HOW CULTURAL INTELLIGENCE HELP PROJECT MANAGERS TO
FACE CROSS-CULTURAL COMPLEXITIES IN CONSTRUCTION
PROJECTS IN LEBANON AND THE GULF

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**ABSTRACT**

Globalization has had a significant impact on all businesses and industries including construction. It reduced distance and time between all points of the world in near real-time which stimulated international projects. Lebanon as well as the Arab Gulf, have always had a culturally mixed societies and always experienced cultural differences due to many reasons. Working with people from different cultures can present a unique set of problems and challenges. The concept of Cultural Intelligence (CQ) looks at the ability of effectively adapting to different cultures. On the surface, it would seem that project managers operating in Lebanon and the Gulf, should have a high CQ due to the culturally diverse population in the Middle East. This paper seeks to understand the level of awareness of CQ and determine if it is being used to solve cross-cultural complexities in the construction industry of Lebanon, KSA, Kuwait, Qatar, Bahrain and UAE. An online survey and an in-depth interview were developed and administered to project managers who have worked in Lebanon and the Gulf. Finally, findings were developed and explained based on the hypothesis posed and the research questions.
It is with my genuine gratefulness and warmest regards that I dedicate this work to my mother Katy and my late father Antoine, who never stopped giving me from themselves and never failed to offer the greatest care and support, specially through the toughest moments.
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Every single person of you has instilled in me the confidence and the motivation to succeed and to transform the impossible into possible.

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# Table of Contents

## Contents

- ABSTRACT ................................................................................................................................. 4
- Dedication .................................................................................................................................. 5
- Acknowledgment ....................................................................................................................... 6
- Table of Contents ..................................................................................................................... 7
- List of Illustrations .................................................................................................................... 10
- List of Tables ............................................................................................................................ 12
- List of Acronyms ....................................................................................................................... 13

### 1. INTRODUCTION ........................................................................................................... 14
  - 1.1. Purpose ............................................................................................................................. 15
  - 1.2. Anticipated Outcome ....................................................................................................... 15
  - 1.3. The Researcher .................................................................................................................. 16
  - 1.4. Research Structure ......................................................................................................... 16

### 2. LITERATURE REVIEW .................................................................................................. 18
  - 2.1. Lebanon Overview .......................................................................................................... 18
  - 2.2. The Gulf Overview ......................................................................................................... 19
  - 2.3. Organizational culture .................................................................................................... 23
  - 2.4. Project Management Industry ......................................................................................... 24
    - 2.4.1. Project Management ................................................................................................. 24
    - 2.4.2. Project Managers ..................................................................................................... 25
    - 2.4.3. Project Teams ............................................................................................................. 27
  - 2.5. Multicultural settings ....................................................................................................... 29
    - 2.5.1. Defining culture .......................................................................................................... 29
    - 2.5.3. Cultural diversity (multicultural settings) ................................................................. 31
  - 2.6. Conflict resolution ........................................................................................................... 32
    - 2.6.1. What is conflict? ........................................................................................................ 32
    - 2.6.2. Conflict in Project Management ............................................................................... 33
    - 2.6.3. Conflict resolution styles ......................................................................................... 33
    - 2.6.4. Conflict resolution and culture ............................................................................... 36
  - 2.7. Cultural intelligence ......................................................................................................... 38
    - 2.7.1. Border crossing ......................................................................................................... 39
    - 2.7.2. What is cultural intelligence?.................................................................................... 39
2.7.3. Cultural Intelligence in engineering and construction ........................................40

2.7.4. Cultural Intelligence structure ........................................................................40

2.7.5. Assessment and improvement of Cultural Intelligence .................................41

3. PROBLEM DEFINITION .........................................................................................43

4. OBJECTIVE AND RESEARCH QUESTIONS .......................................................44

5. RESEARCH METHODOLOGY .............................................................................45

5.1. Data Collection .................................................................................................45

5.1.1. Online Surveys ............................................................................................46

5.1.2. In-depth Interviews ......................................................................................47

5.2. Research Population .........................................................................................48

5.2.1. Population identification ..............................................................................49

5.3. Validation ..........................................................................................................51

5.3.1. Online survey questionnaire validation .......................................................51

5.3.2. Interview Questionnaire Validation ............................................................62

6. RESULTS ANALYSIS ..........................................................................................64

6.1. Survey results and analysis ..............................................................................65

6.2. Interview results and analysis .........................................................................77

7. RESULTS INTERPRETATION ..............................................................................93

7.1. Findings development .......................................................................................93

7.2. Testing hypotheses ..........................................................................................96

7.3. Answering research questions .......................................................................96

7.4. Summary of findings ......................................................................................98

7.5. Comparing Lebanon and the Gulf .................................................................100

7.6. Comparing the Gulf Countries .......................................................................111

7.7. The benefits of Cultural Intelligence ..............................................................127

8. GENERAL INSIGHTS .........................................................................................129

8.1. Limitations ....................................................................................................129

8.2. Future Directions .........................................................................................129

8.3. Ethical Considerations ..................................................................................130

9. RESEARCHER REFLECTIONS .......................................................................132

10. CONCLUSION ..................................................................................................133

11. REFERENCES ..................................................................................................134

12. APPENDICIES ..................................................................................................145
Appendix A: Letter of Invitation - Online Survey .................................................. 145
Appendix B: LinkedIn message .......................................................................... 147
Appendix C: Online Survey .................................................................................. 148
Appendix D: Letter of Invitation - Interview Questionnaire .............................. 151
Appendix E: Pre-Interview Questionnaire .............................................................. 153
Appendix F: Interview Questionnaire .................................................................. 154
Appendix G: Institutional Review Board IRB Application From ...................... 155
Appendix H: Consent Form for Interview Participants ...................................... 157
Appendix I: Investigator’s Verification of Explanation ....................................... 159
Appendix J: Thank You Letter ............................................................................. 160
List of Illustrations

Figure 1: Expatriate workforce population as a percentage of total workforce 2006..................20
Figure 2: The four factor model of Cultural Intelligence .........................................................41
Figure 3 – Basic Checks SPSS data validation.................................................................52
Graph 1 – Survey: Respondents’ gender ........................................................................66
Graph 2 – Survey: Respondents’ age brackets .................................................................66
Graph 3 – Survey: Respondents’ level of education .........................................................67
Graph 4 – Survey: Respondents’ years of experience .......................................................68
Graph 5 – Survey: Respondents’ projects approximate total value ...................................68
Graph 6 – Survey: Lebanon and Gulf Countries Results ..................................................69
Graph 7 – Survey: Other Arab Countries Results ..............................................................70
Graph 8 – Survey: Other Countries Results ......................................................................71
Graph 9 – Survey: CQ general knowledge, Q7 to Q9 ......................................................72
Graph 10 – Survey: Metacognitive CQ (Q10, Q11) and Cognitive CQ (Q12 to Q14) ........72
Graph 11 – Survey: Motivational CQ (Q15, Q16) and Behavioral CQ (Q17 to Q19) ..........74
Graph 12 – Survey: CQ training questions, Q20 to Q23 ....................................................76
Graph 13 – Survey: Overall CQ experience questions, Q24 and Q25 ..............................77
Graph 14 – Interview: Respondents’ gender .................................................................78
Graph 15 – Interview: Respondents’ age brackets ...........................................................78
Graph 16 – Interview: Respondents’ level of education ....................................................79
Graph 17 – Interview: Respondents’ years of experience ................................................79
Graph 18 – Interview: Respondents’ projects approximate total value .............................80
Graph 19 – Interview: Lebanon and Gulf countries results .............................................81
Graph 20 – Interview: Other Arab countries results .........................................................81
Graph 21 – Lebanon vs Gulf: CQ general knowledge .....................................................101
Graph 22 – Lebanon vs Gulf: Metacognitive CQ ............................................................101
Graph 23 – Lebanon vs Gulf: Cognitive CQ .................................................................103
Graph 24 – Lebanon vs Gulf: Motivational CQ ..............................................................105
Graph 25 – Lebanon vs Gulf: Behavioral CQ .................................................................106
Graph 26 – Lebanon vs Gulf: CQ training .....................................................................109
Graph 27 – Lebanon vs Gulf: Overall CQ experience ....................................................110
Graph 28 – Gulf Countries: CQ general knowledge Q7 ................................................111
Graph 29 – Gulf Countries: CQ general knowledge Q8 ................................................112
Graph 30 – Gulf Countries: CQ general knowledge Q9 ................................................112
Graph 31 – Gulf Countries: Metacognitive Q10 ............................................................113
Graph 32 – Gulf Countries: Metacognitive Q11 ............................................................114
Graph 33 – Gulf Countries: Cognitive Q12 .................................................................115
Graph 34 – Gulf Countries: Cognitive Q13 .................................................................116
Graph 35 – Gulf Countries: Cognitive Q14 .................................................................117
Graph 36 – Gulf Countries: Motivational Q15 .............................................................118
Graph 37 – Gulf Countries: Motivational Q16 .............................................................119
Graph 38 – Gulf Countries: Behavioral CQ Q17 ..........................................................120
Graph 39 – Gulf Countries: Behavioral CQ Q18 .........................................................121
Graph 40 – Gulf Countries: Behavioral CQ Q19.................................................................122
Graph 41 – Gulf Countries: CQ training Q20.................................................................123
Graph 42 – Gulf Countries: CQ training Q21.................................................................123
Graph 43 – Gulf Countries: CQ training Q22.................................................................124
Graph 44 – Gulf Countries: CQ training Q23.................................................................124
Graph 45 – Gulf Countries: CQ overall experience Q24.................................................126
Graph 46 – Gulf Countries: CQ overall experience Q25.................................................126
List of Tables

Table 1: Estimated number of nationalities in the targeted countries ........................................ 21
Table 2: Gulf countries construction workforce distribution ......................................................... 22
Table 3: Kuwait construction workforce distribution by source ..................................................... 22
Table 4 – Cronbach’s Analysis case processing summary ............................................................... 53
Table 5 – Cronbach’s Analysis reliability statistics ........................................................................ 53
Table 6 – Q1 frequency statistics .................................................................................................. 54
Table 7 – Q2 frequency statistics .................................................................................................. 54
Table 8 – Q3 frequency statistics .................................................................................................. 54
Table 9 – Q4 frequency statistics .................................................................................................. 55
Table 10 – Q5 frequency statistics ................................................................................................ 55
Table 11 – Q6 frequency statistics ................................................................................................ 56
Table 12 – Q7 frequency statistics ................................................................................................ 56
Table 13 – Q8 frequency statistics ................................................................................................ 57
Table 14 – Q9 frequency statistics ................................................................................................ 57
Table 15 – Q20 to Q23 frequency statistics ................................................................................... 57
Table 16 – Q24 frequency statistics ............................................................................................... 58
Table 17 – Q25 frequency statistics ............................................................................................... 58
Table 18 – Q10 to Q19 descriptive statistical analysis .................................................................... 59
Table 19 – Q10 to Q19 standard deviations conclusions ranges ..................................................... 60
Table 20 – Q10 to Q19 frequency distribution analysis ................................................................... 61
Table 21 – IQ2 frequency statistics ................................................................................................ 62
Table 22 – IQ3 frequency statistics ................................................................................................ 62
Table 23 – IQ4 frequency statistics ................................................................................................ 63
Table 24 – IQ5 frequency statistics ................................................................................................ 63
Table 25 – IQ6 frequency statistics ................................................................................................ 63
Table 26 – IQ7 frequency statistics ................................................................................................ 64
Table 27 – Lebanon vs Gulf: CQ training responses ......................................................................... 108
Table 28 – Lebanon vs Gulf: Overall CQ positive averages (Q10 – Q19) ....................................... 110
Table 29 – Gulf Countries: CQ training responses ......................................................................... 125
Table 30 – Gulf Countries: Overall CQ positive averages (Q10 – Q19) .......................................... 127
List of Acronyms

ME: Middle East
PM: Project Managers
LBP: Lebanese Pound
GDP: Gross Domestic Product
UN: United Nations
UNDP: United Nations Development Programme
UK: United Kingdom
KSA: Kingdom of Saudi Arabia
UAE: United Arab Emirates
OC: Organizational Culture
PMI: Project Management Institute
PT: Project Teams
CQ: Cultural Quotient
CI: Cultural Intelligence
CQS: Cultural Intelligence Scale
1. INTRODUCTION

The world as we know it, is changing. Rapidly changing. Over the years, the term globalization became more recurrent, while the number of researches increased to study the effects and results of it. Many factors contributed to this huge change, especially modern technology. It has revolutionized our world and daily lives and it created amazing tools and resources, putting useful information at our fingertips. This big advancement brought people closer, made communication easier, distances shorter and made access to information and events in near real time. This openness to the world can be seen and experienced from any location, country or continent. In the same manner, the Middle East region and the Gulf cannot be exempted from this phenomenon, especially due to its strength and position in the international Oil and Gas market. This economic power led to a huge economic renaissance in the gulf that triggered countless projects in different sectors from infrastructure, to residential and commercial, to transportation and so on, which are all included in the construction industry. On the other hand, Lebanon is a small country of the Middle East located on the East coast of the Mediterranean Sea. Although it was once one of the leading countries in the region with one of the best economies, everything started to collapse starting the year 1975 when the Lebanese Civil War started. Although, the conflicts and disputes ended around the year 1992, yet the Lebanese economy kept on falling due to many reasons, mainly corruption. However, its geographical location with its openness to Europe through the Mediterranean, provided Lebanon with a big advantage and made it a perfect location to connect the Middle East and the Gulf with Europe and other continents through tourism, import and export…

This financial power transformed the Middle East into an international Business Hub and polarized people from all nationalities and from all over the world to settle down and work in the region, which create a very good and efficient mix of people, cultures and nationalities. This mix is so powerful that it gathered the leading brains of the world from all sectors and
industries. But with this great mix comes great challenges especially in communication and the way things are done and managed due to the difference in perspectives of different cultures.

This research will provide an insight on this cultural mix in Lebanon and in the Middle East. It will also provide a literature review on the concept of cultural intelligence in construction. In addition, it will present the results of the survey prepared by the author to comprehend the level of awareness of Project Managers of the concept of cultural intelligence and whether they are implementing its techniques or not, willingly or unwillingly. The cultural differences and conflicts fall under the Organizational Culture scope which is the governing body of organizations in management.

1.1. Purpose

The purpose of this study was to discover with a group of project managers in the construction industry, from different disciplines and companies, their personal experience on how they learned to manage multicultural project teams and how they implemented this knowledge to successfully complete a multicultural project in some countries of the Middle East. Success means achieving the project goals within the competing constraints of project management which are: time, cost, scope (quality) and risks. Also, we aimed to investigate how much the term “Cultural Intelligence” is familiar within this group of project managers and how it helped them with this multicultural journey. The researcher hoped to develop recommendations on how this learning and application occurred, in order to add to the literature which will eventually help and facilitate the multicultural team management process for other project managers.

1.2. Anticipated Outcome

Once the study is finalized, the researcher hoped to discover the most effective abilities of project managers to manage multicultural teams and what are the best learning processes of
these skills. In addition, it was hoped to find what factors helped or impeded the learning of these skills. Finally, the researcher hoped to identify any similarities or dissimilarities among the participants plans and strategies in learning and applying multicultural project management towards successful projects.

1.3. The Researcher

The researcher is a Civil Engineer with six years of experience working as a project manager and/or project team member in construction and consultancy. He was part and managed different multicultural teams in different countries as part of the multicultural setting in the Middle East. He is based in Lebanon but he also lived in every country he worked in for different periods of time. He traveled extensively, professionally and personally, to around eight different countries.

Having said the above, the researcher developed a personal experience and beliefs, all related to multiculturalism, which also affected the selection of this topic, the data analysis and interpretation.

He experienced during his professional years the importance and power of multiculturalism and he has always entered into conversations with people from different cultures on this topic. He observed some of the needed skills and was curious to gain a better understanding of the procedure to enhance personal and professional effectiveness.

Finally, the researcher found a perfect opportunity in this study to develop this curiosity and transform it into concrete knowledge that may benefit him and every professional project manager.

1.4. Research Structure

This thesis consists of ten sections which contain theoretical and empirical investigation of Cultural Intelligence topics and practices in six Arab Countries from the Middle East.
Section 2 presents a deep literature review of different topics that are prerequisites to understand the concept of cultural diversity, how it is perceived and how is it all related to Cultural Intelligence.

Section 3 defines the problem that this study tries to investigate and that was reason behind choosing the topic.

Section 4 presents the research questions and the hypotheses posed that will help to treat the problem.

Section 5 gives a detailed description of the methodology followed to identify the targeted population, collect data. Also it presents the methodology followed to validate the questionnaires and the data.

Section 6 presents the resulting data from both research methods. This sections gives insights on the demographics of the population and their responses. In addition, it analyzes the results and reasons the numbers.

Section 7 interprets the results. In this section, findings are developed, hypotheses are tested and research questions are answered. Also, comparison between all countries will be presented.

Section 8 explores some general insights about the thesis. It describes the study’s limitations and how it affects practice. In addition, it addresses future directions on the studied topic and some ethical considerations.

Section 9 describes the researcher’s reflections on the topic and the findings and it described how it agree or disagree with his experience and expectations.

Section 10 is the final section. It concludes the study and it summarizes again the major findings of the research.
2. LITERATURE REVIEW

2.1. Lebanon Overview

Throughout history, Lebanon was and still is a socially and economically liberal country. Out of its all economic sectors, the service sector is the most developed. For most of the Arab countries, Lebanon is a target location for investment, tourism and personal recreation. The main reasons behind it is that Lebanon is a touristic country with breathtaking nature (which isn’t available in most of the Arab countries), its developed banking sector, the existence of a hybrid cultural mix between the East and the West and most importantly its geographic location which serves as a trade key portal between Europe and the Middle East. Since the independence in 1943, Lebanon implemented a liberal economic system which gave it a huge competitive advantage in the region. The political reform (independence) helped Lebanon to break monetary links with France and made it a free-trade country with its own Lebanese Lira currency (LBP) and therefore favored the economic growth. Also, new trade agreements with Arabian countries helped the economy to grow faster (Shehadi and Haffar-Mills, 1988). During the Lebanese civil war (1975-1990) the economy collapsed and the dollar exchange rate went from 3 to 1500 LBP and all sectors were affected from human capital, to infrastructure, to trade, to economy... The period between the years of 1990 and 2000 was considered as a short recovery period during which the economy tried to overcome the collapse especially through the financial resources of the Lebanese international diaspora. After 2000, the government tried different economic reform plan, yet it wasn’t enough. Despite the success in economic growth which was implied through an increase in the GDP in 2014 by 1.8% (UNDP, 2014), yet remained 1% in 2015 and 2016. In addition, the results in other sectors were not impressive at all. Mainly, corruption and the geographic location of Lebanon are the premium causes of the economic collapse. In fact, Lebanon scored 28 over 100 (where 0 is very corrupt and 100 is clean) (Transparency.org, 2019). In addition, the geopolitical instability in the region prevents
the country from its economic growth. Through its history, Lebanon was the destination for different workforce migrating from poorer countries such as Egypt, Syria, Ethiopia, Philippines, Bangladesh and others. Therefore, despite its small surface area, Lebanon is characterized by its huge cultural varieties through the Lebanese population which is made of 18 religions and sects and through its big number of foreign workers. According to the UNDP report in 2016 “A labour needs assessment for Lebanon”, stated that the percentage of foreign workers in the construction industry, outside the managerial and professional positions, is around 55% and most of them are Syrians. Also, the report presented some statistics retrieved from the Lebanese Contractors’ Union and Syndicate of Construction Contractors. The total number of workers in the construction sector is 460,600 out of which 350,000 are Syrians distributed among 3,400 companies, which yields a 24% for the Lebanese. Note that the total number includes all occupational levels including the unskilled.

2.2. The Gulf Overview

Culture plays an extremely important role in the Middle East and especially in the Arab countries. The distinctive historical, social and religious traditions require exceptional attention to culture traits especially in during the application of control authority and interpersonal interactions. The Arab countries are one of the most complex and diverse societies, within which exists a cultural heterogeneity that can be seen through different dimensions: racial, tribal, ethnic, linguistic and most importantly religious. These variations resulted from history, traditions, politics, wars and immigration. As per Rezk (2005), Arab societies are rich in diversity, legacies of invasion and multiple conquests whether European, Ottoman or Arabic. At first sight, Arab countries may appear relatively homogeneous due to the abundant Arabic language and Muslim religion that governs most of the 22 Arab countries and the majority of the expected 598 million inhabitants by the end of 2050 (Mirkin, 2010, UNDP). In general, diversity in Arab countries is more related to gender, immigration and religious considerations.
Yahiaoui et al. (2017) stated that although Islam is the predominant religion in the gulf and the laws, rules and regulations are mostly inspired from the Sharia (Muslim path to follow in the Quran), yet it does not have the same influence all around the Arab region. The different Muslim currents are Sunnis, Shiites, Ismalis, Druzes, Zaydis. Also within the Sunnis, there exists different sects like Hanbali, Wahhabis, Maalikis and Shafii’is. As for the other religious minorities, there exists alongside Muslims, Christians (Catholics, Orthodox and Protestants), Yazidis, Jews and others. Yahiaoui et al. (2017) clearly stated that Western military interventions in the region have led to the creation of extremist groups and played a big role in increasing the religious hostility directed against religious communities and minorities. Rezk (2005) found that cultural diversity suffers oppression of closed regimes which evolved from the fear of the reigning families of losing their power. In order to do so, they tend to use the most dogmatic acts and strategies to save their reign. As for ethnicity, the Arab populations origins from the Berbers, Tuaregs, Kurds, Turks, Persians and Circassians (Yahiaoui et al. 2017). Also, different languages established themselves as second official languages with Arabic such as Tamazight in Algeria, the Berber in Morocco, French in Tunisia and Spanish to a lesser extent in Morocco.

![Figure 1: Expatriate workforce population as a percentage of total workforce 2006](gulfntalent.com)
According to Table 1, Qatar is the home for around 24 foreign nationalities, Kuwait is the home of around 17 foreign nationalities while the United Arab Emirates is the home of around 200 foreign nationalities. The researcher wasn’t able to find similar data for Bahrain and the Kingdom of Saudi Arabia. However, according to Figure 1, the number of nationalities in the two countries should be similar to Qatar and Kuwait.

In most of the Arab countries, the immigrants constitute more of two third of the societies. The migration pattern of international immigrants to the Arab Gulf began to take off with the discovery oil resources (Errichiello 2012). As per the United Nations (2003), the establishment and development of the oil industry in the 1930s became the impelling cause behind the first organized wave of foreign workers to the Arab oil-producing countries. Although it decreased somehow, yet this migration pattern is still active during our times and it lead to increasing the already existing cultural mix in the Arab countries as a result of the workforce migration from Asia (Lebanon, Syria, India, Pakistan, Bangladesh, Philippines and others), Africa (Egypt, Niger, Ethiopia, Sudan, South Africa and others), Europe (Turkey, Romania, Ukraine, Russia, UK and others) and from other regions of the world. Sivam et al. 2011 provided the expatriate workforce population as a percentage of total workforce in the Gulf countries for the year 2006, presented in the figure below.

### Table 1: Estimated number of nationalities in the targeted countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Nationalities</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSA</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>Around 24</td>
<td>onlineqatar.com</td>
</tr>
<tr>
<td>Kuwait</td>
<td>Around 17</td>
<td>worldpopulationreview.com</td>
</tr>
<tr>
<td>UAE</td>
<td>Around 200</td>
<td>Chaudhry 2016</td>
</tr>
</tbody>
</table>
The construction industry is affected in the same manner. For most of the five studied gulf countries, the expatriate construction labor force form more than 90% of the total construction labor force.

Table 2: Gulf countries construction workforce distribution

According to Table 2, 93.57% of the 2,012,045 Saudi construction workforce are foreigners; 91.24% of the 160,708 Bahraini construction workforce are foreigners; 99.82% of the 880,949 Qatari construction workforce are foreigners; 96.03% of the 442,306 Kuwaiti construction workforce are foreigners and 96.83% of the 399,412 Emirati construction workforce are foreigners. The above numbers prove the existence of multicultural settings in the construction industry in the Gulf and the extreme importance of CQ.

Table 3: Kuwait construction workforce distribution by source

In a more detailed example from Kuwait, Table 3 presents the distribution of non-Kuwaiti construction workforce according to their origin during the year 2018. 145,598 were Arabs (32.92%); 271,965 were Asians (61.49%); 1,153 were Africans (0.26%); 2,086 were Europeans (0.47%); 3,594 were North Americans (0.81%); 182 were South Americans (0.04%) and 155 were Australians (0.04%).
The above presented numbers, show the enormous cultural diversity in the Gulf Arab countries and prove the existence of multicultural settings, and therefore the paramount important of CQ and the validity of this study.

2.3. Organizational culture

Organizational behaviorists from different professional and academic sectors shifted their focus on Organizational Culture (OC) over the last three decades, and it has seized the interest of researches through a number of publications (Smircich 1983, Peters and Waterman 1982). The rise in the number of researches yielded a rise in organizational culture definitions. For example, Kroebel and Kluckhohn (1952) listed in their published literature review around 164 definitions retrieved from different sources. Some definitions have been talking about “Paradigm wars”, “War games” or “Cultural wars” from Detert (2000), Martin (2002) and Denison (1996). In order to narrow down the wide range of definitions, researchers tried to create a field out of the few closely related disciplines whose definitions:

1. Have only subtle distinctions

2. Tend to define one abstract concept (i.e.: “Shared values”) in terms of similarly abstract concepts (i.e.: “norms”, “Assumptions” and “beliefs”)

3. Share common difficulties in empirical measurements and analysis (Hofstede et al. (1990)).

The following paragraph provides three of the found definitions and will presented by the chronological order:

1. Laurent (1983) stated: “An organisation’s culture reflects assumptions about clients, employees’ mission, products activities and assumptions that have worked well in the past and which get translated into norms of behaviour and expectations about what is
legitimate, desirable ways of thinking and acting. These are locus of its capacity for evolution and change”.

2. Schein (1985) stated: “A pattern of basic assumptions invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and internal integration that has worked well enough to be considered valid and to be taught to new members as the correct way to perceive, think and feel in relation to these problems”.

3. Jay Wu (2007) proposed two different definitions. First he defined OC as accumulated choices and second he defined it as interactions among critical masses of people.

Although the provided definitions are mostly general yet they perfectly fit on all types of organizations including construction companies.

As previously discussed, the mix of nationalities and cultures creates a multicultural setting. With increased differences comes increased challenges on many factors such as degree of participation and openness, approaches to decision making, quality of communication and interpersonal working relationships… Therefore, the following section will provide a literature review on the Multicultural settings.

2.4. Project Management Industry

2.4.1. Project Management

Organizations and companies are increasingly depending on project management to realize projects. Davis (2011) studied some economic figures gathered internationally which indicated a significant and growing use of project management. According to Hueman et al. (2004), we have become a project-oriented society. From a different perspective, from different studies, Anantatmula (2008) estimated the annual spending of the global economy on projects to be in billions of dollars.
Many definitions exist in the literature for project management. However, out of experience project management can be most explicitly described by the word “conflict-ridden”. It is a temporary endeavor undertaken to realize a certain unique goal or project (PMI, 2017). It is mainly characterized by the continuous conflicts that should be addressed and solved by the project manager. Going back to the definition itself, the word unique describes the distinctive properties and conditions of a project even though the final product of two different projects might fall under the same category. This distinctive property of a project makes it dynamic and unpredictable. It is nearly impossible to precisely predict the course of work or how things will turn out. Even for the project team members, they might not know their next project will take place and which partners and stakeholders will be involved. Another formal definition of project management by the PMI (2017): “It is the application of knowledge, skills, tools and techniques to a broad range of activities in order to meet the requirements of a particular project”. All the above describes local project management, yet these properties gets more and more severe when we move to global project management which is a much more dynamic and drastic domain. On the global scale, managers and projects can be in two totally different locations and hence locations are much more spaced. At the same time there might a time conflict due to difference in time zones. Also, electronic correspondence always comes second after live correspondences and discussions.

2.4.2. Project Managers

With the increasing need for their roles, PMs have come under test to help achieve positive project outcomes and improve the performance of the organization as a whole. A very big pool of researches and publications can be found that focuses of the traits and skills, technical or personal, associated with PMs (Hyvari, 2006; Brown, 2000; Gale, 1999; Pinto & Kharbanda, 1995; Thamhain, 1991).
Any successful project manager knows that his success is primarily forged by strong communication skills. As we previously stated, project management is conflict-ridden between all stakeholders and thus conflict-resolution is realized by communication. Creasy & Anantatmula (2013) stated that a project manager’s extent of communication apprehension, degree of innovativeness, level of self-monitoring, conflict management style, degree of change orientation and personality type can hugely affect project outcomes.

Because of the evolving and the interactive nature of project management, Leybourne (2007) reported a shift in focus from the technical bias, which emphasizes the technical skills of a PM, to behavior and inter-personal skills. This division in focus led to extensive analysis of the information and it resulted in the concept of duality of skills of a PM. “Soft skills” which are interpersonal and “hard skills” discipline specific and technically oriented became the main two arenas of project manager traits study (Skulmoski & Hartman, 2010).

Some studies, such as Lechler (1998), considers soft skills or competencies contribute more to project success than technical skills. In the same manner, Posner (1987) and Turner et al. (2006) found that interpersonal skills are more important to the realization of the project than technological skills. This can be very simply explained by the fact that a PM possesses all the resources and assets to support him in the technical side of his job through the designer, consultant or contractor and that is why some PMs consider having a certain minimum technical knowledge enough for their job.

Unfortunately, this interpersonal aspect of project management has not received the deserved adequate attention on the professional or on the research levels until recently. Thal et al. (2010) found association between a PM personality traits and his success while Dvir et al. (2006) emphasized the importance of the alignment of the PM management style and the project type.
Although the above presented studies form a pool of information with priceless value, yet the data is still very wide and needs to be narrowed down and that would need a lot more studies due to the countless types of projects and the countless types of personalities.

2.4.3. Project Teams

The following general definition of the term “team” can be drawn from the literature. “A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable” (Katzenbach & Smith, 1994). In the very wide management world, the management of teams presents a whole different sets of challenges and mainly they depend of the activity and its complexity and it covers totally different scopes: from design teams, to logistics teams, to construction teams to others, even management teams have to be managed; which formed interesting topics for researchers such as Wu et al. (2005) and Carpenter, Westphal and McDonald (2010).

Due to the temporary nature of a project, Project Teams (PTs) acquired this trait. The team members might work jointly for some few months to several years, yet the project will be realized and the team will change. As per Hughey and Mussnig (1997), PTs are group of people working together for a period of timed, sharing common objectives and complementing each other’s competences in order to achieve a specific task that none of them could complete individually. Lankard (1994) stated that not any group is a team, as they need to align their objectives, rules, roles and values; and not every team is a project team. Speaking of size, the team size may vary from an industry to another. Within a lab, a team might have 5 members, however for a construction site, the team of labor might have up to thousands of team members depending on the size of the project. As per Qurashi (1993), technology and science teams are optimally formed by five to nine members. Belbin (2002) proposed that management teams should be composed of sex members optimally while Belbin (2002) favored 6 or 7 members
for project teams. Other studies from international higher education environment (Scarlat & Zarzu, 2012; Scarlat & Falcio Lu, 2013) found that satisfaction and performance are higher in small project teams of three to five members. Belbin (2002), also found that when management teams are built following certain managerial team roles, the team performance goes higher.

Due to globalization and the increase of international projects, teams are becoming less homogeneous and more heterogeneous in terms of team profile. This introduced significant cultural differences in terms of nationalities, ethnicities, languages, education or social systems (Groves and Feyerherm, 2011). Despite these communication barriers, heterogeneous teams present many advantages and they mainly bring together diversity and creativity in problem solving processes as compared to homogeneous teams (Mello and Ruckes, 2006). That is why, heterogeneous teams are recommended for industries that gives importance to innovation and creativity; while homogeneous teams need less time to reach performing stage (Fadey, 2010).

One of the studies by Mello and Ruckes (2006), they found that heterogeneous teams showed higher performance in situations with high level of uncertainty but at the same time consume bigger amounts of time and money to overcome disagreements and cove for turnover. For all of the above there is no perfect solution and that is why choosing between homogeneous or heterogeneous teams is a slow and risky activity (Milliken and Martins, 1996).

What makes the projects realm so unique is that it never fits into the business-as-usual. For a regular type of work, there is a certain routine and pattern in the activities and their job fits within a continuous cycle which most of the types yields a boring routine for the employee. However, as previously explained, for two similar projects having the same end products, the work will never be the same and the challenges are always different. That is why project teams almost never perform routine and boring activities and that is the terms flexibility and innovation are very important in the projects industries as the work environment is never stable.
and can never be predicted. Project teams work on projects having the following characteristics:

- Multidisciplinary: Rarely team members will work on a single discipline in a project
- Complex: Projects can vary between simple and complex and when considering international projects with multicultural settings, it can only be complex.
- Often involve conflicts: It requires high communication and conflict-resolution skills
- Part of programs: A group of projects form a program and for big companies, there might exist numerous programs and therefore many projects. That is why team members are always rotating once projects are delivered and sometimes during the realization phased depending on the need of the company.

Project teams must be technically competent. The senior members must be politically sensitive. Members need a goal orientation with a strong problem-solving potentials. In addition, project workers need high self-esteem.

2.5. Multicultural settings

2.5.1. Defining culture

It was not by chance that a special domain withdrew in the last decades holding the name of “Cultural sciences”. The importance of the concept of culture is continuously rising in contemporary discourse of social sciences and humanities (Mironenko et al., 2018). Valisner (2009) explained that the popularity of the word “culture” is not hindered by its uncertainty: “Reasons for that increasing popularity of a vague label are to be found beyond the boundaries of science —in the ‘culture stress’ experienced by local communities due to in-migration of ‘others’ and temporary (or not so temporary) out-migration of ‘our own’”. It can be seen from literature that “culture” is a very wide and vague term and the process of defining it is very hard due to its multiple depths and dimensions. Also the definition might depend on the context
where it is being used. The following paragraph provides some the mostly used six definitions that were retrieved from the literature.

Hofstede (1994) defined culture as “the collective programming of the mind which distinguishes the members of one group or category of people from another”. Matsumoto (1996) defined differently as “the set of attitudes, values, beliefs, and behaviors shared by a group of people, but different for each individual, communicated from one generation to the next”. Addler (1997) cited later a broader definition which they retrieved from Kroeber & Kluckhohn (1952): “Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other, as conditional elements of future action”. Avruch (1998) cited the following definition of culture by Tyler (British anthropologist) 1870: “Culture ... is that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society”. The same author reported in the same study, another definition but this time by T. Schwartz (1992): “Culture consists of the derivatives of experience, more or less organized, learned or created by the individuals of a population, including those images or encodements and their interpretations (meanings) transmitted from past generations, from contemporaries, or formed by individuals themselves”. Finally, a more recent but also detailed definition was presented by Spence-Oatey in the year (2008) where they defined culture as “a fuzzy set of basic assumptions and values, orientations to life, beliefs, policies, procedures and behavioral conventions that are shared by a group of people, and that influence (but do not determine) each member’s behavior and his/her interpretations of the ‘meaning’ of other people’s behavior”.


As it can be seen, there cannot exist a single definition for the term culture and as we are progressing with time and the world is changing, the definition is being changed and it includes progressively more and more meanings.

However, regardless of the difference in the definitions, Hofstede (1997) considered that the cultural differences relate to five dimensions:

1. Power distance index: the degree of dependence between different levels of authorities.
2. Individualism vs. collectivism: the degree in which everyone is expected to put herself / himself in the middle of the universe vs. the integration into cohesive groups.
3. Masculinity vs. femininity: gender role is clearly different in some cultures.
4. Uncertainty avoidance index: members of a culture may feel threatened by uncertainty or unknown situations.
5. Long term orientation: the importance of the future against the past and the present.

2.5.3. Cultural diversity (multicultural settings)

Cultural diversity has different meaning in various parts of the globe. While in the United States of America multiculturalism prioritize racial aspects, in Europe concerns focus more on national and ethnic aspects, due to the European Union free movement of workforce regulation. Under these changing circumstances, more and more companies are promoting cultural diversity in managerial position. This happened as a result of social pressure but more importantly it happened in respond to the discovered real need for cultural equilibrium within multicultural teams. This complexity brought by multiculturalism induced a huge changed in the management styles. As a result, the formal authority as it was previously known faded while knowledge of joining cultures became the main element behind power. As previously explained that project management is conflict-ridden and a PM has to master communication skills, therefore the key to this task is to deeply apprehend and understand cultural diversity and use
this knowledge to avoid or resolve conflicts, delays and miscommunication (Brett, Behfar & Kern, 2006). For a successful PM, common values among team members from different cultural backgrounds can be a very good starting point. Family, community, social activities, religion and health are some of the common or mutual values that represent the defining elements in negotiations and conflict resolution. Hulkkonen et al. (2007) mentioned one of the statements of Hofstede which stated that team members’ values are determined by members’ national and organizational practices and values. Although the variety of cultures cannot but impact the management course, yet an effective team management strategy recognizes cultural causes of disputes or issues and act effectively to keep or bring back the team back on schedule, scope and cost. Although challenging, differences and conflicts can be transformed into advantages and gains to successfully achieve the project. Gudykunst (1996) pointed that the risk of inadequate team management is more severe in case of intruders from a cultural point of view, as anxiety of mistrust and suspicions leads to defensive approaches and denial of alien cultures (Schneider & Barsoux, 2003). Nummelin (2005) highlighted that disadvantages can be transformed to advantages and international teams might answer in a better way to external challenges, although it will always be hard to demark between pluses and minuses. This long communication journey will also cost a certain unplanned amount of resources (Barsoux, 2003; Chevrier, 2003). The best plan for best communication within the team is to set vocabulary and communication rules internally.

2.6. Conflict resolution

When dealing with culturally diverse team members and stakeholders, the first thing that a PM has to expect is conflicts and disputes which will take a part of his management process.

2.6.1. What is conflict?

The Project Management Institute defined the conflict being the result of a difference in perception, opinion or beliefs among people (PMI, 2010). Usually, incompatible goals,
thoughts or emotions among team members lead to conflicts and as a result opposition and
disagreements rise. Wall and Callister (1995) defined conflict as the process in which one party
perceives that its interests are being opposed or negatively affected by another party. Internal
or external conflicts can be harmful to project performance (Yu-Chin Liu et al., 2011). Another
definition by Ahmed (2007) defines conflict as the difference between two or more parties
leading to mutual opposition. PMs usually go through connection conflicts that arise from
unharmonious requirements from different team members. Different approaches will be
generally presented by different groups towards a project and these disputes will cause interface
conflicts (Awakul and Ogunlana, 2002). This is generally the case for small and local teams,
thus it will definitely become more extreme in big teams consisting of individuals from
different backgrounds and cultures.

2.6.2. Conflict in Project Management

When a PM is leading a group of people, his key to project success is by motivating all those on
board always within time, budget and quality. As per Hoffer et al. (2002), the PM practices
a set of required skills in leadership, management, stakeholder’s relationship and conflict
management to achieve the objectives by motivating the team to resolve conflicts all along the
project life cycle. The PM should not make the same mistake done by most of the individuals
in the multicultural setting and that is presenting negative attitude towards disputes. The
essence is to focus on a constructive conflict resolution management style. Lee (2008), posited
that different conflict management styles should be used by a PM to keep the harmony between
the team members and a good project manager understands that conflict is part of the human
communal activity.

2.6.3. Conflict resolution styles

The most common five styles of conflict resolution were listed by Rahim and Bonoma (1979):
confronting, avoiding, domination, compromising and accommodating.
Confrontation is the when two parties directly discuss openly and freely an issue while both give each other the opportunity and the chance to express themselves.

Kuhn & Poole (2000) studied the confronting conflict management style in project management that allows conflict to be resolved between two parties in order to have a win-win situation. It mainly involves clear and straight communication and it makes available highest declaration. Verma (1998) confronting a problem helps because it involves exchanging point of views which help by solving the problem by analyzing different options that meet the required solution. Thammavijitdej (2000) found that confrontation proved to be the most efficient out of all styles as it encourages openness and it conveys clear information from one side of the discussion to the other.

Compromising is simply bargaining, give-and-take. Verma (1998) and Lee (2008) described compromising as negotiating to solve pending conflicts that satisfy both sides of the dispute and always catering for unambiguous resolve. They found it is good to use when both parties are looking for winning solution; whenever there is a deadlock, there is no enough time and the need to maintain the relationship is important. In simpler words, both parties lose something to gain something in return. Compromising is very hurtful when dealing with complex issues and especially whenever there is a difference in power resulting from different positions in organizational hierarchy, between involved parties. In this case, Lee, 2008; Rahim, 2002; Ricky and Leung, 2001 and Thammavijitdej, 2000 admitted that the more powerful party will become more of an obliging party as it will force their solution to the dispute. Dreu et al. (2001) observed that adopting this style will always lead to the belittlement of the weaker party.

Accommodating/yielding accepts the point of view of all disputants. It combines all inputs to arrive to an agreement between all parties. According to Thammavijitdej (2000), the final result is a win-win solution. Friedman et al. (2000), Rahim (2002), Ricky et al. (2001) and
Verma (1998) state that accommodating style presents a high level of concern for oneself and others' points of view at the same time which encourages openness and exchange of information through assertiveness and cooperation. It works towards finding a solution that is accepted by all parts of the dispute. This style will always lead to a win-win situation according to Thammavijitdej (2000). Appelbaum & Shapiro (1998) explained that this style of management is usually used when each party is certain that the intentions of the opposing party are positive and the clashing issue is important to the parties involved.

Dominating or forcing is an extreme and negative management style. It is a state of high concern of the PM’s self and a low concern for the other team members. It takes place when someone forces his idea or opinion over others which will always lead to win-lose situations. Whenever the manager uses this technique, he will win but at the expense of other team members. (Cheung, 1999; Friendman et al. 2000; Rahim, 2002; Hans & Bariki, 2012). This method can be beneficial in any organization that has production related goals like the construction sector. For example, in this case the consultant or the owner uses his power scheme which will help him accomplish his goals but it will definitely damage his relation with the affected party and thus this style is not suitable on the relational level, although in some extreme cases it is needed. Unending conflict is one of the cases where such management style is needed as per Khanki & Hassanzadeh (2010), since such situation requires assertiveness. Verma (1998) looked and the bigger picture and concluded that domination will create hard feelings between litigants which will lead the loser to retaliate in other places or ways. Whenever a manager uses this technique, he will compromise the project and the results as he will become a dictator or an authoritarian.

Avoiding is the act of looking away and disregarding the rising conflict. It might look like a solution for some managers but in the rare cases where it is, it will only remain for a very short term. Zikmann (1992) described conflict avoidance as a passive answer to disputes in
which the concern for both disputing parties are disregarded. Friedman et al. (2000) observed that PMs who tend to use avoiding styles of conflict resolution usually face some difficulties representing themselves and they usually present low concern for others’ requirements. They usually aren’t able to understand and analyze other person’s problems which will make them lack the basic knowledge needed to find constructive solutions.

After defining each, the same styles are studied to analyze the significance of the PM’s management style on the team’s performance, motivation and positivity (Mumuni, 2013), listing the most efficient and successful styles using ranking. Mumuni found that the ideal ranking of conflict management styles is, from best to worst: Confronting, accommodating, compromising, forcing and finally avoiding. Prieto-Remon et al. (2015) suggests that different parameters enter in the process of deciding on which conflict management style to use. Some of the factors that should be considered in the decision are the nature of the contending issues, the stakeholder’s demand and the urgency to deliver the project without delay.

2.6.4. Conflict resolution and culture

Prieto-Ramon (2015), summarized most literature on conflict and presented conflict management as a process: 1) Identification, 2) Resolution, 3) Enactment and 4) Evaluation.

The first phase, identification, is when the person in charge identifies the conflict. It may be through observation and he may be notified by one of the disputing parties. It also includes the agreement of conflict participants that a conflict exist and a resolution is needed. The second phase, resolution, is when the manager analyzes all data and different solutions in order to decide on the best one. All parties develop a resolution strategy. The third phase, enactment, is when the solution is implemented. Finally, evaluation is the final phase. During this stage, the manager evaluates the implemented solution and studies the results and the effects on the
project and the stakeholder. If need be, the manager might change or modify the solution in order to achieve the best results.

Researchers generally agree that what starts conflict may be an internal or external change, communication, emotions, values, organization structure, workgroup diversity or personal experience (Desivilya and Yagil, 2005; Farmer and Roth, 1998; Fine et al. 1990; Jameson, 1999; Jones and Dechro, 1993; Jones and Melcher 1982; Tjosvold and Su, 2006; Wall and Callister, 1995).

In a research by Kaushal et al. (2006), the authors studied the relationships between personality, power, culture and styles of conflict management. The study involved a literature review of the assumed connections between cultural and personality differences and strategies of conflict resolution. Cingoz-Ulu and Lalonde (2007) explored further cultural differences in dispute management styles within the framework of same-sex friendships, opposite-sex friendship and romantic relationships. Results showed that generally, personal relationships involved more use of conflict management strategies than did opposite-sex friendships, with same-sex friendships falling in between the two.

Vaaland (2004), Billows (2006) and Hodgson (2001) stated that relationship conflict can be reduced through the identification of conflict events and the analysis of difference in both parties’ point of views, especially in situations where continuous tension endanger relationship continuity between different parties. Lam and Chin (2005) explained that identification and prioritization of critical success factors is the most important part of the conflict management. In fact, a manager can work hard towards managing a conflict between two parties but eventually might due to the fact that he might have tackled a wrong factor. That is why the author listed, by priority, the critical success factors for conflict management: 1) Relationship management (mutual understanding of organizational objectives and goals, commitment to
collaboration and trust between parties), 2) Conflict management system (conflict management culture, skills, process, monitoring and improvement), 3) Project management (mutual understanding of the result, task allocation, specification management and progress monitoring) and 4) Communication (communication and information management).

Some other authors like Mantel and Meredith (2009) studied the uncertainty concept in projects and organizations, stating that, although it is difficult, yet it is very important to assess the effects of conflict on project success and he listed three basic types of conflicts: 1) interpersonal (relationship tensions among team members), 2) task (when stakeholders disagree on the requirements, scope and or priority) and 3) process conflicts (how the tasks should be best performed to accomplish the objectives).

Other authors (Gardiner and Simmons, 1998; Mahalingam and Lewit, 2007; Villax and Anantatmula, 2010) confirmed that conflict present some positive effects. It can fuel change, improve communication, encourage creativity and innovation and increase team cohesiveness and performance. On the contrary, conflict also present some negative effects such stress, reduced job satisfaction and morale and eventually might lead to project failure.

As it can be seen from literature, conflict management is considered an important topic and it is considered a vital competency that every project manager should possess.

2.7. Cultural intelligence

While exploring history, it is evident that the ability to deal with culturally different people traces back to the pyramids and maybe older. In fact, all ancient civilizations, from the Egyptian, to the Roman, to Chinese and all others, formed labor force from conquered civilizations and societies to build their monuments such as the pyramids, statues, temples and others. Therefore, the strategies used to manage multiethic team members have evolved through a long period of time. Businesses and projects are becoming more and more borderless.
They are no more limited to a certain geographical area or country. For example, a firm in South America may be designing or managing a project in Asia with a multiethnic team. With this rapidly developing property, PMs critically need a set of competencies and skills to help them deal with people from different cultures and backgrounds and to effectively and efficiently manage these differences in order to insure project success.

2.7.1. Border crossing

Pink (2005) stated that the detailed knowledge in a single field once guaranteed success. Today, success goes to the ones who can operate with confidence and ease in harshly different realms. They call them boundary crossers.

To be successful, a modern project manager should have the skill to cross cultural boundaries and understand the cultural differences of all the project team members.

2.7.2. What is cultural intelligence?

Culture comprises many different behaviors and concepts such as music, cuisine, religion, beliefs, interpersonal relationships, ethics, habits, business practices and many others. People working in multicultural settings must understand how positively and negatively those differences affect communications and interpersonal relationships. (McIntosh, 2008).

According to Ang et al. (2008, 2015), Cultural Intelligence (CI) or Cultural Quotient (CQ) is the capability to function effectively across various cultural contexts (national, ethnic, organizational...). In another research, Ng and Early (2006) refers to CQ as the ability to effectively adapt to new cultural settings. Another complex definition by Early and Mosakowski (2004), the author considered CQ as the natural ability of an outsider to interpret someone’s unfamiliar and unclear gestures in the way that person’s fellow citizens would. Finally, CQ is “a system of interacting knowledge and abilities, linked by cultural
metacognition that allows a person to adapt to select and shape the cultural aspects of their environment” (Thomas et al. 2008). CI and CQ usually are used interchangeably.

2.7.3. Cultural Intelligence in engineering and construction

Just like any other profession or field, and even more, the engineering and construction fields need cultural intelligence skills to achieve success. For instance, the American Society of Civil Engineers’ Civil Engineering Body of Knowledge for the 21st century states that civil engineers must be trained to “work with and report to people from different cultures” and “meet challenges that cross cultural, language, legal and political boundaries while respecting critical cultural limitations and differences”. Parkinson (2009) stated that for engineering graduates to be globally competent, they must be able to “communicate across cultures”, “appreciate other cultures” and “work in teams of ethnic and cultural diversity”. One very important study by Warnick (2010), representative from the engineering industry were asked to rank by importance several qualities to hire engineers. Among the top eight global attributes, were: “communicate cross-culturally”, “work in international teams” and “appreciate and understand different cultures”.

2.7.4. Cultural Intelligence structure

There exist many theories regarding the cultural intelligence structure. Thomas et al. (2005) divided CQ concept into three modules which helps with the interpersonal flexibility and competence in a multicultural setting. First, the knowledge to understand intercultural phenomena. Second, the mindfulness to observe and interpret particular behavior. Finally, to act accordingly and appropriately.

Du Plessis (2011), listed different articles (Early & Ang, 2003; Van Dyne & Ang, 2005 and Ng & Early, 2006) in which the authors believed that CQ comprises of four components: Metacognitive CQ, Cognitive CQ, Motivational CQ and Behavioral CQ.
- Meta-cognitive CQ: it is the individual’s consciousness and awareness of differences during interactions with others from different backgrounds (Van Dyne, Ang and Koh, 2008).

- Cognitive CQ: it is the individual’s cultural acquaintance of conventions, norms and practices in diverse cultural situations which reflects necessary knowledge of cultural resemblances and differences in specific environment (Van Dyne, Ang and Koh, 2008).

- Motivational CQ: it is the ability of an individual to transmit attention and energy toward cultural differences (Van Dyne, Ang and Koh, 2008).

- Behavioral CQ: it represents the individual’s ability to demonstrate proper verbal and nonverbal actions when interacting with individuals having different backgrounds (Van Dyne, Ang and Koh, 2008).

Source: Ang, Van Dyne, et. all, 2012

**Figure 2: The four factor model of Cultural Intelligence**

2.7.5. Assessment and improvement of Cultural Intelligence

Anyone can perform a self-assessment for CQ using “The Cultural Intelligence Scale” also known as CQS. Individuals who goes through CQS can evaluate their own behavior in 20 statements that are previously designed in a questionnaire. The results show how capable the person is to interact and live within a culturally diverse environment. The 20 statements are divided into the four categories of CQ discussed in the previous section. Livermore (2010) defines the CQS as a questionnaire that is administered at 2 levels: an individual and a peer.
assessment. Therefore, the CQS presents an individual’s own view of their accomplishments and measures how others rate one’s level of cultural intelligence. This scale is also used to assess people to fill a position overseas, perform a diversity training and typically for personal development.

Cultural Intelligence is a quality that a person can acquire and even improve. In fact, CQ is a measure that can be nurtured and developed with exposure and experience. According to Livermore (2010), CQ is an acquired skill and not innate. It can be learned by almost anyone and it offers managers an overall knowledge and perception that can be applied and help them in numerous cultural circumstances. Livermore elaborates more and goes on to explain that CQ capability growth is divided into four groups.

1. CQ drive: which represents the motivation for a specific task.
2. CQ knowledge: which specifies what cultural understanding a person needs.
3. CQ strategy: what plan the person is following and tools they are using to explore and learn cultural differences.
4. CQ action: how will this person deal with differences and adapt to them.

Therefore, CQ is multilayered and in order to get the best of it, a person should work to develop all of the layers.

According to Woerner (2010), many tools and techniques can be found in the literature related to managing multicultural projects. However, the author listed some of the techniques that he used during his 25 years of experience: being a learner for cultures, appreciate diversity, develop language skills, read books, travel and explore cultures, look for role models in cultural intelligence and others...
3. PROBLEM DEFINITION

With the rise in globalization and the increase of multicultural work environments, culture plays a huge role in the local and international workplaces. In Lebanon and the Gulf, societies are one of the most culturally mixt societies. The mixture is manifested through culture, sex, race, nationality, religion and others. Therefore, Cultural Intelligence is a very imperative skill that should be acquired by every member of the workforce from the bottom to the top of the hierarchy. In actual fact, it gets more necessary while going up the organization pyramid as the responsibilities increase. In the project management industry, especially in the construction field, a project manager performs countless interactions with a very big number of persons from different cultural and professional backgrounds.

Therefore, this research addresses the use of Cultural Intelligence in the construction field in Lebanon and the Gulf. It investigates if PMs are familiar with the concept of Cultural Intelligence. Also it investigates if they have ever used CQ techniques on purpose or even without being familiar with the notion. In addition, it will evaluate how clear and straightforward cultural differences were to PMs during conflicts. Finally, it will survey the experiences of PMs on how they perceive the importance of CQ and how critical it is to project success.
4. OBJECTIVE AND RESEARCH QUESTIONS

The main objective of this study is to evaluate how cultural intelligence help PMs to face cross-cultural complexities and interpersonal conflicts in construction projects in the Middle East.

In order to achieve the intended result, research questions have been formulated.

RQ1. *What are the project managers’ experiences on inter-cultural complications and reasons of interpersonal conflicts in multicultural construction teams?*

RQ2. *What are the project managers’ experiences on the skills needed to solve inter-cultural conflicts in multicultural construction teams and how do they learn them?*

RQ3. *What attributes help or impede the learning process of cultural intelligence competencies?*

The research questions were posed under two main hypotheses:

Hypotheses 1. *Project Managers’ cultural intelligence competencies positively affect project success in construction when managing projects in multicultural settings.*

Hypotheses 2. *Cultural intelligence skills are highly dependent on the manager’s cultural, educational and professional background and experiences.*
5. RESEARCH METHODOLOGY

The choice of research methodology is very important for the researcher as the method will highly affect the quality and importance of the end results (Hussey and Hussey, 1997). However, there exist many different approaches in the management field which all include both theory and method. All approaches fall under two main paradigms, that is positivism (quantitative) and interpretism (qualitative) (Hussey and Hussey, 1997 and Remenyi et al. 1998).

Literature recognizes positivism as the natural science model of social science research. Positivists presume that the social world exists externally and best measured through objective methods, which create objective viewpoints (Hussey and Hussey, 1997). That is why, investigating reality will never affect reality itself which implies the subjective state. Positivism practitioners believe that the human behavior studies should be conducted in the same way as natural science studies.

On the opposite side, interpretism is based on the hypothesis that features of the social environment are considered as interpretations by humans and tend to be transitory and situational. Merriam (1988) describes the interpretism paradigm as a model that includes several form of investigation that help to explain the meaning of social phenomena in which the focus of the study is on interpretation and meaning.

The use of the qualitative approach shows the abundance of the big picture and the explanations of how process, chronological facts and causal links occur (Miles and Huberman, 1994).

5.1. Data Collection

After stating the above, the research methodology for this study is based on interpretism or the qualitative approach. It mainly consists of two parts: online surveys and in-depth interviews.
5.1.1. Online Surveys

Online surveys are one of the most efficient data gathering tools from professionals. Its biggest advantage is that it can be uploaded online and it can reach a bigger audience easier thanks to the power of the internet. This type of surveys is relatively easy and fast in collecting information. In addition, it can target a specific audience under certain constraints that the author can set. It can be shared via emails and social media applications. The survey creation process goes through different steps: population research, survey method research, analysis procedure research and finally preparing the questionnaire in Arabic and English. The survey is made of 25 questions divided into two main categories: 6 general demographic profiling of the respondents and 19 cultural intelligence related questions. Also, the CQ questions were divided into 7 categories: 2 CQ general knowledge questions, 2 metacognitive CQ questions, 3 cognitive CQ questions, 2 motivational CQ questions, 3 behavioral CQ questions, 4 CQ training questions and 2 CQ experience questions. Appendix C provides a copy of the online survey.

The process of answering the survey should take between 10 and 15 minutes. The gathered data was used to develop charts, histograms and other graphical tools in order to understand the perception of the targeted population on CQ through the answers distribution. The survey targeted different professionals that have hands-on experience in the project management fields. The population was formed of people that have worked in the construction management field but not necessarily engineers. The targeted markets are: Lebanon, Kuwait, UAE, KSA, Qatar and Bahrain, and those are the countries where the author have worked. Due to the respondents’ geographical dispersion, the minimum population size will be 60 and the author will try to increase the number the sample size through professional platforms like emails and LinkedIn which will give access to focused groups of professionals. Different tools will be used to validate the survey such as: trustworthiness, pilot testing and statistical analysis.
As it can be seen in Appendix C, the scale used for the survey is 1 to 7 scaling each statement from strongly disagree (1) to strongly agree (7). The literature provides many reasons why the 7-points scale is better than a 5-points scale. Colman et al. (1997) stated that Symonds (1924) was the first to suggest using a 7-points scale as it optimizes reliability. Leweis (1993) found that a 7-points scales resulted in a stronger correlation with t-test results and Finstad (2010) also found that seven categories likert scales appears to give better results. Finally, Preston and Colman (2000) found that there exists some scientific backing for 7-points scales but the popularity of the 5-points scales seems to be less justified. An online survey website “esurveycreator.com” was used to publish and distribute the survey online.

5.1.2. In-depth Interviews

In-depth interviews involve the solicitation of expert opinion through in-depth one to one interviews. The in-depth questionnaire may also be emailed to the targeted professionals since some of them are based in different countries, then interviews will be conducted over the phone or over the internet. Appendix D provides a copy of the invitation letter to the interview. The intended number of interviews is 12 to be performed with professionals from different fields of project management, consultancy and contracting. The target markets are: Lebanon, Kuwait, UAE, KSA, Qatar and Bahrain, and those are the countries where the author have worked. Since the targeted positions are managerial positions, the author might find difficulty to receive responses. Yet, the author will try to increase the interviewees population. This technique provides some advantages. First, it allows the researcher to obtain more detailed information from different sources. Second, this technique is much more flexible in information acquisition. In fact, the interviewer can intensify his inquiry in a situation where he finds that a particular respondent possesses more information to share. Finally, one to one interviews hugely allow reduction of errors and misinterpretation of questions and answers, since both interviewer and interviewee can ask for more clarifications. Robson (1993) indicated that the interviewer is
allowed to modify freely the order of the questions based on their perception of what seems more appropriate in the course of the conversation. Also, they are allowed to change the way questions are worded, provide explanations and add or cancel particular questions which seem appropriate or inappropriate with a particular interviewee. The interview is also divided into two sections. The first is the pre-interview questionnaire. It includes 7 questions and covers the interviewees demographics. The second part is the interview questionnaires. It includes 12 questions and covers the interviewees experience in CQ. Appendix E provides a copy of the pre-interview and Appendix F provides a copy of the interview questionnaires.

The process of answering the interview should take between 20 and 25 minutes. The pre-interview demographics data was used to develop charts that describes the interviewees experiences. The interview gathered data were used to understand the interviewees experience on CQ which will help to develop findings, test the hypotheses and answer the research questions. The same online platform “esurveycreator.com” was used to create the interview questionnaire. It provided a very easy and efficient way to store and analyze the data during the interview.

5.2. Research Population

The study population for this study is divided into two groups. The first group includes the online survey participants and the second group which included the interviewees.

For the first group, the online survey participants will be identified from two sources. The first source would be the researcher’s personal professional network and their referrals and the second source would be through the online professional platform LinkedIn. The participants will be approached via email, phone calls, Whatsapp and LinkedIn, through which the context of the study and the survey will be explained and the survey link will be shared. Appendix A
provides a copy of the email letter of invitation to the online survey. Also, Appendix B provides a copy of the LinkedIn invitation message.

The second group will consist of project managers from the researcher’s personal professional network and their referrals. A minimum of 2 project managers from each targeted country will be interviewed.

All project managers who participated in this study met the following criteria:

1) Have managed at least three culturally diverse construction project teams.
2) A minimum of 2 years of multicultural construction project team management experience within the past 5 years.
3) Multicultural teams should include at least three team members working in different time zones than the project manager.
4) Multicultural teams should include at least three different nationalities other than the project manager nationality.

The researcher will make sure that the participants come from a variety of industries and functional domains in order to cover wider experiences. In addition, the participants will have the right to ask any study-related question at any time.

5.2.1. Population identification

The targeted population was divided into 2 groups.

The first group comprises the researcher’s personal professional network. Through his 5 years of experience, the researcher was able to identify around 60 persons who have previously worked with, between the 6 targeted countries. Most of those were project managers or construction managers and the remaining have occupied managerial positions in construction sites under different positions. This group was contacted and the link was shared with them.
The second group comprises project managers that were identified through the professional online platform LinkedIn.

We initiated 6 search processes on LinkedIn based on the following keywords:

- Search process 1: “Project Manager Construction Lebanon”
- Search process 2: “Project Manager Construction Bahrain”
- Search process 3: “Project Manager Construction KSA”
- Search process 4: “Project Manager Construction Kuwait”
- Search process 5: “Project Manager Construction Qatar”
- Search process 6: “Project Manager Construction UAE”

The researcher read the profile summary of each person that appeared in the search result. Each profile having the words “Project”, “Manager” and “Construction” highlighted and related experience, was added as a LinkedIn friend. Each person who have accepted the friendship invitation was contacted via LinkedIn message and was asked to fill the survey. LinkedIn doesn’t allow to send a message to a non-friend account. This process was repeated for each search process and for the first 10 pages of the search results. Each page showed 10 accounts and therefore all the pages in all the search processes showed 600 different accounts. However, not every account was contacted for two main reasons. First, some of the results were project managers but in other industries and not construction. Second, it was impossible to contact some of the resulting accounts mainly due to some restrictions, either from LinkedIn or the user. The LinkedIn process lasted for 5 weeks in order to give enough time for all the users to accept the connection request, receive the message and fill the survey. The total number of professionals contacted through LinkedIn was 224.

Therefore, the total number of persons invited to participate in the survey was 284, out of which 93 professionals participated with a response rate of 32.75%. However, 11 responses were incomplete and that resulted in a dataset of 82 responses and response rate of 28.87%.
As for the interviews, 14 interviewees participated. 1 was identified through LinkedIn were he expressed his interest in the study, 2 were identified through referrals and 11 were personal connections to the researcher.

5.3. Validation

Different tools will be used to validate the online survey questionnaire and results and the interview questionnaire and results.

5.3.1. Online survey questionnaire validation

5.3.1.1. Pilot test survey

The survey was pilot tested by 15 persons. One of them was a professional researcher with hundreds of publications and the rest constituted of professionals in the construction management. The response rate was 100% within two days. According to the pilot test results and comments, the survey was enhanced. After sharing the final version of the survey, some of the participants clearly noticed and commented on the improvements.

5.3.1.2. Basic Data Validation

The data for Q10 to Q19 was validated using “Basic Checks” of the “Validate Data” command in SPSS. Basic Data validation was performed only on questions with numerical responses.

The constraints of the basic checks are preset by SPSS. The first three can be modified and the last two are fixed. The variable constraints where:

1) Maximum percentage of missing values: which are the incomplete information by the respondents. Schafer (1999) found that a missing percentage of 5% or less is minor and doesn’t affect the results. In the same concept, Bennet (2001) found that for a missing rate above 10%, statistical analysis is more likely to be biased. Therefore, the maximum missing rate that will be set to this analysis is 5%.
2) Maximum percentage of cases in a single category: this will be kept equal to the standard value of 95% set by SPSS.

3) Maximum percentage of categories with count of 1: this will be kept equal to the standard value of 90% set by SPSS.

For this study, the first constraint was decreased from SPSS standards to lower value in order to give better results:

- Maximum percentage of missing values: 5%
- Maximum percentage of cases in a single category: 95%
- Maximum percentage of categories with count of 1: 90%
- Minimum coefficient of variation: 0.001 (fixed constraint)
- Minimum standard deviation: 0 (fixed constraint)

As per SPSS output, data passed the checks and it is valid (Figure 3).

![Validate Data](image)

**Figure 3 – Basic Checks SPSS data validation**

### 5.3.1.3. Trustworthiness

In order to examine the internal reliability of the data, IBM’s SPSS software was used in order to perform a Cronbach’s Alpha Analysis. According to Vogt (2007), Cronbach’s Alpha is a statistical test that measures internal consistency and reliability. In the same study, Vogt (2007) stated that a value above 0.7 has been determined to be adequate and acceptable for surveys.
Cronbach’s Alpha value can be calculated only for numerical values. Therefore, the analysis was performed for questions 10 through 19 since those are the questions having numerical responses from 1 to 7. (Table 1)

![Case Processing Summary Table]

Table 4 – Cronbach’s Analysis case processing summary

As per SPSS’s reliability report, the 82 responses were valid and included in the analysis (Table 4).

Table 5 shows the results of the Cronbach’s Analysis of the ten questions Q10 to Q19 and yielded a Cronbach’s Alpha value of 0.751 which is above 0.7 and the data is considered reliable and consistent and therefore valid.

![Reliability Statistics Table]

Table 5 – Cronbach’s Analysis reliability statistics

5.3.1.4. Statistical Analysis

For the questions Q1 to Q9 and Q24 to Q25, descriptive analysis isn’t possible since the responses are texts and not numerical values. Therefore, for such questions, we will perform a statistical frequencies analysis.

Statistical Frequency Analysis:
Table 6 shows that all of the responses are valid and 7.3% of the respondents are Females and 92.7% are Males.

Table 7 shows that all of the responses are valid and 3.7% of the respondents are between the ages of 18 and 24; 59.8% are between 25 and 34; 17.1% are between 35 and 44; 12.2% are between 45 and 54 and 7.3% are between 55 and 64.

Table 6 – Q1 frequency statistics

<table>
<thead>
<tr>
<th>Q1 - Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Female</td>
<td>6</td>
<td>7.3</td>
<td>7.3</td>
<td>7.3</td>
</tr>
<tr>
<td>Male</td>
<td>76</td>
<td>92.7</td>
<td>92.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 7 – Q2 frequency statistics

<table>
<thead>
<tr>
<th>Q2 - Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid 18 - 24</td>
<td>3</td>
<td>3.7</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>25 - 34</td>
<td>49</td>
<td>59.8</td>
<td>59.8</td>
<td>63.4</td>
</tr>
<tr>
<td>35 - 44</td>
<td>14</td>
<td>17.1</td>
<td>17.1</td>
<td>80.5</td>
</tr>
<tr>
<td>45 - 54</td>
<td>10</td>
<td>12.2</td>
<td>12.2</td>
<td>92.7</td>
</tr>
<tr>
<td>55 - 64</td>
<td>6</td>
<td>7.3</td>
<td>7.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 8 – Q3 frequency statistics

Table 8 shows that all of the responses are valid and 2.4% of the respondents have a high school degree, 53.7% have a bachelor degree, 41.5% have master’s degree and 2.4% have a PhD degree.

<table>
<thead>
<tr>
<th>Q3 - Education</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid HS</td>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>BE</td>
<td>44</td>
<td>53.7</td>
<td>53.7</td>
<td>56.1</td>
</tr>
<tr>
<td>MSc</td>
<td>34</td>
<td>41.5</td>
<td>41.5</td>
<td>97.6</td>
</tr>
<tr>
<td>PhD</td>
<td>2</td>
<td>2.4</td>
<td>2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 9 – Q4 frequency statistics

Table 9 shows that all of the responses are valid and that 14.6% of the respondents have between 1 and 3 years of experience; 17.7% of the respondents have between 3 and 5 years of experience; 23.2% of the respondents have between 5 and 10 years of experience; 15.9% of the respondents have between 10 and 15 years of experience and 29.3% of the respondents have more than 15 years of experience.

Table 10 – Q5 frequency statistics

Table 10 shows that all of the responses are valid and that 12.2% of the respondents have worked on projects of value less than 5 million dollars, 12.2% between 5 and 10 million dollars, 11% between 10 and 25 million dollars, 7.3% between 25 and 50 million dollars and 57.3% more than 50 million dollars.
Table 11 – Q6 frequency statistics

Table 11 shows the frequencies and percentages of responses to question 6. It listed the countries where the respondents were born, lived and worked. The sum of the nationality frequencies is greater than 82 since a respondent may hold dual citizenship.

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Valid</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Lived</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Worked</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td>55</td>
<td>67.07%</td>
<td>51</td>
<td>62.20%</td>
<td>42</td>
<td>51.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>0</td>
<td>0.00%</td>
<td>19</td>
<td>23.17%</td>
<td>30</td>
<td>36.59%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KSA</td>
<td>0</td>
<td>0.00%</td>
<td>23</td>
<td>28.05%</td>
<td>32</td>
<td>39.02%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UAE</td>
<td>0</td>
<td>0.00%</td>
<td>29</td>
<td>35.37%</td>
<td>36</td>
<td>43.90%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>0</td>
<td>0.00%</td>
<td>9</td>
<td>10.98%</td>
<td>11</td>
<td>13.41%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td>0</td>
<td>0.00%</td>
<td>14</td>
<td>17.07%</td>
<td>20</td>
<td>24.39%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
<td>2.44%</td>
<td>1</td>
<td>1.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>2</td>
<td>2.44%</td>
<td>1</td>
<td>1.22%</td>
<td>3</td>
<td>3.66%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>6</td>
<td>7.32%</td>
<td>8</td>
<td>9.76%</td>
<td>8</td>
<td>9.76%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egypt</td>
<td>1</td>
<td>1.22%</td>
<td>2</td>
<td>2.44%</td>
<td>3</td>
<td>3.66%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
<td>2.44%</td>
<td>1</td>
<td>1.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>1.22%</td>
<td>1</td>
<td>1.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palestine</td>
<td>1</td>
<td>1.22%</td>
<td>1</td>
<td>1.22%</td>
<td>1</td>
<td>1.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>1</td>
<td>1.22%</td>
<td>4</td>
<td>4.88%</td>
<td>7</td>
<td>8.54%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>8</td>
<td>9.76%</td>
<td>5</td>
<td>6.10%</td>
<td>5</td>
<td>6.10%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
<td>1.22%</td>
<td>2</td>
<td>2.44%</td>
<td>3</td>
<td>3.66%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>1.22%</td>
<td>1</td>
<td>1.22%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>3</td>
<td>3.66%</td>
<td>3</td>
<td>3.66%</td>
<td>3</td>
<td>3.66%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>1.22%</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 12 – Q7 frequency statistics

In the same manner, Q7, Q8 and Q9 are yes or no questions and therefore frequency statistics will be used. Tables 12 through 14 show that all responses are valid and the frequency distribution of responses for each question.
Table 1 shows that the responses are valid and shows the frequencies and the percentages of self-trained, professionally trained and never trained respondents to questions Q20 to Q23 and the results are respectively as follows: (69.51%, 15.85%, 26.83%) for Q20; (84.15%, 18.29%, 10.98%) for Q21; (84.15%, 15.85%, 7.32%) for Q22 and (73.17%, 19.51%, 18.29%) for Q23. The sum of percentages for each category cannot be equal to 100% since the responses between self and professionally trained may be overlapping.

Table 13 – Q8 frequency statistics

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>10</td>
<td>12.2</td>
<td>12.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Yes</td>
<td>72</td>
<td>87.8</td>
<td>87.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 14 – Q9 frequency statistics

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>7</td>
<td>8.5</td>
<td>8.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Yes</td>
<td>75</td>
<td>91.5</td>
<td>91.5</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 15 shows that the responses are valid and shows the frequencies and the percentages of self-trained, professionally trained and never trained respondents to questions Q20 to Q23 and the results are respectively as follows: (69.51%, 15.85%, 26.83%) for Q20; (84.15%, 18.29%, 10.98%) for Q21; (84.15%, 15.85%, 7.32%) for Q22 and (73.17%, 19.51%, 18.29%) for Q23. The sum of percentages for each category cannot be equal to 100% since the responses between self and professionally trained may be overlapping.

Table 15 – Q20 to Q23 frequency statistics

In the same manner, Q24 and Q25 are yes or no questions and therefore frequency statistics will be used. Tables 16 and 17 show that all responses are valid and the frequency distribution of responses for each question.
Statistical Descriptive Analysis:

For questions 10 to 19, the respondents’ answers are numerical and therefore a statistical descriptive analysis was performed. Table 18 shows the descriptive analysis results for each of the answers.

The range of possible responses to these questions is between 1 and 7; where 1 is strongly disagree, 2 is disagree, 3 is slightly disagree, 4 is neutral, 5 is slightly agree, 6 is agree and 7 is strongly agree. Based on the above, we can say that the answer is negative between 1 and 3, 4 is neutral and the answer is positive between 5 and 7. This negative-positive relation will help with the skewness and kurtosis analysis.

The mean or the average is the most commonly used method to describe the central tendency. For all the questions, the mean is between 5 and 6 and that indicates that the responses are centered in this positive range and not on the neutral center of the possible answers range. It means that the majority of the population agrees with the statements.
The **median** is the exact middle of the set of values. For eight questions out of 10 the **median** is 6 and the remaining 2 have a **median** of 5. This backs up the indication of the **mean** that the responses are centered on the positive side of the scale.

**Table 1**

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Q10</th>
<th>Q11</th>
<th>Q12</th>
<th>Q13</th>
<th>Q14</th>
<th>Q15</th>
<th>Q16</th>
<th>Q17</th>
<th>Q18</th>
<th>Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>5.99</td>
<td>5.73</td>
<td>5.50</td>
<td>5.04</td>
<td>5.38</td>
<td>5.61</td>
<td>5.79</td>
<td>5.35</td>
<td>5.80</td>
<td>5.02</td>
</tr>
<tr>
<td>Std. Error of Mean</td>
<td>0.091</td>
<td>0.114</td>
<td>0.122</td>
<td>0.135</td>
<td>0.133</td>
<td>0.135</td>
<td>0.111</td>
<td>0.169</td>
<td>0.116</td>
<td>0.147</td>
</tr>
<tr>
<td>Median</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Mode</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>0.824</td>
<td>1.031</td>
<td>1.103</td>
<td>1.222</td>
<td>1.203</td>
<td>1.225</td>
<td>1.003</td>
<td>1.526</td>
<td>1.048</td>
<td>1.333</td>
</tr>
<tr>
<td>Variance</td>
<td>0.679</td>
<td>1.063</td>
<td>1.216</td>
<td>1.492</td>
<td>1.448</td>
<td>1.500</td>
<td>1.006</td>
<td>2.330</td>
<td>1.097</td>
<td>1.777</td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.927</td>
<td>-1.098</td>
<td>-0.651</td>
<td>-0.488</td>
<td>-1.209</td>
<td>-1.025</td>
<td>-1.676</td>
<td>-0.985</td>
<td>-0.521</td>
<td>-0.654</td>
</tr>
<tr>
<td>Std. Error of Skewness</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
<td>0.266</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.529</td>
<td>1.690</td>
<td>-0.236</td>
<td>-0.474</td>
<td>2.000</td>
<td>1.309</td>
<td>5.730</td>
<td>0.597</td>
<td>-0.612</td>
<td>-0.086</td>
</tr>
<tr>
<td>Std. Error of Kurtosis</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
<td>0.526</td>
</tr>
<tr>
<td>Range</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Minimum</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Maximum</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

**Table 18** – Q10 to Q19 descriptive statistical analysis

The **mode** is the most occurring value in each set of responses. For all of the questions, the **mode** is 6 which means that most of the respondents agrees with the statement, except for Q17 where the **mode** is 7 and which means that most of the respondents strongly agree with Q17.

The **standard deviation** is the most accurate and detailed estimate of dispersion. It is related to the **variance**, since the **standard deviation** is the square root of the **variance**. The **standard deviation** shows the relationship between the answers set and the mean of the sample. Since the **standard deviation** is a representation of the average distance between the responses and the **mean**, its magnitude is relative to the to the topic being studied. In our case, the **standard deviation** is relatively small between 0.824 and 1.526 and therefore acceptable. In case it was big, it only represents a large amount of variation in the responses. It also helps to draw the following conclusions about the data which are summarized in Table 19:

- Approximately 68% of the responses fall within one standard deviation from the mean
• Approximately 95% of the responses fall within two standard deviations from the mean
• Approximately 99% of the responses fall within three standard deviations from the mean

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>68% range</th>
<th>95% range</th>
<th>99% range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q10</td>
<td>5.99</td>
<td>0.824</td>
<td>5.166</td>
<td>6.814</td>
<td>4.342</td>
</tr>
<tr>
<td>Q11</td>
<td>5.73</td>
<td>1.031</td>
<td>4.699</td>
<td>6.761</td>
<td>3.665</td>
</tr>
<tr>
<td>Q12</td>
<td>5.5</td>
<td>1.103</td>
<td>4.397</td>
<td>6.603</td>
<td>3.294</td>
</tr>
<tr>
<td>Q13</td>
<td>5.04</td>
<td>1.222</td>
<td>3.818</td>
<td>6.262</td>
<td>2.596</td>
</tr>
<tr>
<td>Q14</td>
<td>5.38</td>
<td>1.203</td>
<td>4.177</td>
<td>6.583</td>
<td>2.974</td>
</tr>
<tr>
<td>Q15</td>
<td>5.61</td>
<td>1.325</td>
<td>4.385</td>
<td>6.835</td>
<td>3.16</td>
</tr>
<tr>
<td>Q16</td>
<td>5.79</td>
<td>1.003</td>
<td>4.787</td>
<td>6.739</td>
<td>3.784</td>
</tr>
<tr>
<td>Q17</td>
<td>5.35</td>
<td>1.526</td>
<td>3.824</td>
<td>6.876</td>
<td>2.298</td>
</tr>
<tr>
<td>Q18</td>
<td>5.8</td>
<td>1.048</td>
<td>4.752</td>
<td>6.848</td>
<td>3.704</td>
</tr>
<tr>
<td>Q19</td>
<td>5.02</td>
<td>1.333</td>
<td>3.687</td>
<td>6.353</td>
<td>2.354</td>
</tr>
</tbody>
</table>

**Table 19 – Q10 to Q19 standard deviations conclusions ranges**

Other important parameters presented by Table 16, are **skewness** and **kurtosis**. Skewness is the degree to which a variable's distribution is symmetrical or asymmetrical. When the distribution stretches to one of the two sides, then it is call skewed and it isn’t symmetrical (Hair et al., 2007). Kurtosis is a measure of how peaked is the distribution (Hair et al., 2007). The same book presented general guidelines for both parameters. First, having a skewness outside the range of [-1, +1] reflects a noticeably skewed distribution. Second, having a kurtosis greater than +1 reflects a too peaked distribution and a kurtosis less than –1 reflects a too flat one.

According to Table 18, the ten questions presents a negative skewness which means that the distributions are stretched to one side. The degree of skewness varies from question to another. The distribution of questions 10,12,13,17,18 and 19 are between 0 and -1 and therefore are somewhat symmetrical. For the questions 11,14,15 and 16 skewness is slightly below -1 and therefore the distribution is considered asymmetric. This finding is correlated with the mean finding where we found that these distributions are centered on the positive side of the scale.

Questions 12, 13, 17, 18 and 19 yielded an acceptable kurtosis within the acceptable range and
therefore their distribution is neither too peak nor too flat. On the opposite hand, questions 10, 11, 14, 15 and 16 yielded kurtoses above +1 and therefore their distribution is peaked which yields closeness in the responses.

The following Table 20 shows the frequency distribution of responses for each question.

<table>
<thead>
<tr>
<th>Q10</th>
<th>Q15</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Valid Percent</strong></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>3</td>
<td>3.7</td>
</tr>
<tr>
<td>4</td>
<td>13.9</td>
</tr>
<tr>
<td>6</td>
<td>53.7</td>
</tr>
<tr>
<td>7</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q11</th>
<th>Q16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Valid Percent</strong></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>6</td>
<td>7.3</td>
</tr>
<tr>
<td>7</td>
<td>20.7</td>
</tr>
<tr>
<td>8</td>
<td>47.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q12</th>
<th>Q17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Valid Percent</strong></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>2</td>
<td>4.9</td>
</tr>
<tr>
<td>3</td>
<td>18.2</td>
</tr>
<tr>
<td>6</td>
<td>43.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q13</th>
<th>Q18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Valid Percent</strong></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>4</td>
<td>22.0</td>
</tr>
<tr>
<td>6</td>
<td>36.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q14</th>
<th>Q19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td><strong>Valid Percent</strong></td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>2</td>
<td>4.9</td>
</tr>
<tr>
<td>4</td>
<td>22.0</td>
</tr>
<tr>
<td>6</td>
<td>36.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Table 20 – Q10 to Q19 frequency distribution analysis
5.3.2. Interview Questionnaire Validation

5.3.2.1. Pilot test interview

The interview was pilot tested by 2 professionals. Both of them had more than 20 years of experience in the construction industry and with multicultural teams. The results were analyzed for consistency and to make sure that the questions are well written. The objective was to make sure that the questions will yield the intended results and that all questions was well explained and understood by the participants. The questions were enhanced according to the pilot test interviewees recommendations.

5.3.2.2. Statistical Analysis

For the questions Q2 to Q6 of the pre-interview, descriptive analysis isn’t possible since the responses are texts and not numerical values. Therefore, for such questions, we will perform a statistical frequencies analysis.

Statistical Frequency Analysis:

Table 21 shows that all of the responses are valid and 100% are Males.

Table 21 – IQ2 frequency statistics

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 22 shows that all of the responses are valid and 0% of the respondents are between the ages of 18 and 24; 64.3% are between 25 and 34; 7.1% are between 35 and 44; 14.3% are between 45 and 54 and 14.3% are between 55 and 64.

Table 22 – IQ3 frequency statistics

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 - 34</td>
<td>9</td>
<td>64.3</td>
<td>64.3</td>
</tr>
<tr>
<td>35 - 44</td>
<td>1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>45 - 54</td>
<td>2</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>55 - 64</td>
<td>2</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 23 shows that all of the responses are valid and 7.1% of the respondents have a high school degree, 42.9% have a bachelor degree, 42.9% have master’s degree and 7.1% have a PhD degree.

### IQ4 - Education

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS</td>
<td>1</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>BE</td>
<td>6</td>
<td>42.9</td>
<td>42.9</td>
<td>50.0</td>
</tr>
<tr>
<td>MSc</td>
<td>6</td>
<td>42.9</td>
<td>42.9</td>
<td>92.9</td>
</tr>
<tr>
<td>PhD</td>
<td>1</td>
<td>7.1</td>
<td>7.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 23 – IQ4 frequency statistics

### IQ5 - Experience

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 - 15 years</td>
<td>2</td>
<td>14.3</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>15 + years</td>
<td>5</td>
<td>35.7</td>
<td>35.7</td>
<td>50.0</td>
</tr>
<tr>
<td>3 - 5 years</td>
<td>4</td>
<td>28.6</td>
<td>28.6</td>
<td>78.6</td>
</tr>
<tr>
<td>5 - 10 years</td>
<td>3</td>
<td>21.4</td>
<td>21.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 24 – IQ5 frequency statistics

Table 24 shows that all of the responses are valid and that 0% of the interviewees have between 1 and 3 years of experience; 28.6% of the interviewees have between 3 and 5 years of experience; 21.4% of the interviewees have between 5 and 10 years of experience; 14.3% of the interviewees have between 10 and 15 years of experience and 35.7% of the interviewees have more than 15 years of experience.

### IQ6 - Projects Value

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 - 50 million $</td>
<td>2</td>
<td>14.3</td>
<td>14.3</td>
<td>14.3</td>
</tr>
<tr>
<td>5 - 10 million $</td>
<td>1</td>
<td>7.1</td>
<td>7.1</td>
<td>21.4</td>
</tr>
<tr>
<td>More than 50 million $</td>
<td>11</td>
<td>78.6</td>
<td>78.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 25 – IQ6 frequency statistics
Table 25 shows that all of the responses are valid and that 0% of the interviewees have worked on projects of value less than 5 million dollars, 7.1% between 5 and 10 million dollars, 0% between 10 and 25 million dollars, 14.3% between 25 and 50 million dollars and 78.6% more than 50 million dollars.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td>11</td>
<td>78.57%</td>
<td>12</td>
<td>85.71%</td>
<td>11</td>
<td>78.57%</td>
</tr>
<tr>
<td>Kuwait</td>
<td>0</td>
<td>0.00%</td>
<td>3</td>
<td>21.43%</td>
<td>7</td>
<td>50.00%</td>
</tr>
<tr>
<td>KSA</td>
<td>0</td>
<td>0.00%</td>
<td>6</td>
<td>42.86%</td>
<td>9</td>
<td>64.29%</td>
</tr>
<tr>
<td>UAE</td>
<td>0</td>
<td>0.00%</td>
<td>7</td>
<td>50.00%</td>
<td>10</td>
<td>71.43%</td>
</tr>
<tr>
<td>Bahrain</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
<td>14.29%</td>
<td>3</td>
<td>21.43%</td>
</tr>
<tr>
<td>Qatar</td>
<td>0</td>
<td>0.00%</td>
<td>3</td>
<td>21.43%</td>
<td>6</td>
<td>42.86%</td>
</tr>
<tr>
<td>Oman</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>7.14%</td>
</tr>
<tr>
<td>Syria</td>
<td>1</td>
<td>7.14%</td>
<td>1</td>
<td>7.14%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Jordan</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
<td>2</td>
<td>14.29%</td>
</tr>
<tr>
<td>Iraq</td>
<td>0</td>
<td>0.00%</td>
<td>1</td>
<td>7.14%</td>
<td>1</td>
<td>7.14%</td>
</tr>
<tr>
<td>India</td>
<td>2</td>
<td>14.29%</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Brazil</td>
<td>1</td>
<td>7.14%</td>
<td>0</td>
<td>0.00%</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Table 26 – IQ7 frequency statistics

Table 26 shows the frequencies and percentages of responses to interview question 7. It listed the countries where the respondents were born, lived and worked. The sum of the nationality frequencies is greater than 14 since a respondent may hold dual citizenship.

6. RESULTS ANALYSIS

Qualitative analysis mainly comprises systematic interpretation of information from a range of methods to build meaningful theories and explanations of the concept under study (Denzin & Lincoln, 1998; Merriam, 1998; Miles & Huberman, 1994; Strauss & Corbin, 1998). The challenge with data collection and analysis lies in understanding and making sense of the large amounts of information, reducing the big volume of data, detecting substantial patterns and building a specific framework. Merriam (1998) advises the researchers to start data analysis
simultaneously with the data collection in order to avoid repetitious, out-of-focus and overwhelming data.

As per Maxwell (2005), the main categorizing strategy of data in qualitative research is coding. Strauss (1997) explains to researchers that coding mainly helps to fracture the data and rearrange it into smaller categories that facilitate comparison between ideas and that help in developing theories.

The researcher will develop findings from the surveys and the interviews. The findings will be developed in a way that respond to the research questions. Findings will focus on the experience of project managers on CQ in dealing with cross-cultural conflicts and the reasons behind it. Also, findings will focus on the skills and competencies needed to deal with these conflicts. Finally, the findings will examine how PMs learned CQ and what factors helped or hindered the learning process of cultural skills.

As a start, the findings will be listed and then explained in details. Then for each finding, the researcher will list the related surveys and interviews responses and percentages. Finally, the responses will be explored further and the author will explain how the findings were developed with respect to the research questions and hypothesis.

6.1. Survey results and analysis

A. Population demographics

The first six questions covered the demographics of the respondents (e.g., gender, age, education, experience).

Six respondents (7.32%) were female and the remaining were male (92.68%) (Graph 1). This clearly indicated that project management was mainly a male occupation in Lebanon and the Gulf. The lack of gender equity was also apparent during the original online search for
respondents. While there can be many reasons for the gender disparity, two main reasons were proposed. First, Arabic social structures reflected those of male dominated Arab communities. Second, Arab retained gender stereotypes in (e.g., women should only raise families, the engineering profession is only restricted to males).

Graph 1 – Survey: Respondents’ gender

Participant age was divided into 5 groups. As per Graph 2, forty-nine respondents (59.76%) were between the ages of 25 and 34. The remaining 40.24% were scattered between the other groups.

Graph 2 – Survey: Respondents’ age brackets
Education level varied with forty-four respondents (53.66%) having a Bachelor Degree, thirty-four (41.46%) a Master’s degree, two (2.44%) a PhD and two (2.44%) a high school diploma (Graph 3). Eight respondents (9.76%) acquired a Project Management Professional (PMP) certificate and one (1.22%) acquired a post-graduation diploma in planning and management.

**Graph 3 – Survey: Respondents’ level of education**

Experience was assessed by two variables: number of years on the job and approximate total value (in million dollars) of the jobs each participant had managed. Two different variables were used in order to reflect the complexity of bigger projects and how they affect experience. For example, a manager with only five years of experience could have spent these years working on a project with a value of $50 million. Another manager with 10 years’ experience could have spent this time on smaller projects with a total value around $15 million.

Years of experience were divided into 5 categories with the following results (Graph 4): 1-3 years, twelve respondents (14.63%); 3-5 years, fourteen respondents (17.07%); 5-10 years, nineteen respondents (23.17%); 10-15 years, thirteen respondents (15.85%); more than 15 years, twenty-four respondents (29.27%).
Graph 4 – Survey: Respondents’ years of experience

Total value of jobs was divided into five categories with the following results (Graph 5): less than $5 million, ten respondents (12.20%); $5 – 10 million, ten respondents (12.20%); $10 – 25 million, nine respondents (10.98%); $25 – 50 million, six respondents (7.32%) and more than $50 million, forty-seven respondents (57.32%).

Results were close in each category for years of experience. This was not true for total value of jobs where more than half of the respondents (57.32%) had worked on more than $50 million dollars’ worth of projects. The above numbers show a good distribution between the respondents and a good level of representability of different types and ranges of experiences.

Graph 5 – Survey: Respondents’ projects approximate total value
Graphs 6 through 8 showed the results of Q6 which examined the countries distribution where the respondents were born, lived and worked.

Graph 6 addresses the countries targeted in this study. 67.07% of the respondents were Lebanese, 62.2% lived in Lebanon and 51.22% worked there. What was remarkable is that none of the respondents was a citizen of the remaining investigated Arab Gulf countries. Therefore, 23.17% of the respondents lived in Kuwait and 36.59% worked there; 28.05% lived in KSA and 39.02% worked there; 35.37% lived in UAE and 43.9% worked there; 10.98% live in Bahrain and 13.41% worked there and finally 17.07% lived in Qatar and 24.39% worked there.

Having respondents from many different nationalities, Graphs 7 shows the results of the remaining Arab countries. 2.44% of the respondents lived in Oman and worked there; 2.44% were Syrian, 1.22% lived in Syria and 3.66% worked there; 7.32% were Jordanian, 9.76% lived in Jordan and 9.76% worked there; 1.22% were Egyptian, 2.44% lived in Egypt and 3.66% worked there; 2.44% lived in Morocco and 1.22% worked there; 1.22% lived and worked in Algeria; 1.22% were Palestinian who lived and worked in Palestine and 1.22% worked in Iraq.
Graph 8 shows the results of the remaining foreign countries. 9.76% were Indians, 6.1% lived and worked in India; 1.22% were Americans while 2.44% and 3.66% lived and worked respectively in the United States of America; 1.22% lived and worked in the United Kingdom; 3.66% were Canadian who also lived and worked in Canada and 1.22% held the Brazilian citizenship. Finally, 1.22% were Africans while 4.88% and 8.54% lived and worked respectively in different parts of Africa including South Africa, Angola, Ghana, Nigeria and Mali.

Q6 is a very important question as it proves the validity of this research. In fact, the results showed 10 nationalities who lived and worked in 23 countries and especially in the 6 targeted countries by this study. It proves the existence of multicultural settings in Lebanon and the Arab Gulf.
The remaining 19 questions covered the concept of Cultural Intelligence through yes or no questions and seven-point Likert scales questions.

**General knowledge**

Questions seven through nine looked at general knowledge of CQ (Graph 9). Q7 indicated that sixty-seven (81.71%) of the respondents understood the concept of CQ while fifteen (18.29%) did not. In the questionnaire and after Q7, the author defined the concept of CQ for the respondents in order to continue the survey. Q8 showed that seventy-two respondents (87.80%) had solved at least one problem at work using CQ at some point in their career while ten (12.20%) hadn’t solved any problems using CQ. Q8 indicated some of the respondents had unknowingly used CQ solutions based on their experience in working with different cultures. Q7 and Q8 explains that while some of the respondents recognized the term Cultural Intelligence, some of them do understand and apply the concept without knowing its name and the fact that it became a well-established line of research.
Q9 showed that seventy-five respondents (91.46%) could clearly identify cultural differences in their jobs while seven (8.54%) were unaware of them (Graph 9). The differences in the results of Q8 and Q9 posed an interesting question. If the majority of respondents were able to identify cultural differences what prevented them from using culturally related solutions to solve problems? Why is there a small difference between the positive percentages of both questions? Most probably, this difference in percentages is due to the lack of professional training for PMs in CQ.

Graph 9 – Survey: CQ general knowledge, Q7 to Q9

Graph 10 – Survey: Metacognitive CQ (Q10, Q11) and Cognitive CQ (Q12 to Q14)
Metacognitive CQ:

Q10 and Q11 covered metacognitive CQ by looking at the cultural knowledge of PMs (Graph 10). 95.12% of the respondents fell on the positive side of the Likert scale when asked if they adjust their cultural knowledge in cross-cultural interactions in Q10. Twenty-one respondents (25.61%) strongly agreed, forty-four (53.66%) agreed, thirteen (15.85%) slightly agreed, three (3.66%) were neutral and only one (1.22%) slightly disagreed. When asked in Q11 if they checked the accuracy of their knowledge during interactions with new cultures, seventeen respondents (20.73%) strongly agreed, thirty-nine (47.56%) agreed, seventeen (20.73%) slightly agreed, six (7.32%) were neutral, two (2.44%) slightly disagreed while one (1.22%) disagreed. These numbers indicated that targeted PMs were well aware of the existence of differences between cultures and were aware of their cultural knowledge.

Cognitive CQ:

Three questions (Q12, Q13, and Q14) covered cognitive CQ (Graph 10). Q12 asked if they were familiar with cultural values, religious beliefs, traditions and arts of other countries. 80.49% of the responses fell in the positive side of the Likert scale. Thirteen respondents (15.85%) strongly agreed, thirty-six (43.9%) agreed, seventeen (20.73%) slightly agreed, eleven (13.41%) were neutral and five (6.10%) slightly disagreed. In Q13, respondents were asked if they were familiar with the rules of verbal expression in different cultures. Again, the majority (67.07%) fell in the positive side of the Likert scale. Six respondents (7.32%) strongly agreed, thirty (36.59%) agreed, nineteen (23.17%) slightly agreed, seventeen (20.73%) were neutral, eight (9.76%) slightly disagreed and two (2.44%) disagreed. Q14 asked if respondents were familiar with the rules of nonverbal expression in other cultures and if they changed their expression when necessary. The majority of 80.49% fell in the positive side of the Likert scale. Ten respondents (12.2%) strongly agreed, thirty-six (43.9%) agreed, twenty (24.39%) slightly
agreed, eleven (13.41%) were neutral, two (2.44%) slightly disagreed, two (2.44%) disagreed and one (1.22%) strongly disagreed. The results of these three questions indicate that the majority of the PMs in Lebanon and the Gulf are culturally educated and try to use their knowledge as much as possible. The respondents try to add to their cultural databases as needed, for example when they encounter a person from an unfamiliar culture on a job.

Motivational CQ:

Some people succeed in multicultural settings because they enjoy it, others because they are obliged to do it and others do not succeed. Two questions, Q15 and Q16, studied the motive behind the CQ (Graph 11). For both questions, the majority of the responses (80.49% and 92.68% respectively) fell in the positive side of the Likert scale. Q15 asked if the PM enjoyed living and interacting with different cultures. Twenty respondents (24.9%) strongly agreed, thirty-two (39.02%) agreed, fourteen (17.07%) slightly agreed, twelve (14.63%) were neutral while three (3.66%) slightly disagreed and one (1.22%) strongly disagreed.

Graph 11 – Survey: Motivational CQ (Q15, Q16) and Behavioral CQ (Q17 to Q19)
Q16 asked if the PM was confident in his or her ability to socialize with people from different cultures. Seventeen respondents (20.73%) strongly agreed, forty-one (50%) agreed, eighteen (21.95%) slightly agreed, four (4.88%) were neutral while one (1.22%) slightly disagreed and one (1.22%) strongly disagreed. These numbers indicate PMs in the targeted area enjoy interaction with different cultures and are willing to adapt and learn about them.

Behavioral CQ:

Three questions (Q17, Q18, and Q19) looked at behavioral CQ by asking about participants’ behavior in cultural interactions (Graph 11). The majority of the responses for the three questions fell in the positive side of the Likert scale (76.83%, 86.59% and 67.07% respectively). Q17 asked if they changed their verbal behavior (e.g., accent, tone) in cross-cultural interactions. Twenty-two (26.83%) strongly agreed, twenty-one (25.61%) agreed, twenty (24.39%) slightly agreed, ten (12.2%) were neutral while three (3.66%) slightly disagreed, four (4.88%) disagreed and two (2.44%) strongly disagreed. Q18 asked if they changed their speed of speaking and used pauses and silence in cross-cultural interactions. Twenty-five respondents (30.49%) strongly agreed, twenty-eight (34.15%) agreed, eighteen (21.95%) slightly agreed, ten (12.2%) were neutral while only one (1.22%) slightly disagreed. Q19 asked if they changed their facial expressions during cross-cultural interactions. Eight respondents (9.76%) strongly agreed, twenty-eight (34.15%) agreed, nineteen (23.17%) slightly agreed, eighteen (21.95%) were neutral while three (3.66%) slightly disagreed and six (7.32%) disagreed. These responses showed a marked difference from the previous questions. Although the majority changed their facial expressions the distribution of responses was very different from the previous two questions. The results of the behavioral CQ questions indicate PMs can adapt, at different degrees, their verbal and nonverbal expressions as needed during interactions with people from different cultures.
CQ training:

This section looked at CQ training (Graph 12). Q20 asked if they were trained on the importance of CQ and the importance of their roles in cultural interactions. 57 respondents were self-trained, 13 had professional training and 22 were never trained. Q21 asked if they were trained to develop an open mind towards cultural differences. 69 were self-trained, 15 were professionally trained and 9 were never trained. Q22 asked if they were trained to appropriately address people from different cultures. 69 were self-trained, 13 were professionally trained and 6 were never trained. Finally, Q23 asked if they were trained to learn basic terms or new languages to easily interact. 60 were personally trained, 16 were professionally trained and 15 were never trained.

There could be some overlapping in the responses since a person can be both self and professionally trained. The most interesting thing in this section was the high number of self-trained PMs versus the low number of professionally trained PMs. This indicates that people have experienced cultural differences and felt the need to educate themselves in order to succeed in the multicultural workplace. At the same time, it points to a lack of professional
acknowledgement of the need for training on CQ requiring PMs to find the information on their own.

The final section looked at how CQ affected participants’ careers (Graph 13). Q24 asked if they learned that people from different cultures have different orientations and expectations; 82 respondents (100%) responded with yes. Q25 asked if CQ improved their own productivity and the overall performance; seventy-nine respondents (96.34%) agreed while only three (3.66%) didn’t.

The last two questions imply the difference in orientations and expectations between different nationalities and most importantly it proves the importance of acquiring and developing cultural intelligence skills which improves the overall performance of the manager and ultimately affects positively the end result of the project.

Graph 13 – Survey: Overall CQ experience questions, Q24 and Q25

6.2. Interview results and analysis

A. Population demographics

The first six questions of the interview covered the demographics of the 14 respondents (e.g., gender, age, education, experience).
Fourteen respondents (100%) were males (Graph 14).

As for the age, Graph 15 shows that nine respondents (64.29%) were between the ages of 25 and 34, one (7.14%) was between the ages of 35 and 44, two (14.29%) were between the ages of 45 and 54 and another two (14.29%) were between the ages of 55 and 64.

Education level varied with six interviewees (42.86%) having a Bachelor Degree, six (42.86%) a Master’s degree, one (7.14%) a PhD and one (7.14%) a high school diploma (Graph 16). Eight respondents (57.14%) acquired certificates or diplomas in different fields related to
engineering management including: project planning and management, project management, FIDIC, real estate, PMP and others.

Graph 16 – Interview: Respondents’ level of education

Experience was again assessed by two variables: number of years on the job and approximate total value (in million dollars) of the jobs each participant had managed. Two different variables were used in order to reflect the complexity of bigger projects and how they affect experience.

Years of experience were divided into 5 categories with the following results (Graph 17): 1-3 years, zero interviewees (0%); 3-5 years, four interviewees (28.57%); 5-10 years, three interviewees (21.43%); 10-15 years, two interviewees (14.29%); more than 15 years, five interviewees (35.71%).

Graph 17 – Interview: Respondents’ years of experience
Total value of jobs was divided into five categories with the following results (Graph 18): less than $5 million, 0 interviewees (0%); $5 – 10 million, one interviewee (7.14%); $10 – 25 million, zero interviewees (0%); $25 – 50 million, two interviewees (14.29%) and more than $50 million, eleven interviewees (78.57%). These numbers show a good distribution between the interviewees and a good level of representability of different types of experiences.

Graph 18 – Interview: Respondents’ projects approximate total value

Graphs 19 and 20 showed the results of Q6 which examined the countries distribution where the respondents were born, lived and worked.

Graph 19 addresses the countries targeted in this study. 78.57% of the interviewees were Lebanese, 85.71% lived in Lebanon and 78.57% worked there; 21.43% of the interviewees lived in Kuwait and 50% worked there; 42.86% lived in KSA and 64.29% worked there; 50% lived in UAE and 71.43% worked there; 14.29% live in Bahrain and 21.43% worked there and finally 21.43% lived in Qatar and 42.86% worked there.

Graph 20 shows the results of the remaining countries. 7.14% of the respondents worked in Oman; 7.14% were Syrian and lived in Syria; 14.29% worked in Jordan; 7.14% lived and worked Iraq; 14.29% were Indians and 7.14% were Brazilians (double nationalities).
Again, Q6 is a very important question as it proves the validity of the results. In fact, out of 14 interviewees, the results showed 4 nationalities who lived and worked in 9 countries and especially in the 6 targeted countries by this study. Again it proves the existence of multicultural settings in Lebanon and the Arab Gulf.

Graph 19 – Interview: Lebanon and Gulf countries results

Graph 20 – Interview: Other Arab countries results
**B. Cultural Intelligence Experience**

The remaining section of the interview asked twelve questions out of which nine investigated specific experiences where interviewees experienced cultural differences and the last three investigate CQ in general. The following section will present the questions and summary of the answers with detailed analysis.

1) **What are some of the most memorable experiences you’ve had as a Project Manager of multicultural teams where you experienced cultural issues?**

   *Example: What particular situation you recall, positive or negative, where cultural competencies were needed?*

2) **Where in these examples did cultural issues rise?**

- Interview 1: The PM was a Lebanese-American engineer who lived most of his life in the USA. He was in Kuwait to train Kuwaiti engineers on a compressor. It was during Ramadan and his presentation was around 4 hours during which he wasn’t allowed to drink due to Ramadan fasting. The issue rose from religious differences, traditions and rules. I had to understand that I wasn’t allowed to drink water during my presentation regardless of its time.

- Interview 2: The PM shared two situations in Lebanon. The first, was again about Ramadan fasting, where he was having lunch in is private office and one of the fasting subordinates commented negatively about it. The issue was religious differences and I wasn’t allowed to eat in front of Muslim team members. The second, was about him learning for the first time about a weird and new tradition, where the construction team set up a BBQ on site when they finish casting the concrete slab. It was purely hygienic issue for me which prevented me from eating onsite.
- Interview 3: The PM was Indian operating in the Arab Gulf and speaking English. He mentioned language conflicts where he had to interact with Arab people who only spoke Arabic. It was purely communication and language barriers.

- Interview 4: The PM was Indian who have worked in UAE and currently KSA. He experienced the food sharing culture on site between all different levels of the organization (labor and managers). He stated that he never experienced it before.

- Interview 5: The PM was Lebanese share two experiences. The first one was about his experience in UAE where he worked with English, Indian and Pakistani people. He experienced the personality differences based on the culture. English people have generally tough personalities and aren’t flexible at all. In addition, to be able to convince them, a person should use technical and scientific reasoning with them and definitely use an English approach. On the other hand, Indians and Pakistanis have generally low profiles. They accept ideas blindly and they do not need convincing. The second one described one situation in KSA where the locals are very keen about religion. The PM had to install some decorative cuneiform letters on the walls of a restaurant. The KSA authorities obliged them to translate the text and post the translation on the wall in order to make sure that the text doesn’t offend Islam.

- Interview 6: The PM was a Lebanese operating in Erbil, Kurdistan, Iraq. The PM experienced two aspects of the culture. The first one is that Kurdish people have a very high level of dignity and self-respect, to a level that he never experienced before. The thing that made them reject the simplest comments. The reason behind that is the amount of oppression and prosecution they experienced along their history. The second one is related to religion. Kurdish people have their own religion which they claim is an old version of Islam. The thing that made them have more holidays, over and above regular Islamic holidays which caused more business interruption.
- Interview 7: The PM was Lebanese living in Qatar and working with Syrian and Asian labor. He experienced that Syrians aren’t used to abiding to rules and regulations especially in safety and site security.

- Interview 8: The PM was Lebanese working in Kuwait and he had an Egyptian manager. The manager used to support Egyptian engineers more than other nationalities. The issue was cultural differentiation.

- Interview 9: The PM was American-Lebanese operating in the Gulf. He worked with different nationalities such as: Common Wealth countries, Gulf Cooperation Council countries and Americans. He experienced the difference in how contracts are interpreted and in conflict resolution. Some cultures rely more on relationship, contacts and friendship while others pay more attention to the contract terms.

- Interview 10: The PM was Lebanese operating in Lebanon where he had a conflict with a new Syrian contractor. The PM explained that the contractor was new to the team and they need to build history and trust with him. The contractor considered it an insult since he is a foreigner to the country. It was trust issue between cultures.

- Interview 11: The PM was Brazilian-Lebanese operating in Kuwait. His Indian team agreed to work for the rest of the night under the condition that he would provide them with dinner. The PM didn’t know that the Indians were vegetarians by religion and he ordered food containing meat. It was religious-cultural issue.

- Interview 12: The PM was Syrian operating in KSA where he worked on a megaproject with people from United Kingdom, United States, Ireland, KSA, and Egypt. He experienced the difference in communication, body language and how each person voice out his concerns. The
issue was mainly in communication, time commitment, flexibility and how perfection is perceived.

- Interview 13: The PM was Lebanese working in KSA under a Pakistani-British manager. The manager had soft methodology in dealing with problems which generated reworks and clashes with stakeholders.

- Interview 14: The PM was Lebanese operating in Abu Dhabi, UAE. He experienced how labor were badly treated like slaves from managers. Also, he experienced how Egyptians give extreme and negative importance for managerial positions.

3) What was easy or challenging in those situations?


Any other aspect that may be affected by the multicultural property of the team?

In general, most of the interviewees shared only what was challenging in the situations they have been through. However, few of them mentioned that the common English language was the easier part when they all spoke it. As for the challenges, the responses were diverse and mainly comprises: difference in language, tough work attitude, understanding the context at that moment and always being careful and attentive to minor details. Some of the other challenges were: interpersonal interactions, managing others’ expectations and team conflicts.

4) How did you handle it?

The solutions presented by the interviewees were diverse but can be summarized with the following. The main solution was communication. In all of the conflict, communication skills were involved to address, negotiate, reflect and understand the problem. For the language differences, the PMs resorted to translation through translators or Google translate application. For the religious issues, the PM had to accept the others religions and beliefs and agree on rules
where it is possible (for example taking permission to drink during Ramadan presentation or just privately eat in the personal office). For the tough nationalities, the solution was by adopting their methods and walking in their shoes. For the low profile nationalities, the solution was to always motivate them and always expressing care and respect. In addition, most of the PMs mentioned the positive and friendly attitude towards others in order to understand and solve the problem. In some situations, referring to higher management is the only option.

5) *Was your solution positive or negative? Did it help solve the problem?*

Eleven interviewees stated that their solution was positive and it solved the problem. However, for the remaining three, the solution was negative although it did solve the problem. The first case created a stressful and hostile environment yet it solved the problem. In the second case, the PM had to hire the only available local subcontractor for a specific trade. It did solve the problem however it affected negatively the quality of the result. In the third and last case, the PM had to explain the job in two different languages. It solved the problem yet it was negative as it took double the effort and double the time.

6) *What skills did you use to handle this situation?*

The interviewees provided a big range of skills that are prerequisites for any successful multicultural interaction. The responses included soft and hard skills. The first and most important skill is communication. Ten interviewees (71.43%) confirmed that a cross-cultural conflict can never be successfully managed or resolved without high communication skills. As per the interviewees, this set of skills include: verbal communication and learning other languages or at least basic words. Some interviewees emphasized a recurrent mistake between PMs in multicultural settings which is confrontation especially when both sides aren’t calm. Also, some cultures are low-profile and aren’t comfortable with confrontations and therefore the person should get to know the new culture before interacting with it. Another important
skill is flexibility. A successful project manager should not be tough in multicultural interactions. Flexibility works in parallel with different other skills that were also mentioned by the interviewees, such as: patience, open-mind and negotiation. In fact, adapting to multicultural settings might be a stressful activity and dealing with it require a big amount of patience and open-mind in order to understand the others and also needs high negotiation skills in order to successfully reach common grounds and set common goals. Respect is another important skill especially during conflicts and during rejecting ideas and opinions. The interviewee emphasized that rejecting others’ opinions respectfully will reduce the possibility of clashes due to rejection. Another skill is high level of expectation. In other words, expecting everything from the person belonging to the other culture and always considering the positive intention of the person and do not prejudice without understanding. This will help to increase the level of awareness of alien cultures and adapting to it. One interviewee explained that he used some learnt body language skills in order to understand the intention of others. In addition, most of the interviewees mentioned leadership skills such as: showing the team how things are done, thinking and walking in their shoes, reflecting on their ideas and try to understand their perspective. Another interviewee explained that he exercised his managerial power in order to solve the conflict however without abusing it. Finally, one remarkable skill was mediation. Being a mediator and legal arbitrator, the interviewee explained that mediation skills positively affected his cross-cultural experience as it helped him to understand and manage conflicts.

7) *How did you identify the needed skills?*

*Example: Previous experience? Read about it? Professional advice? Colleague advice?*

The interviewees specified four main sources which helped them identify the needed skills: First, they mainly used their previous experience in order to understand the problem and recognize the needed skills. Some of them also confirmed that once they faced the problem,
they tried some trial and error skills. In addition, age and maturity, which are directly proportional to the experience. Therefore, they developed they multicultural experience through trying different solution with the other side of the conflict. Second, colleague advice was an important source of help for the PMs, as it lets them benefit from their colleagues’ previous experience who went through similar experience. Third, education and training were important sources however somehow neglected. The minority of the interviewees (only three) have been trained on multicultural intelligence and they stressed on the mistake that only few companies are training their employees on the topic. Another important note, one interviewee has worked in the United States of America and confirmed that such trainings are common in the US yet very uncommon in the Gulf. Fourth, one interviewee explained that reflecting on the problem was a good way to understand the problem and identify the solution with the needed skills. Most importantly, the person should reflect on the conflict and take his time before reacting.

8) What helped or hindered you from acquiring these skills?

As per the interviewees the most important factor that hindered them from acquiring these skills is the novelty of each situation. Each situation differs from the other due to the circumstances and the personality of the people involved. That is why there is always new things to learn even the person has previous experience. However, many factors helped the PMs to acquire multicultural skills. First, age, maturity and previous experiences helped them to build a multicultural background which made them develop an open mind towards differences. In the same manner, being raised in culturally mixt societies really helped the interviewees to acquire CQ skills. Second, for language barriers, some of the interviewees tried to learn new languages or used the Google translate application which helped them with communication skills. Third, some of the PMs enjoyed multicultural settings and therefore their personality helped them innately to acquire the skills and adapt into new cultures. Fourth and finally, for the interviewee
who worked as a mediator and arbitrator, the legal and management trainings really helped him to identify the skills in addition to the engineering trainings.

9) If you go through the same situation again, what would you do differently? What do you think prevented you from trying that at that time?

For most of the respondents, their solution was positive and therefore they wouldn’t change anything in the way they solved the conflict. However, the majority learned from their experiences and they expressed that they would add some steps and rules to what they have previously done, just to make the cross-cultural encounter easier and smoother. These rules and actions form the learning curve and will be presented next. For the interviewee who faced some new religious constraints, such as Fasting during Ramadan, thought about avoiding to perform his presentations during that period of the year or just agree with the host on some exceptions before traveling. For the interviewees who faced some verbal clashes with people from different cultures, they believed that their solution was positive; however, for the next encounter they would to reason and negotiate more and try not to confront the other person. Another example of solution for language barriers was presented by an Indian interviewee, who thought that learning the Arabic language would make his life much easier. One interviewee solved the problem through following the rules of the organization, which he is obliged to do and that is why he wouldn’t change it. Three interviewees believed that after their first experience, they started to learn about the team members and their cultures at the beginning of the project. One interviewee explained that in future situations, he started to think and reflect more about the issue before reacting which gave him a high level of needed flexibility. Finally, one very interesting statement by one of the interviewees who explained that a person can never master cross-cultural interactions and therefore each situation will teach him a new lesson and a new way to solve the issue. In fact, the same solution might not work in the next same situation.
As for the reason why they didn’t implement these changes in the first place, most of the answers were “lack of experience”. Most of the interviewees spoke about their early cross-cultural conflicts and therefore they lacked the experience to deal with it. The majority didn’t expect the situation to occur in the first place and it was their first time. Also, many related their answer to maturity which they didn’t have at early stages of their careers.

10) List minimum 5 ideas that you need to successfully manage multicultural teams.

The responses were divided into two categories: actions and skills.

The actions listed by the interviewees in order to transcend above cross-cultural differences were also divided into two groups:

- Work-related actions:
  - Regular meetings (daily, weekly, monthly) to increase communication
  - Sharing with the team previous lessons from previous experiences
  - Briefing and explaining the job for each individual, personally or through team leaders
  - Request weekly reports from the team members explaining achievements, problems and where help is needed
  - Constantly remind the team of the targets and goals
  - Try to work in multicultural companies
  - Learn basic words and how to greet people in different languages
  - Involve the team more
  - Celebrate the results with the team
  - Deal with every team member according to his level
  - Pick a team leader from the other culture who facilitates the interaction
  - Use your hierarchical power when needed without abusing it
  - Team building exercises
- Mix different cultures within the same team

- Personal (non-work) related actions:
  - Travel more to new destinations
  - Build friendships with people from new cultures
  - Learn different languages
  - Educate yourself about the culture you are interacting with
  - Remove unneeded boundaries between the multicultural team members

The skills listed by the interviewees in order to transcend above cross-cultural differences were:

- Widen your expectations: always expect that you might not like or understand ideas or actions from new cultures
- Widen your sympathy: always expect that other people might not accept your ideas or actions
- Patience
- Adaptation: train yourself to understand differences and adapt into new cultures
- Positive attitude towards others
- Develop an open mind towards new cultures
- Learn to accept others the way they are
- High communication skills
- High level of flexibility
- Innovative: to create new solutions to help the team
- Avoid confrontation and escalation
- Pay attention to cultural biases
- High negotiation skills
- Improve your emotional intelligence
- Leadership skills
- Awareness: be aware of other cultures and their basic differences

11) How do you describe your experience in managing multicultural teams?

Most of the interviewees responded that their multicultural experience was nice and positive. However, the majority emphasized that it was challenging and tough especially at the early stages. Others stated that it is educational, rewarding and it keeps on getting better with experience.

12) What is your advice to other project managers who are managing multicultural teams for the first time?

The advices were diverse however all of them referred to acquiring the skills listed in question ten. Yet, it can be summarized by the following. To succeed in multicultural teams, a project manager should be humble in actions and humble in knowledge. In order to be humble, one must be respectful, flexible, emotionally intelligent and build good relationships with the team members. Understanding the basic aspects of the person’s culture is very important. Always believe in the good intentions of the other person, regardless of his culture and always believe that any team member adds value to the team. Do not rely on the position’s power, prove yourself to the team through knowledge, experience and care. The most remarkable advice was addressed to engineers specifically. Any engineer who is occupying a project management position should acquire a business degree. Engineering skills are not enough to manage multicultural teams, he will always need management, human and communication skills which he will acquire through pursuing business studies.
7. RESULTS INTERPRETATION

The following section will be developing project findings. Findings will be answering the research questions and will be used to validate the hypotheses which were previously posed.

7.1. Findings development

This section develops the findings deduced from the survey and interview responses.

Finding 1: More than 80% of project managers are aware of the topic of Cultural Intelligence and apply its skills and techniques to solve multicultural conflicts.

- Q7 of the survey: 81.71% of the project managers confirmed that they are familiar with the concept of Cultural Intelligence.
- Q8 of the survey: 87.8% of the project managers confirmed that they have solved at least one problem using Cultural Intelligence.
- Q9 of the survey: 91.46% of the project managers confirmed that they are able to clearly identify cultural differences.

In Metacognitive CQ:

Finding 2: More than 89% of project managers have a high level of metacognitive cultural intelligence and are aware of their cultural knowledge.

- Q10 of the survey: 95.1% of project managers confirmed that they adjust their cultural knowledge when interacting with people from different cultural backgrounds.
- Q11 of the survey: 89.02% of project managers confirmed that they check the accuracy of their cultural knowledge as you interact with people from different cultures.
In Cognitive CQ:

**Finding 3:** More than 67% of project managers have a high level of cognitive cultural intelligence and are aware of the existence of cultural differences.

- Q12 of the survey: 80.49% of project managers confirmed that they are familiar with the cultural values, religious beliefs, traditions and arts of other cultures.
- Q13 of the survey: 67.07% of project managers confirmed that they are familiar with the rules of verbal expressing (vocabulary, grammar...) in other cultures.
- Q14 of the survey: 80.49% of project managers confirmed that they are familiar with the rules of expressing nonverbal behavior and they change it when needed in a cross-cultural situation.

In Motivational CQ:

**Finding 4:** More than 80% of project managers have a high level of motivational cultural intelligence and enjoy living in multicultural settings.

- Q15 of the survey: 80.49% of project managers confirmed that they are enjoy living in unfamiliar cultures and interacting with people from different cultures.
- Q16 of the survey: 92.68% of project managers confirmed that they can socialize within unfamiliar cultures and deal with stresses of adaptation to these cultures.

In Behavioral CQ:

**Finding 5:** More than 67% of project managers have a high level of behavioral cultural intelligence and are willing and able to change their behavior in multicultural settings.

- Q17 of the survey: 76.83% of project managers confirmed that they change their verbal behavior (accent, tone...) when needed in a cross-cultural interaction.
- Q18 of the survey: 86.59% of project managers confirmed that they change the speed of their speaking and they use pause and silence when needed in a cross-cultural situation.

- Q19 of the survey: 67.07% of project managers confirmed that they alter your facial expressions when needed in a cross-cultural situation.

**In CQ training:**

<table>
<thead>
<tr>
<th>Finding 6: More than 75% of projects managers experienced the need for cultural intelligence and trained themselves differently on the topic.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding 7: Most of the engineering and construction companies are still neglecting cultural intelligence.</td>
</tr>
</tbody>
</table>

- Q20-23 of the survey: 77.74% of projects managers were self-trained, 17.38% were professionally trained and 15.85% were never trained, on different CQ aspects.

**In CQ overall experience:**

<table>
<thead>
<tr>
<th>Finding 8: People from different cultures have different cultural orientations and expectations.</th>
</tr>
</thead>
</table>

- Q24 of the survey: 100% of projects managers confirmed that they learned that people belonging to different cultures have different cultural orientations and therefore

| Finding 9: Cultural Intelligence is an extremely important topic and it positively affects professional productivity and performance. |

- Q25 of the survey: 96.43% of projects managers confirmed that Cultural Intelligence improved their productivity and overall professional performance.

| Finding 10: Project Managers in Lebanon and the Gulf are generally Culturally Intelligent. |
7.2. Testing hypotheses

This section tests the posed hypotheses based on the survey and interview responses and analysis.

**H1.** *Project Managers’ cultural intelligence competencies positively affect project success in construction when managing projects in multicultural settings.*

✓ Q25 of the survey proved the tested hypothesis H1 and it showed that 96.43% of PMs confirmed that CQ improved.

**H2.** *Cultural intelligence skills are highly dependent on the manager’s cultural, educational and professional background and experiences.*

✓ Q8 of the interview showed that 78% (11 out of 14) PMs identified the needed CQ skills through experience. In addition, 21% (3 out of 14) mentioned that professional trainings helped their Cultural intelligence.

✓ Q9 of the interview proved that previous experience, age, maturity, personality and being raised in a multicultural society helped 71% (10 out of 14) of the PMs to acquire cultural intelligence skills.

✓ Q10 of the interview 75% (6 out of 8) of the PMs, who stated they would modify their positive solution, asserted that the lack of experience prevented them from perfecting their solution in the first time.

7.3. Answering research questions

This section answered the posed research questions based on the survey and interview responses and analysis.
RQ1. What are the project managers’ experiences on inter-cultural complications and reasons of interpersonal conflicts in multicultural construction teams?

Q1, Q2 and Q3 of the interview presented more than 20 situations where PMs experienced multicultural differences and what was easy and challenging about them. Conflicts resulted from differences between religion, personalities, attitudes, traditions, beliefs, habits, history, ethnicities, nationalities, understanding and perspectives.

Q4 and Q5 of the interview also explained how each PM solved the multicultural conflict and whether his solution was positive or negative.

RQ2. What are the project managers’ experiences on the skills needed to solve inter-cultural conflicts in multicultural construction teams and how do they learn them?

Q6 and Q10 of the interview listed a very big number of skills and actions which were used by PMs to solve multicultural conflicts, such as: wide expectations, wide sympathy, patience, adaptation, positive attitude, open-mind, accepting others, communication skills, flexibility, innovation, attentiveness, negotiation, emotional intelligence, leadership and awareness.

RQ3. What attributes help or impede the learning process of cultural intelligence competencies?

Q7 of the interview showed how PMs were able to identify the needed skills and mostly previous experience was the source.

Q8 listed the qualities that successful PM possess in order to acquire CQ skills, such as: maturity, experience, open-mind and positive personality.
## 7.4. Summary of findings

Below Table 27 presents a summary of the findings, hypotheses and the research questions along with the interview and survey questions that helped to address them.

<table>
<thead>
<tr>
<th>Findings</th>
<th>Data Collection Method Used</th>
<th>Online Survey</th>
<th>In-depth Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cultural Intelligence knowledge</strong></td>
<td></td>
<td></td>
<td>SQ7, SQ8, SQ9</td>
</tr>
<tr>
<td>Finding 1: <em>More than 80% of project managers are aware of the topic of Cultural Intelligence and apply its skills and techniques to solve multicultural conflicts.</em></td>
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<tr>
<td><strong>Metacognitive CQ</strong></td>
<td></td>
<td></td>
<td>SQ10, SQ11</td>
</tr>
<tr>
<td>Finding 2: <em>More than 89% of project managers have a high level of metacognitive cultural intelligence and are aware of their cultural knowledge.</em></td>
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<tr>
<td><strong>Cognitive CQ</strong></td>
<td></td>
<td></td>
<td>SQ12, SQ13, SQ14</td>
</tr>
<tr>
<td>Finding 3: <em>More than 67% of project managers have a high level of cognitive cultural intelligence and are aware of the existence of cultural differences.</em></td>
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<tr>
<td><strong>Motivational CQ</strong></td>
<td></td>
<td></td>
<td>SQ15, SQ16</td>
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<tr>
<td>Finding 4: <em>More than 80% of project managers have a high level of motivational cultural intelligence and enjoy living in multicultural settings.</em></td>
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<tr>
<td><strong>Behavioral CQ</strong></td>
<td></td>
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<td>SQ17, SQ18, SQ19</td>
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<tr>
<td>Finding 5: <em>More than 67% of project managers have a high level of behavioral cultural intelligence and are willing and able to change their behavior in multicultural settings.</em></td>
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<tr>
<td><strong>CQ training</strong></td>
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<td>SQ20, SQ21, SQ22, SQ23</td>
</tr>
<tr>
<td>Finding 6: <em>More than 75% of projects managers experienced the need for cultural intelligence and trained themselves differently on the topic.</em></td>
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<tr>
<td>Finding 7: <em>Most of the engineering and construction companies are still neglecting cultural intelligence.</em></td>
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<tr>
<td><strong>CQ overall experience</strong></td>
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<td>All</td>
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<tr>
<td>Finding 8: <em>People from different cultures have different cultural orientations and expectations.</em></td>
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<td>All</td>
</tr>
<tr>
<td>Finding 9: <em>Cultural Intelligence is an extremely important topic and it positively affects professional productivity and performance.</em></td>
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<tr>
<td>Finding 10: <em>Project Managers in Lebanon and the Gulf are generally Culturally Intelligent.</em></td>
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<tr>
<td>Hypotheses</td>
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<tr>
<td><strong>H1. Project Managers’ cultural intelligence competencies positively affect project success in construction when managing projects in multicultural settings.</strong></td>
<td>SQ25</td>
<td></td>
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<tr>
<td><strong>H2. Cultural intelligence skills are highly dependent on the manager’s cultural, educational and professional background and experiences.</strong></td>
<td>IQ8, IQ9, IQ10</td>
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<table>
<thead>
<tr>
<th>Research Questions</th>
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<tbody>
<tr>
<td><strong>RQ1. What are the project managers’ experiences on inter-cultural complications and reasons of interpersonal conflicts in multicultural construction teams?</strong></td>
<td>IQ1, IQ2, IQ3, IQ4, IQ5</td>
</tr>
<tr>
<td><strong>RQ2. What are the project managers’ experiences on the skills needed to solve inter-cultural conflicts in multicultural construction teams and how do they learn them?</strong></td>
<td>IQ6, IQ10</td>
</tr>
<tr>
<td><strong>RQ3. What attributes help or impede the learning process of cultural intelligence competencies?</strong></td>
<td>IQ7, IQ8</td>
</tr>
</tbody>
</table>
7.5. Comparing Lebanon and the Gulf

Sections 2.1 and 2.2 provided insights on the Lebanese and the Gulf economies. Both sections provided a brief description of the different economies in the two regions. In addition, both sections investigated the similarities and the differences between the nationalities of the construction labor force in the two different markets. Although, Lebanon and the Gulf are both culturally mixed, the main difference lies in the different number of nationalities in the construction industry in each of the two clusters. As a reminder, the Lebanese construction market mainly constituted Lebanese and Syrians with very few other minorities while the Gulf includes a higher number of nationalities in construction. This section provides a descriptive comparison of both clusters to explore how these differences affected cultural intelligence and performance. The survey results were divided into 2 clusters. First cluster consisted of 42 professionals who have worked in Lebanon while the second consisted of 40 professionals who have worked in the Gulf and never worked in Lebanon. This section only compares the CQ related questions since demographics were analyzed in the previous sections.

CQ General knowledge

Questions seven through nine looked at general knowledge of CQ (Graph 21). Q7 indicated that 83.33% of the respondents from the Lebanese cluster understood the concept of CQ while only 80% did from the Gulf cluster. In the questionnaire and after Q7, the author defined the concept of CQ for the respondents in order to continue the survey. Q8 showed that 85.71% from Lebanon had solved at least one problem at work using CQ at some point in their career while 90% did from the Gulf. Q8 indicated some of the respondents had unknowingly used CQ solutions based on their experience in working with different cultures. Q9 showed that 92.86% from Lebanon could clearly identify cultural differences in their jobs while 90% were able to identify these differences from the Gulf (Graph 21).
Graph 21 – Lebanon vs Gulf: CQ general knowledge

Metacognitive CQ:

Graph 22 – Lebanon vs Gulf: Metacognitive CQ
Q10 and Q11 covered metacognitive CQ by looking at the cultural knowledge of PMs (Graph 22). 97.62% of the respondents from Lebanon fell on the positive side of the Likert scale when asked if they adjust their cultural knowledge in cross-cultural interactions in Q10 while 92.5% were positive from the Gulf. From Lebanon, 28.57% strongly agreed, 52.38% agreed, 16.67% slightly agreed and only 2.38% slightly disagreed while 22.5% strongly agreed, 55% agreed, 15% slightly agreed and 7.5% were neutral from the Gulf. When asked in Q11 if they checked the accuracy of their knowledge during interactions with new cultures, 92.86% of the respondents from Lebanon positively responded while 85% of the respondents from the Gulf positively responded. From Lebanon, 28.57% strongly agreed, 40.48% agreed, 23.1% slightly agreed, 4.76% were neutral and 2.38% slightly disagreed while from the Gulf 12.5% strongly agreed, 55% agreed, 17.5% slightly agreed, 10% were neutral, 2.5% slightly disagreed and 2.5% disagreed.

The Metacognitive CQ questions, showed that PMs in Lebanon are more aware of the existence of differences between cultures and more aware of their cultural knowledge than the Gulf.

Cognitive CQ:

Three questions (Q12, Q13, and Q14) covered cognitive CQ (Graph 23). When asked in Q12 if they were familiar with cultural values, religious beliefs, traditions and arts of other countries, 83.33% of the respondents from Lebanon positively responded while 77.5% of the respondents from the Gulf positively responded. From Lebanon, 14.29% strongly agreed, 42.86% agreed, 26.19% slightly agreed, 11.9% were neutral and 4.76% slightly disagreed while from the Gulf 17.5% strongly agreed, 45% agreed, 15% slightly agreed, 15% were neutral and 7.5% slightly disagreed.

When asked in Q13 if they were familiar with the rules of verbal expression in different cultures, 71.43% of the respondents from Lebanon positively responded while 62.5%
positively responded from the Gulf. From Lebanon, 7.14% strongly agreed, 42.86% agreed, 21.43% slightly agreed, 21.43% were neutral, 4.76% slightly disagreed and 2.38% disagreed while from the Gulf 7.5% strongly agreed, 30% agreed, 25% slightly agreed, 20% were neutral, 15% slightly disagreed and 2.5% disagreed. When asked in Q14 if they were familiar with the rules of nonverbal expression in other cultures and if they changed their expression when necessary, 83.33% of the respondents from Lebanon positively responded while 77.5% positively responded from the Gulf. From Lebanon, 11.9% strongly agreed, 52.38% agreed, 19.05% slightly agreed, 7.14% were neutral, 2.38% slightly disagreed, 4.76% disagreed and 2.38% strongly disagreed while from the Gulf 12.5% strongly agreed, 35% agreed, 30% slightly agreed, 20% were neutral and 2.5% slightly disagreed.
The results of these three questions indicate that the majority of the PMs in Lebanon and the Gulf are culturally educated and try to use their knowledge as much as possible. The respondents try to add to their cultural databases as needed, for example when they encounter a person from an unfamiliar culture on a job.

The Cognitive CQ questions showed that PMs in Lebanon are more culturally educated and try to use more their knowledge whenever possible, than the Gulf.

Motivational CQ:

Some people succeed in multicultural settings because they enjoy it, others because they are obliged to do it and others do not succeed. Two questions, Q15 and Q16, studied the motive behind the CQ (Graph 24). When asked in Q15 if the PM enjoyed living and interacting with different cultures, 78.57% of the respondents from Lebanon positively responded while 82.5% positively responded from the Gulf. From Lebanon, 30.95% strongly agreed, 30.95% agreed, 16.67% slightly agreed, 19.05% were neutral and 2.38% slightly disagreed while from the Gulf 17.5% strongly agreed, 47.5% agreed, 17.5% slightly agreed, 10% were neutral, 5% slightly disagreed and 2.5% strongly disagreed.

When asked in Q16 if the PM was confident in his or her ability to socialize with people from different cultures, 97.62% of the respondents from Lebanon positively responded while 87.5% positively responded from the Gulf. From Lebanon, 26.19% strongly agreed, 47.62% agreed, 23.81% slightly agreed and 2.38% were neutral while from the Gulf 15% strongly agreed, 52.5% agreed, 20% slightly agreed, 7.5% were neutral, 2.5% slightly disagreed and 2.5% strongly disagreed.
The Motivational CQ questions showed the following. Q15 shows that PMs in the Gulf enjoy interacting with different cultures more than PMs in Lebanon however if we add neutral responses to the analysis, the result would be the opposite. Q16 shows that PMs in Lebanon are more confident of their ability to socialize with new cultures that the PMs in the Gulf.

Behavioral CQ:

Three questions (Q17, Q18, and Q19) looked at behavioral CQ by asking about participants’ behavior in cultural interactions (Graph 25). When asked in Q17 if they changed their verbal behavior (e.g., accent, tone) in cross-cultural interactions, 69.05% of the respondents from Lebanon positively responded while 85% positively responded from the Gulf. From Lebanon, 30.95% strongly agreed, 21.43% agreed, 16.67% slightly agreed, 16.67% were neutral, 2.38%
slightly disagreed, 9.52% disagreed and 2.38% strongly disagreed while from the Gulf 22.5% strongly agreed, 30% agreed, 32.5% slightly agreed, 7.5% were neutral, 5% slightly disagreed and 2.5% strongly disagreed. When asked in Q18 if they changed their speed of speaking and used pauses and silence in cross-cultural interactions, 88.1% of the respondents from Lebanon positively responded while 85% positively responded from the Gulf. From Lebanon, 40.48% strongly agreed, 30.95% agreed, 16.67% slightly agreed and 11.9% were neutral while from the Gulf 20% strongly agreed, 37.5% agreed, 27.5% slightly agreed, 12.5% were neutral and 2.5% slightly disagreed.

Graph 25 – Lebanon vs Gulf: Behavioral CQ

When asked in Q19 changed their facial expressions during cross-cultural interactions, 61.9% of the respondents from Lebanon positively responded while 72.5% positively responded from the Gulf. From Lebanon, 9.52% strongly agreed, 21.43% agreed, 30.95% slightly agreed,
23.81% were neutral, 4.76% slightly disagreed and 9.52% disagreed while from the Gulf 10% strongly agreed, 47.5% agreed, 15% slightly agreed, 20% were neutral, 2.5% slightly disagreed and 5% disagreed.

The Behavioral CQ questions showed the following. PMs in Lebanon change more the speed of talking when needed and PMs in the Gulf change their verbal behavior and facial expressions more when needed in multicultural situations.

**CQ training:**

This section looked at CQ training (Graph 26) and the majority of the respondents were self-trained. Q20 asked if they were trained on the importance of CQ and the importance of their roles in cultural interactions. 78.57%, 16.67% and 21.43% of the respondents from Lebanon were self-trained, professionally trained and never trained respectively, while 60%, 15% and 32.5% of the respondents from the Gulf were self-trained, professionally trained and never trained respectively. Q21 asked if they were trained to develop an open mind towards cultural differences. 90.48%, 14.29% and 7.14% of the respondents from Lebanon were self-trained, professionally trained and never trained respectively, while 77.5%, 22.5% and 15% of the respondents from the Gulf were self-trained, professionally trained and never trained respectively. Q22 asked if they were trained to appropriately address people from different cultures. 92.86%, 11.9% and 4.76% of the respondents from Lebanon were self-trained, professionally trained and never trained respectively, while 75%, 20% and 10% of the respondents from the Gulf were self-trained, professionally trained and never trained respectively. Finally, Q23 asked if they were trained to learn basic terms or new languages to easily interact. 73.81%, 16.67% and 21.43% of the respondents from Lebanon were self-trained, professionally trained and never trained respectively, while 72.5%, 22.5% and 15% of the respondents from the Gulf were self-trained, professionally trained and never trained respectively.
respectively. There could be some overlapping in the responses since a person can be both self and professionally trained. If we analyze the average responses of the four questions according to training type, we can conclude the following pattern. Table 27 shows the average of each group.

<table>
<thead>
<tr>
<th></th>
<th>Lebanon Self trained</th>
<th>Lebanon Professionally</th>
<th>Gulf Self trained</th>
<th>Gulf Professionally</th>
<th>Never trained</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q20</td>
<td>78.57%</td>
<td>60.00%</td>
<td>16.67%</td>
<td>15.00%</td>
<td>21.43%</td>
<td>32.50%</td>
</tr>
<tr>
<td>Q21</td>
<td>90.48%</td>
<td>77.50%</td>
<td>14.29%</td>
<td>22.50%</td>
<td>7.14%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Q22</td>
<td>92.86%</td>
<td>75.00%</td>
<td>11.90%</td>
<td>20.00%</td>
<td>4.76%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Q23</td>
<td>73.81%</td>
<td>72.50%</td>
<td>16.67%</td>
<td>22.50%</td>
<td>21.43%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Average</td>
<td>83.93%</td>
<td>71.25%</td>
<td>14.88%</td>
<td>20.00%</td>
<td>13.69%</td>
<td>18.13%</td>
</tr>
</tbody>
</table>

Table 27 – Lebanon vs Gulf: CQ training responses

First, both clusters presented near averages for the same training categories.

Second, we can obviously see that the self-training is abundant over professional training in both clusters.

Third, Lebanon presents a higher average (83.93%) of self-trained professionals against a lower average (71.25%) in the Gulf. This indicates that people have experienced cultural differences and felt the need to educate themselves in order to succeed in the multicultural workplace. At the same time, it points to a lack of professional acknowledgement of the need for training on CQ in both clusters, requiring PMs to find the information on their own.

Third, the Gulf presented a higher average (20%) for the professional training than Lebanon (14.88%). This can be related to the fact that international companies, which are already aware of CQ, are much more present in the Gulf than Lebanon.

Fourth, the Gulf presented a higher average (18.13%) for the never trained category against a lower average (13.9%) in Lebanon.
This can have two opposite reasons. The first reason is related to the huge difference in the construction labor force between Lebanon (around half a million worker) and the Gulf (around three million workers). The second reason is related to the representation of the survey population which might have not covered enough professionals.

**Graph 26 – Lebanon vs Gulf: CQ training**

**CQ overall experience:**

The final section looked at how CQ affected participants’ careers (Graph 27). Q24 asked if they learned that people from different cultures have different orientations and expectations; all the 82 respondents (100%), from both clusters, responded with yes. Q25 asked if CQ improved their own productivity and the overall performance; 95.24% from Lebanon agreed while 97.5% from the Gulf did.
The last two questions imply the difference in orientations and expectations between different nationalities and most importantly it proves the importance of acquiring and developing cultural intelligence skills which improves the overall performance of the manager and ultimately affects positively the end result of the project.

Graph 27 – Lebanon vs Gulf: Overall CQ experience

Table 28 – Lebanon vs Gulf: Overall CQ positive averages (Q10 – Q19)

As a summary, if we compare the averages of the positive responses for all of the CQ factor models related questions (Q10 to Q19) between both clusters, Lebanon presented an average of 82.38% and the Gulf presented an average of 80.75%. Although PMs are culturally intelligent in both areas, the later numbers imply a slightly higher level of Cultural Intelligence in Lebanon than the Gulf. However, it is very important to mention that most of the
respondents, from Lebanon cluster one, have worked in the Gulf and therefore their responses weren’t considered within cluster two and therefore this might amend slightly the numbers.

7.6. Comparing the Gulf Countries

This section divides the respondents into five new clusters. The respondents were grouped by the countries that they have worked in. Hence, cluster 1 consisted of 33 respondents who have worked in KSA, cluster 2 consisted of 11 respondents who have worked Bahrain, cluster 3 consisted of 20 respondents who have worked Qatar, cluster 4 consisted of 30 respondents who have worked in Kuwait and clyster 5 consisted of 36 respondents who have worked in UAE.

CQ General knowledge

Q7 (Graph 28) indicated that 90.91% of the respondents from KSA understood the concept of CQ while 83.33% from Kuwait, 82.82% from Bahrain, 80% from Qatar and 69.44% from UAE did.

Graph 28 – Gulf Countries: CQ general knowledge Q7

In the questionnaire and after Q7, the author defined the concept of CQ for the respondents in order to continue the survey.
Q8 (Graph 29) showed that 93.33% of the respondents from Kuwait have solved at least one problem at work using CQ at some point in their career while 90.91% from KSA and Bahrain, 88.89% from UAE and 85% from Qatar did. Q8 indicated some of the respondents had unknowingly used CQ solutions based on their experience in working with different cultures.

Graph 29 – Gulf Countries: CQ general knowledge Q8

Q9 (Graph 30) showed that 95% of the respondents from Qatar could clearly identify cultural differences in their jobs while 95% from Qatar, 93.94% from KSA, 90.91% from Bahrain 90% from Kuwait and 86.11% from UAE could.

Graph 30 – Gulf Countries: CQ general knowledge Q9
Metacognitive CQ:

Q10 (Graph 31) asked if they adjust their cultural knowledge in cross-cultural interactions. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 100% from Bahrain, 96.67% from Kuwait, 95% from Qatar, 94.44% from UAE and 90.91% from KSA positively agree. Graph 31 shows the distribution for each country.

Graph 31 – Gulf Countries: Metacognitive Q10

Q11 (Graph 32) asked if they checked the accuracy of their knowledge during interactions with new cultures. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 90.91% from Bahrain, 90% from Qatar, 86.67% from Kuwait,
86.11% from UAE and 84.85% from KSA positively agree. Graph 32 shows the distribution for each country.

The Metacognitive CQ questions, showed that PMs in Bahrain are more aware of the existence of differences between cultures and more aware of their cultural knowledge than the other Gulf countries.

Cognitive CQ:

Q12 (Graph 33) asked if they were familiar with cultural values, religious beliefs, traditions and arts of other countries. By adding the positive responses (slightly agree, agree and strongly
agree) for each country, the results show 90% from Qatar, 84.85% from KSA, 72.22% from UAE, 70% from Kuwait and 63.64% from Bahrain positively agree. Graph 33 shows the distribution for each country.

Graph 33 – Gulf Countries: Cognitive Q12

Q13 (Graph 34) asked if they were familiar with the rules of verbal expression in different cultures. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 72.73% from KSA, 70% from Qatar, 61.11% from UAE, 60% from Kuwait and 45.45% from Bahrain (45.45% were neutral in Bahrain) positively agree. Graph 34 shows the distribution for each country.
Q14 (Graph 35) if they were familiar with the rules of nonverbal expression in other cultures and if they changed their expression when necessary. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 87.88% from KSA, 85% from Qatar, 81.82% from Bahrain, 73.33% from Kuwait and 69.44% from UAE positively agree. Graph 35 shows the distribution for each country.
The Cognitive CQ questions show that PMs in Qatar are more familiar with different cultures and PMs in KSA are more familiar with verbal and non-verbal behavior than the other Gulf countries.

**Motivational CQ:**

Q15 (Graph 36) asked if the PM enjoyed living and interacting with different cultures. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 100% from Bahrain, 85% from Qatar, 83.33% from Kuwait and UAE and 78.79% from KSA positively agree. Graph 36 shows the distribution for each country.
Q16 (Graph 37) if the PM was confident in his or her ability to socialize with people from different cultures. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 100% from Qatar and Bahrain, 96.67% from Kuwait, 93.94% from KSA and 88.89% from UAE positively agree. Graph 37 shows the distribution for each country.
The Motivational CQ questions show that PMs in Bahrain enjoy interacting with different cultures and are more confident of their ability to socialize with new cultures than the PMs in the other Gulf countries. Qatar comes second.

**Behavioral CQ:**

Q17 (Graph 38) if they changed their verbal behavior (e.g., accent, tone) in cross-cultural interactions. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 80% from Qatar, 73.33% from Kuwait, 72.73% from KSA, 72.22% from UAE and 54.55% from Bahrain positively agree. Graph 38 shows the distribution for each country.
Graph 38 – Gulf Countries: Behavioral CQ Q17

Q18 (Graph 39) if they changed their speed of speaking and used pauses and silence in cross-cultural interactions. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 90.91% from Bahrain, 90% from Qatar, 87.88% from KSA, 86.11% from UAE and 83.33% from Kuwait positively agree. Graph 39 shows the distribution for each country.
Q19 (Graph 40) changed their facial expressions during cross-cultural interactions. By adding the positive responses (slightly agree, agree and strongly agree) for each country, the results show 60.61% from KSA, 60% from Qatar, 58.33% from UAE, 56.67% from Kuwait and 45.45% from Bahrain (27.27% from Bahrain were neutral) positively agree. Graph 40 shows the distribution for each country.
The Behavioral CQ questions show that PMs from Qatar change the most their verbal behavior (accent, tone...), PMs from Bahrain change the most the speed of their speaking and PMs from KSA change the most their facial expressions when needed in multicultural situations.

CQ training:

There could be some overlapping in the responses since a person can be both self and professionally trained.

Q20 (Graph 41) asked if they were trained on the importance of CQ and the importance of their roles in cultural interactions. 75.76% (KSA), 72.73% (Bahrain), 75% (Qatar), 73.33% (Kuwait)
and 63.89% (UAE) were self-trained. 12.12% (KSA), 18.18% (Bahrain), 15% (Qatar), 13.33% (Kuwait) and 11.11% (UAE) were professionally trained. 24.24% (KSA), 18.18% (Bahrain), 20% (Qatar), 20% (Kuwait) and 33.33% (UAE) were never trained.

Graph 41 – Gulf Countries: CQ training Q20

Q21 (Graph 42) asked if they were trained to develop an open mind towards cultural differences. 87.88% (KSA), 90.91% (Bahrain), 85% (Qatar), 80% (Kuwait) and 80.56% (UAE) were self-trained. 18.18% (KSA), 18.18% (Bahrain), 20% (Qatar), 16.67% (Kuwait) and 13.89% (UAE) were professionally trained. 12.12% (KSA), 0% (Bahrain), 5% (Qatar), 10% (Kuwait) and 13.89% (UAE) were never trained.

Graph 42 – Gulf Countries: CQ training Q21
Q22 (Graph 43) asked if they were trained to appropriately address people from different cultures. 84.85% (KSA), 90.91% (Bahrain), 80% (Qatar), 83.33% (Kuwait) and 80.56% (UAE) were self-trained. 12.12% (KSA), 0% (Bahrain), 15% (Qatar), 10% (Kuwait) and 8.33% (UAE) were professionally trained. 9.09% (KSA), 9.09% (Bahrain), 10% (Qatar), 6.67% (Kuwait) and 11.11% (UAE) were never trained.

Graph 43 – Gulf Countries: CQ training Q22

Graph 44 – Gulf Countries: CQ training Q23
Q23 (Graph 44) asked if they were trained to learn basic terms or new languages to easily interact. 84.85% (KSA), 81.82% (Bahrain), 80% (Qatar), 73.33% (Kuwait) and 80.56% (UAE) were self-trained. 15.15% (KSA), 9.09% (Bahrain), 15% (Qatar), 20% (Kuwait) and 22.22% (UAE) were professionally trained. 12.12% (KSA), 18.18% (Bahrain), 15% (Qatar), 16.67% (Kuwait) and 11.11% (UAE) were never trained.

If we analyze the average responses of the four questions according to training type, we can conclude the following pattern. Table 29 shows the average of each group.

<table>
<thead>
<tr>
<th>Q20</th>
<th>Self trained</th>
<th>Profess. Trained</th>
<th>Never trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>KSA</td>
<td>75.56%</td>
<td>72.73%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Bahrain</td>
<td>72.73%</td>
<td>73.33%</td>
<td>73.33%</td>
</tr>
<tr>
<td>Qatar</td>
<td>80.00%</td>
<td>80.56%</td>
<td>80.00%</td>
</tr>
<tr>
<td>UAE</td>
<td>63.89%</td>
<td>18.18%</td>
<td>18.18%</td>
</tr>
<tr>
<td>KSA</td>
<td>12.12%</td>
<td>18.18%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Bahrain</td>
<td>13.33%</td>
<td>13.33%</td>
<td>13.33%</td>
</tr>
<tr>
<td>Qatar</td>
<td>15.00%</td>
<td>15.00%</td>
<td>15.00%</td>
</tr>
<tr>
<td>UAE</td>
<td>20.00%</td>
<td>20.00%</td>
<td>20.00%</td>
</tr>
<tr>
<td>Average</td>
<td>14.21%</td>
<td>26.06%</td>
<td>26.06%</td>
</tr>
</tbody>
</table>

Table 29 – Gulf Countries: CQ training responses

First, the five clusters presented near averages for the same training categories.

Second, we can obviously see that the self-training is abundant over professional training in the five countries. This indicates that people have experienced cultural differences and felt the need to educate themselves in order to succeed in the multicultural workplace. At the same time, it points to a lack of professional acknowledgement of the need for training on CQ in both clusters, requiring PMs to find the information on their own.

Third, Bahrain showed the highest average (84.09%) of self-trained respondents against KSA (83.33%), Qatar (80%), UAE (76.39%) and Kuwait (77.5%).

Fourth, Qatar showed the highest average (16.25%) of professionally trained respondents against Kuwait (15%), KSA (14.39%) UAE (13.89%) and Bahrain (11.36%).

Fifth, UAE showed the highest average (17.36%) of never-trained respondents against KSA (14.39%), Kuwait (13.33%), Qatar (12.5%) and Bahrain (11.36%).
CQ overall experience:

Q24 asked if they learned that people from different cultures have different orientations and expectations; all the respondents (100%), from all clusters, responded with yes.

![Graph 45 - Gulf Countries: CQ overall experience Q24](image)

Q25 asked if CQ improved their own productivity and the overall performance; 100% of the respondents from Bahrain and Qatar, 96.97% from KSA and Kuwait and 94.44% from UAE agreed.

![Graph 46 - Gulf Countries: CQ overall experience Q25](image)
The two overall CQ experience questions imply the difference in orientations and expectations between the five markets and most importantly it proves the importance of acquiring and developing cultural intelligence skills which improves the overall performance of the manager and ultimately affects positively the end result of the project.

| Gulf Countries : Overall positive averages (Q10 - Q19) |
|-------------|-------------|-------------|-------------|-------------|
| Overall average | KSA 81.52% | Bahrain 77.27% | Qatar 84.50% | Kuwait 78.00% | UAE 77.22% |

Table 30 – Gulf Countries: Overall CQ positive averages (Q10 – Q19)

As a summary, if we compare the averages of the positive responses (Table 30) for all of the CQ factor models related questions (Q10 to Q19) between the five clusters, we find that PMs in all of the countries are culturally intelligent yet there exist some differences. PMs in Qatar (84.5%) are the most Culturally Intelligent against KSA (81.52%), then Kuwait (78%), then Bahrain (77.27%) and finally UAE (77.22%).

7.7. The benefits of Cultural Intelligence

In all of the previous sections, we have proved the importance of Cultural Intelligence in construction projects in Lebanon and the Gulf. Also, we have seen that PMs have experienced cross-cultural conflicts and the urgent need for CQ skills in order to solve and surpass these conflicts. In addition, we have also seen that construction companies are still neglecting CQ training which made PMs resort to personal training on CQ and we have seen that they performed well on their own with CQ. Finally, the majority of the responses confirmed that CQ enhanced their overall productivity and therefore project success.

So why should a company invest in CQ especially that personal efforts of PMs are hugely contributing to the benefits of the company?
The answer lies within the responses of the interviews. In the majority of the interviewees’ answers, the main conflict was caused by miscommunication. Whether a misunderstanding, a general stereotype, a misunderstood joke, different ways of using words, different ways of interpreting and understanding ideas or actions, or simply different behaviors, all negatively affect the project outcome. The interviewees assured that cross-cultural conflicts will always affect the time or the quality of the project and may sometimes lead to business interruption. For example, the Lebanese interviewee who had a conflict with the Syrian contractor in Lebanon could have jeopardized the project delivery date if the contractor decided to stop working. In another example where an Arab PM had to repeat the same conversation in English and in Arabic to two different teams, it cost him twice the effort and time to convey the message. Finally, in Erbil example where the PM had to work with a local less qualified contractor due to some cultural constraints, he lowered the standards of quality of the project. Hence, such conflicts will always adversely impact the outcome.

For the above stated reasons, companies operating in multicultural settings should give more importance to professional CQ training. In fact, the best way to resolve a conflict is by avoiding it and that can be done only when the person is culturally intelligent and possesses the right knowledge and skills to avoid it. By training professional on CQ, we equip them with the right attributes that help them analyze and resolve any cross-cultural conflict and therefore avoid time losses, business interruption, reworks and most importantly negative work attitudes that adversely impact the team moral and performance and definitely save money on the short and long terms.
8. GENERAL INSIGHTS

8.1. Limitations

This research has some different limitations especially in terms of generalizing the findings. As a reminder to the reader, this research examined projects managers for multicultural construction projects teams in six Arab countries of the Middle East (Lebanon, KSA, Bahrain, Kuwait, Qatar and UAE). Its findings are restricted and can only be generalized to project and construction managers within the construction industry of only these six countries. The developed findings and answers reflect the experiences of managers in this well-defined group of professionals and may differ from findings related to other managerial positions from other industries. Hence, the generalizability to other realms and professions isn’t necessarily correct. Another limitation is represented by the relatively small population that responded to the survey compared to the big numbers of construction labor.

8.2. Future Directions

Cultural Intelligence is a new topic especially in the Middle East. The importance of this research lies in the fact that it is adding to the literature of CQ in construction in 6 different markets and countries. Being novel with limited research up to this date; and after proving the importance of CQ, we believe that this line of research has big potentials and still have a lot to offer to literature and research. Therefore, this topic is still under development and it has countless of potentials. In order to develop this research in the future, the researcher may investigate CQ more in each of the studied countries independently. In addition, for each of the countries the investigation may be extended to cover more engineering disciplines and not only construction.
8.3. Ethical Considerations

The researcher adhered to the Notre Dame University’s research policy regarding ethical research to the best of his ability; and the research only began after receiving the approval from the Notre Dame University Institutional Review Board (IRB).

The researcher’s prior experience in project management as PM provided him with knowledge and insights of the studied topic and the associated challenges. The mathematical and statistical analysis of the data reduced the possibility of including the researcher’s biases in interpreting results. This study included several ethical measures including obtaining IRB approval and protecting the participant’s right to privacy. The participants’ names, in the survey and the interview, were never disclosed to any party and were kept strictly confidential.

Prior to participating, each participant was informed in details about the purpose of the study. No one was obliged to participate and everyone willingly chose to respond. The researcher has briefly explained the purpose and nature of the study to every respondent. Each respondent had the opportunity to discuss it with the researcher in detail, whenever he felt the need. The researcher answered all the questions of the participants and they provided affirmative agreement to participate in this research.

In the context of the right to privacy, the participants were protected from potential harm by ensuring their information was kept confidential. The online survey participants weren’t asked about their names and their responses were kept anonymous and confidential. The interviewees names were only kept in the interviews notes and the responses were never associated with the names. Therefore, the responses in this thesis were kept anonymous. All the names, information and data downloaded from the online platform were stored on a password-protected computer which was accessible only by the researcher. In the same
manner, the online data which were stored on the online platform esurveyreator.com are password protected and only accessible by the researcher.
9. RESEARCHER REFLECTIONS

On the topic and the findings, this study extensively added to the researcher’s knowledge and experience as a human being primarily and as a project manager secondarily. He was really thankful for all the lessons learned along the journey from all the professionals he met. The findings were numerous and of paramount importance. What also helped the researcher, is that he was expecting a big number of the findings as a result of his personal experience and he was able to relate to most of them. He acquired a new perspective to cultural diversity and he confirmed his belief in the strength of multiculturalism.

On a final and personal note, this study has proven to be a challenging and demanding progression. Reflecting back on the journey, the researcher has often wondered if he would be able to complete this overwhelming endeavor. While our journeys may not always be easy, we will arrive to our destination through trusting the process and having faith in others supporting us (advisor, family and friends). This journey can best be described as a powerful experience that will shape my perspective and all future endeavors.
10. CONCLUSION

This thesis indicates CQ’s importance based on the experience and feedback of PMs with hands-on experience in Lebanon’s and the Gulf’s construction and engineering industries. The concept of CQ was familiar to the PMs although some of them understood the concept without knowing the term. In addition, findings indicate that PMs in these countries have a high level of CQ. PMs have experienced cultural differences and, therefore, the need for CQ training. Since they were not provided with training through their professional organizations, they often trained themselves. Finally, it was evident that CQ was a very important factor in improving the overall productivity and professional performance of PMs.

In conclusion, CQ is a relatively new but extremely important concept in business and industry practice. Just like any other new topic, it can suffer from a lack of credibility at first. This study shows the need for CQ training and education in the construction industry. It also indicates the positive impact CQ training can have on project management and, ultimately, company profits.
11. REFERENCES


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Project Management Institute, 2017


Transparency.org


[www.worldpopulationreview.com/countries/kuwait-population/](http://www.worldpopulationreview.com/countries/kuwait-population/)

Appendix A: Letter of Invitation - Online Survey

Dear [Participant’s Name],

I would like to invite you to participate in a master research study being conducted through Notre Dame University – Louaize, Lebanon. The purpose of the study is to understand how Project Managers use Cultural Intelligence to face and solve cross-cultural projects in construction in Lebanon and the Gulf. As more organizations are expanding their operation to the international level, project managers are increasingly managing culturally diverse teams that are globally dispersed and virtually connected. Cultural Intelligence is a new and hot topic worldwide, yet limited studies and information exist due to the novelty of the topic. Specifically, in engineering and in construction, little is known about the process that helps project managers to learn and apply the needed skills and techniques that help them to successfully manage multicultural teams. This study strives to shed light on this topic in a trial to help and improve working conditions for project management practitioners to succeed in their international endeavor, as well as the parties in charge of developing project management training courses and definitely all stakeholders in construction from workers to owners.

Your participation will enable you to contribute to the development of this growing area, by providing insights and personal experience into how PMs learn these extremely important, must-have and contemporary skills. Most importantly, you will help through making this priceless knowledge available to other practitioners. The researcher will provide you with a summary of the results.

Participation criteria:
In order to qualify for the study, you should comply with the following criteria:

5) You have managed at least three culturally diverse construction project teams
6) A minimum of 2 years of multicultural construction project team management experience within the past 5 years.
7) Multicultural teams should include at least three team members working in different time zones than the project manager.
8) Multicultural teams should include at least three different nationalities other than the project manager nationality.

If you fit these criteria and are interested in taking part of this study, please reply to his e-mail by replying to this email and providing your name and phone number or contact me over the phone.

Participation process:
If you choose to participate in this study, you will be asked to fill a 15 - 20 minutes’ online survey which helps in providing background information and cultural intelligence experience.

Following is the link to the online survey: https://www.esurveycreator.com/s/319f14a

In addition, the researcher is conducting one-to-one in depth interviews with all willing participants. If you are interested, please inform the researcher by phone or email.

All collected information will be kept in the strictest confidentiality and identities will never be disclosed in the thesis, discussion, narrative or in academic or professional circles.
Note: Due to the current Corona Pandemic, all interviews will be held over the phone or over video conferencing.

Thank you very much for your time and consideration.

Sincerely,

Fadi A. Saliba
fadisaliba@outlook.com
+961 3 950 480
Dear Friends,

I hope you and your family are fine during this critical time.

I would like to invite you to participate in an online survey for a master’s thesis at Notre Dame University – Louaize, Lebanon.

The purpose of the study is to understand how Project Managers use Cultural Intelligence to face and solve cross-cultural projects in construction in Lebanon and the Gulf.

Your participation is highly appreciated as it is considered an essential part of this study and my success.

Following is the link to the 5 minutes online survey:

https://www.esurveycreator.com/s/319f14a

In addition, the researcher is conducting one-to-one in depth online interviews with all willing participants. If you are interested, please inform the researcher by phone or email.

Thank you very much for your time and consideration.

Sincerely,

Fadi A. Saliba

fadisaliba@outlook.com

+961 3 950 480
Appendix C: Online Survey

HOW CULTURAL INTELLIGENCE HELP PROJECT MANAGERS TO FACE CROSS-CULTURAL COMPLEXITIES AND INTERPERSONAL CONFLICTS IN CONSTRUCTION PROJECTS IN THE MIDDLE EAST.

Thank you for volunteering to fill this Master’s research survey.

My name is Fadi Saliba, a graduate student in Civil Engineering, focusing on Project Management at Notre Dame University Louaize, Zouk Mosbeh, Lebanon.

I am very thankful for your efforts and answers which are considered an essential part of my research and my success. All responses will be kept strictly confidential and never associated with your name.

شكراً لك على التطوع لملء أبحاث الماجستير.

اسمي فادي صليبا، طالب دراسات عليا في الهندسة المدنية، مع التركيز على إدارة المشاريع في جامعة سيدي اللويزة، زوق صبيح، لبنان.

أنا ممتن جدًا لجهودك وإجاباتك التي تعتبر جزءًا أساسيًا من بحثي ونجاحي. سيتم الاحتفاظ بجميع الردود بسرية تامة ولن ترتبط مطلقًا باسمك.

General and demographic profile:

1. What is your gender?
   ○ Female/انثى  ○ Male/ذكر

2. What is your age?
   ○ 18 – 24  ○ 25 – 34
   ○ 35 – 44  ○ 45 – 54
   ○ 55 – 64  ○ Above 65

3. What is the highest level of education that you have acquired?
   ○ High School - مدرسة ثانوية
   ○ Bachelor degree - درجة البكالوريوس
   ○ Master’s degree - ماجستير
   ○ PhD - دكتوراه
   ○ Other Project Management certificate - حدد:

4. How many years of experience do you have in the construction industry?
   ○ 0 – 3  ○ 3 – 5
   ○ 5 – 10  ○ 10 – 15
   ○ >15

5. What is the approximate total value of the projects you have worked on?
   ○ Less than 5 million $ – أقل من 5 مليون $ 
   ○ 5 – 10 million $ – 5 - 10 ميليون
   ○ 10 – 25 million $ - 25 – 10 ميليون
   ○ 25 – 50 million $ - 50 – 25 مليون
   ○ More than 50 million $ - أكثر من 50 مليون $

6. Please fill the below countries table with yes or no.

<table>
<thead>
<tr>
<th>Country</th>
<th>Nationality</th>
<th>Lived</th>
<th>Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Syria
Kuwait

Cultural Intelligence:

CQ general knowledge:

7. Do you understand the concept of Cultural Intelligence?
   8. هل تفهم مبدأ الذكاء الثقافي؟
      □ Yes نعم   □ No لا

8. Have you ever solved a problem at work using Cultural Intelligence?
   8. هل سبق لك أن حللت مشكلة في العمل باستخدام الذكاء الثقافي؟
      □ Yes نعم   □ No لا

In case you didn't previously know what Cultural Intelligence is, below is a summarized definition:
Cultural Intelligence is the ability to effectively adapt to new cultural settings.

9. Were you able to clearly identify cultural differences in your job?
   9. هل كنت قادراً على التعرف بوضوح على الاختلافات الثقافية في عملك؟
      □ Yes نعم   □ No لا

For the remaining section, kindly rate each statement on the scale of 1 to 7, where 1 represents Strongly Disagree (SD), 2 represents Slightly Disagree, 3 represents Disagree, 4 represents Neutral, 5 represents Slightly Agree, 6 represents Agree and 7 represents Strongly Agree (SA). Please encircle the appropriate choice.

Metacognitive CQ

10. You adjust your cultural knowledge when interacting with people from different cultural backgrounds.
   10. يمكنك تعديل معرفتك الثقافية عند التفاعل مع أشخاص من خلفيات ثقافية مختلفة.
      SD 1 - 2 - 3 - 4 - 5 - 6 - 7 SA

11. You check the accuracy of your cultural knowledge as you interact with people from different cultures.
    11. تحقق من دقة معرفتك الثقافية أثناء تفاعلك مع أشخاص من ثقافات مختلفة.
       SD 1 - 2 - 3 - 4 - 5 - 6 - 7 SA

Cognitive CQ

12. You are familiar with the cultural values, religious beliefs, traditions and arts of other cultures.
    12. أنت على دراية بالقيم الثقافية والمعتقدات الدينية والتقاليد والفنون للثقافات الأخرى.
       SD 1 - 2 - 3 - 4 - 5 - 6 - 7 SA

13. You are familiar with the rules of verbal expressing (vocabulary, grammar...) in other cultures.
    13. أنت على دراية بقواعد التعبير اللفظي (المفردات والقواعد ...) في الثقافات الأخرى.
       SD 1 - 2 - 3 - 4 - 5 - 6 - 7 SA

14. You are familiar with the rules of expressing nonverbal behavior and you change it when needed in a cross-cultural situation.
    14. أنت على دراية بقواعد التعبير عن السلوك غير اللفظي وتعبر سلوكك عند الحاجة في موقع متعدد الثقافات.
       SD 1 - 2 - 3 - 4 - 5 - 6 - 7 SA
Motivational CQ

15. You enjoy living in unfamiliar cultures and interacting with people from different cultures.

15. تستمتع بالعيش في ثقافات غير مألوفة و بالتفاعل مع أشخاص من ثقافات مختلفة.

Behavioral CQ

16. You are confident that you can socialize within unfamiliar cultures and deal with stresses of adaptation to these culture.

16. أنت واثق من أنه يمكنك التواصل مع الثقافات غير المألوفة و قدرتك على التعامل مع ضغوط التكيف مع هذه الثقافات.

CQ training

20. You were trained (professionally or self-trained) on the importance of Cultural Intelligence and your role in the cross cultural interaction.

20. لقد تم تدريبك (مهنيًا أو تدريبًا ذاتيًا) على أهمية الذكاء الثقافي ودورك في التفاعل بين الثقافات?

21. You were trained (professionally or self-trained) to respect, understand and acknowledge cultural differences and to develop an open mind towards them.

21. لقد تم تدريبك (مهنيًا أو تدريبًا ذاتيًا) على احترام الاختلافات الثقافية وفهمها والاعتراف بها وتطوير عقل مفتوح تجاهها.

22. You were trained (professionally or self-trained) to appropriately address people from different cultures.

22. لقد تم تدريبك (مهنيًا أو تدريبًا ذاتيًا) على مخاطبة الأشخاص من مختلف الثقافات بشكل مناسب.

23. You were trained (professionally or self-trained) to learn another language to easily interact with different cultures or to learn basic terms in different languages.

23. لقد تم تدريبك (مهنيًا أو تدريبًا ذاتيًا) على تعلم لغة أخرى للتفاعل بسهولة مع الثقافات المختلفة أو لتعلم المصطلحات الأساسية بلغات مختلفة.

24. You learned that people belonging to different cultures have different cultural orientations and therefore expectations.

24. لقد تعلمت أن الأشخاص الذين ينتمون إلى ثقافات مختلفة لديهم توجهات ثقافية وتوقعات مختلفة.

25. Your Cultural Intelligence has improved your productivity and your overall professional performance.

25. ذكاء الثقافي حسنانتتك وعزز أدائك المهني بشكل عام.
Appendix D: Letter of Invitation - Interview Questionnaire

Dear [Participant’s Name],

I would like to invite you to participate in a master research study being conducted through Notre Dame University – Louaize, Lebanon. The purpose of the study is to understand how Project Managers use Cultural Intelligence to face and solve cross-cultural projects in construction in Lebanon and the Gulf. As more organizations are expanding their operation to the international level, project managers are increasingly managing culturally diverse teams that are globally dispersed and virtually connected. Cultural Intelligence is a new and hot topic worldwide; yet limited studies and information exist due to the novelty of the topic. Specifically, in engineering and in construction, little is known about the process that helps project managers to learn and apply the needed skills and techniques that help them to successfully manage multicultural teams. This study strives to shed light on this topic in a trial to help and improve working conditions for project management practitioners to succeed in their international endeavor, as well as the parties in charge of developing project management training courses and definitely all stakeholders in construction from workers to owners.

Your participation will enable you to contribute to the development of this growing area, by providing insights and personal experience into how PMs learn these extremely important, must-have and contemporary skills. Most importantly, you will help through making this priceless knowledge available to other practitioners. The researcher will provide you with a summary of the results.

Participation criteria:
In order to qualify for the study, you should comply with the following criteria:
1) You have managed at least three culturally diverse construction project teams
2) A minimum of 2 years of multicultural construction project team management experience within the past 5 years.
3) Multicultural teams should include at least three team members working in different time zones than the project manager.
4) Multicultural teams should include at least three different nationalities other than the project manager nationality.

If you fit these criteria and are interested in taking part of this study, please reply to his e-mail by replying to this email and providing your name and phone number or contact me over the phone.

Participation process:
If you choose to participate in this study, you will be asked to fill a 5 - 10 minutes’ pre-interview questionnaire which helps in providing background information for research purposes only. Upon completion of the questionnaire, the researcher will schedule a 30 – 45 minutes’ interview to discuss your personal experiences in the multicultural construction project teams.

All collected information will be kept in the strictest confidentiality and identities will never be disclosed in the thesis, discussion, narrative or in academic or professional circles.

Informed Consent and Confidentiality Agreement:
Enclosed you will find an Informed Consent and Confidentiality Agreement. Please review both forms. If you are interested in participating in the study, please sign both forms and mail them back or return them to me personally by 30/04/2020.
Note: Due to the current Corona Pandemic, all interviews will be held over the phone or over video conferencing.

Thank you very much for your time and consideration.

Sincerely,

Fadi A. Saliba
fadisaliba@outlook.com
+961 3 950 480
Appendix E: Pre-Interview Questionnaire

HOW CULTURAL INTELLIGENCE HELP PROJECT MANAGERS TO FACE CROSS-CULTURAL COMPLEXITIES AND INTERPERSONAL CONFLICTS IN CONSTRUCTION PROJECTS IN THE MIDDLE EAST.

Thank you for volunteering to fill this Master’s research interview.

My name is Fadi Saliba, a graduate student in Civil Engineering, focusing on Project Management at Notre Dame University Louaize, Zouk Mosbeh, Lebanon.

I am very thankful for your efforts and answers which are considered an essential part of my research and my success. All responses will be kept strictly confidential and will be accessed strictly by the researcher and possible his advisor.

شكرًا لك على التطبيع للمشاركة بمقابلة أبحاث الماجستير.

اسمي فادي صليبا، طالب دراسات عليا في الهندسة المدنية ، مع التركيز على إدارة المشاريع في جامعة سيده اللويزة، زوق مصبح، لبنان.

أنا ممتن جدًا لجهودك وإجاباتك التي تعتبر جزءًا أساسيًا من بحثي ونجاحي. سأبقى الاحتفاظ بجميع الردود بسرية تامة ولن ترتبط مطلقاً باسمك.

General and demographic profile:

1. What is your name?

   1. ما هو اسمك؟

   ________________________________________________________________

2. What is your gender?

   1. ما هو جنسيتك؟

   Female/انثى  ☐   Male/ذكر ☐

3. What is your age?

   2. ما هو عمرك؟

   ☐ 18 – 24  ☐ 25 – 34
   ☐ 35 – 44  ☐ 45 – 54
   ☐ 55 – 64  ☐ Above 65

4. What is the highest level of education that you have acquired?

   3. ما هو أعلى مستوى تعليمي حصلت عليه؟

   ☐ High School  -  مدرسة ثانوية
   ☐ Bachelor degree  -  درجة البكالوريوس
   ☐ Master’s degree  -  ماجستير
   ☐ PhD  -  الدكتوراه
   ☐ Other Project Management certificate

   Specify / حدد :

5. How many years of experience do you have in the construction industry?

   4. كم سنة من الخبرة لديك في مجال البناء والتشييد؟

   ☐ 0 - 3  ☐ 3 - 5  ☐ 5 – 10  ☐ 10 - 15  ☐ >15

6. What is the approximate total value of the projects you have worked on?

   5. ما هي القيمة الإجمالية التقديرية للمشاريع التي عملت عليها؟

   ☐ Less than 5 million $ – أقل من 5 مليون $
   ☐ 5 – 10 million $ – $ 10 - 5
   ☐ 10 – 25 million $ - $ 25 – 10
   ☐ 25 – 50 million $ - $ 50 – 25
   ☐ More than 50 million $ - أكثر من 50 مليون $

7. Please fill the below countries table with yes or no.

   6. الرجاء املأ الجدول التالي بالبلد و بنعم أو لا.

<table>
<thead>
<tr>
<th>Country</th>
<th>Nationality</th>
<th>Live</th>
<th>Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lebanon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix F: Interview Questionnaire

1) What are some of the most memorable experiences you’ve had as a Project Manager of multicultural teams where you experienced cultural issues?
   
   Example: What particular situation you recall, positive or negative, where cultural competencies were needed?

2) Where in these examples did cultural issues rise?

3) What was easy or challenging in those situations?
   
   
   Any other aspect that may be affected by the multicultural property of the team?

4) How did you handle it?

5) Was your solution positive or negative? Did it help solve the problem?

6) What skills did you use to handle this situation?

7) How did you identify the needed skills?
   
   Example: Previous experience? Read about it? Professional advice?

8) What helped or hindered you from acquiring these skills?

9) If you go through the same situation again, what would you do differently? What do you think prevented you from trying that at that time?

10) List minimum 5 ideas that you need to successfully manage multicultural teams.

11) How do you describe your experience in managing multicultural teams?

12) What is your advice to other project managers who are managing multicultural teams for the first time?
Appendix G: Institutional Review Board IRB Application From

Application Form

(Based on the IRB Guidebook)

<table>
<thead>
<tr>
<th>Title of the Study</th>
<th>How Cultural Intelligence Help Project Managers to Face Cross-cultural Complexities in Construction Projects in Lebanon and the Gulf.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sponsored by</td>
<td>NA</td>
</tr>
<tr>
<td>Purpose</td>
<td>The purpose of this study is to understand how project managers in Lebanon and the Gulf use Cultural Intelligence techniques to solve cross-cultural conflicts.</td>
</tr>
<tr>
<td>Concise Summary of Project [200 words]</td>
<td>While Cultural Intelligence (CQ) is becoming a very hot topic worldwide, very few research has been conducted on cultural intelligence in the Gulf and almost zero research in Lebanon and especially in the construction field. This study seeks to add to the literature by asking project managers in Lebanon and the Gulf about CQ, what are the skills needed and what helps them in learning CQ?</td>
</tr>
<tr>
<td>Profile of the Research Subjects</td>
<td>The participants will be experienced project managers who have worked in the construction field in Lebanon and the Gulf.</td>
</tr>
<tr>
<td>Recruitment Methods and Consenting Process</td>
<td>The researcher will use his personal network within all the studied countries from his 5 years of experience. In addition, the researcher will look at Order of Engineers list of Project Managers in Lebanon. Also, PMs in the Gulf will be identified using professional online platforms such as LinkedIn. Those who agree to participate will be sent online surveys and will be interviewed, in person or online.</td>
</tr>
<tr>
<td>Potential Risks (such as discomfort, inconveniences expected)</td>
<td>The only risk is having a slow response from the participants which can delay the project.</td>
</tr>
<tr>
<td>Potential Benefits (solution to social/environmental problems, advance of knowledge, treatment of any kind, etc.)</td>
<td>Cultural Intelligence presents many benefits in dealing with cultural diversity which is a very prominent phenomenon in Lebanon and the Gulf. Investigating the importance of CQ and identifying the methods and skills to deal with cultural conflicts in the construction field will benefit individuals and companies</td>
</tr>
</tbody>
</table>

1 The IRB Guidebook: [http://www.hhs.gov/ohrp/archive/irb/irb_guidebook.htm](http://www.hhs.gov/ohrp/archive/irb/irb_guidebook.htm)
as it will reduce the lost time and money and it will guarantee project success.

<table>
<thead>
<tr>
<th>Subject Safety and Data Monitoring</th>
<th>This study does not present any possibility of harm to the subjects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedures to Maintain Confidentiality</td>
<td>Questionnaires will be anonymous. Subjects will be referred to by an assigned number. Only the faculty advisor and PI will have access to the information. The project advisor and myself will have access to the data. The data will be encrypted and stored on a password protected on an external hard drive with a password. The data will be kept for 5 years. The data will be deleted after 5 years.</td>
</tr>
</tbody>
</table>
Appendix H: Consent Form for Interview Participants

Informed Consent Form

(Based on IRB Guidebook)

GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Title of Research</th>
<th>How Cultural Intelligence Help Project Managers to Face Cross-cultural Complexities in Construction Projects in Lebanon and the Gulf.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding Agency/Sponsor, if any:</td>
<td>NA</td>
</tr>
</tbody>
</table>
| Names of the Leading Researcher and Those Individuals Who will Obtain Consent | Fadi Saliba  
Naji Khoury, PhD., P.E.  
Dept. of Civil and Environmental Engineering |
| Contact Person | Fadi Saliba |
| Phone | +961 3 950 480 |
| Office Hours | |

RESEARCH STUDIES: MATERIALS & METHODS

<table>
<thead>
<tr>
<th>Statement About the Research Studies</th>
<th>This study looks at the knowledge and the use of Cultural Intelligence in Lebanon and the Gulf. Data will be collected via an online survey and in-depth interviews to determine to what extent Cultural Intelligence is being used, the skill needed for it and the factors that helps or impede learning it.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose(s) of the Research</td>
<td>The purpose of this study is to understand how project managers in Lebanon and the Gulf use Cultural Intelligence techniques to solve cross-cultural conflicts.</td>
</tr>
</tbody>
</table>
| Expected Duration of the Subject's Participation | 15 minutes to complete the survey  
30 minutes to complete the interview |
<p>| Description of the Procedures to be Followed | The researcher will use his personal network within all the studied countries from his 5 years of experience. In addition, the researcher will look at Order of Engineers list of Project Managers in Lebanon. Also, PMs in the Gulf will be identified using professional online platforms such as LinkedIn. Those who agree to participate will be sent online surveys and will be interviewed, in person or online. |</p>
<table>
<thead>
<tr>
<th>Detailed Experimental Procedures</th>
<th>NA</th>
</tr>
</thead>
</table>
| Approximate Number of Subjects Involved in the Study | Minimum 60 surveys  
Minimum 12 interviews |
| Profile of the Research Subjects | The participants will be experienced project managers who have worked in the construction field in Lebanon and the Gulf. |
| Circumstances Under Which the Subject's Participation May be Terminated by the Leading Researcher Without Regard to the Subject's Consent | Subjects participation will be terminated if they fail to complete the survey. |

**RISKS & BENEFITS**

<table>
<thead>
<tr>
<th>Foreseeable Risks or Discomforts to the Subject</th>
<th>None other than the time it takes to fill out the survey.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits Expected from the Research</td>
<td>Cultural Intelligence presents many benefits in dealing with cultural diversity which is a very prominent phenomenon in Lebanon and the Gulf. Investigating the importance of CQ and identifying the methods and skills to deal with cultural conflicts in the construction field will benefit individuals and companies as it will reduce the lost time and money and it will guarantee project success.</td>
</tr>
<tr>
<td>Disclosure</td>
<td>NA</td>
</tr>
<tr>
<td>Confidentiality Statement</td>
<td>Questionnaires will be anonymous. Subjects will be referred to by an assigned number. Only the faculty advisor and PI will have access to the information. The project advisor and myself will have access to the data. The data will be encrypted and stored on a password protected on an external hard drive with a password. The data will be kept for 5 years. The data will be deleted after 5 years.</td>
</tr>
<tr>
<td>Medium to High Risks</td>
<td>NA</td>
</tr>
<tr>
<td>Subject’s Compensation to be expected (if any)</td>
<td>NA</td>
</tr>
</tbody>
</table>
Appendix I: Investigator’s Verification of Explanation

I certify that I have carefully explained the purpose and nature of this research to every participant in age-appropriate language. He/She has had the opportunity to discuss it with me in detail. I have answered all his/her questions and he/she provided the affirmative agreement to participate in this research.

Investigator’s signature: Fadi Antoine Saliba

Date: 4/5/2020
Appendix J: Thank You Letter

Dear [Participant’s Name],

This is to express our sincerest gratitude for your participation in the research study on how cultural intelligence help project managers to face and solve cross-cultural complexities in multicultural teams in Lebanon and the Gulf.

I look forward to share with you a summary of the research and will be happy to talk through the results with you once completed. Please accept my sincere thanks for contributing to this research.

Sincerely,

Fadi A. Saliba
fdisaliba@outlook.com
+961 3 950 480