus of a research project lies in broad, familiarizing questions about a social process, a case study is a fitting approach. As interpersonal conflict is a social phenomenon, and the focus of the current study is interpersonal conflict in a software development project team, this makes qualitative methods and a case study design the best fit for the study.

Yin (2014) also states that if the research questions of a study focus mainly on “what” questions, this is a justifiable rationale for conducting an exploratory case study.

The two research questions for the current study are indeed “what” questions. This therefore supports the use of exploratory case study design for the current study.

The current study is a multiple-case study design consisting of 12 holistic cases. The decision to select 12 cases was entirely discretionary (Yin, 2014). According to Yin, although single-case studies can yield invaluable insights, multiple-case study designs are stronger than single-case designs. This underscores the reasoning behind pursuing a multiple-case study design.

### **Delimitations**

In designing my study, I made some choices related to the scope and the specific design of the study. These choices constituted delimitations to it. The first delimiting factor was the focus of the study on the role of project managers managing multicultural software development project teams in the United States so it excluded non-PM team members of the software development project team. Furthermore, the study participants were recruited from a LinkedIn group which is an online professional social medium. Finally, the study made use of a qualitative exploratory multiple case study research design with 12 participants as a sample.

### **Screening and Replication Logic**

The population for the study was the Project Management Institute’s (PMI) credentialed project management professionals LinkedIn group, which comprised of 82,157 members. This LinkedIn group consisted of worldwide project management professionals who had earned the PMI’s project management professional (PMP) credential, and the group’s sole mission was to discuss topics and share ideas related to project management. The group’s member roster served as the pool for the sample for

this study, and purposeful sampling was used to select project managers with five or more years of experience managing multicultural software development project teams in the United States of America.

Purposeful sampling or replication logic was used for this study to select cases that are diverse but exhibit similar themes and to describe multiple perspectives about the cases (Seidman, 2013; Yin, 2014). A sample size of 12 project managers ensured that the study identified the themes of the cases (Seidman, 2013; Yin, 2011). The decision on the number of cases in the sample size is discretionary, not formulaic (Yin, 2014), as the ideal sample size includes at least one case and a recommended upper limit of six cases (Yin, 2014). For this study, the sample consisted of 12 project managers who have managed multicultural software development project teams for at least five years and who were certified as project management professionals by the PMI. An account of each project manager's experience with a single multicultural software development project represents a case (Yin, 2014). The cases focused on the issue of cross-cultural interpersonal conflict in multicultural teams and ways to address them.

The use of a sample of 12 participants allowed for broader exploration of the participant's experiences, a result that would have been challenging to attain with a larger sample that would have focused on a narrower range of experiences (Russell & Gregory, 2003). History supports this assertion by pointing to the fact that in the field of psychology, much of the foundational research was conducted with small samples (Englander, 2012). The smaller sample size for this study was based on the principles of a qualitative case study using the concept of saturation as the guiding principle (Glaser & Strauss, 1967; Mason, 2010).

## Case Selection

Prior to discussing how the cases were selected, I would like to justify my decision to study individual project managers as separate cases. Yin (2014) defines a case as an individual. According to Yin, if in a study an individual represents a case, that individual then becomes the primary unit of analysis in that study. With the help of study questions, relevant information about each individual who is a case would be collected, and several such individuals/cases might be added as part of the same study (Yin, 2014).

Based on the above definition of a case, I selected 12 project managers to represent 12 different cases for this study. The relevant information about these project managers (see Appendix A) was collected to explore and understand their experiences with cross-cultural challenges, interpersonal conflict resolution in a team setting, and the skillset needed to succeed with multicultural teams as a project manager. The analysis was also done with each project manager representing a unit of analysis. Considering this explanation on why each project manager represents a case, I would like to discuss my recruitment process.

Using purposeful sampling, the case selection for the proposed study took a multi-phase approach, to narrow the sample to 12 candidates (Yin, 2014). The first step involved posting a research advertisement on the sample frame of the LinkedIn group (see Appendix B). Interested participants were advised to respond within 15 days; after the 15-day cutoff, 74 participants had indicated interest to participate in the study. The second step involved reviewing the LinkedIn profiles of those who indicated interest and collecting relevant quantitative data about the entire pool of respondents to narrow the list to 20 potential participants. The goal was to identify potential participants with similar

backgrounds, paying careful attention to those that would replicate the findings.

Reviewing the LinkedIn profiles helped with this. The profiles had to show that each candidate had experience managing multicultural software development project teams for at least five years in the United States, was PMP certified, and was practicing at the time of the interview.

Out of all 74 respondents, 33 were experienced PMP credentialed professionals in other countries, and 21 respondents were in other areas/industries of practice other than software development. The third step involved contacting the remaining 20 participants for further screening. When initial contact was made with the remaining 20 candidates using the Identity & Screening Questions of the Interview Guide and Observational Rubric (see Appendix C), only 15 responded with a time and date for further screening. Out of the 15, two were disqualified for not having multicultural project management experience, and one participant was placed on a waiting list. The decision to place one candidate on a waiting list was based solely on the order of responses. Out of the remaining 13 respondents, the first 12 that responded to the initial advertisement were accepted to participate in the study. Achieving this first phase entailed filtering the entire population for candidates who have managed multicultural software development teams for at least five years. This constituted the preliminary sample. Once the cases had been identified, the necessary consent were obtained, and the cases were then accessed in their real-world context (Yin, 2014).

### **Data Collection**

After the participant signed and returned the consent form (see Appendix D), a date and time was then set for data collection. Data collection was completed via semi-

structured interviews (Yin, 2014) using an observational rubric (see Appendix C), and the interviews assumed the form of guided and open-ended conversations to explore the two study constructs: cross-cultural interpersonal conflict and multicultural skills. Although the goal was to pursue a consistent line of inquiry, the actual stream of questions was fluid rather than rigid as this research follows a case study design (Yin, 2014). The interviews allowed for exploration as reflected by the case and actual conversational questions in an unbiased manner (Yin, 2014). The interviews were conducted via Skype webcam and iPhone FaceTime because this social media communication allowed participants to be observed for nonverbal cues during the interview (Yin, 2014). With the permission of the participants (Yin, 2011), the interview was recorded by typing the participants' responses. The appropriate data from the transcribed interviews was imported into the Dedoose Software for analysis.

As the cases were explored, the interview questions were used to guide the conversation and identify other relevant sources of evidence (Yin, 2014). As an essential source of case study evidence, the interviews provided relevant information and evidence that would otherwise not be directly made known to the interviewer. The interviews also helped corroborate and clarify findings revealed by the cases. Therefore, the interview questions became an integral part of the data collection.

### **Data Sources**

To address the two research questions, data was collected from two sources—interviews and archival documents.

**Interviews.** Semi-structured open-ended interviews were conducted with a final sample of 12 experienced project managers that held at least five years of experience

managing software development projects in a multicultural team setting. The interview questions aided the exploration of the challenges faced by project managers when resolving interpersonal conflict between culturally diverse project team members. Additionally, the interview questions explored skills needed by project managers for multicultural software development project teams to succeed at effectively managing interpersonal conflict resulting from cultural differences in these teams. The responses from the participants combined amounted to 51 transcribed pages.

The 12 qualified participants were recruited from the LinkedIn group, PMI Credentialed PMP's, whose 82,157-member roster at the time of the study served as the sampling frame for the study (see 'case selection section' for steps on case selection). Data collection took place via semi-structured interviews over Skype or iPhone FaceTime, which allowed the gathering of non-verbal cues to corroborate the narratives of the participants. Twenty-two open-ended questions were asked to each participant to invite open-ended discussions from the participant. Each interview lasted an hour. Through member checking, the transcripts of the data and themes were sent to each participant to confirm the accuracy of their accounts and each participant offered written and oral feedback. During the interviews, some participants answered the calls from their work locations and others from their homes. I also initiated the interviews partly from my home and partly from my office. The ultimate goal was to hold each interview at a time and place with no interruptions so that participants could have a means to reflect carefully on the questions and their responses.

As an extra technique to corroborate the interview data, observations were made and recorded in an observation rubric. To be clear to the reader, the observations made

only related to pay attention to the body language, vocal resonances, relevance of content, and eye contact of the participant during the interview. The observations did not include observing the participant performing their role. This extra technique allowed for non-verbal cues to be gathered for corroboration with the experiences shared verbally by the participants.

**Archival documents.** To increase the reliability and validity of the data, archival documents were obtained from the participants. Such documents included emails and activity logs such as communications logs, issues logs, action items logs, and risks logs. These documents were analyzed by reading to identify corroboration with the participant's narrative.

### **Data Analysis**

The data collected was analyzed by using the case study strategy and cross-case syntheses technique (Yin, 2014). This entailed developing the individual case descriptions, and then aggregating findings across the cases. The emergent themes constituted synthesis of similar findings across the respective individual cases. The goal was to analyze the cases holistically to assess the study constructs, cross-cultural complexities, and multicultural skills. Through cross-case synthesis, common patterns in the cases were identified as they aligned with the constructs. The Dedoose Qualitative Analysis Software was used to code and categorize the data to identify the patterns and determine frequencies for the emergent themes. Cross-case synthesis was used to “assess the patterns within the data to identify emergent themes” (Yin, 2014, pp. 202-203). The use of the software ensured data accuracy, maintained thoroughness in analysis, and avoided biases from personal values. In the process of analysis, all reasonable threats to



the validity of the results were identified, and repeated comparisons were continuously made to eliminate the possibility of the threats accounting for dual patterns in the cases analyzed (Yin, 2014). The findings of each case were then compared with those of other cases to identify common patterns for emergent themes. The corroboration, contradiction, and frequency of the patterns established major themes (Appendix E).

### **Data Analysis Steps**

Data analysis was conducted in three steps, namely, organizing and preparing data for coding and analysis, coding the data, and analyzing the data.

**Organizing and preparing the data for coding and analysis.** To avoid unintentionally leaning towards any particular interpretation of the data, I completed all 12 interviews prior to beginning my data analysis process. During the data preparation step, I read each interview transcript several times, selecting the information that was relevant to the study. After selecting all relevant data, I then grouped all similar data together. In other words, if multiple people seemed to respond in the same way to particular questions, I grouped their responses together. After grouping similar responses together, I then reviewed each composite response to determine the word or phrase that best described the group response. This word or phrase would then become the code for that particular group response. A code therefore is a hint word or phrase under which similar comments about a participant's case are sorted; the code represents a concept or abstraction of a potential interest (Yin, 2014). The grouping and coding process led to seven codes, four for multicultural challenges faced by project managers, and three codes for the skills required by project managers to succeed. The four codes for challenges were competitive attitude, language barriers, trust and collaboration, and punctuality. The three

codes for skills were broker, emotional intelligence, and leadership and training. The data preparation step concluded with going through the documents and aligning corroborating material from the documents with the narratives by the participants.

**Coding and data entry into Dedoose.** It would be beneficial to give a brief overview of the Dedoose software prior to delving into the specifics of the data entry step. The Dedoose software is very sophisticated but easy to learn and use. A username and password are required to log into the software. The landing page after login presents a dashboard that allows easy access to any data set. At the top right hand side of the page are twelve buttons. The ones that were used for the current study are the home button, the codes button, the excerpts button, the descriptor button, and the analyze button. Below this set of buttons are six windows, which present views for the media, codes, descriptor, packed code cloud, excerpts, codes, and some quick information for the project/study. I reviewed codes, descriptor, and media in this section, and then discussed excerpts, code cloud, and analyze button as part of the analysis section below.

**Codes.** As discussed earlier in the data preparation step, seven codes emerged from the data preparation. These codes were added to the Dedoose software using the codes button. Clicking on the code button presented fields that were filled out with the code name and any rating scale. When a code was entered and submitted, it displayed in the code window on the dashboard.

**Descriptor.** The descriptor button provided a means to enter the participants and their demographics. Prior to entering the participants, their actual names were removed and only pseudonyms were used. For this study, the names Participant X were used where X was A to L. The demographic information entered included gender, age, highest

level of education, country of residence, state of residence, country of employment, state of employment, industry role/employment status, current profession, years of multicultural software development project management, and years of PMI-PMP certification. These were custom-defined fields. Once this information was manually populated and submitted, the information then displayed on the codes descriptor window on the dashboard on the home page.

**Media.** Media refers to any form of data collected from the participants. For this study, media refers to the individual case descriptions generated from the raw interview data from the transcripts. The information from the individual cases could either be added to the Dedoose software by uploading them to the software or by copying and pasting into the fields presented when the media button was clicked. This study utilized the latter. The data was copied and pasted into the data fields for the media. The dashboard has no window to immediately view the raw data. Each media (individual case) entered was linked with a descriptor (a participant and the related demographic information).

**Analysis using Dedoose.** In the analysis section, I will review the main steps I used to analyze the data entered into Dedoose. To achieve this objective, I will look at the tools buttons and dashboard windows pertaining to excerpts, code cloud, and analyze. The analysis section presents how I arrived at the major themes, which constituted the findings for this dissertation.

**Excerpts.** An excerpt is a piece of text extracted from the individual case descriptions and linked with an applicable code. In Dedoose, the process of linking a piece of text to an applicable code is called excerpting. After the individual case descriptions had been entered into the tool and the descriptors and codes entered, the first

step to analyze the data was to work the data from the “ground up” (Yin, 2014) by reading each individual case description entirely and then linking any part of the texts that were best described by any particular code. Selecting the applicable text with a computer mouse and then double-clicking on the related code automatically linked that piece of text with the code. A piece of text could be linked with more than one code if the text could be described by more than one code. When all the relevant text was linked to the applicable code(s), the linked codes then appeared in the code cloud. As a reminder to the reader, linking the codes to the text automatically links the codes to the participants and their respective demographic information. This is because the text from each individual case description is linked with the participant who is linked with the demographic information.

**Code cloud.** In Dedoose, the code cloud is a window on the home dashboard where any code that was linked with a text appeared. The font sizes of the codes varied in the code cloud depending on how many times the code was linked to applicable text. The code that had the most links to the individual case descriptions had the largest font size. The one with the least links had the smallest font size.

**Analyze button.** The analyze button presents various ways to view the data. One of the views is the qualitative charts view. This view presents several charts to display the data. For example, the code weight statistics showed presented a graph of the frequency of linkage for each code with text. The counts are color coded in red green and amber. Red always indicated the code with the highest links, amber the code with the median links, and green the code with the least links. Clicking on the number of links navigated to a more detail view showing the texts and participants linked to that code. This same information

could also be obtained from the 3D code cloud view under the qualitative charts. Clicking on the code with the largest font size, for example, showed all the text linked to that code and the frequency of linkage.

After knowing the frequency of the linked text to each code, the next step was to identify the codes with the highest links and drill down into the data. For the construct of cross-cultural complexity, language barriers had 23 links from 11 participants, trust and collaboration had 23 links from seven participants, and competitive attitudes had 13 links from seven participants. These constituted the three major themes that were reported in the results section. The theme that relates to the code the best was then used as the main theme in the results section. A similar approach was applied to the construct for multicultural skills and yielded two major themes of communication and negotiation skills and emotional intelligence skills.

**Analysis of archival documents.** The data from the archival documents was analyzed by reading the documents many times, extracting material relevant to the two constructs of the study, and logging the relevant information from the documents. Data from the archival documents, interviews, and interview observations allowed corroboration and triangulation of the narratives of the participants.

### **Validation/trustworthiness Strategies**

Every researcher strives to produce results that are valid/trustworthy, reliable, and ethical. In an applied field, the results of a research should be trusted. Ensuring validity and reliability in a qualitative study entails conducting the study in an ethical manner (Merriam & Tisdell, 2016). Validity being one of the strengths of qualitative research, it determines the accuracy of a study's findings from the perspective of the researcher,

participant, and reader. Validity can be ensured by identifying and discussing at least one of several strategies available to verify the accuracy of the findings (Creswell, 2014). The validity of this study was assessed through triangulation, member checking, and researcher reflectivity/clarification of researcher biases (Creswell, 2014; Yin, 2014).

**Triangulation.** Through triangulation, the study made use of data collected through two main approaches; namely, initial interviews and document analysis (Creswell, 2014; Yin, 2014). The primary data collection involved participant interviews. Twelve participants were interviewed to obtain their perspectives on the challenges/cross-cultural complexities they faced while managing conflict in multicultural project teams. The interviews also explored the participants' perceptions regarding the skills necessary for project managers to overcome these challenges. To ensure ethical practices, approval was obtained from the university's institutional review board and informed consent obtained from each participant prior to proceeding with the interviews. An additional approach utilized during the interviews involved observing the participants for non-verbal cues (see Appendix A for the observational rubric). During the interviews, which were done via a web camera, the researcher observed the participants and recorded their body gestures, facial gestures, and relevance of the content of the participants' responses. These were then matched with their narratives to establish corroboration.

The secondary data source was documents. Emails and activity logs (issues logs, action items logs, and risks logs) were obtained from the participants and analyzed for corroboratory and/or contradictory information. These documents provided insights to the cultural issues faced by project managers which impacted or posed a risk of impacting the projects and their outcomes. The documents also provided information on how the

project managers addressed these challenges. The information in the documents in some cases collaborated the narratives of the participants, and in other cases conflicted their narratives. The documents also showed different ways in which the project managers addressed similar cross-cultural situations. Collecting data from interviews and documents was relevant to increasing the reliability and validity/trustworthiness of the data for the study.

**Member checking.** After data initial collection and establishment of the themes, the latter were shared with the participants to validate that they were indeed a true reflection of their narratives. The findings were also shared with the participants to validate correctness of the findings and alignment with the experiences, which they shared with the researcher. The material was shared with the participants and follow-up interviews were held with them to discuss their thoughts about the reports. Checking and confirming with the participants on the correctness of the themes contributed towards the validity and reliability of the data collected during the study.

**Researcher reflectivity/clarification of researcher biases.** I, being a software development project manager myself, provided a section at the end of this chapter where I described my story as a project manager and my stand on the issue being studied as well as any of my own biases. Reflectivity is a core characteristic of qualitative research and this process helped me as the researcher to reflect on how my profession as a project manager could shape my interpretation of the findings. For example, as a project manager who believes in formal education, I believe in formal education prior to on-the job training. I am therefore biased against on-the-job training without formal education on the theory of cross-cultural issues. Another example of my bias is that based on my

experience as a project manager, I am inclined to believe that whenever people of different cultures have to work together, conflict is inevitable. This implies that I am biased towards findings that show otherwise or that suggest that conflict can be minimized when people from different cultures work together in a team to deliver a piece of software.

Bracketing is a way of increasing the validity of data collection and analysis. Bracketing aids researchers put aside their repertoires of knowledge, beliefs, values, and experiences to accurately describe participants' life experiences. Through bracketing, researchers are able to suspend judgement about the natural world and instead focus on analysis and experience (Creswell, 2007; Tufford & Newman, 2012). Although experienced in the field of multicultural project management, I bracketed my biases by suspending judgment of the participants' narratives based on my knowledge, values, experiences, and beliefs. I focused instead on listening to the narratives of the participants with an open mind, giving their narratives an objective analysis that is independent of my experiences, beliefs, and values, and leaving the reader to draw their own conclusions on the findings and my analysis. Being transparent with my biases, and using bracketing to put them aside, contributed towards increasing the validity and reliability of the study.

### **Quality of the Study**

To ensure the quality of the study, I utilized Yin's (2014) case study evaluation criteria checklist. First, the cases were clearly identified as discussed in the case selection section of chapter three. Second, the cases were used first to study the dual outstanding issues of primarily, cross-cultural complexities/challenges that affect a software development project manager's ability to successfully address conflict in a multicultural



project team, and secondly to explore the skills needed by project managers to overcome these obstacles. Third, each case was clearly described as the experience of a project manager related to a single project, but drawing possibly relevant experiences and examples from other projects. Fourth, themes were clearly identified from the narratives of the participants. The study yielded five major themes from twelve participants. Fifth, although no theoretical generalizations were made, conclusions were drawn by comparing the findings of the study with the themes that emerged from the literature review and the theoretical basis of the study. Sixth and finally, I presented a section that describes my biases and how these might affect my interpretation of the findings of the study.

### **Ethical Considerations**

Ethical considerations arose from the involvement of human subjects in the case study and the possibility of placing human subjects at any kind of risk. The human subjects are those who participated in the study and whose information and accounts is recorded as part of data collection. The study of a contemporary phenomenon in its real-world context obligates researchers to implement important ethical practices (Yin, 2014). Part of this obligation required conducting a case study with special care and sensitivity, going beyond the research technical consideration mentioned by research literature.

Although this study involved minimal participant risk, some applicable guidelines were used to ensure higher standards of ethics in relation to the use of human subjects. To protect participants, an informed consent was obtained from all persons who took part in the study. The participants were alerted to the nature of the case study and formally solicited to volunteer to participate in the study. The researcher ensured that the

participants were protected from any kind of harm, including avoiding the use of any deception in the study. Protecting the privacy and confidentiality of those who participated in the study was also of prime importance. This ensured that their participation did not cause the participants to be unwittingly placed in any undesirable position, such as being on a roster to receive requests to participate in some future study (Yin, 2014). To ensure fairness, participants were selected equitably so that no groups of people were unfairly included or excluded from the research (Yin, 2014). A final step was to obtain approval of the study from the institutional review board.

### **Expected Contribution to the Scholarship of Conflict Analysis and Resolution**

This study is based on culture and conflict, as software development is becoming increasingly distributed across different locations. Virtual and physical globalization is the new norm for doing business (Mitchell, 2009; Ochieng & Price, 2009; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013; Richards & Bilgin, 2012). These new and increasingly common trends make it imperative for multicultural business leaders to know, understand, and deal with the cultural obstacles that could impede their investments, ventures, and strategic initiatives. Considering this, the central contribution of the study was to expose some of the common cross-cultural complexities that have challenged the conflict resolution efforts of project managers for software development projects in a multicultural team setting. A second aim of the study was to uncover and propose ways of dealing effectively with cross-cultural issues that minimized, eliminated, or mitigated the risk of cross-cultural interpersonal conflict that might erupt and disrupt the progress of a software development project involving multicultural team members.

Although multicultural teams have proven to be more productive (Ochieng & Price, 2009), the use of such teams can also be counterproductive if not appropriately handled (Park & Kang, 2012). In this study, culture was perceived as plural and situational (Avruch, 2013) and suggestions were made about ways of minimizing interpersonal conflict and fostering cross-cultural team collaboration.

### **The Role and Background of the Researcher**

At the time of the study, I had more than nine years of experience managing technology projects as standalones, or as part of programs and portfolios. I also have experience with various project management methodologies including Waterfall and Agile methodologies. These two approaches differ regarding the way teams work together.

In a Waterfall environment, project team members typically work out of their respective and isolated workstations and only meet during various team meetings such as status meetings or other team activities. The waterfall project management philosophy tends to be more rigid towards change. This rigidity is often a source of team conflict. The waterfall philosophy advocates upfront planning of the entire project followed by a strict adherence to the plan and implementation schedule.

In an Agile environment, project team members gather and work for the duration of the project in one location. Typically, all members of the team perform their work in a single shared room. Agile team members meet daily to discuss the progress of the team. Agile philosophizes an approach in which a project is delivered in small pieces. The entire project is broken down into valuable pieces that can be completed and delivered within short periods of two weeks, for example. This project management methodology is

more flexible and accommodating to change even late into the project, and requires daily face-to-face meetings. For teams that are distributed or work out of different locations on a common initiative, these teams typically use collaborative tools such as video conferencing during their daily calls.

At the time of the study, I held several project management certifications including the PMI-PMP certification. I also worked as a portfolio manager, managing a portfolio of various software development initiatives across various industries. I am passionate about project management and have managed multicultural teams for all my professional life. I consider myself experienced with cultures from five continents, namely, Europe, Asia, Africa, North America, and South America.

After working with several cultures on various initiatives over a long period, I realized that it was necessary to explore the area of multicultural project management within the software industry. Convinced that this was an area of interest, I then explored literature on international project management. This search revealed the lack of extensive scholarly knowledge in the field, highlighting the need for additional understanding, and the main drive for me to explore a dissertation in this area.

Based on my career experience, I may have a few biases that could influence my interpretation of some findings of the study. My first bias relates to the fact that my stand on the issue under investigation in this dissertation was that conflict occurs when people from different cultures work together. I am therefore biased towards any finding that would suggest that multicultural teams diminish the possibility of conflict occurring and instead encourage collaboration.

Secondly, I strongly believe that a project manager needs to be trained on theory and practice of project management and conflict analysis and resolution. I advocate that to be successful as a multicultural project manager, formal education is needed on cultural awareness skills, followed by practical or on-the-job training. Theoretical and practical skills complement each other and a combination of both would enhance and accelerate the multicultural project manager's efforts to bringing team members of a cross-cultural project team together on the same page early in the project. Therefore, I am biased towards any finding of the study that discounts formal education and only validates on-the-job training as the only way to get a project manager trained on cultural awareness.

Identifying and being transparent with these two biases paved the way for me to look for a way to manage them so that they did not influence my analysis of the themes that emerged from the interviews. I managed my biases by bracketing them (Creswell, 2007; Tufford & Newman, 2012). This allowed me to set aside my knowledge, beliefs, values, and experiences, and have an open mind to listen to the participants. This also made it possible for me to filter out my biases and objectively analyze the experiences described by the participants. Another way I controlled my biases was by using open-ended, semi-structured questions to guide the interview. I adhered to the questions to guide the interviews, and avoided letting my biases influence the process. The data analysis was also carried out objectively by focusing on triangulation. The goal was to obtain honest responses that are presented in an original and objective manner as stated by the participants (Bryman, 2012) to permit readers to develop their own assessment, and determine whether the findings are transferable to other settings (Hill, 2012).

### **Summary**

Chapter three, research method, presented (a) population and sampling, (b) case selection, (c) data collection, (d) data analysis, (e) validation/trustworthiness, (f) quality of the study, (g) ethical considerations, (h) expected contribution to the scholarship of conflict analysis and resolution, and (i) the role and background of the researcher.

Chapter four will present the major themes that emerged from the interviews.

## Chapter 4: Findings

The purpose of this qualitative exploratory case study was to explore the challenges faced, and the cultural competencies needed by a software development project manager leading multicultural project teams to successfully manage and resolve cross-cultural interpersonal conflicts amongst members of a software development project team. This study was designed to explore the specific problem of cross cultural interpersonal conflict management and resolution in a team setting (Ochieng & Price, 2009), such as a software development project team. To achieve the objective of this study, the study explored two constructs, defined by two research questions:

**RQ1.** What are the perceptions and experiences of software development project managers with cross-cultural complexities/challenges and causes of cross-cultural interpersonal conflicts in multicultural software development project teams?

**RQ2.** What are the perceptions and experiences of software development project managers with the multicultural skills needed to resolve cross-cultural interpersonal conflict effectively within multicultural project teams?

### **Demographic Characteristics**

The final sample of 12 participants for this study comprised of most males (7) and participant ages ranged from 41 to 65 years. Four participants had completed a bachelor's degree, with the majority holding an earned master's degree (7) and doctorate degree (1). Three participants reported 6 to 8 years of experience managing multicultural software development project teams, followed by 9 to 11 years of experience (2), 12 to 14 years of experience (1), 15 to 17 years of experience (1), and 18 to 20 years of experience (5).

Frequency tables for demographic characteristics can be found in Appendix A. Each case presentation begins with an overview of the participant prior to getting deeper into their responses to the interview questions.

## **Results**

The results presented below follow Yin's (2014) guidance on reporting multiple-case study. According to Yin (2014), a full multiple-case report consisting of the single cases is usually presented in a separate section in reporting multiple-case study. A separate section or chapter covering the cross-case analysis then follows. Yin (2014) states that a common variant suitable for a journal-length article is for the cross-case analysis to form the bulk of the report with the individual cases presented as a set of appendices. Since the current study is a dissertation and not a journal, the former approach is used to report the results. The individual cases are first presented followed by presentation of the cross-case analysis.

In this study, individual in-depth interviews were completed with each participant. During the interviews, each participant was asked to discuss their experiences with challenges in managing interpersonal conflict within a multicultural software development project team. Participants were also asked to discuss the skills that project managers need to succeed at managing conflict in a multicultural project team setting. Different themes emerged from the interviews questions for each research question; these are discussed below under the cross-case analysis section. The results are broken down into two sections—the case presentation and cross-case analysis. Case presentation is presented in a chronological manner, starting with Case A through Case L. Cross case



analysis is presented in order of frequency of responses per theme with the most frequent responses presented first.

### **Case Presentation**

This section of the results presents the individual cases of the research study. As a reminder to the reader, a case in the context of this study represents a project manager and the narrative of his or her experience managing a multicultural project team for a particular project. There were twelve participants with each participant representing a case. The participants consisted of five women and seven men. The participants drew experiences from their other projects to substantiate the stories they told for the project they chose to discuss in this study. The participants all lived and worked in the United States. Some participants were comfortable naming the cultures represented on their teams and describing the behaviors and characteristics unique to those cultures. Other participants shied away from naming specific cultures and spoke generally in an effort to be cautious. When asked, they chose to speak generally and not to name specific cultures.

Interviews constituted the primary data source. During data collection, an additional approach utilized as part of the interviews involved observing the participants for non-verbal cues (see Appendix A for observational rubric). During the interviews, which were done via a web camera, the researcher observed the participants and recorded their body gestures, facial gestures, and relevance of the content of the participants' responses to the interview questions. These were then matched with their narratives to establish corroboration with the interview data.

Secondary data sources were archival documents. Emails and activity logs (issues logs, action items logs, and risks logs) were obtained from the participants and analyzed

for corroboratory and/or contradictory information. These documents provided insights into the cultural issues faced by project managers which impacted or posed a risk of impacting the projects and their outcomes. The documents also provided information on how the project managers addressed these challenges. The information in the documents mostly corroborated the narratives of the participants, and in other cases differed from their narratives. The documents also showed different ways in which the project managers addressed similar cross-cultural situations, thus supporting the data gathered from the interviews. The twelve cases are presented below.

**Case A.** Case A represents the narrative of Participant A. Participant A was a 47-year-old male who lived and worked in Alabama at the time of the interview. He held the PMP certification and a Master's Degree. Participant A was a Program Manager working as an employee with over ten years of experience managing diverse and multicultural project teams.

In responding to research question one, Participant A, who named specific cultures when discussing his experiences, named punctuality as a major source of conflict with his multicultural project teams. He attributed this likelihood of conflict to the fact that software developers from different cultures have different backgrounds and as such commit to time differently. For example, Participant A stated that in his experience working with developers from India, he found that they were very reluctant to commit to deadlines because they were more driven to produce a perfect product than paying attention to time constraints. They were more focused on the quality of the product than a deadline. While participant A attributed the cause of such behavior to cultural differences, he underscored the role of miscommunication magnifying them.

On another front, Participant A experienced that the manner which team members viewed and understood tasks was shaped by their cultural backgrounds and experiences. This of course constituted a source of conflict. For example, participant A indicated that, on an initiative he worked on, he noticed that while US engineers paid careful attention to completing the design on time, Indian developers focused on building a quality software. Time and schedule were trivial to the Indian team members. The delay caused by the Indian team members rippled through the project as the US based testers could not complete their testing on time. This created a lot of conflict between the team members. According to Participant A, co-location plays a major role in team communication, especially in multicultural teams. This participant experienced that the absence of face-to-face communication in a multicultural project team setting made it hard to get the team members to a common understanding of the common goal of the project.

Participant A addressed this concern by bringing all team members on the same page through effective communication that helped set a common goal for the team. One way the Participant A ensured effective communication was bringing the team members together at least once a week in a face-to-face meeting where they interacted on a personal basis. While bringing everyone on the same page, Participant A said he also made sure that the team members understood that he recognized the differences that existed between team members. This recognition, an expression of emotional intelligence, then paved the way for him to blend the cultural differences within the team and establish a common goal for the team.

In responding to research question two, Participant A emphasized the skills of emotional intelligence as being invaluable to the success of a project manager for a

multicultural project team. He suggested that PM's can acquire emotional intelligence skills by first knowing the various cultures represented on their teams and then conducting research to better understand those cultures. Such understanding would help the PM ensure better productivity without the interruption of the project through conflict caused by cultural differences. This participant supported training for multicultural project managers to include both formal training and on-the-job training as well. The participant reported that most of the project managers he was associated with usually received academic training followed by experience on the job. This was very beneficial to them and the participant recommended this approach for training multicultural PM's.

During the interviews, Participant A appeared to be very compassionate when speaking about emotional intelligence. His vocal resonance alternated, depending on the content of his response to the interview questions. For the most part, his vocal resonance appeared normal. His voice became emotional when he spoke about appreciating the differences in cultures between team members. His facial expression appeared thoughtful and serious when he discussed the skills needed by project managers to succeed with multicultural project teams. I also observed that the content of Participant A's interview data was relevant to the two research questions. Through observation, I noticed that Participant A maintained eye contact with me throughout the entire interview duration of one hour.

In reviewing archival documents provided by the participant, it was evident from logs, that participant A had documented risks to the project resulting from cultural differences. The risk pointed to the fact that a lack of understanding of the cultures on the team and a way to blend those cultures could result into conflict that would derail the

success of the project. The documents also revealed a risk mitigation strategy involving learning and understanding cultures to better work with them. To address the risk, the mitigation strategy revealed by the archival documents called for the organization to make financial and time provisions for the PM to research the cultures represented on the project team to find ways to blend them. This would mitigate the potential conflict that could result from a misunderstanding of these cultural differences and will ensure productivity and completion of the project.

To summarize, Participant A highlighted language barriers, trust and collaboration, and competitive attitudes as the main sources of conflict he experienced managing multicultural project teams. This participant also identified communication and negotiation skills, as well as emotional intelligence skills as critical to a project manager's success with multicultural teams. Participant A recommended both formal and on-the-job training on cross-cultural awareness for multicultural PM's. Finally, observation of Participant A and archival documents corroborated the participant's narrative.

**Case B.** This participant was an executive level information technology (IT) leader with extensive experience in program and project management in a variety of industry settings. Participant B was a program and project management consultant at the time of the interview. This male participant was 54 years old and had accrued over 20 years of experience managing multicultural software development project teams. He lived in Texas and held a Bachelor's degree and the PMP certification. He owned his own program and project management consulting company at the time he was interviewed for this study.

In responding to research question one, and naming specific cultures, participant B stressed that culture did not impact performance. This participant reported that, in his experience, he could not predict how an individual would fit into a team or contribute to team success based solely on the individual's native culture. Participant B stated that, for the most part, he found that multicultural teams were no different from mono-cultural teams. The participant experienced that most individuals wanted to succeed in satisfying the customer and for him, this was the most apparent driving force for project success. Participant B further expressed that experience had taught him that multicultural teams are the norm in US based settings. He reported that conflicts were similar whether they were cross-cultural or not. This participant said he came to the realization that conflict in project teams centered on communication breakdown and incorrect expectations, which are typical challenges any team faces. For example, Participant B experienced that US team members, without prior negotiations with the Indian team members, expected Indian team members to work independently on tasks. This was an incorrect expectation as the Indians like working on tasks together rather than as individuals. This brought conflict when a task that had to be completed by Indian team members was not completed, and the US team, that depended on this task to do their job did not know who to hold accountable.

Another example of incorrect expectations reported by Participant B related to time zone differences. He reported that cross-cultural conflict erupted in his team when US team member working on a common initiative with Indian team members based in India set up team meetings without consultation with their Indian peers. These meetings were set with only the US team's availability in mind. Conflict resulted when the Indian

team members repeatedly failed to attend these off-hour meetings. It became increasingly difficult to bring the team on one page as related to the goals of the project. The lack of commonality in goal setting resulted from incorrect expectations by the US team members that the Indian based team members will attend the team meetings irrespective of the disparate time zone difference between the two countries. This resulted in cross-cultural conflict.

Participant B also noticed that other common areas of team conflict are accountability and adherence to established project schedule. For example, in Participant B's project, he found that when Indian team members missed task delivery dates, they did not want to be accountable. On the other hand, US team members put in extra time to accomplish any tasks they could not complete within the agreed upon time. While the US team members bought into the accountability system, the Indian team members did not. According to this participant, the US project team members were appreciative of the project management process, understood their roles, and felt accountable for their role in the project. On the other hand, the Indian team members did not want to be held accountable for their schedule commitments and resisted the process and system put in place. This resulted in conflict.

In responding to research question two, Participant B identified skills such as good listening, respect for individuals, being a motivator, leading by example, being quick to praise and slow to criticize as skills needed by a project manager to succeed in a multicultural team setting. This participant also believed that software development project manager training should be independent of culture. The participant advocated for

on-the-job practice as the most valuable means of gaining experience managing multicultural project teams.

The archival document submitted by the participant highlighted no project risks based on culture, thus supporting the participant's narrative. The archival documents however, did reveal documentation of best practices used in managing team. These documented best practices included the skills identified above by the participant as the skills necessary for a project manager to be successful in managing a multicultural software development project team.

As the participant was interviewed, he maintained constant eye contact and spoke passionately when discussing the topics of accountability and project conflicts being independent of culture. I perceived this constant eye contact to mean sincerity and relevance of his content to the research questions. The participant's voice was stronger and somewhat forceful when he said that the degree to which an individual fits into a team cannot be based solely on their native culture. His body language was very relaxed, something I interpreted to mean that he was telling the truth. Finally, the content of his responses was relevant to answering to the research questions.

To sum up on responses to research question one, Participant B noticed that Indian project team members preferred working on most tasks together, making accountability difficult and hence resulting in conflict. Additionally, time zone differences caused conflict. According to the participant, time zone differences made communication difficult, exacerbating misperception and conflict. This participant experienced that communication barriers arose from an individual's native language. These barriers led to misperception, incorrect expectations, and conflict. Participant B



named emotional intelligence, communication, and negotiation skills as invincible to the success of a PM managing a multicultural team. He also recommended on-the-job training as the best way for a PM to gain experience managing multicultural teams. This participant's narrative was supported by results from observation during interview and archival documents.

**Case C.** Participant C was a 47-year-old male with over 19 years of experience managing multicultural software development project teams that involved team members that were virtual from India, Ireland, the United States, and Muslim countries. He held a Master's degree and the PMP certification. Participant C was an IT Project Manager and worked as Senior Project Manager for a local government agency in Texas.

In answering to questions that pertained to research question one, Participant C, naming particular cultures, emphasized three major challenges. First, he reported that team trust was a major challenge. For example, he stated that mistrust led Muslim team members to distrust other non-Muslim team members based solely on perception and cultural biases. Muslim team members perceived Western team members as exhibiting certain behaviors that they perceived as taboo in the Muslim culture. For example, Muslims expected younger team members to express respect for their older team members. Contrary to this, Western team members called everyone by their first names and did not shy away from calling team members out when they did not complete their tasks on time. The Muslim team members perceived this practice of their colleagues from the West as disrespectful. This led the Muslim team members to distrust their Western team members.

Participant C stated that he overcame this challenge firstly, by encouraging and making provisions for open dialog about the issues affecting the team members; and secondly, by creating and implementing various team-building exercises such as online video game tournaments. This fostered interaction amongst the teams and helped build trust. Participant C stated that taking these actions demonstrated a show of emotional intelligence as the Muslim team members then began to realize that their concerns were taken seriously.

Another major concern reported by Participant C was that of language barriers. Without naming the cultures involved, this participant reported that foreign accents and different communication styles presented communication barriers that challenged team communication. Cultural biases and negative stereotypes exacerbated the impact of these communication barriers. For example, Participant C found that team members of one culture on his project team perceived team members of another culture as incapable or less qualified to perform certain project tasks. This perception was based solely on the negative stereotypes fueled by the cultural heritage of the team members perceived as incapable. As Participant C recounted, communication amongst global teams was a major challenge.

According to Participant C, the way he dealt with this challenge was to exercise emotional intelligence by first respecting all cultures on his team. He then educated himself about the cultures represented on his team. Thirdly, he used his communication skills to educate team members about respect for all team members. During his team meetings, he would devote a segment to talking about mutual respect for all team members. Finally, Participant C used his negotiation skills to garner consensus from team

members on distributing tasks based on qualification and not stereotypes. By doing this, the participant registered a lot of success with his project.

The third and final major challenge identified by Participant C was ignorance. He stated that ignorance of team members about the cultures of other team members caused unnecessary conflict. Again, without naming cultures, Participant C said ignorance caused team members to say or do things that other team members perceived as offensive. For example, when Muslim team members prayed several times a day, other non-Muslim team members would make a mockery of their praying habits. This fractured the team and resulted in conflict. Participant C addressed this by first educating himself on the cultural norms of Muslims. Secondly, Participant C used effective communication to educate the team members on various cultural norms and decision-making styles of the team members. Participant C also used team-building activities such as games to build cohesion amongst team members from the various cultures represented on the team, thus minimizing animosity.

In responding to research question two, Participant C pointed out communication and negotiation skills as the two most important skills needed by a project manager to succeed in leading a multicultural team. While mentioning emotional intelligence, this participant emphasized the need for a multicultural project manager to be skilled and effective at communicating and negotiating. According to Participant C, diversity training should be a major component of project management education. He concluded by stating that while practical experience is very important, it will be very challenging for a project manager to successfully lead a multicultural project team without formal

diversity training. He therefore recommended formal training in conjunction with practical training.

In observing Participant C during the interview, I noticed that the participant maintained eye contact with me, indicating that his narrative was truthful. His vocal resonance was soft and he came across as very sincere. Additionally, his body language conveyed a sense of passion and sincerity. He maintained a cool demeanor all through the interview. The content of his narrative was also very relevant to the two research questions. He was succinct and provided concrete examples to substantiate his narrative.

In reviewing the archival documents for this participant, his notes captured the training he provided to the team on cultural sensitivity. The risks log also indicated a risk showing that if negative stereotyping was not given urgent attention, it could lead to irrecoverable failure of the project. The mitigation strategy logged against this risk indicated that he called for his organization to prioritize diversity training. The archival documents also reflect a capture of Participant C utilizing communication and negotiation as tools to garner consensus within his project team. These both substantiate Participant C's accounts of his experiences.

To recap, Participant C, without naming particular cultures, pointed out language barriers, trust, and collaboration as the main challenges he experienced managing multicultural teams. According to this participant, communication and negotiation skills are the main skills needed by a project manager to succeed leading multicultural teams. He recommended that project management education includes formal and practical training on cultural awareness. The information shared by this participant was supported by evidence from the interview observation rubric and archival documents.

**Case D.** Participant D, a 65-year old male, was a professor and freelance consultant in the field of project management. At the time of the study, Participant D had over 20 years of experience managing multicultural project teams in the US Air Force and at IBM. He held a Doctorate degree and was PMP certified. This participant lived and worked in Colorado while also teaching online classes.

In discussing his experience relevant to answering interview questions for research question one, Participant D shied away from naming cultures. He emphasized language barriers, competitive attitudes, and mistrust as the main causes of conflict within his multicultural project team. To elaborate the issue of language barriers, Participant D cited an example of communication breakdown. In this example, he found a communication breakdown issue pertaining to the fact that the project team was distributed. The lack of effective interactive technology at the time of his project made this issue even more visible. To bridge this communication gap, the two companies involved in Participant D's project used courier persons. These individuals travelled between the two locations of the project teams, transmitting information from one team to another. As English was not the first language of one of the messengers, things got lost in translation. This caused miscommunication and tasks delays amongst teams. Teams that depended on deliverables from other teams failed to receive those at an expected time. This then caused delays with the project schedule and caused conflict. Digging into this issue revealed that the problem was that of language barriers.

To address this issue, the participant adopted an approach of empathy. Participant D showed empathy on both sides of the conflict, understanding the frustration of team members, and understanding the language issues that that team member experienced. By

exercising empathy- understanding the language of the team members and then speaking to them in terms that were meaningful to team members, Participant D was able to place the team member with a language barrier into a role that was more fitting. This resolved the conflict and both sides were able to work together again.

In discussing competitive attitudes as a source of conflict, Participant D blamed perception as the main issue. For example, he stated that in his experience managing multicultural teams, he encountered a situation in which one member from one culture said something, and another team member from another culture perceived what was said as having a hidden agenda. This misperception caused competition between these two team members, which resulted in them both disqualifying work outputs from one another and each team member claiming that his output was the best. This resulted in interpersonal conflict. It was in addressing this situation with the team members that Participant D realized that the conflict resulted from competitive attitudes which stemmed from misperception.

To address this conflict in a way that was acceptable to both parties, Participant D stated that he had to first learn the language of the team members. This meant knowing what they valued, how to speak to them in terms that were meaningful to them, and understanding what they were trying to accomplish. By learning and speaking their language, Participant D became an effective interpreter who then understood and communicated effectively with each team member in terms that were meaningful and acceptable to them. Bringing the team members together to communicate and understand each other's perspectives made them realize their error. The team member who had been perceived as having a hidden agenda was actually upfront and direct with his

communication, and had no hidden agenda. It was just a difference in communication styles.

To expatiate on the issue of mistrust, Participant D followed through with this occurrence of mistrust and competitive attitudes. In this same instance, Participant D reported that while he attributed the cause of the competitive attitudes to misperception, there was also a trust factor. The fact that one team member perceived the other as having a hidden agenda led to mistrust amongst these team members. This then resulted in competitive attitudes.

Participant D addressed this situation by a show of empathy, understanding the language of the participants, and then communicating with them in ways that made meaning to them. In doing so, Participant D was able to bring both team members together to have a frank conversation. This conversation helped both parties to get to know each other better and understand each other's value system. This took away the mistrust and initiated the process of trust building.

In making some general comments relevant to research questions one and two of the current study, Participant D stated in his experience, he has come to realize that the first thing that members of a multicultural project team need to do prior to working together is to get to know and understand each other. They must understand how each person in the team views the world. Some people are more work oriented while others are more laid back. Some are more time conscious and others are not. Participant D encouraged people from different cultures to work together because working together helps people have a broader view of the world as opposed to a narrower view

characteristic of people working in mono-cultural teams. When different cultures work together, more innovative thinking is encouraged.

Furthermore, Participant D stated that multicultural team members who work together must learn and understand the value structures of the different cultures represented on their teams. Value structures are carried over into family life and work life. A lack of understanding of the various value structures poses the challenge of not understanding that people from different cultures think differently. Participant D found it quite challenging to blend the cultural gap between cultures without understanding their values. According to Participant D, culture serves as the lens through which team members view project tasks. Management must therefore invest in equipping their project managers and project teams with the multicultural skills they need to succeed in a multicultural team environment.

In responding to research question two, Participant D stated that the most valuable skill a Project Manager needs for a multicultural project team is empathy. The Project Manager must have the capacity/desire to empathize with the various cultures on his project team. This means that the Project Manager must be able to understand their language so as to speak to them in terms meaningful to them. To sum it up, participant D stated a multicultural Project Manager must possess emotional intelligence skills. Possessing these skills would help the Project manager become a better communicator, a skill which is also invaluable to the success of a Project Manager in a multicultural team setting. According to Participant D, Project Managers need skills that would help them to be able to fairly and contextually perceive the ideas of other team members from different



cultures. The PM needs skills that would help the PM to be able to fairly evaluate team members from different cultures.

To acquire these skills, Participant D recommended formal training in multicultural competencies especially in the areas of emotional intelligence (emotional IQ) and empathy. He believes that multicultural training should be for all team members and not just for PM's. He further recommends that there needs to be a balance in both theoretical/conceptual training and practical training and that both should be provided for all project team members, not just for project managers.

During the interview, I observed Participant D's non-verbal cues. First, this participant maintained constant eye contact with me. To me, this reflected truthfulness and sincerity. Second, he spoke very confidently and eloquently, citing several examples in each situation. This demonstrated his vast experience in project management. His voice was very firm and clear throughout the interview, indicating preparedness, knowledge, and experience in multicultural project management. The content of his responses was entirely relevant to the study. Additionally, his body language conveyed a sense of tremendous knowledge and experience.

A review of the archival documents from Participant D revealed at least one issue logged for team morale. According to the logged issue, mistrust amongst team members was impacting team collaboration and affecting the progress of the project. The resolution recommended by Participant D to management was to find quick ways to educate the team on cultural tolerance and trust-building. This corroborated Participant D's narrative. The archival documents centered more on emotional intelligence, perception, and effective communication. The archival documents also review at least

one risk logged against language barriers. According to Participant D, language barriers posed a risk of miscommunication which could ripple through the schedule and delay the project. This risk was addressed in the archival documents by encouraging a show of empathy and finding way to negotiate with team members so that they would accept tasks that better fit their skillsets.

In conclusion, Participant D speaking without naming any particular culture, named language barriers, competitive attitudes, and trust and collaboration as the key areas of challenge and conflict he experienced managing multicultural teams. He said that for a project manager to succeed with multicultural teams, the PM must possess strong and effective communication, negotiation, and emotional intelligence skills. In this participant's opinion, while formal education of PM's on cultural awareness is a must, it must be balanced out with practical experience. Archival documents and interview observation rubric corroborated the information shared by Participant D.

**Case E.** Participant E, the first of five female participants to this study, was a 59-year old female with over six years of experience managing multicultural project teams. At the time of the interview, she was a Senior Project Manager working in the State of Texas as an employee. She held a Bachelor's Degree and the PMP certification.

In addressing research question one of the current study, Participant E who named specific cultures, emphasized the divisiveness competitive attitudes caused in her culturally diverse project team. She also identified language barriers and mistrust as challenges that impacted her culturally diverse teams. Participant E's experience managing culturally diverse teams was with teams whose members were in the United States and Dubai. These teams worked on a common project led by the US-based team.

Elaborating on competitive attitudes, she stated that cultural differences made a difference especially when the initial thought of the team members was “them versus us.” This created silo and disabled the ability of the team to function as a unit focused on a common objective of realizing the goals of the project. One cause of competitive attitudes cited by Participant E was the twelve-hour time difference between the United States and Dubai. This created a lot of tension and conflict as one of the two teams had to meet at times inconvenient to some of the team members. Additionally, with the US-based team leading the project due to their experience and familiarity with the project scope, the Dubai team had to wait for longer periods to get resolutions to any issues they encountered.

According to Participant E, language barriers were another area of challenge that caused conflict in her multicultural team. While the US team members often misunderstood the English Language spoken by the Dubai team members, due to a difference in accents, the Dubai team members, on the other hand, often found offensive and/or inappropriate, the choice of words and slang used by the US team members. Tone was another component of language barriers. The US team members often came across as polite, though they appeared to be controlling. The Dubai team member, conversely, came across in their communication as authoritative. This cultural misunderstanding on both sides caused conflict and difficulty on the project.

Participant E supported her assertion of mistrust as a challenge with the example of religion. According to this participant, the Dubai team members who were mostly Muslims would miss important project meetings or breakout from sessions to pray several times a day. This created a lot of animosity and mistrust as the US team members

thought that the Dubai team members were simply making excuses to dodge project work. This also contributed in part to the sense of “them versus us”, led to competitive attitudes, and caused conflict amongst both teams.

To address these three challenges of language barriers, competitive attitudes, and mistrust, Participant E reported that she did several things. First, she focused on forming, nurturing, and fostering a sense of oneness with all team members, encouraging them to focus on the common goal of the project. She used every meeting and opportunity she had to remind the team about the importance to set aside differences and work together towards completing the project. In line with this, Participant E tried to accommodate time off as much as possible and as long as such time off did not impact the project schedule. Accommodating time off requests helped team members perceive Participant E as fair and helped counter the animosity that resulted because Muslim team members took time off to pray.

Second, this participant said she listened carefully and did not interrupt when team members were speaking, especially during meetings. This helped Participant E to understand and make sense out of what was being said by a team member with a different accent. This also helped her to then become translator, clarifying any miscommunication that was caused by the language barriers. Third, Participant E researched and learned a lot about the culture of Dubai. She then shared a lot of what she had learned with her US team. She also helped educate the Dubai team on the US culture. This approach helped both teams to better understand the issues and concerns of their team members. It brought about empathy and resulted in a significant reduction in conflict. Fourth and finally, she convinced her leadership to provide appropriate funds for frequent travel between the two

countries—Dubai and the US. These face-to-face meetings brought about a personal touch, built rapport, and improved communication greatly, reducing conflict.

To address research question one, Participant E identified strong communication and listening skills, having an open mind and ear, active listening, and respect for cultural differences within the team as skills critical to a project manager's success with leading multicultural project teams. These summed up to emotional intelligence skills, communication, and negotiation skills. On the question of formal training, Participant E believed that formal training on conflict resolution and skills at effective communication are needed for all project teams, not just multicultural project teams, and for all team members, not only the Project Manager. Regarding practical experience, Participant E recommended having a co-lead to help guide the practical experience.

In her concluding remarks, Participant E stated that learning the language or having knowledge about the language of each team member is a big plus, though this is not always possible. Additionally, having the opportunity to meet face to face with team members presents a big advantage as rapport tends to be built much quicker. Where this is not possible, Participant E recommended using video conferencing, but only if the connection is good. This participant stated that a bad connection could worsen communication and exacerbate conflict. Finally, she stated that multicultural teams are an extension of teams. Dealing effectively with different personalities makes dealing with cultures a lot easier.

In observing Participant E during the interview, I noticed that this participant maintained constant eye contact with me. This conveyed a sense of truthfulness. Her voice was strong, but softened when she spoke of understanding various cultures

represented on the project team. She showed some emotions, almost moving to tears when she spoke on the issue of accommodating Muslims who had to pray several times a day. Her body language conveyed focus and sincere knowledge of the topic of cultural project management and team conflict. The content of her responses was relevant to answering the two research questions of this study.

In reviewing the archival documents, I realized that the issues encountered during Participant E's project were clearly documented. The issues of communication and language barriers were documented as high priority issues that needed to be addressed before their impact became too obvious on the outcome of the project. The documents also revealed meeting minutes showing the reiteration by the Project Manager of the importance of the team staying as one and functioning as such to be successful at delivering the project successfully. The archival document corroborated the narrative of the participant and the observations made for non-verbal cues very well.

To sum up, Participant E said that competitive attitudes, language barriers, and trust and collaboration challenged her ability to effectively manage her multicultural team. She said that possession of effective emotional intelligence and communication and negotiation skills will significantly elevate the success of a project manager in a multicultural team setting. According to this participant, while formal training on cultural awareness is important, she would recommend practical on-the-job training to go alongside formal training. Participant E recommended using an experienced mentor to facilitate the practical aspect of such training. A review of the archival documents and observation of Participant E during the interview corroborated her narrative.

**Case F.** Participant F, a 41-year old male with seven years of managing multicultural project teams, held a Master's Degree and the PMP certification at the time of the interview. This participant worked in Texas as an employee and held the position of a Senior Project Manager at the time of this study. Language barriers and competitive attitudes were reported by Participant F as the two major areas of challenge he faced in managing multicultural software development teams.

In responding to research question one, Participant F named specific cultures and emphasized language barriers and competitive attitudes as the challenges he faced with his project whose team members came from Australia, Bangladesh, and Spain. Participant F explained that he faced communication challenges that resulted from language barriers, and competitive attitudes that resulted from perception on adherence to project schedule, importance of job titles, and gender difference. These challenges resulted in conflict that threatened the completion of the project.

Speaking about language barriers, without naming any specific culture, Participant F reported that different accents and difference in communication styles, direct versus indirect communication, constrained the free flow of ideas. This caused some team members to be perceived as arrogant. This perception of arrogance caused conflict as it shaped the way team members interacted with each other. For example, Participant F said that he experienced a situation in which one member of the team was unable to succinctly and eloquently explain how he had written computer software to provide a solution for one of the project tasks. Although this team member's lack of explanation was due to his inability to fluently express himself in the English language which was not his mother tongue, his colleagues from other cultures perceived him as

being arrogant. They thought he was unwilling to share his knowledge with the team. This caused the team members to isolate this member, an action that led to conflict and hampered the ability of the team to work cohesively toward the delivery of the project.

To address the challenge posed by language barriers, Participant F said he brought the team members together and facilitated a conversation amongst them. Bringing them together helped them to understand each other's perspective better. Setting aside all their differences and focusing their communication on the issue that caused miscommunication, the lack of one member to explain his software code, the members came to the realization that the issue they faced was a language problem and not arrogance. The result of this meeting was that the team members came out exercising more empathy towards each other, stopped being judgmental about each other, and asked questions to better understand their peers instead of drawing wrong conclusions whenever a situation was unclear to them. This improved team communication and fostered collaboration amongst the team members.

Additionally, shying away from naming particular cultures, Participant F said he also experienced competitive attitudes that resulted from perception on adherence to project schedule, importance of job titles, and gender differences. The first reason for competitive attitudes was time consciousness and adherence to the project schedule. In his explanation of competitive attitudes, Participant F stated that some team members from one culture were more time conscious and adhered strictly to the project schedule while team members from another culture were very lax with time constraints and paid little attention to the project schedule. For example, he reported an experience in which a team member from the culture that was more relaxed failed to deliver a task on time. This



delay affected the project tasks of the more time-conscious team member as her tasks depended on the late task. The team member from the time-conscious culture became frustrated and the situation quickly escalated into a conflict as competitive blame surfaced.

The second thing that caused competitive attitudes was importance of job titles. Without naming cultures, Participant F explained a situation in which team members from one culture focused on emphasizing that they be called by their designated job titles. Team members from another culture quietly ignored their title and focused on their job tasks. Furthermore, since these team members paid no attention to job titles, they also neglected to address their fellow colleagues by their titles. This initiated competitive attitudes and conflict as the members who wanted and expected to be addressed by their titles felt ignored and disrespected whenever their expectations were not met.

The third and final cause of competitive attitudes identified by the Participant F was gender difference. Without naming any particular culture, Participant F stated that male team members from cultures of male dominance treated female team members negatively. This negative treatment caused competitive attitudes and conflict as female team members from emancipated cultures rejected being treated negatively.

To address the challenge on competitive attitudes, Participant F stated that his most important tools were communication and education. As soon as Participant F noticed the issue of competitive attitudes, he immediately reached out to his management and human resources department to arrange for cultural/diversity awareness and harassment training for his entire project team. During the duration of the project, this participant would devote a segment of his monthly status meeting towards refreshers on

key aspects of the diversity and harassment training. Additionally, Participant F encouraged more healthy and frequent communication amongst the team members. He also used his project team meetings as a platform to encourage such conversations while cautioning that they should be centered on real issues impacting the team. As team members communicated even better with one another and became more aware through cultural/diversity awareness training, team interactions and collaboration improved. They got to know and appreciate each other more and this helped towards delivering the project successfully.

To respond to research question two, Participant F explained that there is no single skill that would help the project manager be successful across all multicultural teams. According to Participant F, the Project Manager's best skill is the ability to learn from experience and adapt quickly before situations get out of hand. The PM would have to learn from experience and be observant. According to Participant F, this is not a skill that can be learned without actual experience. Another skill that would be very helpful to the success of a PM with multicultural teams is communication. The PM must communicate effectively with his team and encourage his team members to also communicate effectively with one another.

The observation rubric for non-verbal cues for Participant F revealed that this participant maintained constant eye contact throughout the interview. This indicated sincerity on the part of the participant regarding his responses. Participant F was very soft-spoken. His vocal resonance was constant throughout the interview. This was an indication to me that he was someone who did not openly express his emotions although he paid attention to the emotions of the team members. His body language conveyed a

calm, experienced participant who preferred to resolve team issues instead of showing his own emotions. The content of this participant's interview responses was relevant to the two study constructs.

A review of the archival documents from Participant F corroborated this participant's narrative. The archival documents showed risks documented to indicate the danger of language barriers and competitive attitudes to the outcome of the project. The archival documents also confirmed requests and approval of training on diversity awareness. The documents revealed the documented improvement of the team due to the diversity training. It was also obvious from the archival documents that the Participant F facilitated discussions sessions amongst team members, encouraging them to be more empathetic and tolerant towards each other, and to always focus on issues when communicating with one another.

To summarize, Participant F named language barriers and competitive attitudes as the core challenges he experienced leading multicultural teams. According to this participant, a PM for a multicultural team would need communication and negotiation skills to overcome these challenges. This participant recommended on-the-job training as the most effective means to acquire these skills. The points presented by Participant F in his interview found strong support in the observations made during the interview and the archival documents. Participant F shared his experiences without naming any particular culture trying to be politically correct.

**Case G.** Participant G was a 49-year old male who held a Bachelor's Degree and was pursuing a Master in Business Administration Degree. Amongst other project management certification, he held the PMP certification. Living in Virginia and working

in Maryland as an employee, Participant G had 18 years of experience managing multicultural software development project teams. At the time of the interview, Participant G held the position of Manager of Project Management.

In addressing research question one, Participant G, who shied away from naming specific cultures, identified trust, collaboration, and language barriers as the main areas of challenge he faced with a particular project managing a multicultural team. Beginning with trust and collaboration, Participant G stated that team members from a more reserved culture found it hard to speak out. They did not trust sharing their opinions, as they were not sure how it would be received or interpreted. According to Participant G, it was even more difficult to get people from reserved cultures to trust speaking out when stronger personalities dominated the conversation in a team meeting. Stronger personalities contributed a great deal towards diminishing team collaboration.

Participant G did a number of things to improve trust, encourage participants from all team members, and enable greater team participation, especially from culturally reserved team members. First, he reported that on topics of importance where he needed input from the entire team, he would ask people to write down their ideas on a piece of paper and submit them. Using this approach, the team members had the opportunity to express their opinions anonymously. This approach ensured participation from all team members while making sure that those who were not very verbal felt safe uttering their opinions.

The second thing that Participant G did to improve trust and collaboration amongst team members was that he used team retrospectives to smooth the storming phase of team development. In a retrospective session, Participant G facilitated the

meeting, making sure that all team members' opinions were heard. A retrospective served the purpose of looking back at the team's work for a set period of time and evaluating how to improve moving forward. An additional approach used by Participant G during the retrospective sessions was the rotation of the lead role. Each team member facilitated at least one retrospective session during the duration of the project. This helped boost confidence, built trust, and neutralized team dominance by strong personalities.

Thirdly, Participant G facilitated team involvement and maximum participation by allowing team members to select the teams they wanted to join. This approach made all team members, especially the culturally reserved team members, feel a sense of ownership. The sense of having a stake in the project promoted participation and encouraged collaboration from all team members.

The second challenge faced by Participant G in managing a multicultural project team was that of language barriers. According to this participant, who spoke without naming the cultures involved, he experienced that people whose first language was not English sometimes misinterpreted project tasks. This resulted in rework and delays that caused conflict amongst team members. To address this challenge, Participant G encouraged an environment of team collaboration to ensure a common understanding of the project tasks. One way the participant did this was encouraging more face-to-face communication. For example, whenever a Business Analyst would write business requirements, Participant G organized workshops for the analyst to review the requirements with the developers, testers, architects, and the entire project team. This provided the team with the opportunity to ask clarifying questions and have a common understanding of the requirements. Any resulting revisions were incorporated by the

analyst and the revised requirements reviewed again with all team members until there was an agreement and a common understanding of the requirements by the team.

Participant G called this negotiation. The participant used these review sessions to negotiate agreement from team members on the requirements.

To address research question two, Participant G said the most important skills for a project manager to have are tolerance, patience, open mindedness, and a sense of humor. Participant G advised that PM's should not live in a vacuum. Project Managers must understand that project team members come from different occupations and the PM needs to be ready to accept all team members.

Regarding training, Participant G said he is an advocate of continuous improvement. He therefore recommended theoretical training followed by practical training on diversity/cultural awareness as practice makes perfect. Participant G pointed out that whether formal or informal training, each has its advantage and both complement each other.

A review of the observation rubric confirmed that Participant G made constant eye contact with me, indicating truthfulness of his narrative. His vocal resonance stayed steady throughout the interview, except for when he spoke of accommodating team members from a reserved culture. When speaking of the culturally reserved team members, he softened his voice, something I interpreted as participant's strong passion for making sure that all team members had a true stake in the project. His body language conveyed experience, passion, and sincerity. He was steady when responding to the interview questions. The content of his responses was very relevant to the study's two constructs.

The archival documents also corroborated the narrative of Participant G. The documents showed the meeting minutes of the retrospective coming from the different leads, confirming the participant's use of role rotation. The archival documents also named collaborative tools such as anonymous expression of ideas and retrospectives used by Participant G to facilitate collaboration and encourage maximum contribution from all project team members.

To conclude, Participant G named language barriers, trust, and collaboration as the main challenges that affected him as he managed projects with multicultural team members. This participant, who spoke without referencing any particular culture, also named emotional intelligence, communication, and negotiation skills as key to the project manager's success in a multicultural team setting. Regarding training, Participant G stated that he would recommend theoretical training followed by practical training on cultural awareness and sensitivity. The account of his experiences was corroborated by observations made during his interview and archival documents.

**Case H.** Participant H was a 42- years- old male, and at the time of this study, had 10 years of experience managing multicultural project teams. This participant held many professional and academic credentials including the PMP certification and a Master's Degree in Business Administration. At the time of this study, Participant H worked as an employee, serving as a program manager in the mortgage finance industry. He lived and worked in the state of Virginia.

In response to research question one, Participant H named specific cultures and emphasized language barriers, competitive attitudes, and trust and collaboration as the main challenges he faced managing multicultural software development project teams. In

describing the issue of language barriers, he stated that, when English was not the first language of the project team members, communication was misunderstood. This led to misperception that caused frustration and stereotyping, the result of which was interpersonal conflict amongst the team members. According to this participant, team members from different cultures misunderstood and misperceived the use of slang by team members from different cultures. The use of a slang meant several different things to the different people from the various cultures represented on the project team. This was a common source of conflict amongst the team members. In one situation, it caused conflict that hindered collaboration and had a negative effect on the project schedule.

Competitive attitudes, another challenge identified by Participant H, arose because of cultural practices and religious beliefs. Regarding cultural practices some team members came from a culture where people talked to each other at very close proximity. Additionally, team members from this same culture were very hands on, using their hands to touch the shoulder, back, and/or hand of any person with whom they carried on a conversation. These team members freely hugged team members of the same sex without any second thoughts. Team members from other cultures, especially the US, found these practices offensive and considered them an invasion of personal space. This alone was grounds for team members who did not accommodate such practices to find ways to stay away from team members who perpetrated them. When team members avoided other team members, this led to tensions and conflict, which hampered team collaboration and jeopardized the completion of the project.

On the issue of religion as a challenge in a multicultural team setting, Participant H gave an example he encountered regarding Muslim team members' need to pray



several times daily. This brought about competition as team members who were not Muslims also wanted to be away from work a few times a day. Non-Muslim team members felt that their Muslim peers were cheating them. They felt that they had to pick up the workload of their Muslim peers to prevent the project schedule from delay while their Muslim colleagues were praying. This competition created animosity and conflict, which influenced project performance.

Regarding the issue of trust, Participant H said that lack of trust and collaboration resulted from language barriers and competitive attitudes. Participant H stated team members with accents other than the American ones clustered together and trusted themselves more than they would trust their American colleagues. These team members considered themselves outsiders whose accents influenced their communication and the way they interacted with other team members whose first language was English. Competitive attitudes amongst Muslims and non-Muslims also created an environment of distrust. Muslims felt that their various team members were unaccommodating to their religion. Non-Muslims, on the other hand, felt that they were being taken advantage of since they were not afforded the privileges extended to Muslims. These behaviors diminished trust and discouraged team collaboration. Participant H said that consequently, conflict erupted and slowed down team performance.

To address the three challenges of language barriers, competitive attitudes, and trust and collaboration, Participant H stated that he did several things. First, he made a conscious attempt to research and understand the different cultures represented on his project team to anticipate how team members from these cultures would behave in a team setting. Participant H stated that this understanding helped him assist his team to be more

collaborative and productive. Leveraging the acquired knowledge about the respective cultures to carry on specific conversations with the team members helped him build rapport with the team members faster.

Secondly, prior to team gatherings, Participant H asked which types of food the team members would like to eat during the gatherings. He then made it a point to get all the various types of food. According to him, accommodating the team members' food needs gave all team members a sense of belonging to the team. This helped foster collaboration.

Thirdly, Participant H showed empathy by accommodating the prayer schedule of the Muslim team members. This was a way of making the Muslim team members know that, although they are different from other team members in the way and number of times they prayed, diversity was appreciated and they were a part of the team. In addition to accommodating their prayer schedule, he also worked with management to assign a prayer room with mats and water kettles for the Muslim team members. This greatly boosted collaboration as Muslim team members felt like part of the project team.

Fourth and finally, Participant H used team meetings and the various project communication forms to establish clear and proper expectations. This brought every team member on the same page and minimized significantly misunderstanding of the project tasks. According to him, establishing clear communication eliminates any possibility of misunderstanding of project tasks.

In responding to research question two, Participant H stated that the most important skill needed by a Project Manager is communication. A Project Manager must be able to communicate well, thereby setting clear expectations and bringing all team

members to a common understanding of the project tasks. Clear communication will also help the project manager establish rapport quicker. Another skill highlighted by him was the ability to show empathy to the genuine needs of the project team members. According to Participant H, empathy, as part of emotional intelligence, is invincible to the success of a Project Manager within a multicultural team setting.

Regarding training, Participant H recommended practical training without formal training. This participant said that the more projects a PM manages, the more experience the PM acquires. Regarding formal training, he stated that it depends on where the project is executed. In the US, most of the people from different cultural backgrounds that work in the US already have a common understanding of the US business place and how business is conducted. As a result, formal training might be necessary in this situation. If a PM were to go abroad to say, India, then it would make sense to have that PM trained formally on multicultural competences.

A review of the observation rubric revealed that Participant H maintained eye contact with me throughout the interview. I interpreted this to mean that he was truthful of the account of his experience with managing multicultural software development project teams. Participant H showed no emotions during his interview. This participant spoke at the same pitch without altering his vocal resonance. He was very soft-spoken, though he spoke strongly about showing empathy and accommodating the needs of project team members who are of different religious backgrounds. His body language seemed very relaxed. He was very confident with no signs of tension. Information seemed to flow freely from his head. I interpreted this to mean that the participant was

someone who was very experienced, comfortable, and confident speaking about his experience.

Looking at the archival documents, I noticed risks documented which corroborated the narrative of Participant H. According to one risk, the prayer schedule for Muslim team members needed to be accommodated in order to create a sense of belonging and eliminate alienating Muslim project team members causing conflict and potential project failure. The archival documents also revealed his support for communication. Documents showed language which emphasized the need for team members to communicate clearly in order to avoid any miscommunication and misunderstanding. The documents also encouraged team members to ask questions if something was unclear. The documents revealed reports of various food purchases, supporting Participant H's claim of accommodating the food choices of all team members during team gatherings. The documents strongly supported and corroborated the account of this participant.

To summarize, Participant H who named specific cultures in certain situations and declined to name them in others, found competitive attitudes, language barriers, trust, and collaboration to be the main challenges that he encountered when he managed multicultural teams. According to this participant, excellent communication and negotiation skills would come very handy in helping the project manager better manage these challenges, so that they do not escalate and affect the project. He further recommended practical training as the most effective means to help project managers gain experience managing multicultural teams. This participant's account was strongly supported by observations made during the interview and archival documents.

**Case I.** Participant I was a 57–years- old female who lived and worked in Texas as an employee in the position of Deputy Chief Information Officer. This participant held a Master’s degree and the PMP certification. She had 15 years managing multicultural software development project teams.

In addressing research question one, Participant I, who shied away from naming specific cultures, emphasized language barriers as the primary challenge she faced managing multicultural software development project teams. According to her, she experienced that cultural barriers and mores caused strife among project team members. Additionally, Participant I stated that, in her experience, members of some cultures were “yes” oriented, but never produced results or acknowledged when they did not know what to do. Individuals from the “yes” culture did not understand the tasks and the expectations, but refused to work with the team to understand them. She attributed this behavior to a language barriers and cultural mores.

In an example cited by Participant I, she said that in one instance it was difficult to know if the team members in remote locations understood the tasks given to them and were performing the work accordingly, although several regular team meetings had been held. These team members would say “yes” on conference calls, but failed to deliver milestones and their associated results on their due dates. When Participant I asked these team members why they did not complete their tasks as promised and did not reach out for help, they simply made excuses.

To address the language barrier issue the impeded team communication and delayed task completion, Participant I used team meetings as a platform to improve communication. At these meetings, she communicated slowly to make sure that team

members whose first language was not English understood the goals of the project and were on target to get those attained. She also used team meetings to promote a team agenda. She encouraged those with language issues not to be shy of communicating and also encouraged those whose first language was English to be tolerant and patient in listening to and clarifying things to their peers whose first language was not English. Participant I also made the time to work one-on-one with those team members who wanted to be part of the team but had communication issues. This approach ensured that all team members were on the same page about the project deliverables.

Another approach used by Participant I to foster productive communication within her project team was repeated communication. This participant said she continually communicated and verified that the communication was understood. She would then check periodically to make sure that the work proceeded as expected. In other situations, she made use of technology tools such as the Microsoft Link, Skype for Business, and Jabber. These are interactive chat and video tools that allowed face-to-face communication amongst team members. The use of these tools allowed Participant I to gather non-verbal cues when speaking with a remote project team member. According to her, it was a way to see the remote team members and make sure they understood the tasks they were assigned and their due dates.

In responding to research question two, Participant I identified communication and negotiation skills as a must-have for project managers in a multicultural setting. One way to become a good negotiator is to understand software development itself. The participant states that the project manager should have experience being a member of a software team to understand the dynamics of such teams. If this is not possible, then the

project manager should attend development meetings to understand the workings of the team and its dynamics so that the project manager is not caught off-guard when situations arise. In regards to training, Participant I stated that while formal training is important, it is no substitute for practical on-the-job training where the PM becomes part of the team and produced an actual product.

In her concluding remarks, Participant I stated that the project manager needs to understand the team members and their respective cultures in order to be able to find ways to deal successfully with those cultures and deliver the product on time and under budget. When working with multicultural teams, it is imperative for the project manager to understand the cultures represented on the team. If there are language challenges, the project manager needs to make sure that such language barriers do not transcend into tasks interpretation issues. Additionally, it helps if the project manager has worked on a development team before. Prior experience helps the project manager understand the pitfalls associated with development projects. Participant I advised against introducing both culture and software development projects to a new project manager.

The non-verbal cues observation rubric for Participant I revealed that the participant maintained constant eye contact with me. My interpretation of this was that the participant meant what she said in her account of her experiences. She regulated her voice based on the situation she described. For example, when talking about team members who said “yes” without understanding the project tasks and ended up not delivering on time, Participant I spoke passionately with her voice somewhat elevated. She appeared a little upset at the situation she faced with her project. However, she was also very passionate when she talked about helping people one-on-one. She believed in

people asking for help when they need it. Participant I's body language conveyed seriousness and sincerity to me. This participant came across as someone who always wants to get the job done and would help team members if they asked for help. This is why she would go the extra mile of having one-on-ones with team members at a language disadvantage. The content of Participant I's responses was relevant to the two constructs of this dissertation.

A review of the archival documents showed that an issue was documented of missed deadlines due to language barriers that impacted team member understanding and affected task delivery dates. Additionally, the archival documents also revealed a risk logged indicating that if deadlines continued to be missed, then the project might have to undergo a schedule creep leading to the delay of project delivery. To address this risk, the archival documents showed an issue resolution and a risk mitigation strategy that called for Participant I to utilize technology to communicate effectively with team members and make sure that they understood project tasks. These documents all corroborated Participant I's narrative of her experiences with managing a multicultural software development team.

To recap, Participant I named language barriers as the main challenge she experienced with multicultural teams. She recommended communication and negotiation skills as instrumental in managing these challenges. This participant also stated that, while formal training is important to help make project managers aware of cultural differences, such training should not be a substitute for practical on-the-job training. In reviewing archival documents and interview observation rubric for non-verbal cues, it was determined that these strongly corroborated Participant I's narrative.



**Case J.** Participant J was a 44-year-old female with eight years of experience managing multicultural software development project teams. She was PMP certified and had a Bachelor's degree. Participant J lived in Arizona and worked there as an employee. As a Business Integration Specialist, she was responsible for the highest level of technology planning, development, and support for strategic implementation of information technology solutions. These solutions aligned with the needs of all departments in her organization and maintained enterprise technology standards. In her role, Participant J worked closely with all departments to identify and develop technology solutions that enabled business process improvement, enhanced operational efficiency, and improved customer service.

Prior to sharing her experience on the challenges she faced as she managed teams with people from different cultures, Participant J provided a brief introduction. In her introduction, she stated that, after managing several multicultural project teams, she has come to believe that there are two types of culture. The first type is that of beliefs and customs belonging to a particular society, group, or place of origin. The second type of culture refers to the beliefs and customs that are generational. Although these generational cultural differences have sometimes caused conflict in her project teams, they have also been very instrumental in fostering productivity if properly managed. Participant J stated that she has managed many projects that had a mix of both types of cultures. In her experience managing cultures, she observed some frequent mistrust within team members of different cultures. This led to conflict and affected project performance.

Turning her attention to research question one and, shying away from naming specific cultures, Participant J identified language barriers, trust, collaboration, and competitive attitudes as the core challenges she experienced managing multicultural project teams. Beginning with language barriers, she said that she experienced that different accents presented grounds for team members whose first language was the English language to be judgmental and stereotypical. This then made communication difficult amongst team members with different accents and those with an English-speaking accent. According to Participant J, this is mere human nature. Experience drove perception, which then became the lens through which team members judged and understood everything. This was the principal source of challenge as communication became perception-based; perception drove culture and the way team members discuss and understand project tasks.

The second challenge faced by Participant J was that of lack of trust and collaboration. According to her, the far end of the oldest and the youngest from a generational perspective sometimes prioritized work/life balance and leisure time over getting their project tasks completed on time. This sometimes left other team members to counterbalance by taking on tasks that were either unfulfilled or not completed correctly. This led to mistrust that resulted in resentment by those who performed the counterbalance. The result was interpersonal conflict amongst team members, which slowed down progress on the project.

The third challenge experienced by Participant J was that of competitive attitudes. According to the participant, some team members who came from caste backgrounds found it difficult to recognize the authority of other team members. This precipitated

competition and a mutual lack of respect . The competitive attitudes diminished team collaboration and created a chaotic environment of conflict that jeopardized the completion of the project. These competitive attitudes also caused competing team members to disqualify task outputs by each other just because they came from different cultures.

To ensure the success of the project, Participant J did several things to counteract the challenges she faced with her multicultural project teams. First, she made a conscious effort to consistently recognize the associated behaviors amongst multicultural team members such as the behaviors exhibited by caste team members. She then tried to redirect communication in order to address such behaviors and move forward with the project with less conflict. By redirecting communication, she refocused attention on the project. Participant J influenced engagement of the team members by actively listening to the team members and then interjecting when necessary in a way that made the team member refocus on the project. This helped the participant navigate the various cultures, garnering coalition and support geared towards successful completion of the project.

The second way Participant J addressed the challenges she faced in her multicultural team was that she ensured the workload was distributed as equitably as possible. Participant J held daily fifteen minute status calls to make sure that team members were progressing with their tasks and were not piling them up to pass on to another team member when they went on vacation. This approach expressed fairness to all team members and ensured equitable accountability.

Thirdly, Participant J successfully anticipated needs, read body language, and understood behaviors. According to her, she “dialed into the frequency” that her team

members were on and adjusted her communication style to that frequency. From her point of view, dialing into the frequency of the team members meant that she listened to them attentively and actively, identifying their needs. She also made a consistent attempt to read body language in order to understand the non-verbal cues of the team members. Participant J then found ways to address the identified needs of the team members. This made team members feel valued, the result of which was increased productivity. In certain situations, she held one-one-one meetings with team members who preferred meeting in private. Through this approach, Participant J ensured confidentiality while addressing the needs of these team members. The result of this was also increased productivity leading towards successful completion of the projects. This approach helped her break through cycles of mistrust and enable communication and team spirit within her multicultural teams. This then helped foster collaboration and productivity.

Fourth, Participant J consistently communicated at a group level and on a one-on-one basis. This participant treated her team members with respect and always acknowledged the particular skillset, which each team member brought to the project. She encouraged a sense of belonging, promoted team spirit by tapping into strengths of the team members, and assigned each team member tasks and responsibilities that increased their strengths. According to her, this enhanced collaboration and team spirit, advancing the agenda of the project. In Participant J's opinion, she experienced that communication was perception-based. This corroborated Avruch's conceptualization of conflict, which stated that, because culture is the derivative of experience, it is deeply connected to ongoing or past social practice. According to Participant J, culture drove perception and the way team members discussed and understood project tasks. The way

team members perceived each other was based on their past cultural experiences. This diversity caused conflict since team members often had conflicting thoughts on how to approach the project tasks. In this situation, Participant J stated that developing a homogeneous team culture out of a diverse team culture fostered communication and enabled project delivery success especially since her project was a long-term project.

In responding to research question two, Participant J identified emotional intelligence and communication skills as those critical to the success of a project manager in a multicultural team setting. According to her, communication is very important and necessary from both group and one-on-one perspectives. Communication can enhance collaboration and team work if it is frequent, clear, and respectful, and if it is tailored to address specific team needs in specific circumstances. Furthermore, Participant J stated that she also received feedback from the project team members. She then used this feedback to tailor team communication to meet the specific communication needs of team members.

Another skill emphasized strongly by Participant J was emotional intelligence. According to her, emotional intelligence skills need to focus more on an esprit de corps leadership style. This should be geared towards inspiring the team individually and collectively towards making the team members to want to do well and competently execute the project.

Regarding training, Participant J stated that formal training could never hurt; however, emotional intelligence and leadership are usually part of one's core self. Either they possess it or they do not. She further said that although actual hands-on experience is probably the best teacher, such training needs to be done in conjunction with formal

training. Doing the two in parallel allows for the skills learned in formal training to be practiced in hands-on training. In this situation, Participant J recommended a mentor. However, if it hands-on training has to be done in lieu of formal training, then the participant recommended a senior and more seasoned mentor.

A review of the observation rubric for nonverbal cues revealed that Participant J maintained constant eye with me. Looking at the constant eye contact in combination with the fact that her vocal resonance was strong, implied to me that this participant was confident and passionate about her profession and the thoughts she expressed. This to me was also an indication that Participant J was very sincere with all the thoughts she shared with me. I interpreted her relaxed body language to imply genuineness and originality of the thoughts she shared. The content of her story were very relevant and applicable to the two constructs of this dissertation.

Looking at the archival documents showed a clear corroboration of the participant's story. Reports showed documentation of a communication strategy that paid careful attention to team members and emphasized showing empathy towards their different cultural heritages. The documents also supported claims by Participant J of breaking cycles of mistrust through effective communication. The documents revealed multiple streams of communicating the same information to team members. The archival documents identified conflict documented as issues that resulted from mistrust amongst team members. The same documents also showed evidence that Participant J improved team spirit by leveraging the strengths of team members through assignment of tasks that would help elevate their strengths.

To conclude, Participant J identified language barriers, competitive attitudes, trust, and collaboration as fundamental challenges that affected the multicultural teams she led. As recommendation for dealing with these challenges, she highlighted emotional intelligence, communication, and negotiation skills as instrumental. This participant also recommended that formal training on cultural awareness should be done in conjunction with practical training. However, she hinted that emotional intelligence skills are part of one's core self and cannot be acquired through training. Participant J's experience and thoughts were strongly supported by interview observations and archival documents.

**Case K.** Participant K was a female of 47 years old. She had eight years of experience managing multicultural software development project teams. At the time of her interview for this dissertation, Participant K was a holder of a Master's Degree and the PMP certification. This participant worked as an employee in Texas, holding the position of Senior Information Technology Resource Manager.

In response to research question one, Participant K, who named specific cultures, highlighted language barriers as the greatest challenge she experienced. According to her, cultural diversity meant language diversity. She experienced that, in her multicultural team, language barriers affected how team members understood project tasks. Additionally, Participant K said that communication was quite challenging in her multicultural team. Team members viewed things differently and expressed opinions differently. As a result, misunderstanding and misinterpretation prevailed.

Participant K's team consisted of team members from Japan, China, and India. Although these are all Asian team members, there were distinctions in that Chinese and Japanese team members were very accountable and detail-oriented. They asked very

specific questions, got straight to the point, and did not talk much. They took the project tasks seriously and delivered them on time with high quality. On the other hand, Indian team members were more sociable, but also effective. Although the team was effective, conflict always erupted when Indian team members wanted to carry on long friendly discussions and Chinese and Japanese team members viewed that as disrespectful.

In explaining how she handled the communication challenge that affected her multicultural team, Participant K identified a number of things. First, she said that she would always pick an agile project management methodology over any other. The reason for this is merely that an agile approach allows the team to be co-located. According to her, co-location helps a lot with communication issues within a project team made up of members from different cultures. In such a team, members can observe nonverbal cues, which are essential to effective communication.

Another approach taken by Participant K to address the communication challenge that resulted from language barriers was employing active listening. According to her, observing, active listening, and on-the-spot clarification helped her to be successful at managing miscommunication within her multicultural project team. She said she spent more time listening and observing. Doing this not only enabled her to get the perspective of all team members but also helped with understanding the way they thought. In addition, it helped the participant to find a way to speak to the point in real time, correcting any misunderstanding.

To address communication issues, Participant K avoided the use of ambiguous vocabulary. She communicated with the team in simple language and encouraged her team members to do the same. She was simple and specific with her communication. She



was also very attentive, paying attention to the details and making sure that she noticed non-verbal cues.

Her response to research question two emphasized communication and emotional intelligence skills as the skills needed by project managers for multicultural project managers to succeed at managing these teams. On emotional intelligence, Participant K said the multicultural project manager needs to be open minded, inclusive, and sincere. Additionally, she stated that a project manager for a multicultural project team needs to demonstrate a deep understanding and appreciation of common values. These skills will promote team spirit and collaboration.

Regarding communication skills, Participant K indicated that a project manager for a multicultural software development project team needs to be able to be attentive and must possess active listening skills. Attentiveness allows the project manager to notice minute details in the conversation. Active listening, on the other hand, allows the participant ask clarifying questions on any point that required clarification. This will also make team members feel valued, as they know that someone is listening to them.

With respect to training, Participant K stated that, although formal training might be helpful, she found practical experience to be much valuable and would recommend practical training as such. According to her, the more one knows, the more one learns how different people are. Exposure helps bring awareness and appreciation for cultural differences. Sincere appreciation helps create an open mind and heart, which then enhance the ability to communicate more effectively in a culturally diversified setting.

A review of the observation rubric for non-verbal cues indicated that Participant K maintained constant eye contact. In addition, her vocal resonance indicated no

emotions. Her body language conveyed confidence and sincerity. These three factors -eye contact, vocal resonance, body language- combined indicated to me that the information provided by the participant was very truthful and reliable. The content of Participant K's experience was also relevant to the two research questions of the current study.

A review of the archival documents revealed risks logged, indicating that lack of a co-location for the project team was impacting team communication due to language difference. The archival documents also revealed a risk response strategy documented against this risk. The response strategy indicated that management will assign a room by a certain date to prevent further impact to the project. This room would serve as a co-location room where all project team members for the project will sit and work cohesively as a single unit. Another finding from the archival documents was the documentation of active listening as part of a communication strategy. The material in the archival documents corresponded to the interview with the participant, thus corroborating Participant K's narrative.

To conclude, Participant K named language barriers as the core challenge she experienced with multicultural teams. She highlighted communication and emotional intelligence skills as those needed by a project manager to succeed with multicultural teams. This participant further added that she would recommend practical training as a means for project managers to acquire the skills necessary for them to be successful leaders of multicultural teams. Archival documents and observation made during the interview revealed strong support for the Participant K's narrative.

**Case L.** Participant L was female, 53 years old, and had 20 years of experience managing multicultural software development project teams. She worked as an employee

in Texas in the position of Business Technology Consultant. At the time I interviewed her, she held a Master's Degree and the PMP certification.

Participant L began with an introduction prior to delving into research questions one and two. In that introduction, she said that working in an information technology environment has brought her to the realization that it has become the norm to work in such an environment with people from various backgrounds, including culture. Participant L said that whenever she managed a multicultural software development project team, she tried to treat all team members with the same respect with which she would want to be treated. She reported that in her experience, the use of multicultural teams brings some challenges with it, especially when some of the team members are geographically distributed. One of the major challenges she experienced was language barriers with team members whose first language was not the English language. Another challenge related to difference in time zones.

Through experience, Participant L found that sometimes staff working together had the tendency to forget about the remote meeting attendees. In such a situation, the team working together did not have an appreciation for the difficulty and differences in communication, which the remote attendees experienced. The difficulty involved with remote communication was exacerbated with the language barriers. She concluded her introduction by stating that she also noticed a lot of generational differences which posed some generational cultural issues and resulted in team conflict.

Turning her attention to research question one and, shying away from naming specific cultures, Participant L emphasized competitive attitudes and language barriers as the core challenges she experienced. The project this participant discussed during her

interview ended up being cancelled. For this project, Participant L worked onsite with the customer. Other team members who were multicultural traveled to the customer's location for specific activities, but then worked remotely for most of the tasks. The developers and testers worked at two different locations. The team members had a variety of backgrounds and ages.

The origin of competitive attitudes was the religious obligations of one of the team members. They kept him out of work one day a week. No one else on the team had the ability to adjust their schedules similarly, although many competed for such an adjustment. This resulted in resentment and conflict. Part of the conflict came from the fact that the same members whose schedule adjustment requests had been turned down were asked to make up for the one day per week which the member with religious obligations missed. Apart from the fact that their schedule adjustment requests were turned down, the resentment also resulted from the fact that team members believed that the member with religious commitments was simply making up an excuse to push for his schedule to be modified.

Speaking of language barriers as another core challenge, Participant L experienced that communication in a multicultural team is not something that necessarily comes easily or naturally. She said that language barriers coupled with competitive attitudes caused team communication to decline very swiftly to a point of no rescue. According to this participant, communication was gravely impacted by the fact that team members had not worked together before. Additionally, the team members came from different cultural, demographic, and age backgrounds. This alone was a source of cultural chaos in terms of team communication. Participant L concluded that a better job at

planning team communication could have helped with the language barriers and communication challenges she faced with her multicultural project team.

Although this project failed, Participant L did several things to try to rescue the project. According to her, if she had done these earlier, she would have been able to rescue her project. The first thing done by Participant L was negotiation. This participant negotiated with team members to provide support on the day on which the team member with religious obligations was out of office. Through negotiation, she was also able to get this team member with religious obligations to make up for the lost hours during off hours. Although this reduced the concern of other team members picking up extra work, it was not enough time to rescue the project's schedule, which had already slipped too far off.

Another technique employed by Participant L to accommodate multiculturalism in her team was the use of emotional intelligence. After a while, the rest of the team working with the team member who had religious obligations came to understand the religious commitment of this member. This understanding led to empathy which eliminated the team's suspicion that this team member might have been playing games to get his schedule adjusted. As a result of this understanding, which came a little late, team members became more open and flexible to fill in and make up for lost time.

In addressing research question two, Participant L stated that the key skills needed by a project manager to succeed at leading multicultural software development project teams are emotional intelligence, communication, and negotiation skills. Regarding emotional intelligence skills, she recommended training on multicultural awareness. According to her, awareness will bring about understanding that will in turn lead to

empathy and tolerance. In relation to negotiation and communication skills, Participant L said that a project manager needs to quickly understand the cultures of the team members represented on the project team. An understanding of them paves the way for the project manager to plan and design tailored communication for each culture. Effective communication also equips the project manager with the ability to negotiate effectively. A project manager would need to negotiate a great deal with team member on schedule, in asking them to swap tasks, or for some other reason. Communication and negotiation skills are therefore important and paramount to the project manager's success in leading a multicultural team.

In discussing recommendations for training, Participant L stated that formal training is essential in the global workplace. She said that prior to taking on the management of a multicultural project team, she received some training that broached the subject of multicultural awareness. Participant L added that she wished she had had the opportunity to get more adequate training prior to her project. If she had gotten adequate training, this participant believes that she would not have learned many lessons the hard way. Participant L thinks that it is important to understand that there are many faces to the term multicultural. She further said that it is no longer a black and white or male and female thing anymore. The world is diverse. We work with people with very different backgrounds and ideas. According to Participant L, project managers need to understand and be sensitive to these differences to form well performing teams.

On the issue of practical experience, she stated that practical experience was great in many ways. However, sometimes it is very difficult to undo damage once it has been done. Engaging directly with practical experience without first taking formal training to

understand multicultural dynamics in a team setting can be a disaster for failure. On this basis, Participant L recommended beginning with formal training on multicultural awareness and use this training as a road into practical experience.

Verification of the observation rubric for nonverbal cues showed Participant L as maintaining constant eye contact with me throughout the entire interview. I interpreted this to mean total sincerity with the material shared with me by her. Although Participant L seemed to maintain a steady vocal resonance, her body language expressed disappointment very well when she spoke of how she could have done things better to rescue her failed project. Her face conveyed regrets and she paused periodically to hold back her emotions. To me, this meant passion and total sincerity. The content of her responses also applied directly to the two research questions of this study.

The archival documents showed documented lessons learned that spoke strongly about planning communication and implementing the plan early on in the project. The archival documents also showed lessons learned that indicated the need to be empathetic to the cultural diversity and needs of the team members when planning on how to communicate with these team members. Furthermore, the archival documents showed communication breakdown as the main issue that led to the failure of Participant L's project. These archival documents contain management's acknowledgement of failure to equip the project manager with the skills needed to be effective at managing multicultural project teams. The closure documents show that once Participant L noticed the emergence of competition, due to the misperception of favoritism, she as the project manager did not document a risk to raise awareness which could have attracted

management's attention and prevented failure. The archival documents supported and corroborated in totality the narrative of Participant L on her experiences.

To sum up, Participant L highlighted language barriers and competitive attitudes as the challenges she faced with multicultural teams. This participant stated that emotional intelligence, communication, and negotiation skills are critical to the success of a project manager in a multicultural team setting. To acquire this training and training on multicultural awareness, she recommended beginning with formal training and then supplementing it with practical experience. The archival documents and interview observations strongly supported Participant L's narrative.

### **Cross Case Analysis**

The cross-case analysis section presents the results of the data collection by synthesizing and cross validating the findings, patterns, themes, explanations, processes, and outcomes. The results are presented in order of frequency of the responses per theme with the most frequent responses presented first. Each theme is presented in three parts, highlighting agreement, disagreement, and uniqueness.

#### **Research Question One**

Research question one was as follows: What are the perceptions and experiences of software development project managers with cross-cultural complexities/challenges and causes of cross-cultural interpersonal conflicts in multicultural software development project teams? The responses to this research question expressed the challenges faced by participants in managing multicultural teams and conflict in these teams. Three major themes emerged from the analysis of the individual cases in regards to research question 1 (see Table 1).



Table 1

*Research Question 1 Major Themes: Cross-cultural conflict management and resolution*

Theme	Frequency	Percent
1. Language barriers exacerbated difficulty and differences in communication	11	92
2. Cycles of mistrust diminished team spirit and collaboration	7	58
3. Competitive attitudes caused team members from one culture to disqualify task outputs by team members from another culture	7	58

*Note.* N=12.

**Major theme one.** When asked about the challenges that resulted from culture and caused conflict within their respective multicultural software development project teams, 11 out of 12 participants (92%) responded along similar lines naming language barriers as an issue, making this the first major theme. The 11 participants who agreed on language barriers as an issue in multicultural teams linked communication to the ability to bring the team to a common understanding of the project goal. These participants expressed that the absence of adequate communication in a multicultural project team setting made it hard to get the team members to a common understanding of the common goal. This challenge often caused things to get lost in translation.

According to these 11 participants, language barriers and lack of understanding of the other group's culture caused team members to misinterpret things said by team members from a different culture. This challenged the attainment of effective team communication. Additionally, some team members misunderstood the choice of words used by other groups, leading to conflict. When English was not a team member's first

language, it was challenging to foster communication and ensure common understanding of project tasks.

The participants shared that there was also the problem of different interpretations of slang, which posed a cultural barrier. These cultural barriers and cultural mores caused strife among team members because the individuals either did not understand the language, the tasks, or the expectation, or refused to work with the team to understand these. All eleven participants agreed that communication is perception-based. Culture drives perception and perception drives the way team members discuss and understand project tasks. The opinions of these 11 participants were explicitly expressed by Participant C who said:

Communication amongst global team members was a major challenge. Foreign accents as well as styles of communication (direct vs. indirect) were communication barriers. These barriers were exacerbated by negative stereotypes of cultural biases even though the same language was spoken. Language barriers led to miscommunication and mistrust, which caused conflict.

Participant B had a different perspective from the rest of the 11 participants on language barriers as an issue within a multicultural team. According to Participant B:

You cannot predict how an individual will fit into a team or their contribution to success based solely on their native culture. For the most part, multicultural teams are no different from monocultural teams. Conflicts are similar whether cross-cultural or not. They tend to center on a couple of common themes like communication breakdowns and setting of incorrect expectations. These are

typical challenges of any project team and are not peculiar to the multicultural project team.

I found it unique that Participant B, an experienced program and project management executive with over 20 years of experience managing multicultural project teams did not perceive culture and by extension, language barriers as a potential challenge to managing multicultural teams. As stated and agreed upon by the other 11 participants, culture drives perception and perception drives the way team members discuss and understand project tasks. This stark contradiction between Participant B and the rest of the participants makes Participant B's perspective worth noting. While this was noteworthy, it wasn't surprising as it corroborated Avruch's conceptualization of conflict. According to Avruch (2013), because culture is the derivative of experience, it is deeply connected to ongoing or past social practice. Based on his extensive past experiences, Participant B determined that culture and language barriers do not constitute potential challenges to managing multicultural teams.

To conclude, Major Theme One was the first of three themes for research question one. This theme reflected similar responses from 11 out of 12 participants. Analysis of the responses from these participants revealed language barriers as a source of cross-cultural challenge in multicultural teams.

**Major theme two.** The second of three themes that emerged from the responses to research question one had seven out of the 12 participants (58%) responding along the lines of trust and collaboration. These participants stated that mistrust emerged as a top challenge as messages from one person to another were lost or distorted in transmission and translation. Lack of collaboration which resulted from mistrust became even more

prominent and visible as a challenge due to the difficulty in getting culturally reserved team members to trust, get involved, and collaborate. This was particularly true when stronger personalities in the group dominated those who were not very verbal and made them feel unsafe uttering their opinions. False expectations also led to mistrust as team members perceived false expectation as a deliberate effort intended to cause other team members to fail so that they could be blamed. These made it very challenging to build a cohesive multicultural project team that trusted each other and worked collaboratively on the project. Lack of trust and cohesiveness made team members from different cultures to view themselves as “them versus us”. This encouraged interpersonal conflict that discouraged collaboration and prevented team members from dialoging amongst themselves about the cultural issues that affected them and their work. Lack of collaboration diminished team spirit and productivity.

The consensus by the participants who agreed on mistrust and lack of collaboration as a multicultural team challenge was most clearly articulated by Participant H who noted that:

The failure to build rapport between project team members from different cultures resulted in mistrust, lack of buy-in from team members, lack of collaboration, lack of ownership, and lack of involvement within the team. This chain of events led to conflict. Furthermore, lack of the ability to show empathy, diminished the possibility to establish rapport, and resulted in conflict.

Participants B, F, I, K, and L neither mentioned trust and collaboration as constituting a challenge nor disputed the naming of these as challenges in multicultural project teams. Although Participant C agreed with six participants on trust and

collaboration as challenges to managing multicultural teams, he somewhat differed by going further to name the cause of these two challenges as cultural biases. Participant C said:

Building team trust and cohesion was the biggest challenge. This was due to cultural biases, which were a major factor of individual perception. Conflict often resulted because of cultural biases, especially during certain interactions that were considered taboo in one culture, but completely acceptable in another. This prevented team dialogue about the issues at hand and hindered the development of team trust and cohesion.

In discussing his experiences in relation to trust and collaboration, Participant A shared something unique. This participant experienced that while US team members were very time sensitive and worked on adhering to the project schedule, Indian team members paid more attention to quality and ignored the schedule. Indians were more focused on delivering a quality product than finishing on time. According to this participant, this was a source of mistrust and conflict amongst these two cultures. He stated that:

Software developers from India were reluctant to sign-up for and/or commit to a deadline. They focused more on the quality of the product than a deadline. They always wanted to make the product perfect. This introduced conflict into the team especially when other teams depended on deliverables from these Indian team members.

In conclusion, analysis of the data collected in response to research question one revealed a pattern by seven out of 12 participants. This pattern yielded Major Theme two, the second of three themes for research question one. According to Major Theme two,

mistrust and lack of collaboration greatly challenged the efforts of project managers leading multicultural teams.

**Major theme three.** To answer the question on the challenges that resulted from culture and caused conflict within their multicultural software development project teams, seven out of 12 participants (58%) gave similar accounts centered on competitive attitude, making this the third major theme for research question one. These participants expressed that time zone differences caused competition associated with scheduling of meetings and timely responses to requests from other distributed team members. Generational differences between cultures also caused competition and conflict. While members of some cultures showed respect for elderly team members, team members from other cultures looked at everyone as equal. This attracted rivalry and conflict.

Furthermore, some cultures were more work-focused than others. This was a source of competition as those that worked harder completed their tasks on time while those that were not so work-oriented kept them behind, impacting team progress as their work was delayed. They always valued relationships over work. Other cultures were focused on job titles regardless of whether there was associated authority or not. Failure by their fellow team members from different cultures to recognize their titles led to competitive attitudes that caused conflict. In other circumstances, people from caste cultural backgrounds found it difficult to recognize the authority of other team members. This caused competition, conflict, and stalemate; resulting in team members from one culture disqualifying task outputs by team members from another culture. A clear example of competitive attitudes was provided by Participant H who said:

Religion was a challenge. For example, Muslims had to pray several times a day. Accommodating this need impacted the project schedule and caused competition from fellow team members who requested to be granted personal time off a number of days since they could not pray as often as the Muslims did.

Participants B, C, G, I, and K did not make any mention of competitive attitudes as a challenge that impacted their multicultural project teams. Participants D and J, who agreed with five other participants on competitive attitudes as a challenge to effective management of multicultural teams, also agreed on a distinction. These two participants agreed that beliefs and customs differ from culture to culture and become the lens through which cultures view and perceive things. Failure by one culture to understand the belief system of another caused conflict. This distinction, which was noted by both Participants D and J, was best expressed by Participant D who said that:

Cultures did not understand each other. They did not understand how each person in the team viewed the world. They did not understand the value structures from different countries. This lack of understanding was due a narrow view of the world by team members. This caused conflict and affected team performance.

Participant D who agreed on competitive attitudes as a challenge in multicultural teams also shared a unique experience. He stated that:

Thinking of value structures from different countries and cultures, they are carried over into family and professional life. For example, military kids have their culture from moving around the world. This cultures moves with them in all they undertake. The biggest challenge and source of competition is the lack of understanding of the existence of different value systems. It was hard getting team

members to understand that other people think differently and that their experiences shaped their perceptions.

To summarize, Major Theme three was the last of three themes that emerged from the responses to research question one. The analysis of the data collected aligned Major Theme three with the responses from seven out of all 12 participants. It identified competitive attitudes as one of the cross-cultural complexities that challenge a project manager's ability to manage multicultural teams.

### **Research question two**

Research Question 2 was as follows: What are the perceptions and experiences of software development project managers with the multicultural skills needed to resolve cross-cultural interpersonal conflict effectively within multicultural project teams? Two major themes emerged from the interviews for the skills needed by software development project managers to be successful at managing interpersonal conflict within a project team (see Table 2).

Table 2

#### *Research Question 2 Major Themes: Multicultural skills*

Theme	Frequency	Percent
1. PM needs to have excellent communication and negotiation skills	12	100
2. PM needs emotional intelligence skills	10	83

*Note.* N=12.

**Major theme one.** Theme one for research question two was noted by all 12 participants (100%) who responded with the need for PMs to have excellent



communication and negotiation skills. All 12 participants shared that a project manager for a multicultural project team needs the skills to make sure that every team member worked and felt as a part of the integrated project team. One way that helped with the formation of an effective and well-integrated team was by enabling proper communication that helped bring the project team to a common understanding of the project goals. This meant breaking communication barriers derived from the natural language of each team member. Effective and healthy communication within the project team was achieved by listening to the team, respecting and motivating team members, leading by example, and being quick to praise and slow to criticize the project team.

According to the participants, a PM needs to understand the language of the respective members on the team. Effective communication helped cultures on the team to understand each other. Empathizing with team members led to better and open communication within the project team. A PM therefore needs to be skilled at empathizing in order to make team members from various cultures feel comfortable communicating freely.

Furthermore, the participants agreed that a PM managing a multicultural team needs strong communication and listening skills. Listening to team members and creating an environment for all team members to communicate freely and safely helped with fostering communication and team collaboration. In certain circumstances, it was necessary to create a secure environment for team members to freely communicate their thoughts without fear of retribution. This was achieved through one-on-one meetings and/or anonymous notes in suggestion boxes. Alternatively, when team members were allowed to pick and choose their teammates, especially in situations where English was

not the first language, communication was fostered and productivity was higher. The PM therefore needs to be skilled at using various techniques to foster communication and negotiate collaboration. The goal was always to encourage an environment of collaboration to ensure that team members were on the same page and had a common understanding when it came to the project tasks.

All 12 participants agreed that proper communication earned the PM the ability to establish rapport earlier on in the project. The team's respect was earned through effective communication with the team members, which established rapport. A PM therefore needs to be able to establish rapport with the team in order to enable better communication within the team. Effective communication paved the way for establishing a common understanding of the project's expectations and ensured success. A PM needs to be skilled at overcoming communication barriers that exist in a multicultural project team setting.

Additionally, all twelve participants agreed on the needs for a PM in a multicultural team setting to be dynamic in alternating different communication and negotiation techniques in order to identify what works for each situation. For example, while regular team meetings helped improve communication in some cases, one-on-one meetings worked better in other situations. Technology assisted communication tools such as Lync, Skype for Business, and Jabber were also used as needed to communicate project tasks and expectations to distributed team members.

All twelve participants reported that recognizing subtle behaviors and redirecting communication to move forward with less conflict earned a lot of success with moving a project forward. Communication is perception-based and perception drives culture, and

the way team members discussed and understood project tasks. Developing a harmonious team culture fostered communication and enabled project delivery success.

Communication was the biggest challenge to managing a cross-cultural team. Team members tended to view things differently and expressed opinions differently.

Misunderstanding and misinterpretations easily occurred. These communication challenges were overcome by spending more time listening to and observing the team members. This allowed all team members' perspectives to be heard and their thoughts understood. This also allowed the team to be brought on the same page about the project tasks. The PM therefore needs to be skilled at communicating effectively with the project team in order to be successful.

The PM needs excellent communication and negotiation skills. The bulk of the PM's role entails communication and negotiation. Being skilled in these areas will very well assist the PM with being effective at managing a multicultural project team. The skills needed by a PM were more clearly articulated by Participant C who said:

Communication barriers amongst team members were a major challenge due to foreign accents and styles of communication (direct vs. indirect). The project manager must therefore understand the different cultural norms and communication and decision-making styles of the various cultures represented on the project team. In my team, learning and respecting the cultural differences on the PM's team helped me strengthen the unity of the team and broke down the cultural barriers that impacted team communication.

Although there was a unanimous agreement from all participants on communication and negotiation as critical skills for the PM, Participants D and J agreed

on a distinction. These two participants linked communication to empathy. A clearer articulation of this distinction was made by Participant D who said:

When I encountered communication challenges, I overcame them by empathizing and understanding with the team members whose first language was not English. Empathy led to a process of reflection which then made me to think through how to better communicate to the respective team members. Reflecting and changing my communication approach to communicate in a way valuable to the team members helped promote team collaboration as all team members felt a sense of belonging.

Particularly noteworthy and unique to me was the fact that all twelve participants emphasized on active listening as an important part of communication. The participants emphasized on listening to team members especially those that might be dominated by outspoken team members. Participant E elaborated this succinctly by stating that:

PM managing a multicultural team needs strong communication and listening skills. Having an open mind and open ear, not just hearing, but actively listening to other team members broke the language and communication barriers and made team members feel free to communicate their thoughts. In certain circumstances, it was necessary to create a secure environment for team members to freely communicate their thoughts without fear of retribution. This was achieved through one-on-one meetings and/or anonymous notes in suggestion boxes.

To summarize, major theme one was identified through analysis of the responses from all 12 participants. In responding to research question two, these participants

responded along similar lines stating that project managers need excellent communication and negotiation skills to be successful at managing multicultural project teams.

**Major theme two.** In responding to research question two, 10 out of 12 participants (67%) indicated that a PM for a multicultural team needs to have skills centered on emotional intelligence. According to these ten participants, understanding individuals, their backgrounds, and their cultural heritage was instrumental in understanding key characteristics of their culture. Different cultures exhibited different characteristics. Understanding these characteristics was instrumental in predicting and/or understanding how and why individuals behaved in a certain way. Such understanding (empathy) then made it possible for the PM to devise ways to appropriately respond to an expected behavior if it surfaces. PMs therefore need to research and understand the cultures represented on their project teams. In order to succeed as a PM for a multicultural software development project team, the PM has to have the capacity/desire to empathize with the various cultures. The PM has to be able to learn and understand the language of team members and stakeholders. This means knowing what they value, how to speak to them in terms that are meaningful to them in relation to what they are trying to accomplish. A PM for a multicultural project team has to be able to exhibit emotional intelligence by empathizing with other team member's emotions.

All ten participants added that in order to be successful at managing a multicultural software development team, the PM for such a team needs to have an open mind and ear, not just hearing but actively listening to the team members. The PM needs strong communication and listening skills which means being mindful of the language used and actively listening to the team members. The skills needed by a PM in order to

thrive in leading a multicultural project team are tolerance, patience, open-mindedness, and a sense of humor. A PM for a multicultural team should not live in a vacuum. People come from different walks of life and the PM needs to be ready to accept all people. To succeed at managing a multicultural software development project team the PM needs to be attentive, sincere, inclusive, open-minded, observant, and has to listen actively to the team members. A deep understanding of and appreciation for the common values are critical to succeed as a PM for a multicultural software development project management team.

Participant L stated most clearly the need for project managers to possess emotional intelligence skills. This participant stated that:

It is important to understand that there are many faces to the team. This makes the team multicultural. It is not a black and white or male and female thing any more. The world is diverse. We work with people with very different backgrounds and ideas. Project managers need to understand and be sensitive to these differences to form well performing teams. To do this, a PM needs emotional intelligence skills. Skills need to focus more on an esprit de corps style of leadership and inspiring the team (individually and collectively) to want to do well and competently execute the project.

Participants I did not mention emotional intelligence as an important skill for PMs operating in a multicultural setting. Participant F who had a different opinion stated that:

In order to understand and manage multicultural teams most effectively, PMs will have to learn from experience and be observant. These are not skills that can be learned without actual experience.

Two things came across as unique to me. The first thing was the fact that ten participants spoke of emotional intelligence with two participants actually calling the words “emotional intelligence.” This was unique because according to my experience as a PM, this is not a very familiar term in the project management community. The second unique thing I noticed was with Participant L. Although this participant agreed with nine other participants that PMs need emotional intelligence skills, she went further to state that this skill cannot be learned. She stated that:

While formal training can always be useful, emotional intelligence and leadership skills are usually part of one’s core self. Either a person possesses these skills or not. These skills can neither be taught nor learned.

In conclusion, the second of two major themes for research question two reflected the responses of 10 out of the 12 participants. In responding to research question two, these 10 participants expressed similar thoughts. According to them, a project manager managing multicultural teams needs to possess emotional intelligence skills in order to be successful with these themes.

### **Summary**

This chapter presented the results of this study in two parts—the case presentation and the cross-case analysis. For the first part, the case presentation, an analysis of the individual cases was presented for each of the twelve cases. This analysis presented the data collected from each participant, corroborating this data with data from interview observations and archival documents.

The second part consisted of the cross-case analysis, which compared the findings of the case, citing commonalities, differences, and uniqueness. Research question one

yielded three themes that touched on language barriers, trust and collaboration, and competitive attitudes. While themes revealed agreements from the participants, they also revealed differences and uniqueness amongst the experiences of participants. Similarly, research question two generated two themes centered on communication and negotiation skills, and emotional intelligence skills. These themes also revealed agreements, differences, and uniqueness with the experiences of the participants.

Chapter four presented the data as collected from the participants. Chapter five will delve deeper into analyzing these data, comparing the data with data from the literature review and drawing conclusions. The idea is to present the reader with the data and a comprehensive analysis to allow the reader to make up his/her own mind about the findings.



## Chapter 5: Discussion, Conclusions, and Recommendations

This chapter provides an overview of the research problem, study design, research activities, and conclusions. The problem explored in this qualitative exploratory case study was twofold. The first part of the problem was the lack of understanding of the challenges posed to the project managers by culture in relation to interpersonal conflict within a multicultural software development team. The second part of the problem was the lack of project managers who were skilled at managing the cultural diversity of the project team members by maximizing the benefits of diversity and minimizing the eruption of conflict from it.

The purpose of this study was to explore the challenges faced, and the cultural competencies needed by software development project managers leading multicultural project teams to successfully manage and resolve cross-cultural interpersonal conflicts amongst members of a software development project team. The study was designed to add to the research on cross-cultural interpersonal conflict resolution in a software development project team setting. The use of a qualitative method and an exploratory case study design allowed data collection through interviews and archival documents. A qualitative method also allowed the analysis of the data collected for identification of patterns leading to themes. This analysis provided qualitative results that deepened an understanding of the challenges faced by project managers and the skills needed by these project managers to resolve conflict in multicultural software development teams.

The study explored research question one regarding the perceptions and experiences of software development project managers with cross-cultural complexities/challenges and causes of cross-cultural interpersonal conflicts

in multicultural software development project and research question two addressing the perceptions and experiences of software development project managers with the multicultural skills needed to resolve cross-cultural interpersonal conflict effectively within multicultural project teams. The findings of the research revealed that the project managers perceived challenges including language barriers, cycles of mistrust, and competitive attitudes when leading multicultural teams. In order to mitigate these differences, the participants reported that project managers require excellent communication, negotiation, and emotional intelligence skills.

### **Interpretation of the Findings**

This section reviews the findings of this study, discussing them in relation to the theories that framed this study and the literature reviewed in Chapter 2 of this dissertation. The purpose of this section is to compare and contrast the findings related to the specific themes that emerged from this study with the postulations of the theories that framed the study and the findings from relevant studies reviewed in Chapter 2. The findings helped provide a better understanding of the theories that framed the study. This section also draws conclusions from similarities or distinctions. The theories that framed this study are Avruch's Conceptualization of Culture, the Human Needs Theory, the Rational Choice Theory, and the Cross-Cultural Adaptation Theory. The findings are interpreted as they relate to each of these theories.

**Avruch's conceptualization of culture.** According to Avruch (2013), individuals in societies are distributed across many different sorts of social groupings—regional, ethnic, religious, class, occupational, and so on. Each of these groupings is a potential container for culture. The findings of this study illustrated Avruch's assertion of culture

based on social groupings. An illustration of this in the findings is with Participant H's account. According to this participant, Muslims have a religious culture to pray several times a day. While at work, they grouped with other Muslims to pray together. After prayers, they would regroup with their project team members to perform project tasks. These various social gatherings were different buckets of culture that were carried from one social group to another and influenced the way a team member interacted within the project work team. As revealed by the results, bringing religious culture into a work culture caused conflict. Non-Muslim team members perceived prayers as an interruption to work and demanded to be given the same amount of time for their personal use. Muslim team members, on the other hand, perceived prayers as part of their culture. In another example, Participant D confirms the existence of cultural buckets for individuals based on their social groupings. This participant stated that:

Thinking of value structures from different countries and cultures, they are carried over into family and professional life. For example, military kids have their culture from moving around the world. This culture moves with them in all they undertake. The biggest challenge and source of competition is the lack of understanding of the existence of different value systems. It was hard getting team members to understand that other people think differently and that their experiences shaped their perceptions.

The findings of the current study also supported Avruch's (2013) theory that despite the traditional or customary base of culture, culture is to some extent always situational, flexible, and responsive to the exigencies of the worlds that individuals confront. Participant H provided a clear example that concisely illustrates Avruch's

theory. According to this participant, in a project team made up of US team members and team members from other national cultures, it was common to see team members with accents other than the American accents clustering together and trusting themselves more than they trusted their American colleagues. These team members considered themselves outsiders whose accents influenced their communication and the way they interacted with their US colleagues. These outsiders also perceived their accents as posing language barriers to them communicating effectively within the project team.

Although these team members were of various nationalities, their situation of language barriers brought them together. Faced with their exigency of language barriers, these team members went against their traditional or customary base of their respective national cultures and exhibited flexibility by choosing to interact with team members from other cultures facing a similar situation like they did. This example from the findings of this study provides a better understanding of Avruch's conceptualization of culture as situational, flexible, and responsive.

The participants who were the project managers handled this situation by empathizing with and encouraging empathy for those team members with language barriers. The participants noted that with emotional intelligence and empathy, the participants encouraged team members to show understanding and be accommodating to those team members with language barriers. In this situation, the team members with language barriers became flexible and collaborated more with the team members who empathized with them. This improved individual, team, and project performance.

The findings of this study also supported Avruch's (2013) claim that the mere existence of cultural differences is usually not the primary cause of conflict between

groups. However, culture is always the lens through which differences are refracted and conflict ensued. Understanding the concept of culture is therefore a prerequisite for effective conflict analysis and resolution. The findings of this study revealed that culture and individual experiences shape perception. This was illustrated by the example of Muslims being awarded prayer time and US team members complaining about this practice. To the US team members, a culture of fairness means treating everyone equally. They perceived the extra time used by Muslims for prayers as being unfair to those team members who were not Muslims. They therefore demanded to be given equal time for their own personal use.

On the other hand, the Muslim team members perceived fairness to mean that the PM and the rest of the team would be understand their religious beliefs and would not complain about the time required for prayers. In their culture, the Muslims pray several times a day without anyone complaining. They expected their fellow team members to be understanding of their practice. While these different perceptions were shaped by the respective experiences and cultures of Muslims and US team members, the perceptions caused conflict that affected team performance.

The findings of this study further revealed that an understanding of the cultures represented on a given team is required to successfully resolve team conflict. According to them, understanding the cultures of team members entails learning their values and how to communicate with team members in ways that are meaningful to them. Understanding project team members' culture and values and knowing how to communicate with them help pave the way for better negotiation.

**Human needs theory.** The findings of this study also supported the Human Needs Theory and helped provide a better understanding of this theory. According to it, cultures are characterized by certain needs, which if absent, threatened, or scarce, oftentimes result in conflict (Maslow, 1970). Burton's version of the Human Needs Theory states that humans are characterized by certain qualities, the absence of which can result in conflict (Burton, 1979). Such needs include but are not limited to identity, recognition, security/safety, belongingness, freedom, self-esteem, personal fulfillment, and distributive justice.

The findings of this study affirm this theory by revealing that, when project team members perceived their leaders as discriminating against them based on their culture, this caused resistance from the team members and conflict. An example of this is a situation in Participant H's narrative in which US team members were unhappy because of the extra time awarded to Muslim team members for prayers. The US team members felt that not giving them a corresponding amount of time for their personal use and giving time to Muslims for prayers was an indication of lack of recognition and discrimination against them. This caused tensions and conflict as the US team members demanded fairness by asking that they be awarded extra time for their own personal use.

**Rational choice theory.** The findings of the current study also supported the Rational Choice Theory and helped promote better understanding of this theory. According to this theory, humans generally base their decisions on their own strategic interests (Ritzer & Goodman, 2004; Scott, 2000). This means that when humans are confronted with a situation, they make a cost/benefit analysis of the situation. Based on the outcome of the analysis, humans then make intentional decisions regarding the

situation. In agreement, the findings of this study suggested that when team members who were not native speakers of English were faced with challenges communicating, they made an assessment of the situation (Participant E). The team members weighed the cost of speaking up openly against the benefits of staying silent. Based on the findings, participants with language barriers usually preferred staying silent, with the benefit that it saved them the embarrassment of language mistakes. This was an example of a culturally motivated intentional decision to stay silent and reserved during team meetings. Their decision to stay silent exacerbated the cultural and language barriers and caused conflict amongst the team members.

**Cross-cultural adaptation theory.** Though the findings of this study support the previously mentioned theories, the findings differ from both the Cross-Cultural Adaptation Theory and the research conducted by Panggabean et al. (2013). The Cross-Cultural Adaptation Theory suggests that, when strangers from different international cultures have a purpose-related encounter such as a software project, the individuals try to adjust their culture to adapt to the other culture (Kim, 2001). This enhances communication for the purpose of the encounter. In contrast to this theory, the findings of this study suggest that language barriers -an aspect of culture- exacerbated communication difficulty and differences. According to those findings, team members did not automatically adjust their cultures to accommodate team members from different cultures as suggested by the cross-cultural adaptation theory. The study showed that, in cases where such adjustment took place, the project manager used skills such as empathy, emotional intelligence, negotiation, and communication skills to help the team members tolerate and adjust to their fellow team members for the benefit of the project. The

findings attributed the lack of adjustment of team members to each other to a lack of skill on the part of project managers to nurture the team members to adjust to each other.

The findings of this study also differ from Panggabean et al. (2013). These researchers found that competition had a positive impact on the outcome of a project. Their findings revealed that the competitive attitudes of one culture motivated all team members to succeed. The competitive attitudes of some team members attracted the admiration of team members from another culture. This finding contradicts the ones of the current study since it was found that competition and competitive attitudes presented risks that jeopardized project completion. This is exemplified by the example of generational differences. Older team members felt that younger team members did not pay enough attention to detail and took a lot of time off. As a result, older team members had to do work not completed by younger team members. This created competition as younger team members felt that they were being falsely accused by older team members who did not want to accept their way of life. Both sides felt they were right. This competition diminished collaboration on the project work, putting at risk the completion of the project. Contrary to the authors cited just above, competition here seems to have been harmful to the project.

To summarize, the interpretation of the findings sections connected the findings of this study with the theories that framed the study. This connection helped provide a better understanding of those theories, thus contributing to the literature. The section also pointed out an example of how the findings differed from the literature reviewed for this study. The theories connected to the findings of this study are Avruch's



conceptualization of culture, the Human Needs Theory, the Rational Choice Theory, and the Cross-Cultural Adaptation Theory.

### **Discussion on How Current Study Addressed Identified Gaps**

This section reviews how the findings of this study addressed the gaps identified in the literature reviewed. This section also describes how this study adds to the body of knowledge related to cross-cultural complexities and interpersonal conflict in multicultural software development project teams. As a reminder to the reader, the gaps identified were categorized as knowledge, context, methodology, and theory gaps. The discussion in this section is broken down into the mentioned categories under each of the two study constructs— Cross-Cultural Interpersonal Conflict and Multicultural Teams, and Multicultural Competencies for Software Development Project Managers.

#### **Cross-Cultural Interpersonal Conflict and Multicultural Teams**

**Knowledge gap.** Three knowledge gaps were identified. The first knowledge gap identified was that existing studies explored cross-cultural complexities, but fell short of linking these complexities to the need for specialized skills required by project managers to effectively deal with these complexities, minimize, and resolve interpersonal conflict and boost collaboration and productivity in project teams (Ogbodo, 2014; Barrett & Oborn, 2010; Park & Kang, 2012; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013). The current study addressed this gap by exploring both the cross-cultural complexities that are common in a multicultural software development project team, and the skills needed by the project manager to overcome these challenges in order to be successful at leading this multicultural software development project teams. The current study revealed three common cross-cultural complexities -language barriers, mistrust, and competitive

attitudes- and three skills needed by the project manager to thrive—communication, negotiation, and emotional intelligence skills.

The second knowledge gap identified was that, although studies of a similar nature had been carried out in other industries, none were conducted in the software development realm; presenting therefore a lack of knowledge in the software development realm (Ochieng, Price, Ruan, Egbu, & Moore, 2013; Meckl & Johanning, 2012; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013). The current study addressed this gap by focusing on the software development project realm. Twelve experienced project managers with five or more years of experience managing multicultural software development project teams participated in the study. The experiences of the participants included project, program, portfolio, consulting, and executive leadership experience in the software development realm.

In the third and final knowledge gap, Meckl & Johanning (2012) found that cultural diversity reduced conflict and improved team performance. This finding presented an opportunity for validation by the current study, which contradicted this finding by revealing that cultural diversity indeed caused conflict. This was very well expressed by Participant C who said:

Building team trust and cohesion was the biggest challenge. This was due to cultural biases, which were a major factor of individual perception. Conflict often resulted because of cultural biases, especially during certain interactions that were considered taboo in one culture, but completely acceptable in another. This prevented team dialogue about the issues at hand and hindered the development of team trust and cohesion.

**Context gap.** The literature reviewed revealed one context gap. According to the literature reviewed, some studies investigated multicultural project teams, but they did not focus on the software development project team (Ochieng, Price, Ruan, Egbu, & Moore, 2013; Meckl & Johanning, 2012; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013). To address this gap, the current study limited the context of the study to multicultural software development project teams and explored the experiences of 12 software development project managers.

**Methodology gap.** Three methodology gaps emerged from the literature review. The first gap pointed out that a number of past studies were limited to the use of quantitative research designs (Ogbodo, 2014; Meckl & Johanning, 2012). The current study addressed this gap by using qualitative multiple case study design for the study. The second methodology gap exposed that, although case study design had been used in one study in the past, it was limited to a single case study design (Barrett & Oborn, 2010). The current study addressed this gap by utilizing a multiple case study design. The third and final methodology gap revealed that other studies utilized qualitative study designs other than case study (Ochieng, Price, Ruan, Egbu, & Moore, 2013; Park & Kang, 2012). The current study addressed this gap by using a qualitative multiple case study design.

**Theory gap.** The literature reviewed presented a single theory gap. A past study identified and called for the need for future studies to elaborate on the theoretical framework for cultural diversity by capturing taxonomically the effects of leadership in multicultural teams (Meckl & Johanning, 2012). The current study addresses this gap in four different ways. First, it presents a theoretical model that is a synthesis of the theories

that form the theoretical framework for this study. This framework helped provide a lens through which to understand the findings of this study. Second, the current study focuses on the software development project team, satisfying the taxonomical aspect of the gap. Third, the study identified three cross-cultural complexities -language barriers, mistrust, and competitive attitudes- that can impact leadership in multicultural teams. Fourth and finally, the current study identified three skills— communication, negotiation, and emotional intelligence skills—required by the project manager to counter these cross-cultural challenges, diminish/resolve conflict, and exert a more productive influence on the multicultural team.

### **Multicultural Competencies for Software Development Project Managers**

**Knowledge gap.** Concerning the single knowledge gap identified in the literature, existing studies determined the lack of specialized skills by managers leading multicultural initiatives (Keil, Lee, Deng, 2013; Boroş et al., 2010; Jaakkola et al., 2010; Duus & Cooray, 2014). The findings of the current study addressed this gap as it revealed three specialized skills needed by project managers to ensure their success in multicultural software development project teams. The three skills identified are communication, negotiation, and emotional intelligence skills. To elaborate the emotional intelligence skills, here is what Participant L said:

It is important to understand that there are many faces to the team. This makes the team multicultural. It is not a black and white or male and female thing any more. The world is diverse. We work with people with very different backgrounds and ideas. Project managers need to understand and be sensitive to these differences to form well performing teams. To do this, a PM needs emotional intelligence skills.

Skills need to focus more on an esprit de corps style of leadership and inspiring the team (individually and collectively) to want to do well and competently execute the project.

**Context gap.** The literature review revealed one context gap under this construct. This gap was that, although existing studies investigated cross-cultural project teams, none focused on the multicultural skills requirements for the software development project Manager (Boroş et al., 2010; Duus & Cooray, 2014). The current study addressed this gap by exploring the experiences of participants and identifying three critical skills needed by the software develop project manager to thrive in multicultural project teams. The skills derived from the current study are communication, negotiation, and emotional intelligence skills.

**Methodology gap.** Two methodology gaps emerged from the literature review. First, existing studies were conducted using quantitative methods (Richards & Bilgin, 2010). This was resolved by using qualitative multiple case study design to explore the skills needed by project managers to successfully lead software development project teams. Second and finally, although past studies utilized qualitative designs, none used case study (Boroş et al., 2010). The current study addressed this gap by utilizing multiple case study to explore the skills that would support the project manager's success in a multicultural software development project team.

### **Limitations**

This study is limited in terms of the generalizability of its findings. As a reminder to the reader, this study investigated project managers for multicultural software development project teams in the United States. Its findings are limited in that they may

only be generalizable to project managers within this group of practitioners -project managers for multicultural software development project teams in the United States. The findings of this study reflect the experiences of project managers in this defined group and may differ from findings related to project managers in other realms. Therefore, this limits the generalizability of the findings of this study to this defined group of project managers.

### **Recommendations**

Since studies have shown that multicultural teams outperform monocultural teams (Ochieng & Price, 2009), multinational organizations have increasingly implemented the use of multicultural teams (Mitchell, 2009). Although organizations have increasingly used these teams, some research findings have noted the possibility of detrimental project failures resulting from interpersonal conflict due to cultural differences amongst the project team members (Park & Kang, 2012). Additionally, Ochieng and Price (2009) suggested an ever-increasing risk of project failure due to the lack of competent project leaders to effectively manage multicultural project teams, mitigating and resolving project team conflict resulting from the cultural differences within multicultural team members. Popescu, Borca, Fistis, and Draghici (2014) noted that today projects have dramatically increased in complexity, as project teams increasingly comprise of people from various cultural backgrounds that come together and integrate as a whole, in order to deliver the project. To succeed at managing the complex nature of projects in a multicultural environment, project managers require a certain skillset. The skill requirements for a project manager in multicultural information technology projects have not been widely studied in the past (Keil, Lee, Deng, 2013).

The current study found interpersonal team conflict is caused by three cross-cultural challenges, namely, language barriers, cycles of mistrust, and competitive attitudes amongst multicultural team members. In order to address these challenges posed by multicultural teams in a project setting, I offer three recommendations for practical applications and four recommendations for further studies.

**Practical applications.** The current study found that effectively resolving team conflict and overcoming the cross-cultural challenges characteristic of multicultural teams require project managers to have excellent communication, negotiation, and emotional intelligence skills. I base my recommendations for practical applications on these skills and the need for conflict resolution training.

**Communication skills.** The first practical application relates to enhancing the communication skills of project managers for multicultural teams. Based on the analysis of the interview data from participants, project managers need to master how to communicate with team members in a way that team members find meaningful and inclusive. Providing the project manager with training on how best to communicate with team members in ways that make team members feel valued, increases productivity, and diminishes tensions that could result in conflict and cause project failure. Based on the findings of this study, I recommend that organizations invest in diversity training and periodic refresher training for their project managers to equip them with the proper communication skills they need to lead culturally diverse teams.

**Negotiation skills.** Based on the analysis of the interview data from participants, negotiation skills go together with communication skills. If an organization makes frequent use of team members from particular cultures, it would be beneficial to invest in

having its project managers immersed in those cultures. Based on the findings of this study, immersion compliments formal training on managing diversity. Immersion also helps the project manager to become better acquainted with ways of communicating and negotiating effectively with those cultures as the project manager is able to speak the “language” of those team members.

***Emotional intelligence skills.*** The analysis of the interview data supports my recommendation on emotional intelligence skills, which is two-fold. Based on the findings of this study, organizations must invest in training their project managers to understand, appreciate, and embrace diversity. Second, project managers must learn to be tolerant and make the project team a welcoming environment for all team members so that all team members will feel free to present their thoughts without fear of retribution based on their cultural background. Tolerance entails having understanding and empathy towards language barriers, accents, and religious beliefs and practices. According to the participants, productive ideas were generated if employees felt that their culture did not affect how their ideas were judged by their teammates.

***Conflict Resolution Training.*** I recommend that a conflict resolution specialist provide training to project managers on the skills revealed in my study. As a reminder, the training should cover the skills of communication, negotiation, and emotional intelligence. Periodic training on these skills may help equip and keep project managers abreast of the skills they need to succeed in leading their multicultural teams.

**Future Research.** To advance this study, I make five recommendations for future research. Four recommendations are categorized under expansion of the current study. The fifth recommendation relates to the utilization of different research methods.



***Expansion of the study.*** Under this category, I make four recommendations. The first recommendation is for a future study to involve a larger number of participants expanding the sample. Second, since this study focused on the project manager, future research can expand to include other members of the software development project team. Third, since the current study focused on project managers in the United States, future study could be regional and/or continental. Fourth, future study could expand to focus on project managers in other related industries. Expanding future studies in these four ways would help confirm the results of the current study. Additionally, an expansion of the current study in the ways mentioned above could help generate other testable questions/hypotheses that can be tested with quantifiable methods.

***Utilization of different research methods.*** The fourth recommendation is to perform the same study utilizing a mixed methods approach. To this effect, I recommend utilizing a qualitative exploratory case study and a quantitative two-factor analysis of variance. This would help confirm the findings of the current study. The use of surveys as a quantitative data collection technique will make it possible to sort the opinion of more participants. Getting more people to participate in a mixed methods study will substantiate the data collected, thereby confirming the results.

To summarize, existing literature revealed that organizations are increasingly utilizing multicultural teams to realize projects. Furthermore, research showed that software projects have dramatically increased in their complexity and project teams have increasingly comprised of people from various cultures (Mitchell, 2009; Ochieng & Price, 2009; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013; Richards & Bilgin, 2012). Other research revealed the lack of skilled project managers to effectively manage

increasingly diverse project teams (Ochieng & Price, 2009). Yet another study points out that the skills needed by a project manager to succeed at leading a multicultural project team have not been fully explored (Keil, Lee, & Deng 2013). The current study found that in order to effectively manage the cross-cultural complexities—language barriers, cycles of mistrust, and competitive attitudes—posed by multicultural teams, project managers need communication, negotiation, and emotional intelligence skills. In line with these findings, I made three recommendations for practical implications and four recommendations for further studies. My recommendations for practical implications included training on communication, negotiation, and emotional intelligence skills. Similarly, my four recommendations for further research are summarized as expansion of the study.

### **Contribution to the Scholarship of Conflict Analysis and Resolution**

This study was based on culture and conflict, as software development is becoming increasingly distributed across different locations. Virtual and physical globalization is the new norm for doing business (Mitchell, 2009; Ochieng & Price, 2009; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013; Richards & Bilgin, 2012). These new and increasingly common trends make it imperative for multicultural business leaders to know, understand, and deal with the cultural obstacles that could impede their investments, ventures, and strategic initiatives. In light of this, the central contribution of this study is that it highlighted language barriers, cycles of mistrust, and competitive attitudes as the cross-cultural complexities that have challenged the conflict resolution efforts of project managers for software development projects in a multicultural team setting.

A second contribution of this study is that it uncovered and proposed communication, negotiation, and emotional intelligence capabilities as skills needed to effectively deal with cross-cultural issues. These skills contribute towards minimizing, eliminating, and/or mitigating the risk of cross-cultural interpersonal conflict that might erupt and disrupt the progress of a software development project involving multicultural team members. A third contribution of this study is that the findings of the study helped provide a better understanding of the four theories that helped frame the study. A fourth and final contribution of the study is the development of a synthesized theoretical model to explain the relationship between needs, culture, and interpersonal conflict in a multicultural software development project team.

Although multicultural teams have proven to be more productive (Ochieng & Price, 2009), the use of such teams can also be counterproductive if not appropriately handled (Park & Kang, 2012). In this study, culture was perceived as plural and situational (Avruch, 2013), and suggestions were uncovered about ways of minimizing interpersonal conflict and fostering cross-cultural team collaboration.

### **Summary**

Chapter five began by restating the research problem, emphasizing the two constructs of the study—cross-cultural complexities in software development teams and the skills needed to overcome these challenges so as to successfully resolve interpersonal conflict in these teams. This chapter also reminded the reader of the purpose of the study which was to first, explore the cross-cultural complexities and second, explore the skills needed. The chapter then went on to interpret the results and citing examples that helped provide a better understanding of the theories that framed the study. In addition, the

interpretation pointed out differences between the findings of the study and the literature reviewed in Chapter two, explaining possible reasons to the differences. It also reviewed limitations of the study, which could have influenced the findings of the study. Finally, the chapter provided the recommendation for practical application and for further studies. Chapter five concluded with discussing the contributions made by the study to the scholarship of conflict analysis and resolution.

### **Conclusion**

The problem explored in this study was that of interpersonal conflict caused by cross-cultural complexities in multicultural software development project teams. Cross-cultural complexities pose challenges hindering the ability of software development project managers to successfully lead multicultural teams (Ochieng & Price, 2009). Previous related research supported the need for this study. According to past studies, globalization is on the rise in today's business world (Mitchell, 2009; Ochieng & Price, 2009; Ochieng, Price, Ruan, Melaine, & Ogbu, 2013; Richards & Bilgin, 2012). While organizations are increasingly striving to take advantage of new business opportunities in other parts of the world and achieve global performance indicators by capturing and sustaining global market leadership in their respective industries, software manufacturers are also going global to take advantage of needed overseas talent and bring software development closer to its users (Jaakkola, Heimbürger, & Linna, 2010). As a result, software development has become increasingly distributed across the world, thereby requiring multinationals to work in multicultural teams (Jaakkola et al., 2010; Park & Kang, 2012).

Furthermore, past studies showed that cultural differences amongst project team members caused conflict, misunderstanding, and poor project performance (Ogbodo, 2014; Ochieng, Price, Ryan, Egbu, & Moore, 2013; Park & Kang, 2012). These studies also revealed that in order to minimize the challenges posed by cross-cultural complexities, project managers need to understand the cultures represented on their project teams. An understanding of the cultures of the project team members prepares the project manager to utilize the skills required to narrow the cultural gaps and ensure success with multicultural teams. Other studies showed that the skills needed by project managers to successfully manage multicultural information technology project teams have not been extensively studied (Keil, Lee, & Deng 2013). By exploring cross-cultural interpersonal conflict resolution in multicultural software development teams, this study suggested ways in which the project manager can minimize the associated caveats and maximize the opportunities that come with multicultural teams.

In order to develop a better understanding of the common cross-cultural challenges in software project teams, this study established three specific objectives. The first objective was to explore the common cross-cultural complexities experienced by project managers. This objective was addressed by the study in that data analysis revealed that language barriers, cycles of mistrust, and competitive attitudes were the most common cross-cultural complexities that project managers encountered while leading software development project teams.

The second objective was to explore the strategies used by experienced project managers to overcome these challenges. To attain this objective, an analysis of the data collected for the current study showed that communication, negotiation, and emotional

intelligence skills are the necessary skills needed by software development project managers to effectively address the challenges revealed in objective one.

The third objective of the study was to make recommendations for practical applications and further research. To fulfill this objective, an analysis of the data collected from the participants revealed that the recommendations for practical applications included training of project managers on communication, negotiation, and emotional intelligence skills. These skills would enhance the ability of the project manager to understand the cultures on the project team and therefore lead the team members more effectively. The recommendations for future study included expanding the current study and utilizing mixed methods to validate the results of the current study.

Four theories framed the study to support the three objectives of this study. The first of theoretical element was Avruch's conceptualization of culture. According to Avruch (2013), culture is socially distributed across a population; culture is psychologically distributed within individuals across a population; culture as a derivative of experience, is deeply connected to ongoing or past social practice. The second element was the Human Needs Theory. According to this theory, cultures are characterized by certain needs which if absent, threatened, or scarce, oftentimes result in conflict (Maslow, 1970; Burton, 1979). The third of theoretical element was the Rational Choice Theory. This theory states that humans generally base their decisions on their own strategic interests (Ritzer & Goodman, 2004; Scott, 2000). The fourth element was the Cross-Cultural Adaptation Theory. It philosophizes that when strangers from different international cultures have a purpose-related encounter such as working together on a project; deculturation and acculturation occur (Kim, 2001).

This study is significant in a number of ways. The first one is that it helped provide a better understanding of the theories that framed the study. Second, the study identified three of the most common challenges faced by project managers leading multicultural teams. Third, the study identified three important skills needed by the project manager to succeed in leading multicultural teams. Fourth and lastly, the study made recommendations for practical applications and future research to practitioners and researchers.

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## Appendix A: Demographic Characteristics Frequency Tables

Table 3

*Gender*

Characteristic	Frequency	Percent	Valid Percent
Male	7	58	58
Female	5	42	42
Unknown	0	0	0

*Note.* N=12.

Table 4

*Age*

Characteristic	Frequency	Percent	Valid Percent
18-21	0	0	0
22-25	0	0	0
26-30	0	0	0
31-40	0	0	0
41-50	7	58	58
51-60	4	33	33
60-over	1	8	8

*Note.* N=12.

Table 5

*Education Level*

Characteristic	Frequency	Percent	Valid Percent
< High School	0	0	0
High School	0	0	0
Some College	0	0	0
2-Yr College Degree (Associates)	0	0	0
4-Yr College Degree (Bachelor's)	4	33	33
Master's Degree	7	58	58
Doctoral Degree (PhD, DM, DBA)	1	8	8
Professional Degree (MD, JD)	0	0	8

*Note.* N=12.

Table 6

*Multicultural Software Development Project Management Experience*

Characteristic	Frequency	Percent	Valid Percent
0-5	0	0	0
6-8	3	25	25
9-11	2	17	17
12-14	1	8	8
15-17	1	8	8
18-20	5	42	42
21-over	0	0	0

*Note.* N=12.

## Appendix B: Research Advertisement

**RESEARCH ADVERTISEMENT - Research Subjects Wanted**

NOVA SOUTHEASTERN UNIVERSITY (NSU)  
College of Arts, Humanities, and Social Sciences  
3301 College Avenue · Fort Lauderdale, Florida 33314-7796  
(954) 262-3000 · 800-262-7978 · Fax: (954) 262-3968  
Email: [cahss@nsu.nova.edu](mailto:cahss@nsu.nova.edu) · <http://cahss.nova.edu>

Participate in a research study to Explore The Multicultural Skills Needed by a Software Development Project Manager to Resolve Cross-Cultural Interpersonal Conflict in a Multicultural Software Development Project Team.

Subjects will be asked to describe their experience managing multicultural software development project teams and resolving cross cultural interpersonal conflict among the team members of such teams. Each participant will be interviewed for about an hour. Another hour will be needed by the participant at a later time to review the transcript of the interview for correctness. Additional time may be needed to review revised transcripts based on feedback from the participants. The study is free and on a volunteer basis only.

If you are interested in participating, please respond with the following information in an email to [ha172@nova.edu](mailto:ha172@nova.edu) by December 4th, 2015:

- i. Country in which you have practiced / are practicing software development project management within the last five years.
- ii. Project Management Institute-Project Management Professional certification status.
- iii. Number of years managing software development projects.
- iv. Number of years managing multicultural software development project teams.
- v. Willingness to be interviewed via Skype and a web camera.
- vi. Willingness to sign an informed consent form voluntarily.

The Principal Investigator (PI) for this project is Hilary Aza.  
If you have any questions for the PI, please call 817-219-1156 or email [ha172@nova.edu](mailto:ha172@nova.edu)

## Appendix C: Interview Guide and Observational Rubric

Table 7

*Semi-structured Interview Guide*

Category	Questions
Identity & screening	<p>Introduce yourself.</p> <p>What is your profession?</p> <p>In which country do you practice your profession?</p> <p>For how long have you been PMI-PMP certified?</p> <p>How many years of experience do you have managing multicultural software development project teams?</p>
Demographic characteristics	<p>What is your gender? (Male/Female)</p> <p>What is your age?</p> <p>In what state do you reside and work?</p> <p>What is the highest level of education you have completed?</p> <p>What is your role in the industry (self-employed, employee, consultant, etc.)?</p>
Construct #1: Cross-cultural conflict management and resolution	<p>Can you describe your perception of team members from different cultures belonging to and working in the same software development project team in the same location or in a distributed team?</p> <p>What is your experience managing multicultural software development project teams?</p> <p>What are the challenges/successes you have encountered managing and resolving cross-cultural conflict between project team members from different cultures in a multicultural software development project team?</p> <p>Why do you think you succeeded and/or failed?</p> <p>How did team members from various cultures understand and react to project tasks?</p> <p>What are your thoughts about communication within a multicultural software development project team?</p> <p>Describe any cultural challenges you encountered managing geographically distributed software development teams working on a common initiative.</p> <p>What are your thoughts about the causes of such challenges?</p>
Construct #2: Multicultural skills	<p>What is your perception of the skills needed by a software development project manager to succeed at managing and resolving conflict in multicultural software development project teams?</p> <p>What do you think about formal training of software development project managers in multicultural competencies?</p> <p>Describe your perception of practical experience as a training mechanism for multicultural competencies.</p>
Conclusion	Any final thoughts on anything we have/have not discussed?



Table 8

*Observational Rubric for Nonverbal Cues*

	Not present	Partially present	Present
Eye contact			
Vocal resonance			
Body language			
Content			

**Rubric key**

**Eye contact.** The participant is keeping eye contact with the interviewer.

**Vocal resonance.** The participant is speaking loudly and clearly, with the use of an appropriate tone of voice.

**Body language.** The participant has good demeanor (i.e., good posture, proper gestures, and warm expressions).

**Content.** The participant is presenting relevant information.

**Not present.** The skill is not present.

**Partially present.** The skill is partially present and partially not present.

**Present.** The skill is present.

## Appendix D: Informed Consent

Consent Form for Participation in the Research Study Entitled: “A Case Study to Explore the Multicultural Skills Needed by a Software Development Project Manager to Resolve Cross-Cultural Interpersonal Conflict in a Multicultural Software Development Project Team.”

Funding Source: None.

IRB protocol #: 2015-127

Principal investigator(s)

Hilary Aza, PhD Candidate—Conflict Analysis and Resolution

C/o Professor Cheryl Duckworth

Department of Conflict Resolution Studies

College of Arts, Humanities and Social Sciences

Nova Southeastern University, Fort Lauderdale, FL

301.768.0241

For questions/concerns about your research rights, contact:

Human Research Oversight Board (Institutional Review Board or IRB)

Nova Southeastern University

(954) 262-5369/Toll Free: 866-499-0790

[IRB@nsu.nova.edu](mailto:IRB@nsu.nova.edu)

Site Information (if applicable)

Address: The site will be the [PMI Credentialed PMPs](#) LinkedIn Group located at:

<https://www.linkedin.com/groups/40431>

### **What is the study about?**

This study involves research to explore the possible cultural competencies that a software development project manager for a multicultural software development team needs to acquire in order to be successful at managing and resolving cross cultural interpersonal conflict amongst members of a software development project team.

**Why are you asking me?**

You are invited to participate because you are PMI-PMP certified, and a software development project manager with at least five years of experience managing multicultural software development project teams in the United States of America.

**What will I be doing if I agree to be in the study?**

The participant will participate in a Skype or iPhone FaceTime interview in which the investigator, Mr. Hilary Aza will ask the participant 21 questions about the participant's experience managing a multicultural software development project team for a particular project of choice. The investigator will ask the participant questions related to how the participant managed and/or resolved conflict between multicultural project team members. There will be a web camera to allow the investigator to gather non-verbal cues from the participant.

There will be no compensation of any kind for participating in the study. The study is totally voluntary. If it is determined at any time that the participant does not meet the selection criteria or lied about their experience in order to meet the selection criteria, the participant will immediately cease to be part of the study.

Each participant will participate in an interview lasting for about an hour. The researcher will record the participant's responses by typing them into a word processor.

Subsequently, each participant will be asked to review a transcript of their narrative for accuracy. This should take about another hour. If there are revisions resulting from the participant's review, the investigator will provide the revised copy to the participant for review. This will be repeated until a final copy is agreed upon by the participant and the investigator.

**Is there any audio or video recording?**

There will be no audio or video recording.

**What are the dangers to me?**

There is no risk/danger to you.

If you have any questions about the research, your research rights, or have a research-related injury, please contact Hilary Aza and/or Dr. Cheryl Duckworth. You may also contact the IRB at the numbers indicated above with questions as to your research rights.

**Are there any benefits for taking part in this research study?**

There are no direct benefits.

**Will I get paid for being in the study? Will it cost me anything?**

There are no costs to you or payments made for participating in this study.

**How will you keep my information private?**

The interview questions will not ask you for any information that could be linked to you.

The transcripts of the interview responses will not have any information that could be linked to you. As mentioned, the transcripts will be destroyed by shredding 36 months after the study ends. In addition, all information obtained in this study is strictly confidential unless disclosure is required by law. The IRB, regulatory agencies, and the dissertation chair may review research transcripts.

**What if I do not want to participate or I want to leave the study?**

You have the right to leave this study at any time or refuse to participate. If you do decide to leave or you decide not to participate, you will not experience any penalty or loss of services you have a right to receive. If you choose to withdraw, any information collected about you **before** the date you leave the study will be kept in the research records for 36

months from the conclusion of the study and may be used as a part of the research.

**Other Considerations:**

If significant new information relating to the study becomes available, which may relate to your willingness to continue to participate, this information will be provided to you by the investigators.

**Voluntary Consent by Participant:**

By signing below, you indicate that

- this study has been explained to you
- you have read this document or it has been read to you
- your questions about this research study have been answered
- you have been told that you may ask the researchers any study related questions in the future or contact them in the event of a research-related injury
- you have been told that you may ask Institutional Review Board (IRB) personnel questions about your study rights
- you are entitled to a copy of this form after you have read and signed it
- you voluntarily agree to participate in the study entitled “*A Case Study to Explore the Multicultural Skills Needed by a Software Development Project Manager to Resolve Cross-Cultural Interpersonal Conflict in a Multicultural Software Development Project Team.*”

Participant's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Participant's Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of Person Obtaining Consent: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix E: Themes Frequency Tables

Construct #1: Cross-cultural conflict management and resolution

Table 9

*Major Themes of Cross-cultural Management and Resolution*

Theme	Frequency	Percent
1. Language barriers exacerbated difficulty and differences in communication	11	92
2. Cycles of mistrust diminished team spirit and collaboration	7	58
3. Competitive attitude made team members from one culture to disqualify task outputs by team members from another culture	7	58

*Note.* N=12.

Construct #2: Multicultural skills

Table 10

*Major Themes of Multicultural Skills*

Theme	Frequency	Percent
1. PM needs to have excellent communication and negotiation skills	12	100
2. PM needs emotional intelligence skills	10	83

*Note.* N=12.