

# **Perceived Group Diversity and Group Outcomes**

The Mediating effects of Communication and Social  
Integration, and the Moderating effects of Group Task  
Interdependence and Longevity

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## **Declaration of Authorship**

I, Majed Alsolamy, hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Signed: \_\_\_\_\_

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

## **Abstract**

A large number of research has been conducted to examine the complex relationship between diversity and group outcomes. However, the effect of perceived diversity on group outcomes (i.e., job satisfaction, commitment, and performance) and mediating and moderating factors potentially influencing this relationship are still not fully understood with mixed results in the literature. On the one hand, diversity is considered to be a source of intergroup bias (such assumption is based on SAT and SCT) leading to lower levels of group communication and integration, which, in turn, have a negative effect on work group outcomes. On the other hand, the IPT suggests positive effects of diversity linked to the enhanced processing of information resulting from the wider spectrum of knowledge and perspectives found in groups that are more heterogeneous. Likewise, a number of meta-analyses have suggested that the mixed results yielded by various studies are due to a variety of possible combinations: 1) team composition and operationalisation of diversity; 2) differences in the tasks the groups perform; and 3) the developmental phase of the groups. Therefore, these issues were addressed in this study by investigating and critically exploring how and when group diversity may have an influence on group outcomes. The research developed and tested a moderated mediation model with indirect effects of perceived diversity on group outcomes, mediated via communication and social integration, moderated by group task interdependence and group longevity. Most studies in this field have neglected such an integrated model and their utility has not been tested.

The number of usable surveys returned from employees working in the Saudi healthcare sector was 561. The data was analysed using a two-stage Structural Equation Modelling. The findings underscore the importance of group mechanisms (social integration, communication) as mediators when considering the indirect positive relationship between perceived group diversity and group outcomes. Regarding the moderated mediation model, the results suggest that high levels of social integration and communication are the preliminary conditions and prerequisites for high levels of task interdependence and group longevity.

**Key Words:** Perceived diversity, Group outcomes, Mediating variables, Moderating variables, Moderated mediation model, SEM

## **Table of Contents**

ABSTRACT.....	3
TABLE OF CONTENTS.....	4
TABLE OF FIGURES.....	9
TABLE OF TABLES.....	10
ABBREVIATIONS.....	11
ACKNOWLEDGEMENTS.....	12
CHAPTER 1 INTRODUCTION.....	14
1.1 INTRODUCTION.....	14
1.2 BACKGROUND AND RATIONALE OF THIS STUDY.....	14
1.2.1 The need to integrate different theoretical perspectives and perceived diversity.....	16
1.2.2 Moving from main to interaction effects.....	18
1.3 AIMS AND OBJECTIVES.....	19
1.4 CONTEXT OF THE INVESTIGATION: THE SAUDI HEALTHCARE SECTOR.....	20
1.5 RATIONALE FOR THE RESEARCH METHODOLOGY.....	22
1.6 RESEARCH CONTRIBUTIONS.....	23
1.7 STRUCTURE OF THE RESEARCH CHAPTERS.....	25
CHAPTER 2 LITERATURE REVIEW.....	28
2.1 INTRODUCTION.....	28
2.2 DEFINITIONS AND ASPECTS OF DIVERSITY.....	28
2.3 WORK GROUPS AND GROUP OUTCOMES.....	31
2.3.1 Work Groups and Outcomes in Healthcare Context.....	33
2.4 THEORETICAL UNDERPINNINGS.....	34
2.4.1 Similarity-Attraction Theory.....	36
2.4.2 Self-Categorisation Theory.....	38

2.4.3 Information-Processing Theory .....	39
2.5 PERCEIVED DIVERSITY AS A POTENTIAL WAY TO SOLVE CONTRADICTIONS IN DIVERSITY LITERATURE ..	41
2.5.1 Definition of perceived diversity.....	42
2.5.2 Perceived self-to-group dissimilarity .....	44
2.5.3 Perceived subgroup splits .....	46
2.5.4 Perceived group heterogeneity .....	48
2.6 GROUP MECHANISMS AS MEDIATORS .....	50
2.6.1 Social Integration .....	51
2.6.2 Communication.....	54
2.7 TASK INTERDEPENDENCE AND LONGEVITY AS MODERATORS .....	56
2.7.1 Task Interdependence .....	56
2.7.2 Group Longevity.....	58
2.8 CONTROL VARIABLES.....	61
2.8.1 Group Size .....	61
2.8.2 Task Complexity .....	62
2.9 RESEARCH HYPOTHESES AND THEORETICAL FRAMEWORK .....	63
2.9.1 Direct Relationships and hypotheses' development .....	63
2.9.2 Indirect relationships and hypotheses' development – The Mediation Model.....	78
2.9.3 The role played by group contextual factors – The Moderated Mediation Model.....	80
2.10 CHAPTER SUMMARY .....	87
<b>CHAPTER 3 SAUDI ARABIA AND THE SAUDI HEALTHCARE SECTOR .....</b>	<b>89</b>
3.1 INTRODUCTION .....	89
3.2 THE KINGDOM OF SAUDI ARABIA: A HISTORICAL PERSPECTIVE .....	91
3.2.1 Macro-economic background .....	91

3.2.2 Socio-cultural background .....	92
3.2.3 Labour market background.....	92
3.3 AN OVERVIEW OF THE SAUDI HEALTHCARE SECTOR.....	94
3.3.1 Healthcare development .....	94
3.3.2 Healthcare structure .....	95
3.3.3 Human Resources in the Saudi Healthcare Sector .....	99
3.3.4 Lack of workforce diversity-related research .....	100
3.4 CHAPTER SUMMARY .....	100
<b>CHAPTER 4 RESEARCH METHODOLOGY AND DESIGN.....</b>	<b>102</b>
4.1 INTRODUCTION .....	102
4.2 PHILOSOPHICAL PERSPECTIVES AND SELECTED RESEARCH APPROACH.....	102
4.3 RESEARCH DESIGN .....	106
4.4 SAMPLING.....	107
4.4.1 Target Population.....	107
4.4.2 Sampling technique .....	107
4.5 MEASUREMENTS .....	111
4.5.1 Measurement Items.....	113
4.6 QUESTIONNAIRE DESIGN.....	116
4.6.1 Timeframe .....	117
4.6.2 Translation.....	117
4.7 FIELDWORK: PILOT STUDY, ACCESS STRATEGY, AND RESPONSE RATE.....	123
4.8 DATA ANALYSIS METHODS .....	124
4.8.1 Structural Equation Modelling.....	125
4.8.2 Two-Step Structural Equation Modelling.....	126
4.8.3 Mediation and Moderation analyses.....	130

4.8.4 Analytical Procedure in SEM .....	133
4.9 RESEARCH ETHICS .....	135
4.10 CHAPTER SUMMARY .....	136
<b>CHAPTER 5 FINDINGS.....</b>	<b>137</b>
5.1 INTRODUCTION .....	137
5.2 DATA ANALYSIS PART I – DESCRIPTIVE ANALYSIS .....	137
5.2.1 Group-level Descriptives.....	137
5.2.2 High team Interdependence vs. Low team Interdependence.....	138
5.2.3 Sample-level Descriptives .....	139
5.3 DATA ANALYSIS PART II – STRUCTURAL EQUATION MODELLING .....	140
5.3.1 Stage One: Data Preparation .....	140
5.3.2 Stage Two: The Measurement Model .....	143
5.3.3 Stage Three: The Structural Model.....	152
5.4 CHAPTER SUMMARY .....	171
<b>CHAPTER 6 DISCUSSION .....</b>	<b>172</b>
6.1 INTRODUCTION .....	172
6.2 DISCUSSION OF THE DIRECT RELATIONSHIPS.....	172
6.2.1 Perceived group diversity and group outcomes relationships .....	172
6.2.2 Perceived group diversity and group mechanisms.....	174
6.2.3 Group mechanisms and group outcomes.....	175
6.2.4 Task interdependence and group outcomes .....	177
6.2.5 Group longevity and group outcomes .....	178
6.2.6 Task interdependence and group mechanisms.....	180
6.2.7 Group longevity and group mechanisms .....	181
6.3 DISCUSSION OF THE INDIRECT RELATIONSHIPS.....	181

6.3.1 General Notes for Mediational and Moderated-Mediation Models.....	181
6.3.2 Discussion of Mediation Model .....	184
6.3.3 Discussion of Moderated Mediation Model .....	187
6.4 GENERAL COMMENTS REGARDING THE OVERALL DISCUSSION .....	192
<b>CHAPTER 7 CONCLUSIONS AND IMPLICATIONS OF THE STUDY.....</b>	<b>194</b>
7.1 INTRODUCTION .....	194
7.2 CONTRIBUTIONS.....	194
7.2.1 Theoretical contributions.....	194
7.2.2 Methodological contributions .....	195
7.2.3 Practical contributions .....	196
7.3 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH .....	197
7.3.1 Limitations related to Sampling and Response Rates: .....	197
7.3.2 Limitations related to design and measurement Issues.....	198
7.3.3 Limitations related to diversity research .....	199
7.4 FUTURE RESEARCH.....	200
7.5 CHAPTER SUMMARY .....	202
<b>BIBLIOGRAPHY .....</b>	<b>204</b>
<b>APPENDIX A. THE QUESTIONNAIRE – ENGLISH VERSION.....</b>	<b>232</b>
<b>APPENDIX B. THE QUESTIONNAIRE – ARABIC VERSION.....</b>	<b>237</b>
<b>APPENDIX C. TEAM DATA COLLECTION FORM.....</b>	<b>242</b>



## Table of Figures

Figure 1.1 <i>Manpower Trends for Non-Saudi Arabians</i> .....	22
Figure 1.2 Structure of the study.....	27
Figure 2.1 Theoretical framework proposed by the study .....	87
Figure 3.1 Healthcare structure in KSA (Source: Almalki et al., 2011, p.786) ...	96
Figure 3.2 Percentages of hospital services provided by the healthcare sector in the KSA (Source: Almalki et al., 2011, p.786) .....	97
Figure 3.3 Increasing number of PHCs in KSA (2004-2009) (Source: Almalki et al., 2011, p. 788) .....	98
Figure 4.1 Data Collection Process.....	111
Figure 4.2 Two-Step SEM.....	129
Figure 4.3 Mediation Model .....	130
Figure 4.4 Mediation analysis using a*b products.....	131
Figure 4.5 Moderation Model – Bath Diagram .....	132
Figure 4.6 Moderation Model – Statistical Diagram .....	132
Figure 5.1 The statistical model with group longevity as a moderator.....	163
Figure 5.2 The statistical model with task interdependence as a moderator...	164

## Table of Tables

Table 3.1 The Saudi Arabia Context – Fast Facts .....	90
Table 3.2 Manpower in MOH by Category, Sex and Nationality (MOH, 2015) .	99
Table 4.1 Comparison of Major Research Paradigms Informing Social Research .....	104
Table 4.2 Employee and team distribution across the three participating regions .....	110
Table 4.3 Measurement Scale .....	119
Table 4.4 Cronbach’s alpha of the pilot study .....	123
Table 4.5 GOF indices used in the study .....	134
Table 5.1 Team-level Demographics (n = 47).....	138
Table 5.2 Participants Demographics (N = 561) .....	139
Table 5.3 Univariate Higher – order Moment Descriptive Statistics .....	141
Table 5.4 Factor loading of measurement scales .....	144
Table 5.5 Validation of measurement scales through CFA .....	147
Table 5.6 Factor Loadings for the Post Hoc.....	148
Table 5.7 Inter-correlation for Post Hoc and square root of the AVE .....	150
Table 5.8 Internal Consistency of the Original and Modified Scales Based on Coefficient Omega: .....	151
Table 5.9 Assessment of the direct effects .....	158
Table 5.10 Assessment of the mediation effects.....	162
Table 5.11 Assessment of moderated mediation model .....	168

## Abbreviations

<b>Abbreviation</b>	<b>Meaning</b>
<b>SAT</b>	Similarity-Attraction theory
<b>SCT</b>	Self-Categorisation theory
<b>IPT</b>	Information-Processing theory
<b>MOH</b>	Ministry of Health
<b>PHCs</b>	Primary Healthcare Centres
<b>SEM</b>	Structural Equation Modelling
<b>CFA</b>	Confirmatory Factor Analysis
<b>EFA</b>	Exploratory Factor Analysis
<b>GLM</b>	General Linear Model
<b>MLR</b>	Maximum Likelihood Estimator
<b>ANOVA</b>	Analysis of Variance
<b>LMS</b>	Latent Moderator Structural Equation Model
<b>ICC</b>	Intraclass Correlation
<b>SRMR</b>	Standardized Root Mean Residual
<b>RMAES</b>	Root Mean Square Error of Approximation
<b>CFI</b>	Comparative Fit Index
<b>TLI</b>	Tucker-Lewis Index.

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“O mankind! We have created you from a male and a female, and made you into nations and tribes, that you may know one another...”

«يَا أَيُّهَا النَّاسُ إِنَّا خَلَقْنَاكُمْ مِنْ ذَكَرٍ وَأُنْثَى  
وَجَعَلْنَاكُمْ شُعُوبًا وَقَبَائِلَ لِتَعَارَفُوا»

Holy Quran: In chapter Al-Hujraat, Verse  
No:13

# **Chapter 1 Introduction**

## **1.1 Introduction**

This chapter presents the overall background of this study, including a brief discussion of the relevant literature, in which its apparent gaps are highlighted—namely, the lack of consensus regarding the combination of variables that determine the relationship between group diversity and group outcomes. This is then followed by an in-depth discussion pertaining to the context and rationale for this research. The rationale for the research methods employed by this study is also addressed. Following this, how the research aims and objectives are framed is presented together with a critical discussion of the study’s significance. Finally, the structure of the thesis is outlined.

## **1.2 Background and Rationale of this Study**

A great deal of research has been conducted into the topic of diversity in the workplace; specifically, on what effects it has on group outcomes (Webber & Donahue, 2001; Williams & O’Reilly, 1998). Indeed, organisations have struggled to understand and manage the effects diversity has on outcomes, especially as the ever-changing demographics of the workforce require a calibrated integration policy (Bridges, 1994; Ely & Thomas, 2001). The ability to integrate employees with diverse backgrounds, expertise, and functions in a single unit has become a “growing practice in modern organisations” (Horwitz, 2005:219; Cox & Blake, 1991; Lawrence, 1997). If managed properly, diversity may provide an opportunity for outstanding operational synergy; but, if mismanaged, it may pose a threat that may lead to intra-group conflicts, high turnovers, miscommunication, and, ultimately, become a hindrance to functionality and efficiency (Watson, Kumar & Michaelsen, 1993; Jehn, Northcraft & Neale, 1999).

The last four decades of research have highlighted that group diversity and its relationship with group outcomes is more convoluted than initially expected (Lawrence, 1997; Harrison & Klein, 2007; Milliken & Martins, 1996). Indeed, not only is the direct link between group diversity and group outcomes disputed, but also other intervening variables affecting group processes as well as moderating factors are also not clearly understood (Levine & Moreland, 1990; Webber &

Donahue, 2001; Van Dick et al., 2008; Shemla et al., 2014). A number of meta-analyses have suggested that the mixed results yielded by various studies, particularly those conducted in the field, are due to the variety of possible combinations: the conceptualization of diversity and its theoretical framework, differences in tasks the team perform, and the developmental phase of the teams (Joshi & Roh, 2009; Van Knippenberg & Schippers, 2007; Schippers et al., 2003; Shaw, 1981).

Several other empirical studies have highlighted this issue. On the one hand, researchers have found that group diversity is positively correlated with group outcomes (Ely, 2004). Information-processing theory supports this notion resting on the premise that cognitive diversity may lead to constructive and innovative problem solving. Put another way, cognitive diversity (at times, also surface-level and/or perceived diversity) facilitates the development of a platform in which knowledge, skills, expertise, and perspectives are pooled together to the end of solving a complex task. According to the theory, the resulting solution to a given problem would be both innovative and creative, particularly because of the effect of multiple perspectives found and constructive conflicts occurring among the diverse group members and of the synergy of the skills and knowledge suited to effectively tackling the problem (Amabile, 1983; Kickul & Gundry, 2001; Schwenk & Cosier, 1980).

On the other hand, a set of studies has suggested that group diversity—cognitive, perceived, or surface-level—is negatively correlated with group outcomes (Leonard, Levine & Joshi, 2004). Their findings highlighted the negative interaction between diversity and communication, social integration, and intragroup conflict (Riordan & Shore, 1997; Ancona & Caldwell, 1992). The theoretical basis of most of these studies is rooted in similarity-attraction, social-categorisation, and social identity theories, all of which are discussed in the literature review chapter.

My research seeks to further explain the inconsistent findings revealed in past studies looking for the effect of diversity on group outcome. By doing so, it examines the mechanisms through which group diversity affects group outcomes. Simultaneously, by including moderating variables, it explores when perceived group diversity may have an influence on group processes and

outcomes through a moderated mediation relationship. As there is little consensus regarding the direct/main effect of perceived group diversity on group outcomes, I develop the diversity-process-outcome model framework in an effort to investigate the possible indirect relationships between perceived group diversity, moderating and mediating effects on group processes, and the effects these have on group outcomes. The following two sections in this chapter discuss in more detail the various gaps in our current understanding of the relationship between diversity and group outcomes (satisfaction, commitment, and performance), which provide the motivation for the present study.

### **1.2.1 The need to integrate different theoretical perspectives and perceived diversity**

This research is based on a synergy of three dominant theories: Similarity-Attraction theory (SAT), Self-Categorisation theory (SCT), and Information-Processing theory (IPT). SAT and SCT belong to the pessimistic end of the spectrum of group diversity discourse in relation to the workplace; conversely, IPT foreshadows a more propitious outlook. For instance, SAT centres on the premise that human beings inherently move toward homophily in order to conform to their own individual identities by associating with similar others (Carley, 1991). This is upheld both in social and career networks (Ibarra, 1993). The assumption is that, in free choice situations, individuals feel a strong urge to gravitate toward persons who are similar to them (Williams & O'Reilly, 1998). In that regard, SCT expressively elucidates the process by which an individual's self-concept is defined "in terms of membership in social groups" (Mannix & Neale, 2005:40; Turner, 1987). Tajfel (1978:61) considered social categorisation "as the ordering of social environment in terms of groupings of persons in a manner which makes sense to the individual". Correspondingly, the process of categorisation "is usually accompanied by positive or negative evaluations leading to social stereotyping" (Haas, 2010:462). Evidently, such a (re)categorisation necessitates one to perceive—i.e., label—the seen or felt differences.

Each theoretical lens is calibrated to assess an aspect of work group diversity, its composition and its effects on group processes. Indeed, it is impossible to comprehend the diversity-process model without pragmatically integrating each



theoretical lens. Thus, I develop an eclectic and integrated theoretical framework for the examination of the effects of work group diversity on group processes. In that way, SAT (and SCT) helps us explain how individuals gravitate towards similar others in an effort to validate and conform to their own self-perceptions. IPT, on the other hand, elucidates how diversity may support learning, creativity, and innovation through constructive communication (Mannix & Neale, 2005). For instance, studies have come to show that cognitive diversity—the pooling of information and brainstorming ideas—has led to innovative and creative solutions to work-related problems, which, in turn, have led to positive performance benefits (Amabile, 1983; Kickul & Gundry, 2001; Schwenk & Cosier, 1980; Jehn, Northcraft & Neale, 1999). By considering multiple perspectives at the early stages of problem solving, diverse groups can produce ‘high-quality solutions’ (Schippers et al., 2003:779; Watson, Kumar & Michaelson, 1993). From this, one can deduce that IPT is largely centred on job-related (cognitive) diversity (Ancona & Caldwell, 1992; Wittenbaum & Stasser, 1996). Nonetheless, the extant studies in this subfield of diversity research only partially supported the perceptual model’s assumptions (e.g., Shemla et al., 2014), although the empirical focus is still at an early stage and may grow. Despite the present inchoateness, the constructivist logic underlying the perceptual approach does have some theoretical—and possibly practical—leverage for this particular research. Likewise, the observations from the literature foreshadow a more promising avenue of investigation aimed at understanding the effects of perceived diversity. Therefore, this research answers the call made by a recent paper review on perceived diversity and group processes and outcomes (Shemla et al., 2014), and conceptualises the objective/demographic attributes as perceived diversity; a measure that indicates the heterogeneity of a group, as perceived by group members. Put differently, perceived group diversity was conceptualised utilising the perceptual model in order to measure the impact of diversity in the workplace. Different dimensions (with the objective diversity categories of: age, gender, nationality, ethnicity, educational background, and functional background) as well as other psychological differences (i.e., personality attributes, personal values, and work attitudes) were adopted to operationalise generally perceived group diversity. Indeed, to the best of my knowledge, perceived diversity has not been extensively tested in the diversity-process-outcome framework, especially by

utilising a symbiosis of all three major theoretical pillars. In that sense, this thesis also contributes to promoting the inclusion of perceived diversity in the general framework and, while doing so, the utility of an eclectic approach as well. As such, it is vital to take into account the moderating and mediating variables, which this study does.

Furthermore, group outcomes are often measured in terms of affective consequences as well as of group performance (Cohen & Bailey, 1997). In this study, I focus on job satisfaction, commitment, and performance. Job satisfaction is the degree to which individuals perceive positive or negative relations towards their work environments (Curry et al., 1986). This is both a cognitive and an effective evaluation of one's surroundings (Brief & Weiss, 2002). Employee commitment is the extent to which individuals identify with and are involved in their work environments and groups (Dannhauser & Boshoff, 2006). Nevertheless, most studies concerned with commitment have acknowledged only surface-level diversity, while ignoring deep-level diversity and its effects on membership commitment. Lastly, as a third indicator of group outcomes, group performance was used in this research. Undoubtedly, performance is a convoluted concept to define as it depends on the context, task, and focus. In most cases, it is operationalised as productivity and client satisfaction (Curry et al., 1986). However, having recognised and utilized a sample (i.e., healthcare work groups) with divergent tasks and hereafter incomparable measurements of performance, this study adopted the broad term and defined group performance as the degree to which a group accomplishes its desired goals and aims (Devine & Phillips, 2001; Qin, 2007).

### **1.2.2 Moving from main to interaction effects**

The field of diversity has been well researched in studies largely devoted to its main effects—namely, the relationship between categories of group diversity, group processes, and group outcomes—without taking into consideration possible moderating factors. Review studies, including meta-analyses, have clearly indicated that such main effects are neither capable nor adequate to explain the effects of perceived group diversity (Webber & Donahue 2001;

Jackson & Joshi, 2003; Van Knippenberg & Schippers, 2007; Joshi & Roh, 2009). For example, Van Knippenberg & Schippers (2007:519) stated that:

*“It seems time to declare the bankruptcy of the main effects approach and to argue for models that are more complex and that consider moderating variables in explaining the effects of diversity”.*

As a result, this thesis focuses on the indirect effects of perceived diversity. It does so by utilising moderating and mediating variables that examine the interaction effects of several variables in an effort to explain the inconsistencies and mixed findings yielded by previous research. I consider communication and social integration as mediators while simultaneously employing group task interdependence and group longevity as moderators. In doing so, I argue that the perceived diversity-process-outcome model is contingent on task interdependence and longevity among group members. This integrated model, also known as *moderated mediation*, is a stepping stone, if not the main road, to answering: a) when perceived diversity could affect group outcomes, either positively or negatively; and b) how perceived-diversity could affect group outcomes via group mechanisms, the process underlying the impact of perceived group diversity. In other words, I argue that, in the presence of high group task interdependence and group longevity, perceived diversity is less likely to have a negative impact on communication and social integration, which, in turn, should lead to positive group outcomes.

### **1.3 Aims and Objectives**

As stated by the research background, this thesis builds upon the existing literature on perceived group diversity (Campion, Medsker & Higgs, 1993; Goodman, Devadas & Hughson, 1988; Edmondson & McManus, 2007) and seeks to address and examine how the relationship between diversity and group outcomes is moderated and mediated by a number of variables that may lead to positive group outcomes. Specifically, in an effort to better comprehend the diversity-process-outcomes relationship, this thesis seeks to answer questions of *how* (mediators: communication and social integration), and *when* (moderators: group longevity and task interdependence). Therefore, I have outlined the two objectives of this study below:

**1** – To examine whether perceived group diversity, through group processes, is positively associated with group outcomes.

This is done by exploring and testing the mediating effect of communication and social integration on the relationship between perceived group diversity and group outcomes.

**2-** To explore and elucidate the circumstances under which perceived group diversity is, and can be, a positive influence on group outcomes.

This is done by:

*a.* analysing the moderating effects of group task interdependence and group longevity on the relationship between perceived group diversity and group outcomes.

*b.* examining the interactive nature and complexity of the relationship that exists between group task interdependence, group longevity, communication and social integration; a moderated mediation model.

Moreover, it is imperative that I discuss and explore the context of the research before delving into the wider literature on diversity. Neglectful studies have left out a critical discussion of their context, which has led to some results being left without an explanation as they were not embedded within the context in which they were found (Mannix & Neale, 2005; Chatman & Spataro, 2005; Kozlowski & Bell, 2001).

## **1.4 Context of the Investigation: the Saudi Healthcare Sector**

Previous research on the subject of group diversity and group outcomes has yielded mixed results: positive, negative, or neutral (Jackson & Joshi, 2003). In particular, the root issue is how to understand the way in which the group diversity variable affects the group outcome one; of course, the answer to this would have a great impact on management strategies applied to diverse teams (Horwitz, 2005). Yet, despite the challenges regarding the nature of diversity and its impact on work environments, healthcare organisations (e.g., private and public hospitals, clinics, etc.) continue to employ diverse teams while lacking the

knowledge required to manage them. Thus, this more than ever necessitates a greater comprehension of what the possible effects of diversity may be (Heinemann, 2002; Shortell & Kaluzny, 2000).

The wider context of this research is Saudi Arabia's healthcare system. The aim is to improve our understanding of perceived group diversity by focusing upon healthcare delivery groups. According to the World Healthcare Organisation (WHO, 2013) Saudi Arabia's healthcare system is ranked 26<sup>th</sup> among 190 nation-states (above Canada – 30<sup>th</sup>, New Zealand – 41<sup>st</sup>, and Kuwait – 45<sup>th</sup>). Gallagher (2002:182) found that:

*“Although many nations have seen sizable growth in their healthcare systems, probably no other nation (other than Saudi Arabia) of large geographic expanse and population has, in comparable time, achieved so much on a broad national scale, with a relatively high level of care made available to virtually all segments of the population”*

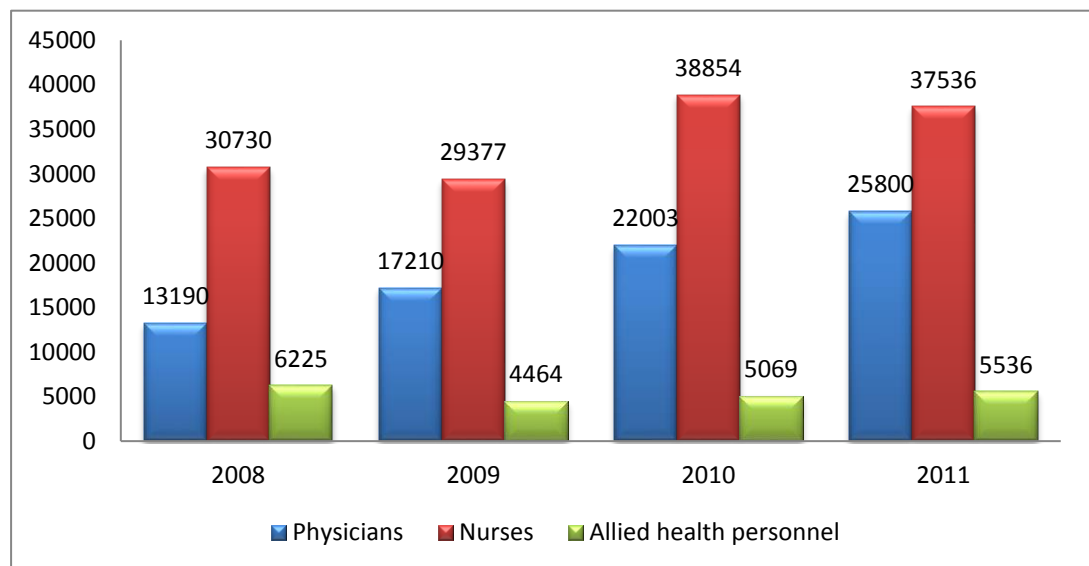
The specific contextual focus is on the primary healthcare centres (PHCs) that are publicly owned by the Saudi Ministry of Health, of which there are 2,037 in the country (Ministry of Health, 2014). Specifically, I focus on interdisciplinary workgroups that are interdependent and situated in the same work setting. An interdisciplinary workgroup may be a group of professionals with a diverse range of skills, expertise, and functions—as well as different backgrounds—that are interdependent, interact both formally and informally, and have common goals. In that sense, communication and social integration are important variables for the outcomes and success of interdisciplinary groups in terms of performance and efficiency (Mackinnon et al., 1993; Andreatta, 2010).

The Saudi healthcare system, which is diverse and unexplored, represents a fertile context within which to examine the interplay and relationships resulting from perceived group diversity and its effects on group processes and group outcomes. More so, a particular focus upon PHCs provides the opportunity to investigate perceived group diversity in different situations within the same wider area of healthcare delivery.

As highlighted by Saudi Ministry of Health statistics, a total of 248,000 individuals work in the country's healthcare system, around half of which (125,000) are

employed by the Ministry of Health (Ministry of Health, 2014). Of these, around 54% are Saudi nationals (of these, 22.6% are physicians, 50.3% nurses, and 27.1% allied health personnel), leaving the remainder 46% as expatriates (Almalki, Fitzgerald & Clark, 2011). Figure 1.1 shows that the overall number of expatriates in the Saudi healthcare system has been trending upwards reflecting the level of diversity in the work place.

Figure 1.1 *Manpower Trends for Non-Saudi Arabians*



Source: Ministry of Health (2014)

Nonetheless, ‘the new understanding of diversity involves more than increasing the number of different identity groups’ on the organisations (Thomas & Ely, 1996:2). The organisation should have a well-articulated and widely understood mission within which workers feel valued. The Saudi government has been, and continues to be, facing the issue of high turnovers and growing instability due to the mismanagement of expatriates (from diverse backgrounds) and their lack of integration in the healthcare system (World Health Organisation, 2013).

## 1.5 Rationale for the research methodology

Given that this thesis seeks to explore and understand whether, how, and under which circumstances perceived group diversity affects group outcomes, it reflects upon preconceived theories and concepts to answer its questions (Edmondson & McManus, 2007; Easterby-Smith and Lowe, 2002). I decided upon a cross-

sectional survey design due to its suitability and its potential for obtaining a large sample size, something that is imperative to effectively and legitimately analyse the independent and dependent variables (Tabachnick & Fidell, 2007). In order to analyse the data gathered—i.e., the relationship between perceived group diversity and group outcomes—I utilise a two-stage structural equation modelling (measurement and structural models). According to Hair et al. (2005), unlike other traditional data analysis tools such as ANOVA or regression, structural equation modelling (SEM) is preferred if the study is simultaneously testing mediating and moderating factors, something this thesis intends to do.

## **1.6 Research Contributions**

This research is one of few studies on perceived group diversity to attempt to examine the moderating role of task interdependence and group longevity along with the mediating role of group process (i.e., social integration and communication). It proposes and then empirically tests the utility of a relatively novel theoretical framework using more complex interactions to examine the positive effect of diversity on group outcomes (satisfaction, commitment, and performance). Although it is perplexing to find an impact of a moderating factor in a field setting (McClelland & Judd, 1993), the results show that the interaction between perceived diversity and task interdependence, and between perceived diversity and group longevity are vital for predicting group processes and, in turn, group outcomes.

To be more specific, this research contributes to the literature on perceived group diversity in three ways. First, it proposes a subjective definition (instead of using objective demographic attributes) of group diversity to examine the perceptions of group members towards group heterogeneity, including surface- and deep-level diversity, in combination with a set of moderators (group longevity, group task interdependence) and mediators (communication, social integration) to predict group outcomes (satisfaction, commitment, performance). The relationship between perceived group diversity and group outcomes rests upon a moderated mediation approach, a model that is fairly untested in field research (Van Knippenberg & Schippers, 2007; Mannix & Neale, 2005; Baron & Kenny, 1986). The primary hypothesis proposes that high levels of task interdependence

lay the foundation for good levels of communication and social integration, which then lead to positive group outcomes. The findings of this research will contribute towards our understanding of the fundamental relationship between (perceived) group diversity, group processes, and group outcomes.

Second, only a handful of studies have tested the contention that perceived diversity—or diversity in general, for that matter—is beneficial to group outcomes in the field. That is, the majority of studies have opted to perform a controlled laboratory experiment rather than to test a hypothesis in a real life context within an organisation or, in this case, a healthcare system (Williams & O'Reilly, 1998; Schippers et al., 2003). Thus, by conducting field research on the topic of perceived group diversity and its possible positive effects on/relationship to group outcomes, I will contribute to the literature by providing field data and real life contextual examples.

Third, (to my knowledge) no previous research has been done on the subject matter of perceived group diversity and group outcomes with a focus on Saudi Arabia's healthcare system. Surprisingly, despite Saudi Arabia being a nation-state thriving with a diverse workforce of expatriates employed in almost all sectors of society, researchers have not given it its deserved attention. Thus, it provides an important and fertile opportunity to examine the phenomenon of group diversity in the context of Saudi Arabia's healthcare system. While this addition will not make a contribution to the theoretical body of diversity literature, it will nevertheless further our understanding by adding a case study to the mix. Indeed, for Saudi Arabia's healthcare system, this thesis and its findings will have wide-ranging implications and may inspire insights in, if not changes, to the way work is completed and diverse groups handled and structured.

All in all, these contributions are theoretical, methodological, and practical. They are theoretical and methodological because the combination of different variables, the integration of moderating and mediating factors while employing an appropriate statistical methods (SEM), and the examination of the largely ignored Saudi Arabian healthcare system may yield new insights and deepen our understanding of the indirect relationship between perceived group diversity, group processes, and group outcomes. Also, the insights deduced from this research may reinforce a specific theoretical lens with regard to perceived group



diversity. In terms of practice, the findings may help managers, board members, and decision-makers in formulating effective strategies to better manage an increasingly diverse workforce, implementing social integration and tackling miscommunication between employees in Saudi Arabia's healthcare system and beyond.

## **1.7 Structure of the Research Chapters**

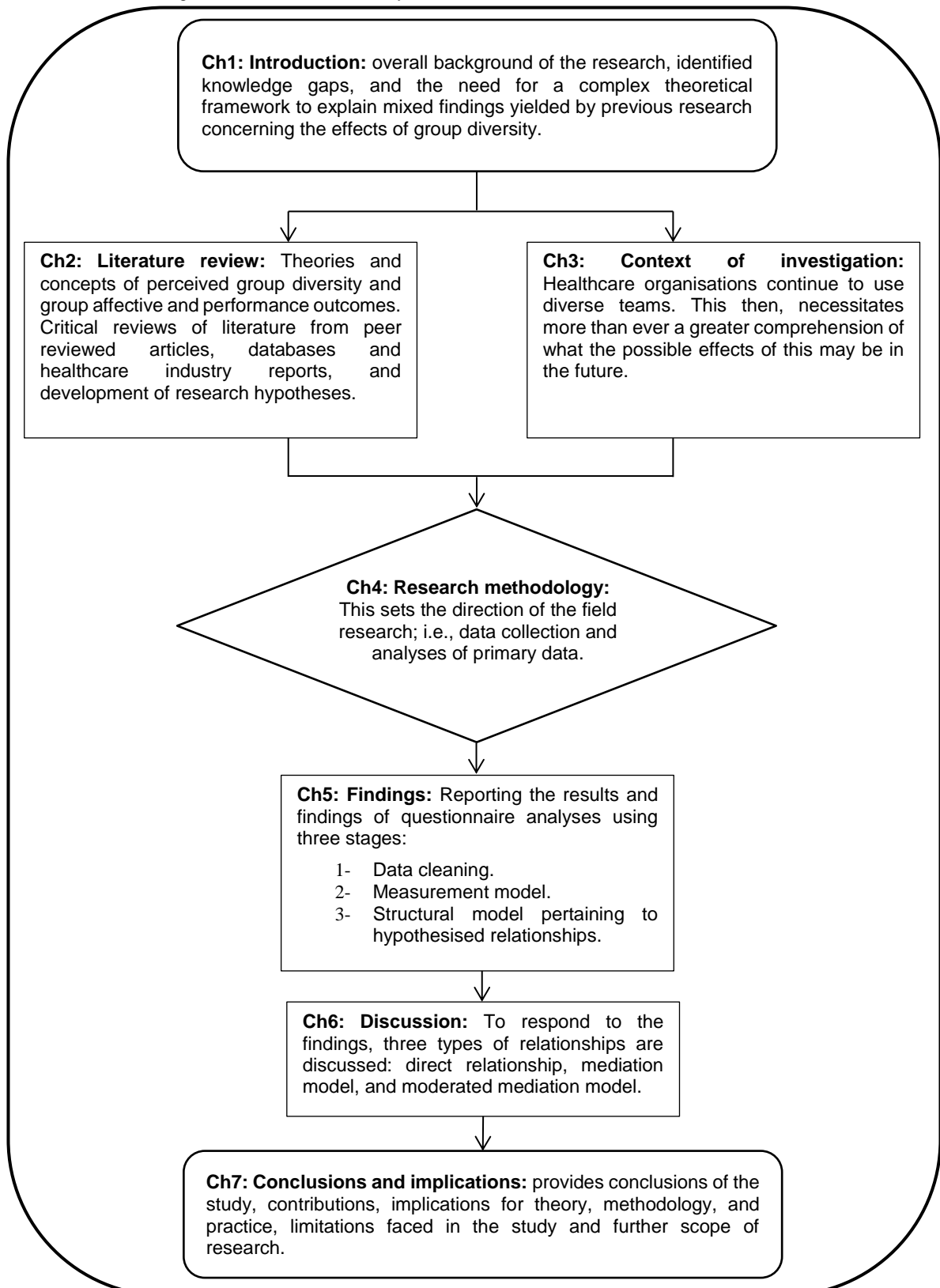
The entire thesis is organised into seven chapters and three appendices covering the information that is referred to within the main text. The content of each chapter is summarised below:

**Chapters 2 and 3** critically review the literature from peer-reviewed articles, databases and healthcare industry reports. Chapter 2 looks into the current state of the literature regarding the subject matter of diversity—specifically, perceived diversity and its impact on the work environment. It analyses a variety of viewpoints and theoretical traditions in an effort to clarify and comprehend the nature of (perceived) group diversity and its impact on aggregate group outcomes in the workplace. The theoretical traditions subject to analysis include similarity-attraction theory (that predicts a negative relationship), social-categorisation theory, social identity theory, and information-process theory (that predicts a positive relationship). Moreover, the chapter also features a definitions section for the purpose of clearly conceptualising and operationalising independent, dependent, and control variables, respectively. The two last sections have the aim of amalgamating the knowledge, studies, and understanding gained from the literature and the context of the research to formulate a series of logical and testable hypotheses. Chapter 3 then presents both the wider and the specific contextual focus of the study; i.e., Saudi PHCs. **Chapter 4** outlines and justifies the implementation of the research approach, strategy, design, and the analytical tools utilised.

The main results are reported in **Chapter 5**, which includes group member perceptions toward group heterogeneity and diversity, their possible impacts on

group outcomes, and the underlying group processes. To further elucidate the results found and reported in chapter 5, the interpretation is laid out in **Chapter 6**. This chapter discusses whether a mediation or a moderated mediation model is supported. Following from this, **Chapter 7** concludes the study, and summarises its key findings as well as its theoretical, methodological, and practical implications. This chapter closes with the limitations emerging from the study, which are then addressed as implied recommendations for further research. Figure 1.2 below shows a schematic representation of whole study, presenting the inter-relation among all chapters.

Figure 1.2 Structure of the study



## **Chapter 2 Literature Review**

### **2.1 Introduction**

This chapter provides a review of the key literature on the relationship between group diversity and group outcomes. It critically analyses a number of theoretical interpretations and outlines the issues faced by scholars when discussing diversity, its definitions and categories, its relation with the work environment, and how it affects outcomes. Specifically, this chapter (1) defines diversity and team/work group; (2) examines and critically discussing prominent theories in the fields of behaviour and diversity, and their relationships with outcomes; (3) outlines the dependent and independent variables; (4) highlights the lack of evidence for a direct link between dependent and independent variables; (5) introduces and critically discusses the variables used in this study and the hypotheses presented.

### **2.2 Definitions and Aspects of Diversity**

The concept of diversity and its practical implications and theoretical considerations require the critical understanding of a multitude of factors; indeed, it is a convoluted matter. This includes how diversity is defined and categorised and, most importantly, the moderating and mediating processes “affecting the diversity-process-performance linkage” (Mannix & Neale, 2005:31). Scholars have sought to define and categorise the construct, but have failed to produce a clear understanding (Guzzo & Dickson, 1996; Jackson & Ruderman, 1995; Schneider & Northcraft, 1999). In an effort to operationalize the term, I have sought to conceptualise diversity in incremental stages, beginning with a broad understanding. In layman’s terms, it refers to ‘variety’ or, as Mannix & Neale (2005:402) put it, “point or respects in which things differ”. Similarly, Joshi & Roh (2009:600) defined diversity as “an aggregate group-level construct that represents difference among members of an interdependent work group with respect to a specific personal attribute”. Put another way, it is a view of the composition of a group through the differences or similarities found among its members (Haas, 2010). This serves as a broad definition of diversity and thus requires further elaboration.

To begin with, there is a distinction between surface- and deep-level diversity. The former includes visible characteristics—such as age, gender, and race—while the latter considers attitudes, beliefs, and educational and functional backgrounds (Harrison et al., 2002; Harrison, Price & Bell, 1998). Studies have found that mixed results emerge when juxtaposing surface- with deep-level diversity. In addition to that, Pelled (1996) highlighted a further distinction within the diversity literature—namely, highly and less job-related attributes. Attributes reflecting skills, experience and/or cognition (education, tenure, function) were labelled as highly job-related as opposed to attributes such as age, sex, and race, which were defined as less job-related (Horwitz, 2005).

Although a mixture of various diversity types helps to deepen our knowledge of the effects of diversity, the existing research consistently yielded inconsistent findings that do not support the notion that different dimensions of diversity are associated with particular outcomes (Jackson et al., 2003; Lawrence, 1997). A meta-analysis performed by Webber & Donahue (2001) revealed that the two categories of diversity—highly and less job-related—are not associated with either group processes or group functioning. It is also important to note that those studies that opted to focus on a singular aspect of diversity—in total, 43% of studies reviewed by a meta-analysis of the literature (Jackson, Joshi & Erhardt, 2003)—failed to capture the full range of diversity found in organisations (Cox, 1993). From this, we can deduce that diversity is better understood holistically, rather than through its separate parts.

Furthermore, opting for a narrow focus on a single measure has further compromised the validity of objective diversity measures. Consider, for example, a sample that contains eight females and two males, and compare it with one that contains eight males and two females. On face value, both present the same degree of diversity; indeed, the only difference between the samples is the composition of the male-to-female ratio. Theoretically, both samples would weigh the same on a diversity scale. Clearly, objective differences found in the group (in both singular and categories of diversity) do not indicate whether dissimilar individuals perceive themselves as being different from their overall group (Van Dick et al., 2008).

Therefore, focussing on the perceptions of diversity, rather than on any actual demographic differences, provides an opportunity to gain new insights and a deeper understanding of the nature of group diversity and of its impact on group outcomes. This is in line with theoretical reasoning; e.g., those associated with Social Categorisation (SCT) and Similarity-Attraction Theory (SAT). That is, the focus is placed upon the group members' use of their cognitive processes to differentiate between themselves and other members as a result of perceived differences in certain demographic attributes (e.g., age, gender, ethnicity, educational and functional backgrounds, etc.) (Van Dick et al., 2008). Likewise, Shemla et al. (2014) argued that "these theories hinge on perception, but studies on objective forms of diversity, which relied on these theories, were mostly tested without taking perception into account." suggesting that this could be the cause of mixed findings. Indeed, this research proposes that the impact can be understood by measuring the perceived heterogeneity of a group. Hence, the issue is addressed by conceptualising the categorisation of objective diversity based on perception, a measure that should indicate what the members of a group really perceive as different (diversity) with regard to the specific characteristics of other group members.

Within perceived diversity research, there are three focal points that reflect different theoretical backgrounds, and are therefore critical to separate when examining the effects of diversity on group processes and outcomes. One important focal point type is "perceived subgroup splits" as explained by faultline theory. It refers to the extent to which group members perceive their group to be split into subgroups (Shemla et al., 2014). This stream of research uncovered that the categorisation process (i.e., categorising a member as belonging to an out-group of other homogeneous subgroups with strong faultlines) reduced the level of social integration and communication between members of different subgroups, which, in turn, led to a lower level of group outcomes (Homan, Van Knippenberg, Van Kleef & De Dreu, 2007; Meyer & Schermuly, 2012). In contrast, the third focal point, "perceived group heterogeneity", is anticipated to be linked with positive group outcomes (Shemla et al., 2014) (see section 2.5 for more details).

Given the inconsistencies found in previous research, and the potential negative effects of faultline diversity, I adopted Shemla et al.'s (2014) conceptualisation of

perceived diversity as “the degree to which individuals are aware that others differ along any salient dimension”. By doing so, perceived diversity is operationalized along different dimensions (where objective diversity categories are: age, gender, nationality, ethnicity, educational background, functional background) as well as in terms of other deep-level differences (i.e., personality attributes, personal values, work attitudes). Together, these are measured as perceived differences, and the average of these is operationalized as a measure of general perceived diversity (e.g., Van Dick et al., 2008). Therefore, the manner in which perceived diversity is understood in this research coincides with what Shemla et al. (2014) categorised as “perceived group heterogeneity”, in that the focus is on the individual perception towards group diversity.

Finally, the types of diversity included in this study represent the most studied dimensions when examining the effect of diversity on group outcomes (i.e., age, gender, nationality, ethnicity, educational background, functional background, personality attributes, personal values, and work attitudes) (O’Reilly, et al., 1989; Shemla et al., 2014). These dimensions are also relevant to the studied context (see chapter 2 for more details). However, it is worth pointing out that perception has been used as a key dimension of diversity conceptualisation in this research. This implies that, “perceived diversity measures capitalize on the intricate and multidimensional nature of diversity and avoid the need to presuppose that certain dimensions of differences are indeed relevant to the specific unit, context, or culture” (Shemla et al., 2014). In doing so, perceived diversity may or may not be related to actual/objective group attributes. Those researchers who adopted this view on perceived diversity placed it in the role of an independent construct (Allen et al., 2008; Van Dick et al., 2008).

### **2.3 Work Groups and Group Outcomes**

A work group is defined as a unit of three or more individuals that exists for an organisational purpose, fulfils relevant tasks, maintains and manages boundaries with other groups, and is situated in a wider organisational context (Kozlowski & Bell, 2003). Accordingly, Arrow & McGrath (1995) understood work groups by considering membership, task, and the tools used. Wageman (1995) made the further distinction that work groups also vary in interdependence. He stated that

this may be in terms of the tasks they perform and the structure imposed, and/or the rewards promised and the goals set, all of which promote mutual responsibility and dependency among their members. Likewise, Guzzo & Dickson (1996:309) defined a work group as a set of people “who see themselves and who are seen by others as a social entity, and who perform tasks that affect others”. With this in mind, work groups are understood as continual units of an organisation with “well defined membership and work roles” (Horwitz, 2005:233). For the purpose of this research, I draw on Cohen & Bailey’s (1997:241) definition of a work group as:

*“a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger systems (for example, business unit or corporation), and who manage their relationships across organisational boundaries”*

Furthermore, I also take into account Lemieux-Charles & McGuire’s (2006) findings regarding the most commonly found work groups in healthcare. These include: (1) projects, (2) management, and (3) care delivery; the focus of my research rests upon the third category. Two subcategories are found within care delivery groups: (1) patient population and (2) care delivery setting (Lemieux & McGuire, 2006). In that sense, and while the definition of a work group is quite broadly laid out, the further differentiation of the type of work group that will be the focus of this thesis will provide a clearer framework that will guide and screen what groups are admissible for its purposes.

As the dependant variable, group outcomes is divided into three subcategories: (1) satisfaction, (2) commitment, and (3) performance. *Satisfaction* is the degree to which an individual perceives a positive or negative relation towards his or her work environment (Curry et al., 1986). This evaluation is both a cognitive as well as an effective evaluation of one’s surroundings (Brief & Weiss, 2002). The relationship between group diversity and group satisfaction has been extensively covered in previous studies. Altogether, most studies assert that group diversity, particularly the surface-level type (sex, age, race), has a negative effect on group satisfaction and even increases turnover intentions (Wagner et al., 1984; Tsui et



al., 1992; Tsui et al., 1999). Contrastingly, when considering deep-level diversity (functional background, education, expertise) there seems to be, of course in certain circumstances (e.g. group interdependence; task and goal, group longevity) that such diversities increase group satisfaction due to the exchange of knowledge and completion of tasks/goals (Mannix and Neale, 2005).

*Commitment* is the extent to which individuals identify with and are involved in their work environment and group (Dannhauser & Boshoff, 2006). SAT (SCT and SIT) would suggest that demographically heterogeneous groups would earn lower levels of commitment from their members in contrast to homogeneous ones (Tsui et al., 1992; Townsend & Scott, 2001). Nevertheless, most studies concerned with commitment have acknowledged only surface-level diversity, while ignoring deep-level diversity and its effects on membership commitment.

*Performance* is a convoluted concept to define as it depends on the context, task, and focus. In most cases, it is operationalized as productivity and client satisfaction (Curry et al., 1986). In broad terms, it is defined as the degree to which a group accomplishes its desired goals and aims (Devine & Phillips, 2001). Qin (2007:27) succinctly defined performance as:

*“The accomplishment of organisational objectives, group work assignments or individuals’ responsibilities and the contributions to individual/group/organisational goals. Having four sub-domains (that is, objective task performance, subjective task performance, objective contextual performance and subjective contextual performance), it is both results of behaviours and behaviours themselves that create the results”*

Thus, this research adopts Qin’s definition and categorisation of performance.

### **2.3.1 Work Groups and Outcomes in Healthcare Context**

Work groups are becoming an increasingly common and integral part of healthcare organisations (Weisman et al., 1993; Curley et al., 1998; Heinemann, 2002). This has led researchers to investigate the value of team structure and design, and subsequently how this may be related to team effectiveness. According to a review of the literature on healthcare team effectiveness (Lemieux-Charles & McGuire, 2006), the majority of the literature on health care teams failed to produce conclusive findings regarding the usefulness of work groups to

increase patient satisfaction and organisational outcomes. This caused healthcare researchers to use the organisational study literature on team design and team effectiveness (Lemieux-Charles & McGuire, 2006). Therefore, future investigations regarding the relationship between work groups and group outcomes in healthcare organisations should variously consider team structures and group composition (i.e., group diversity and group size), task features (i.e., interdependence), and examine their interactions with other factors such as team processes (i.e., communication) and team psycho-social traits (i.e., social integration).

With regard to group outcomes in healthcare research, both objective (i.e., patient status and satisfaction) and subjective outcomes (i.e. employee satisfaction, performance, and commitment) were largely examined (Lemieux-Charles & McGuire, 2006). However, this study merely considers the latter due to access constraints to patient data and information encountered during the empirical investigation.

Broadly speaking, as mentioned in the introduction chapter, previous research produced inconclusive findings when examining the relationship between group diversity and group outcomes in the healthcare context. It is therefore imperative to understand *if, how, and under what conditions* diversity in healthcare groups influences group outcomes and how to provide any potential implications for healthcare managers and policymakers. In the next section, I critically discuss two prominent theoretical frameworks that consider the nature of diversity in groups and the probable group outcomes associated with it. By doing so, I hope to gain a clearer understanding of group diversity and its effects on group processes and outcomes.

## **2.4 Theoretical Underpinnings**

A lot of ink has been put to paper on the issue of diversity and group outcomes. The dominant assertion is that member heterogeneity is associated with weak group performance. This notion has been reinforced by three independent meta-analyses that found member heterogeneity consistently exhibiting a “weak relationship with group performance” (Bowers et al., 2000; Webber & Donahue, 2001; Stewart, 2006). Their findings show that individuals have a tendency to

strive toward homophily and prefer settings with similar 'others' (Pfeffer, 1983; Thomas, 1990). Yet, some scholars have posited that these findings are not as consistent as they are made to be, arguing that there are cases of organisational diversity leading to positive, neutral, and negative group outcomes. The findings of Tsui et al. (1992) and those of Guillaume, Brodbeck & Riketta (2012:81) elucidate the possibility of managing and possibly harnessing the benefits of group diversity, highlighting that it "hinges crucially on understanding how one can overcome individuals' proclivities towards homogeneous groups or organisations".

Reviews of the literature have yielded two dichotomous paradigms of teamwork that investigate the relationship between group diversity and group outcomes: (1) similarity-attraction theory (Byrne, 1971; Tziner, 1985) and (2) information-processing theory (Cox & Blake, 1991; Easely, 2001). Some studies supporting the latter argued for the notion that heterogeneity leads to better group outcomes (Bantel & Jackson, 1989; Magjuka & Baldwin, 1991); they focussed on the creativity resonated by diverse patterns of thought and functional backgrounds, which may lead to more innovative problem-solving and decision-making. Conversely, the former paradigm promotes the idea that homogeneity has a positive influence on group outcomes (Campion, Medsker & Higgs, 1993; Wiersema & Bird, 1993). The notion is that similarity fosters cohesion and a lack of conflict, which then leads to a positive environment and better communication. Logically speaking, we should see heterogeneous groups producing better group outcomes in cases of high task complexity—especially those requiring creativity—and homogeneous groups performing better in routine tasks that require consistent, clear-cut communication and rigid roles (Guzzo & Dickson, 1996; Jackson, May & Whitney, 1995).

Still, the nature of diversity is complex and does not fall neatly into theoretically categorised routes of behaviour. This is highlighted by a lack of convergence between theory and practice, whereby divergent studies simultaneously find that group diversity has positive, neutral, and negative effects on group outcomes. In light of this, the effects of diversity are still largely unknown, warranting it the label of a double-edged sword, which, at the same time, is positive and negative. In a sense, this is also a reflection of the literature's inability to comprehend the interplay inherent in the group diversity-process-outcome model (Qin, O'Meara &

McEachern, 2009). Below, in an effort to clarify the theoretical standings on the issue of group diversity, I discuss the three theories: similarity-attraction theory, self-categorisation theory, and information-processing theory.

#### **2.4.1 Similarity-Attraction Theory**

Similarity-Attraction theory (hereafter SAT) centres on the premise that human beings inherently move toward homophily to conform to their own identities by associating with similar others (Carley, 1991). This is upheld in both social and professional networks (Ibarra, 1993). The assumption is that, in free choice situations, individuals have a strong urge to gravitate toward persons who are similar to them (Williams & O'Reilly, 1998). This is due to a variety of reasons. First, similarity between individuals reinforces their identities, beliefs, and values and leaves these unchallenged (Riordan, 2000). Second, and a corollary of the first, communication is easier and reinforces greater interaction and social recognition (Christian et al., 2006). From this, one can deduce that high group diversity is precariously positioned in relation to group outcomes, particularly as it may cause greater miscommunication due to differences in perspectives over key issues.

Further, SAT presumes a correlation between surface- and deep-level diversity. First and foremost, SAT highlights "the importance of the distribution of demographic characteristics within a group" (Haas, 2010:461). This highlights that surface-level diversity is considered to be the primary focus of this theoretical lens, as individuals are susceptible to surface-level characteristics due to their immediate visibility. Understandably, deep-level characteristics require a certain length of time for their effects to become apparent. SAT, in this case, presumes that highly diverse groups (e.g., those presenting substantial variation in terms of race, gender, and age) are likely to have "different experiences and, therefore, significantly different perspectives on key issues or problems" (Milliken & Martins, 1996:404; Jackson et al., 1991). Townsend & Scott (2001) reiterated this position as they argued that, while race does not necessarily determine a person's "attitudes toward work and rewards, it can contribute to a set of life experiences that are likely to affect these attitudes" (Mannix & Neale, 2005:39; McGrath et al., 1995).

Empirically, a correlation between surface- and deep-level diversity has gained recognition across a variety of contexts, with findings suggesting that high attraction is positively correlated with low heterogeneity (Westmaas & Silver, 2006; Qin, O'Meara & McEachern, 2009). Attraction, in those cases, was operationalised according to the level of shared attitudes, values, and beliefs (Tsui et al., 2002). Likewise, Haas (2010) found that, as individuals seek to converge with persons similar to themselves—a process that leads to the emergence of subgroups—this puts them at odds with dissimilar members of the same work group. The result is miscommunication, group disintegration, and a hindrance to overall group functioning (Bacharach et al., 2005; Ibarra, 1992). This process has also been associated with low social integration and higher levels of turnover and dissatisfaction (O'Reilly, Caldwell & Barnett, 1989; Wagner, Pfeffer & O'Reilly, 1984).

A study of 151 groups (1,705 respondents) across three large organisations highlighted that a higher distribution of differences among members of an organisation (surface-level diversity) led to lower levels of attachment, higher turnover, and higher levels of absenteeism (Tsui, Egan & O'Reilly, 1992). Put another way, people seem to dislike dissimilar 'others' and this has a profound effect on the essential factors required for the emergence of a healthy work group—namely; social integration and communication (Pfeffer, 1983). Kirkman, Tesluk & Rosen's (2000) study of manufacturing groups found a negative correlation between ethnic diversity and both performance and customer service ratings. From these research findings, it can be argued that increased similarity among members of a group facilitates easier interaction due to a positive reinforcement of shared attitudes, beliefs, and values; this, in turn, leads to more desirable group outcomes (Sacco & Schmitt, 2005; Riordan, 2000). With this in mind, SAT supports the prediction that high homogeneity is positively correlated with cohesion, less conflict and misunderstanding, and commitment, and is related to positive group outcomes (Van Knippenberg et al., 2004). Accordingly, high heterogeneity negatively affects communication, social integration, turnover, and conflict, and is overall related to negative group outcomes (Swann et al., 2004; Qin, O'Meara & McEachern, 2009).

Nevertheless, there is a lack of understanding with regard to how individuals, as members of a group, perceive others in terms of similarity, particularly

considering the multiple interplay of social categories to which one single individual can belong. In this case, SAT's explanatory capabilities are exhausted. With the above in mind, self-categorisation theory (hereafter SCT) may provide a more concrete comprehension of the abovementioned dilemma.

#### **2.4.2 Self-Categorisation Theory**

SCT expressively elucidates the process by which an individual's self-concept is defined "in terms of membership in social groups" (Mannix & Neale, 2005:40; Turner, 1987). Tajfel (1978:61) understood social categorisation "as the ordering of social environment in terms of groupings of persons in a manner which makes sense to the individual". It is to be noted that, while this theoretical lens focuses upon the individual-level perspective and may not correspond with the categorisation of diversity adhered to in this research, it nevertheless is a supportive theoretical strand that provides a glimpse of the difficulties associated with individuals systematically categorising others (similar/dissimilar) into groups. Correspondingly, the process of categorisation "is usually accompanied by positive or negative evaluations leading to social stereotyping" (Haas, 2010:462). Therefore, SCT predicts that these consequent evaluations have a profound effect on the functionality of a heterogeneous group, especially as the process of stereotyping significantly alters how individuals are perceived by others; it has the effect of transcending their uniqueness and positioning them as an example of relevant group stereotypes (Tajfel & Turner, 1986). The result is an 'us' vs. 'them' mentality (Mannix & Neale, 2005). Studies have shown that stereotyping triggers a number of vicissitudes, most notably miscommunication, conflict, and an increased distrust of the "other" (Lindeman & Sundvik, 1993). Both theoretically and practically, there is a direct convergence between SCT and SAT, both of which predict no direct effects of homogeneity/heterogeneity on performance. Rather, SCT—similarly to SAT—predicts the positive effects of homogeneity to be social integration, communication, and lack of conflict, which, in turn, "have a positive impact on group performance" (Qin, O'Meara & McEachern, 2009:746; Van Knippenberg et al., 2004; Hobman & Bordia, 2003).

Furthermore, social identity theory (hereafter SIT), an approach closely related to SCT, posits a deeper understanding of the probable effects of group membership.

The assumption of SIT is similar to those of SCT and SAT—namely, that individuals gravitate toward similar others because they are motivated by the prospect of a positive self-image (Goldberg, 2003; Tajfel & Turner, 1986). However, Ashforth & Mael (1989) found that group identity salience leads to the unfavourable treatment of those who are dissimilar. Again, a repeated theme of in- and out-grouping ('us' vs. 'them') precipitates favouritism for the in-group and warrants discrimination towards the out-group (Turner, 1982). In light of these findings, the combination of SAT, SCT, and SIT provides a platform of answers with regard to empirical studies that posit questions such as: “why members of heterogeneous groups (particularly those with a majority-minority structure) show less attachment to one another and less commitment to their organisations (Harrison et al., 1998), are absent from work more often (O'Reilly et al., 1989; Wagner et al., 1984), take more time to reach decisions (Hambrick et al., 1996), and experience more conflict” (Mannix & Neale, 2005:41; Jehn, Northcraft & Neale, 1999).

### **2.4.3 Information-Processing Theory**

A landmark study examining small heterogeneous groups conducted over four decades ago by Hoffman & Maier (1961) and Hoffman (1959) suggested that diverse groups are expected to demonstrate a wider spectrum of expertise, knowledge, and perspectives than homogeneous ones. Inspired by studies such as the above, information-processing theory (hereafter IPT) suggests that diversity—particularly cognitive diversity (e.g., that pertaining to knowledge, expertise, and perspectives)—has a positive impact on performance (Cox & Blake, 1991; Hambrick, Cho & Chen, 1996; Horwitz, 2005). Studies have come to show that cognitive diversity, the pooling of information and brainstorming of ideas, has led to innovative and creative solutions to work-related problems, which, in turn, have led to positive performance benefits (Amabile, 1983; Kickul & Gundry, 2001; Schwenk & Cosier, 1980; Jehn, Northcraft & Neale, 1999). By considering multiple perspectives at the early stages of problem solving, diverse groups can produce 'high-quality solutions' (Schippers et al., 2003:779; Watson, Kumar & Michaelson, 1993). From this, one can deduce that IPT is largely

centred on job-related (cognitive) diversity (Ancona & Caldwell, 1992; Wittenbaum & Stasser, 1996).

A number of studies have supported the IPT premise. For instance, Pelz (1956) highlighted that scientists benefit most from contact with dissimilar colleagues. Likewise, Kanter (1983) found that highly innovative companies “deliberately established heterogeneous groups to capitalise on a multiplicity of views” (Horwitz, 2005:225; Janis, 1972). In an effort to conceptualise this process, Amason (1996:124) pinpointed that high-quality innovation was a result of “critical and investigative interaction processes in which group members identify, extract, and synthesize their different perspectives”. This rests on the notion that the presence of a minority perpetuates divergent thinking—multiple understandings and perceptions of a phenomenon—and therefore provides results borne from constructive conflict over and a wider comprehension of any given problem (Nemeth, Mosier & Chiles, 1992; Mannix & Neale, 2005). On the one hand, this has led some scholars to suggest that diversity in group composition, if managed properly, can “be beneficial for group functioning” (Schippers et al., 2003:779; Cox, Lobel & McLeod, 1991). Likewise, Williams & O’Reilly (1998:120), in their review of 40 years of diversity literature, pointed out that “under ideal conditions, increased diversity may have the positive effects predicted by information and decision theories”. On the other hand, a variety of studies have highlighted the drawbacks of both cognitive and surface-level diversity as being miscommunication, turnover (Pelled, 1996), conflict, lack of cohesion and attraction (Terborg, Castore & DeNinno, 1976), and diminished group effectiveness (Milliken & Martins, 1996; Jackson & Ruderman, 1995).

Yet, Nemeth (1986), in a study of work groups that included minority members juxtaposed with others that were more homogeneous, found that the former were more innovative than the latter in generating non-obvious alternatives. In another study, McLeod & Lobel (1992) found similar results with respect to heterogeneous groups performing better and producing higher quality ideas than their homogeneous counterparts. Additionally—and, in a way, providing a surface-level example of IPT in practice—Cox, Lobel & McLeod (1991), in an experimental study involving a two-party prisoner’s dilemma game, found that ethnically diverse groups were more cooperative than all-Anglo ones. They attributed these results to the assumed nature of Anglos as being more



individualistic when compared to minority ethnic groups that tend to be “more collectivist in their orientation” (Milliken & Martins, 1996:406).

All in all, group diversity seems to remain a double-edged sword. It is still dependent on contingency factors, conditions, and the placement of groups within the organisation. It is also affected by the members’ cognitive processes to differentiate between themselves and others due to perceived differences in some demographic attributes. Each theoretical lens is calibrated to assess an aspect of diversity, its composition, and its effects on group processes and outcomes. With that in mind, it is impossible to comprehend the diversity-process-outcome model without pragmatically integrating each theoretical lens when appropriate. Thus, I propose an eclectic and integrated theoretical framework when examining the effects of group perceived diversity on group processes and outcomes. In that way, SAT (SCT and SIT) helps us explain how an individual gravitates toward similar others in an effort to validate and conform to his/her own self-perception. IPT, on the other hand, explains how perceived diversity can support learning, creativity, and innovation through constructive communication and as a result of enhanced performance and affective group outcomes (Mannix & Neale, 2005). Indeed, relying on perceived diversity conceptualisation—as a measure of perceived differences—and its theoretical underpinning has encouraged this study to further examine how and under what conditions demographic predictors affect group mechanisms and outcomes. As suggested in the literature, research is needed to determine whether the mediating and moderating factors provide adequate explanations for the effects of perceived diversity. This study endeavours to fill this gap.

## **2.5 Perceived Diversity as a potential way to solve contradictions in diversity literature**

The fundamental questions driving this thesis have been in regard to how group outcomes are impacted by diversity factors (Allen et al., 2008). Scholars have made several assumptions regarding the process by which diversity impacts group outcomes, all with the aim of unearthing what this impact might actually be (Levine & Moreland, 1990; Shemla, et al., 2014). In order to do just that, this thesis has coalesced two theoretical traditions to provide a fresh insight into the

questions of how, why, and when group diversity may have an impact on group outcomes. (Kiggundu, 1983).

IPT proposes that, under the right circumstances, diversity can be immensely valuable for group processes and improved group outcomes (Janz, Colquitt & Noe, 1997). Subsequently, such a viewpoint would encourage, and indeed enable, management professionals to create groups that are diverse in opinions, perceptions, expertise and knowledge in order to improve performance, satisfaction, and commitment (Wittenbaum & Stasser, 1996). Conversely, drawing from the SCT literature, Shemla & Meyer (2012) suggested that diversity could be the ultimate cause of divisions amongst group members and therefore lead to a degradation of performance and generally negative group outcomes. Indeed, they argued that such a negative impact would hamper the individuals' ability to produce quality performances (Ely, 2004). Nonetheless, when considering the vast inconsistencies found in the literature related to the above theoretical findings—namely, that the meta-analyses conducted found that most studies contradicted each other—this study proposes the inclusion of perceived diversity within the theoretical mix. In other words, diversity is not operationalised as a matter that is external but rather as a perception that is created internally.

This particular sub-section aims at giving a clear definition of perceived diversity and of how it affects group outcomes.

### **2.5.1 Definition of perceived diversity**

As a concept, perceived diversity reflects the variations observed and perceived by a given individual. No doubt, there is a mixture of opinions on how perceived diversity is conceptualised, let alone operationalised (e.g., Giambatista & Bhappu, 2010; Hentschel et al., 2013; Cunningham, Choi & Sagas, 2008). According to Giambatista & Bhappu (2010), it represents the dissimilar perceptions that are held by individuals based on how they are exposed to others. Likewise, Hentschel et al. (2013) argued that perceived diversity reflects the feelings of a given individual who perceives those by whom he or she is surrounded as being different. The more easily detectable attributes of individuals are the perceived dissimilarities that distinguish them from others. In that sense, perceived diversity is initially based upon surface-level diversity attributes and,

over time, it may also shift to or engulf deep-level diversity. Cunningham, Choi & Sagas (2008) suggested that perceived diversity is the degree to which individuals tend to view or perceive themselves to be different from others.

In order to evaluate and address the connection between perceived diversity and group outcomes, this study will refer to past findings, which have highlighted the differences and variations in their perceptions regarding this particular topic. Allen et al. (2008) best summarised the three main areas in which individual perceptions can be diverse; these are: a) perceived self-to-group dissimilarity, b) perceived subgroup splits, and c) perceived group heterogeneity. They continued by arguing that each of the three areas exhibits a diverse set of theoretical assumptions and subsequent methodological requirements, something that it is crucial to take into account when examining the effects of perceived diversity on group processes and outcomes. While investigating the differences in groups from the perspective of individuals, Williams, Parker & Turner (2007) argued that perceived diversity is closely related to relational demography. They highlighted that individuals were found to link their own attributes, beliefs, culture, values and principles with those of others in their group. This seems to have a strong impact on the experiences of individuals (Mowday & Sutton, 1993).

From an SCT perspective, Hogg & Terry (2000) contributed by highlighting that individuals who consider themselves to be different from others in their group tend to categorise themselves as separate from them, and seek individuals who have similar values and/or perceptions to theirs. Put differently, the more an individual regards himself/herself as dissimilar to others, the less likely he/she is to take the initiative to interact/communicate with group members (Tsui, Egan & O'Reilly, 1992). Consequently, they will not generally be willing to engage or be helpful to the group (Hobman, Bordia & Gallois, 2003). Logically, such behaviour leads to a negative impact on communication and social cohesion/integration. Ultimately, the performance of the individual, and subsequently that of the group, will decline in efficiency (Meyer & Schermuly, 2012). The logical clarity that comes as a result of integrating and distinguishing the three areas of perceived diversity will be immensely helpful during the analytical phase of this thesis.

## **2.5.2 Perceived self-to-group dissimilarity**

According to Unzueta & Binning (2012), diversity is represented by the various types of differences and dissimilarities that are perceived among individuals associated with a particular organisational setting. Differences in age, nationality, culture, religious beliefs, work abilities, etc. are only some of the perceived differences in an organisation that tend to have an impact on its wellbeing. Diversity is a significant factor in ensuring the wellbeing and sustainable position of a given organisation (Levine & Moreland, 1990). The ways in which individuals perceive themselves and others have a long-lasting effect on organisations, particularly when individuals react to dissimilarity in their environment (Ely, 2004). Zellmer-Bruhn et al. (2008) found that the concept of perceived self-to-group dissimilarity adversely affects individual outcomes as well as group ones. In terms of individual outcomes, a large dissimilarity is associated with perceived self-to-group values, information, and visibility; few members are involved in various task based processes such as collaborative decision-making, exchange of information, etc. (Ellis & Shockley-Zalabak, 2001). Further to this, Acar (2010) highlighted that helping behaviours of individuals are negatively correlated with perceived self-to-group dissimilarities. Unsurprisingly, perceived self-to-group dissimilarity is positively interrelated with workforce turnover, particularly when individuals' perceptions and values do not match those of other group members, which then negatively impacts their willingness to work together (Kiggundu, 1983). Indeed, and as Hentchel et al. (2013) succinctly posited, to maintain efficiency and carry out successful, ethical business operations, organisations need to manage the various types of perceived diversities in the workplace through proper management strategies and interventions. It is crucial to identify the impact of perceived diversity so that the exact nature of dissimilarity among group members can be assessed and effectively judged (Townsend & Scott, 2001).

Harrison, et al. (2002) suggested that perceptions have a high impact on developing the idea of differentiating oneself from the others in a group. An individual tends to observe or perceive himself/herself differently from his group members. Homan & Greer (2013) argued that, in a group, individuals who view themselves dissimilar from others tend to consider themselves as members of the out-group. It is quite likely that, in such cases, these individuals will try to mix

with members of other groups and become associated with them, especially those that possess values and principles similar to theirs (Ely, 2004). Being in such groups, individuals identify their group members from their out-group (Jehn, Chadwick & Thatcher, 1997). In any given organisation, such a context is likely to decrease efficiency and performance standards (Zellmer-Bruhn et al., 2008).

To ensure successful organisational operations, staff members need to be cooperative and encouraged to work together as a group; they must be willing to share values and opinions. Increased perceived diversity, especially if left unmanaged, often causes teamwork to not be functional within organisations (Levine & Moreland, 1990). As a consequence of perceiving oneself to be dissimilar to other group members, avoidance becomes engrained and, as a consequence, the effectiveness of work declines (Hentschel, 2013). Indeed, there is no interest or motivation for individuals who perceive themselves as being dissimilar to collaborate with others and, as a consequence, the standards of working together stagnate. Such a process may also increase employee turnover. Logically then, and as highlighted by Fields & Blum (1997), when individuals find similar others and form a group, they feel satisfied and are more easily engaged in various work-related tasks. In such circumstances, they tend to provide better work performance and forge a stronger commitment towards the group as an entity (Bodenhausen, 2010). Deep-level similarities among individuals in a group, particularly in regard to values and attitudes, have been identified as key factors affecting and increasing satisfaction (Ely, 2004; Greer & Jehn, 2007; Levine & Moreland, 1990; Brewer & Brown, 1998).

A considerable finding is the close relationship that exists between group-level outcomes and perceived dissimilarity. For instance, religious diversity is a significant dissimilarity that is salient among individuals within a given organisational setting. Harrison, Price & Bell (1998) suggested that perceived religious diversity is in a negative relationship with perceived group cohesion. Such difference tends to make individuals consider other group members as being further apart, especially in terms of opinion, and may therefore hamper unity (Piekut & Valentine, 2016). Furthermore, it has been observed that the interaction between perceived group compositions, specifically regarding sexual orientations, also affects the welfare of organizations. Graves & Elsass (2005) highlighted that, in the workplace, heterosexual employees often negatively

perceive homosexual ones. Unsurprisingly, when homosexual employees work in a group in which there is a considerable number of other employees who share their sexual orientation, they face less perceived workplace discrimination (Cunningham, 2007). Therefore, it can be argued that the higher the perceived self-to-group similarities in terms of sexual orientation, the lower the possibility of facing discrimination—or, at least, of perceiving to be discriminated against—at work (Kiggundu, 1983).

Jehn, Rupert & Nauta (2006) contributed to the above study by including the argument and finding that contextual features heavily shape the perceived diversities among people and that such differences may motivate them to value diversity. They continued by suggesting that, depending on the degree of task interdependence, the relationship between perceived self-to-group dissimilarity and the cooperative behaviour of individuals differs markedly (Shrivastave & Gregory, 2009). For example, when task interdependence is low, perceived self-to-group dissimilarity decreases the cooperative behaviour of individuals vis-a-vis one another (Levine & Moreland, 1990). On the other hand, when task interdependence is high, individuals build closer connections with one another despite having dissimilar features (Ely, 2004). Such a process reduces tendencies towards categorisation bias. This was further reinforced by Hobman, Bordia & Gallois (2004), who highlighted that, when group openness is encouraged, perceived self-to-group dissimilarities become moderate and group conflicts are reduced. This is because the context itself enhances group involvement in various tasks, especially as there is a need to do so as part of the job (Levine & Moreland, 1990; Unzueta & Binning, 2012).

### **2.5.3 Perceived subgroup splits**

Hentschel et al. (2013) noted that perceived diversity subgroups have a significant impact on group outcomes. With relevance to the theoretical proposition, there is a negative relationship between the formation of perceived subgroups and the outcomes observed in group processes (Janz, Colquitt & Noe, 1997). According to the findings, these outcomes always seem to be negative (Hentschel et al., 2013). Certain drawbacks have been identified in regard to the extent to which the subgroups get involved in group discussions while carrying

out their tasks (Greer & Jehn, 2007). Inter-subgroup conflicts can be said to be the result of perceived subgroup splits (Kiggundu, 1983). The higher the number of perceived subgroup splits, the more conflict there will be among members of inter-group subgroups (Levine & Moreland, 1990). As a result, the quality of teamwork will decline, which, in turn, will lower the wellbeing and consistency of the organization (Kiggundu, 1983). Moreover, Jung & Sosik (1999) stated that an increase in perceived objective faultiness could also lead to inter-group subgroup conflicts. A further salient observation is that, as groups get divided into subgroups, they become focused on engaging with inter-group conflicts and coalitions (Bodenhausen, 2010). This tends to reduce satisfaction levels among group members, subsequently decreasing their involvement in work-related tasks (Doosje, Ellemers & Spears, 1995). However, at a deeper level of analysis, it was found that there is a moderating factor through which such conflict can be avoided (Ely, 2004). In those cases in which the members of a particular group maintain a work group identity, there are fewer chances of perceived subgroup splits. This, in turn, results in reduced conflict among group members, which can then lead to the establishment of a stronger group identity (Townsend & Scott, 2001).

Interestingly, Harrison, Price & Bell (1998) found that leaders' perceptions of group diversity vary widely when compared to those of group members. When leaders felt satisfied with their groups' compositions and perceived group members to be satisfied, the contrary was true of the perceptions of the group member themselves. While the group leaders felt that varied opinions and views increased sharing and promoted interesting discussions, group members felt dissatisfaction, particularly on specific topics (Hobman, Bordia & Gallois, 2003). Indeed, according to the employees surveyed during the study, the variety of opinions was seen to cause confusion and misunderstandings, which, more often than not, decreased motivation to work (ibid.). Therefore, it is important to consider both leader and employee perceptions of group diversity, particularly as these promote disparate views and may provide divergent data (Levine & Moreland, 1990).

Furthermore, Chattopadhyay, Tluchowska & George (2004) found that group members who have different educational qualifications and degrees tend to form diverse environments and therefore necessitate leadership that is considerate of this (Yun et al., 2007). Champion, Papper & Medsker (1996) highlighted that such

group members are likely to form subgroup splits and express their increased desire for an effective leader who is capable of effectively identifying problems and resolving conflicts among group members. Nevertheless, the formation of subgroups has a negative impact on the quality of performance, both of individual employees and of the organization as a whole (Shrivastava & Gregory, 2009).

#### **2.5.4 Perceived group heterogeneity**

According to Cunningham (2007) and other relevant scholars (e.g., Janz, Colquitt & Noe, 1997), perceived group heterogeneity has both positive and negative effects on organizational efficiency and performance. Among a number of deep-level analyses focusing on differences in employee perceptions of demographic variables, particularly management and non-management groups within organisations, Aladwani, Rai & Ramaprasad (2000) found that employee perceptions of heterogeneity in management and non-management levels closely affect company performance; usually in a positive fashion when there is a difference in information sharing capabilities. Put differently, when groups possess individuals with diversified views, perspectives, and expertise, perceived group heterogeneity can be a factor of success and reduce errors in strategic decision-making procedures (ibid.). On the other hand, several studies identified negative aspects related to perceived group heterogeneity (Levine & Moreland, 1990). For instance, Allen et al. (2007) pointed out that perceived surface-level heterogeneity causes emotional conflict between group members. Aladwani, Rai & Ramaprasad (2000) evaluated that perceived heterogeneity plays a pivotal role in acting as a mediator between the various differences in objectives in relation to group outcomes and group members. According to Zellmer-Bruhn et al. (2008), an identity approach can be taken to shed light on the various advantages of similarity among members of a given work group. These authors stressed the fact that perceived similarities can co-exist in contrast with perceived heterogeneity. Hence, in this respect, two types of perceived similarities can be elicited—namely, perceived social category similarity or SCS and perceived work style similarity or WSS (Jehn, Chadwick & Thatcher, 1997). Moreover, Jung & Sosik (1999) found that perceptions associated with WSS tend to change on the basis of a group's life cycle. This, however, is negatively related with the effectiveness



of the group. It is highly possible for WSS to change the course of groups that impact organizational performance (Kiggundu, 1983).

As highlighted by Homan & Greer (2013), there is a strong relationship between information heterogeneity, work group effectiveness, and other moderating factors. This perceived heterogeneity is positively related to the processes and emotional conflicts that take place among group members (Acar, 2010). It has been observed that, in groups within organizational settings, employees hold various educational qualifications and thus have various opinions and perceptions in regard to certain specific tasks (Kiggundu, 1983). This perceived heterogeneity in the context of group members' abilities, expertise, skills and backgrounds is not at all inter-linked with their satisfaction levels; thus, their performance effectiveness is hampered (Levine & Moreland, 1990). Since employees are not satisfied with such diversity, they do not feel the urge to work effectively (Janz, Colquitt & Noe, 1997). Nevertheless, and as observed by Bell et al. (2010), perceived heterogeneity among group members can lead to more identification. Consequently, it can be said that perceived heterogeneity is directly related to causing relationship conflicts among group members and is adversely related with identification (Hayles, 1992). On the other hand, these relationships are perceived to be moderated by different beliefs, values, cultures, and morals in such a way that they are attenuated by them (Campion, Medsker & Higgs, 1993).

In the case of perceived self-to-group dissimilarity, individuals often tend to avoid cooperating with other group members due to feeling that they are different from or even superior to others (Levine & Moreland, 1990). According to Glick, Miller, and Burke (1998), this feeling of superiority leads individuals to segregate themselves from others and associate with separate subgroups in which other individuals with similar perceptions and beliefs are found. Thus, in such homogeneous groups, individuals feel comfortable to share and discuss their opinions and feelings with each other, and therefore have increased cooperative behaviours towards group members (Homan et al., 2010). In the case of perceived subgroup splits, Shrivastava & Gregory (2009) highlighted that group members encourage group splits when they do not feel comfortable working with fellow group members. As a result of this, small subgroups are formed, the members of which tend to avoid communicating with those that have different

opinions and perceptions specifically because they view them as being inferior (Hobman, Bordia & Gallois, 2003).

With regard to perceived group heterogeneity, Campion, Medsker & Higgs (1993) argued that individuals tend to segregate themselves from others due to specific attributes. Despite the efforts of group leaders to create engagement, individuals still feel rather dissatisfied with working with others who have differing perceptions (Townsend & Scott, 2001). In turn, this affects teamwork and leads to organisational stagnation and low efficiency (Kiggundu, 1983). However, and from a more positive point of view, Hentschel et al. (2013) argued that the individuation of a given group engages various perspectives and increases organisational efficiency. It is also argued that such individuation helps reduce bias and intergroup conflict between group members (Janz, Colquitt & Noe, 1997). Thus, from this strict point of view, it can be said that perceived diversity can yield positive group outcomes and can help to fulfil various social needs in an effective way.

## **2.6 Group Mechanisms as Mediators**

In an increasingly globalised world economy, managing a diverse workforce has become a serious work in progress (Ragins & Gonzalez, 2003). Some studies considered a high perceived diversity related to backgrounds, experience, and/or knowledge to be associated with positive group outcomes (Basset-Jones, 2005). The evidence suggests that such diversity is strategically advantageous due to its potential to bring about bursts of creativity and innovation, and thus positively affect performance (Richard, 2000). However, the relationship between diversity and group outcomes is still opaque, with little understanding of how, why, or when such a relationship turns either negative or positive (see Williams & O'Reilly, 1998; Van Knippenberg & Schippers, 2007). As there is little evidence to suggest that a direct causal relationship exists between perceived diversity and group outcomes, scholars have come to support models that include mediation and/or moderation-mediation.

The importance of adding mediators to the direct relationship between perceived diversity and group outcomes is derived from the fact that there is no direct relationship between perceived diversity on the one hand and group outcomes

on the other (Piekut & Valentine, 2016). Mediators refer to, and usually account for, the correlation between the independent and the dependent variables (Levine & Moreland, 1990). In that sense, mediators interpret the ways in which external phenomena take on internal importance (Baron & Kenny, 1986). Whereas moderators pinpoint *when* particular impacts will hold, mediators identify *how* or *why* these impacts take place (Baron & Kenny, 1986). This research will consider social integration and communication as mediators. These two variables constitute and are dubbed as group mechanisms (Schippers et al., 2003).

### **2.6.1 Social Integration**

Social integration is regarded as a dynamic and systematic process through which individuals tend to contribute to maintaining peaceful and effective social relationships (Messick & Mackie, 1989). Social integration should not be conceptualised or considered as a form of forced assimilation (Ellis & Shockley-Zalabak, 2001). The concept promotes the idea that any given individual is free to move towards any group to which he/she feels he/she belongs and in which he/she feels safe (Janz, Colquitt & Noe, 1997). It encourages individuals to move to a suitable and stable environment in which feelings of social disintegration, social fragmentation, polarization, and/or exclusion are not prevalent (Piekut & Valentine, 2016). In order to be socially integrated, a group must strengthen and expand the causes facilitating unity among its members (Townsend & Scott, 2001). In that sense, peaceful social relations are instilled through the facilitation of collaboration, coexistence, and cohesion (Harrison, Price & Bell, 1998). More specifically, the concept of social integration determines the inter-relationship between people who belong to various demographic groups, such as those determined by age, experience, income level, culture, and nationality (Zenger & Lawrence, 1989). From the functionalist perspective, social integration is considered an effective identifier for the different modes of relations of unity that exist among the members of a group (Bodenhausen, 2010). Some of the positive consequences of social cohesion are avoidance of corruption, disruption, and social fragmentation (Ellis & Shockley-Zalabak, 2001). Indeed, social integration is an important facet of group dynamics (Wageman, 1995). It is also a solid corollary of those circumstances that facilitate collaboration among groups and

individuals, something that is immensely important for organisational sustainability (Janz, Colquitt & Noe, 1997; Sturgis, Brunton-Smith, Kuha & Jackson, 2014). When applied at the organisational level, social integration is a good indication of whether actors accept the social rules set by the organisation as a whole. An integrated social system represents the mutual interaction of various segments of a particular social structure (Allen & Meyer, 1996). However, as the actual or direct meaning of the term 'integration' suggests, relations among individuals cannot be always presumed to be harmonious and cordial (Levine & Moreland, 1990). The concept covers the various factors that can lead to the rise of potential conflicts among people in a group (Vodosek, 2007). Religious, cultural, and behavioural differences among individuals can be considered to be key factors behind social disintegration (Hayles, 1992).

On the other hand, the notion of integration also focuses on how to maintain order and peace among the individuals in a particular group (Jehn, Chadwick & Thatcher, 1997). By instilling order and stability, it is possible to maintain a steady balance among different social communities and units (Townsend & Scott, 2001). It should be noted, however, that, for ethnic and/or religious groups, the concept of integration is not confined to meaning assimilation, acculturation, or socialisation (Kiggundu, 1983). Indeed, it is a process that does not inevitably lead to conflicting identities or undividable aspects. (Sturgis, Brunton-Smith, Kuha & Jackson, 2014). Social integration is not a linear progression; it is a continuous process (Williams & O'Reilly, 1998). Overall, in some way or another, such a process is essential for the effective functioning of any social system (Janz, Colquitt & Noe, 1997). From an organizational perspective, social integration needs to be completely uprooted so as to maintain a close member-to-member bond as well as a member-other professional one (Ellis & Shockley-Zalabak, 2001). Through various diversity training programmes, group members can be made aware of how they can avoid discrimination and encourage collaborative work practices (Wentling & Palma-Rivas, 1997).

This will not only help group members to work efficiently; it will also help them to change their perceptions and attitudes towards other members (Piekut & Valentine, 2016). Various scholars, researchers and theorists have argued that social integration is not a bureaucratic, legal or administrative issue; rather, it can be broadly regarded as a social one, since it involves all the people who occupy

an extensive part of society (Van Knippenberg et al., 2004). The different variables of integration, such as people's incomes and professions, can be considered to be one of the most significant factors behind the cause of social discrimination (Piekut & Valentine, 2016). Hence, in this respect, it can be said that, while working in a group, one should not showcase his or her superiority towards others and should maintain an attitude of equality and collaboration (Janz, Colquitt & Noe, 1997). Several factors—such as, among others, racial, ethnic, religious, and gender inequalities—have been perceived as being engraved in the modern paradigms of different social categories (Wagner et al., 1984). Individuals have so increasingly become conscious of their social statuses that they tend to look down upon others possessing lower ones (Levine & Moreland, 1990).

The theory of status construction has some leverage in explaining how such circumstances come about (Kiggundu, 1983). Perceived diversity on the basis of ethnicity, race, gender, or culture enables individuals to rate each other in terms of their numerical value, such value representing the resources they possess (Horwitz & Horwitz, 2007). As a result of this, attitudes and behaviours change. Individuals gravitate towards those who share their same values and principles (Townsend & Scott, 2001). Such a process can create specific subgroups, which may affect the work standards of other individuals (Horwitz, 2005; Piekut & Valentine, 2016). Several researchers have observed that such differences have given rise to serious competition among individuals and have led to social disintegration (Piekut & Valentine, 2016). However, recent studies have indeed evaluated that the prevailing social inequalities cannot be analysed or judged in a context in which control and distribution is only required with regard to economic resources (Messick & Mackie, 1989). It is clear that social integration is quite closely related to an individual's position in a given society (Hayles, 1992). This social position firmly determines the opportunities and capabilities by virtue of which individuals tend to separate themselves from others (Kiggundu, 1983).

Ultimately, this study will analyse the outcomes and results of social integration as a mediating factor between perceived diversity and group outcomes.

## 2.6.2 Communication

Communication is regarded as a key and pure group process as it illuminates *how* a group interpersonally orchestrates its work to function effectively (Barrick & Bradley, 2007). Communication describes the nature of interactions and captures interpersonal mechanisms within the group work (Marks et al., 2001; McGrath, 1984). In the context of group diversity, communication is particularly important to evaluate the abilities of group members to get along with one another and work together to solve problems and perform effectively (Lester et al., 2002). As proposed by models of work group effectiveness (Campion et al., 1993; Gladstein, 1984), communication has always been of great significance for group outcomes (Koopmans & Schaeffer, 2016). It enables the gathering of vital and crucial information, the identification of errors, and the rejection of poor suggestions (Levine & Moreland, 1990). With regard to the relationship between communication and group outcomes, the literature has presented substantial evidence supporting the fact that communication has a significant effect on group performance; however, this can be either positive or negative depending on several contextual factors (Kiggundu, 1983). In a study focusing on the degree of communication and on the extent to which it contributes to ensuring positive group outcomes, Levine & Moreland (1990) found that groups with high levels of communication produce positive outcomes. Interestingly, the results also concluded that there are groups that do not engage in quality communication in order to improve their outcomes (Horwitz, 2005). What's more, frequency of communication within groups makes little difference, what actually matters is quality of communication (Koopmans & Schaeffer, 2016; Bodenhausen, 2010). For instance, Sorenson (1971) argued that the role played by communication in structuring, producing, detailing, and, finally, evaluating has always been related with the quality of performance, especially with regard to a task. However, producing/generating and explaining are fundamentally associated with the quality of group outcomes, specifically in regard to tasks only associated with problem solving (e.g., Dietrich, 2010; Ely & Thomas, 2001). On one hand, these results are suggestive in regard to the significance of the different types of communication that diverse groups enact to achieve their tasks (Horwitz, 2005). On the other hand, such results have never replicated specific tasks of problem solving or production activities undertaken simultaneously by different groups

(Ellis & Shockley-Zalabak, 2001). In her investigation of group performance and communication in comparison with previous problem solving and production tasks, Marby and Attridge (1990) took structured and unstructured organisational activities such as ranking tasks and case studies. Based upon the Interaction Process Analysis (IPA) approach, a measure of communication action, the outcomes showed no association of group performance with communication activity. However, unstructured tasks did manage to show significance (Townsend & Scott, 2001). In this case, communication activity did have a significant relationship with case studies that were helpful or did have an orientation in its expression (Jehn, Chadwick & Thatcher, 1997). The communication that was engaged in counsel-giving sessions was closely related with the case study, which also signalled the presence of a strong belief in a proposal or an idea (Kiggundu, 1983). The communication activity that was related with disagreeing was also significantly associated with case studies with novelty or originality in their responses (Hayles, 1992).

Interestingly, even though multiple studies have been conducted on the subject of communication and its relationship with performance, most of them did not identify a positive outcome (Sturgis et al., 2014). For instance, Sundstorm, Busby & Bobrow (1997) examined the relationship between group outcomes and communication through an experimental survival task (desert survival). Their study eventually concluded that group performance has nothing to do with communication among group members. Their study also indicated that the quality of results or group decisions is not associated with communication. In other words, according to the test results, communication has no positive and/or negative impact on group performance. Nonetheless, there is an array of studies that do indeed evidence that communication does have a positive impact on group outcomes (Hayles, 1992; Kiggundu, 1983). Considering the above findings, the literature presented can be suggestive but does not offer any evidence regarding the circumstances that demands a significant consideration of the role played by communication in group outcomes, rather than the effect of other factors. This study opted for group contextual factors—i.e., group longevity and task interdependence—in order to examine their relationships with group communication and outcomes (Joshi & Roh, 2009; Johns, 2006; Horwitz, 2005; Kiggundu, 1983).

## **2.7 Task interdependence and Longevity as moderators**

This study adopts two moderators—i.e., task interdependence and group longevity. Generally speaking, moderators can be classified either as qualitative—such as race, age, and gender—or quantitative—such as group longevity and task interdependence (Goodman, 1988). More specifically, in a correlational analysis framework, moderators are perceived as the third factors that impact the zero-order correlation that exists between the other two. Moderators pinpoint when particular effects will hold (Edmondson, 2007).

### **2.7.1 Task Interdependence**

Task interdependence within a group is the extent to which group members have to interact with each other in order to complete their tasks (Shea & Guzzo, 1987, in Langfred, 2000). Most groups composed on the basis of member tasks or responsibilities are, at times, interdependent and, more often than not, differ from other units (Cummings, 1978). However, there can be a variance in the degree to which members are task interdependent with each other. According to Langfred (2000), the degree to which a group is task interdependent is determined by the organisation's task technology, indicating that task interdependence is a structural feature of work. Structural work features, which determine whether a group is more or less task interdependent, include whether the members have to use the same (technical) materials, knowledge, information, space, etc. Task interdependence levels ranges from low, indicating that group members function as individuals; to moderate, in which, to some extent, interaction is taking place; to high, where intensive interactions and relationships take place (Stewart, 2006). Community building aspects are a major benefit of high levels of task interdependence. The advantages of low levels of task interdependence include efficiency and creative problem solving by individuals (Wageman, 1995, in Stewart, 2006).



### **2.7.1.1 *The moderating effect of task interdependence***

Task interdependence is a structural factor that has an impact on the ability of group members to successfully complete their tasks (Langfred, 2000). It is often found to indirectly influence group diversity and outcomes by moderating the effects of other variables (Cummings, 1978; Janz et al., 1997; Langfred, 2000; Langfred, 2005; Langfred & Shanley, 2001; Liden et al., 1997). The next two paragraphs will present the hypotheses that Langfred (2000) proposed on the moderating effect of task interdependence. However, it should be noted that Langfred never found empirical proof to test the hypotheses he made. In groups with high levels of task interdependence and close coordination, members are more likely to be aware of in-group problems, especially when compared to groups in which members perform their work activities more independently. An example of being aware of in-group problems, mentioned by Langfred (2000), is social loafing. In groups that require close coordination, undesirable social problems such as social loafing will become more evident to group members. Additionally, Langfred hypothesised that those groups with high degrees of task interdependence that are given autonomy can benefit from “the unique process-related knowledge held by group members” (p. 57). Furthermore, when a task interdependent group is given a great deal of autonomy, it may exhibit stricter and harsher behaviours with respect to its members than it would have when under the control of (higher) hierarchical management. He also suggested that such groups would be better able to operate efficiently as coherent units compared to those in which members work independently; this would enable the former to better handle situations requiring coherent group actions. Finally, he proposed that groups with high degrees of internal control that were granted higher levels of autonomy could take more advantage of group-level autonomy compared to those with members working independently of one another. This can be explained by the fact that highly task interdependent groups require little or no additional interaction because it is already in place. Groups with low levels of task interdependence and high degrees of autonomy would need to spend more time planning, coordinating, and making decisions (Langfred, 2000). By doing so, group members would spend less time on their individual tasks, thereby giving rise to a process loss. In other words, granting autonomy to a low task interdependent group could result in dysfunctional performance loss (ibid.).

Additionally, Langfred (2000) proposed that those groups in which members work independently would not easily be able to coordinate their activities to accomplish group tasks. The above indicates the opposite of high task interdependent groups, which, in such circumstances, would more easily take coherent group action due to the existing collaborative structures. Other scholars, such as Liden et al. (1997), made an effort to briefly reveal the causal mechanisms behind the relationships between group autonomy, task interdependence, and group effectiveness that explain that a low level of task interdependence combined with a high level of autonomy may have a negative effect on group outcomes. They argued that group members could find it time-consuming and ineffective to reach group-consensus on decisions that might have been addressed more effectively at the individual level or by small subgroups within the group. On the other hand, Liden et al. (1997) also suggested that, when a group lacks autonomy, it may lose valuable time in waiting for managerial approval before being able to make decisions (Klein, 1991, in Liden et al., 1997).

### **2.7.2 Group Longevity**

The term group longevity indicates the time span for which a given group has been together; in certain aspects, it differs from group tenure (Oetzel, 2001). Group tenure indicates the time span for which an individual has been associated with a group. According to King & Anderson (1990), groups with shorter life-spans tend to be more innovative and creative. However, regardless of a group's size, lifespan demands effective cohesiveness among group members, which can only be achieved with group longevity. Goodman & Leyden (1991) conducted a research that concentrated solely on the fact that, for a group to work effectively and develop cohesiveness, ample time is required, which resulted in a significant correlation. On the other hand, Katz (1982) exemplified that, after completing 2-3 years together, groups reduce their habit of communicating significant information, and become less interactive with the environment. Indeed, he found that groups tend to be less communicative and reactive to significant external entities. Some studies have pointed at the problematic aspects of group longevity—namely, the fact that, over time, it may reduce the effectiveness of group performance (Wageman, 1995). However, the empirical evidence seems

to suggest quite the opposite; i.e., that, as a consequence of their longevity, groups have actually been performing better. However, the above does point out that some matters become self-evident within groups and, after a certain period, are treated as not needing to be discussed. This, in turn, may eventually reduce the effectiveness of group mechanism over time (Webber, 2001).

The question arises then, of how best to describe the variance that occurred in the results above. The most compatible response to this particular question would be to analyse diversity within a group (Watson, 1993). In groups with lower diversity, members might not take much time to familiarize with one another (Bradley, 2007). When considering this, groups with lower diversity might also begin to communicate frequently and become socially integrated over shorter periods of time. However, they could also become less responsive and/or communicative, especially as they might too quickly routinize their performance and actions. Thus, it also refers to group members becoming compatible in different situations and not getting stuck in a single pattern of behaviour (Bandura, 1993). In contrast to this, members of highly diversified groups might need more time to familiarize with one another. Furthermore, this will demonstrate that extremely diversified groups might be less communicative and socially integrated at the beginning but that, once they were formed, they could be highly communicative as well as socially integrated (Brewer, 1979). In relation to this particular reasoning, Watson et al (1993) identified that, ultimately, groups with higher diversity scored better than those with lower diversity in two significant aspects of performance. This also supports the notion that groups with higher diversity might need some time to overcome the adverse conditions of diversity-related consequences (Campion & Higgs, 1993).

#### ***2.7.2.1 The moderating effect of group longevity***

Following from the above, a field research conducted by Pelled, Eisenhardt & Xin (1999) identified that group longevity, as a factor, can moderate the association between diversity and group processes, and ultimately concluded that, with greater longevity, it becomes easy to neutralize any emotional processes (e.g. conflicts) within a particular task. The authors also concluded that groups with higher diversity either promote a mutual understanding among their members or

prefer to learn to anticipate and prevent any sort of opposition to their individual ideas.

Generally, there can be two potential and contrasting alternatives for group longevity to moderate the kinds of relationships linking diversity, group processes, and group outcomes (Horwitz & Horwitz, 2007). The first possibility could see groups with higher diversity and higher longevity eventually achieving higher group mechanisms in comparison with less diverse ones, since high diversity might take up a greater part of their time in reflecting and exploring the dissimilarities in insights and opinions (Hoffman, 1985). On the other hand, groups with lower levels of diversity will eventually be higher on their group mechanisms, since group members are well familiar with one another from the very beginning (Hogg & Abram, 1985). However, it has also been often observed that groups with lesser diversity often routinize their actions and eventually turn out to be less effective in terms of their group mechanisms (Heider, 1958). Yet, on the other hand, groups with higher diversity in composition eventually become more effective in terms of their group mechanism rate because members form a strong bond and generate more innovative and creative ideas (Harrison et al., 1998). Satisfaction and commitment are two other factors that are also affected by the level of diversity possessed by a group (Harrison, Price, Gavin & Florey, 2002). Likewise, Schippers et al (2013) indicated that there is indeed an interaction between group longevity and diversity. For example, highly diverse groups with higher longevity tend to be better in terms of group performance when compared with those that have higher levels of diversity but lower ones of longevity. Groups with lower levels of diversity but higher ones of longevity tend to show less performance compared with highly diverse groups with low levels of longevity (Schippers et al., 2013).

There is another alternative possibility, however; this is that the impact of group longevity might as well be just the opposite. It also is reasonable to state that groups with higher diversity often engage in heated discussions during the early stages of their formation. On this note, since groups with higher diversity are made up of individuals that may differ in terms of race, educational backgrounds, and ideology, the possibility of arguments and adverse reactions is increased (Gerbing, 1988). A number of studies, particularly those by Zenger & Lawrence (1989) and Wiersema & Bantel (1992), have proposed the notion that

communication sessions within homogeneous groups can be self-reinforcing by nature. March & Simon (1958) emphasized a fundamental theory stating that the greater the communication session/period, the greater the favourable effect and strength of the message to be conveyed through it. This eventually suggests that groups with higher homogeneity should become highly communicative after some time (Bowers et al., 2000). On the other hand, groups with higher diversity will already be engaged in exploring diverse viewpoints and will also start scoring high on reflection during the initial stages of their formation (Milliken & Martins, 1996; Smith et al., 1994).

What's more, one would expect a three-dimensional interaction when discussing the above processes. For instance, groups that have been together longer (i.e., that have higher longevity) will have developed some form of interdependence. This, in turn, will have been coupled to an extent—which is unknown and requires investigation—to group outcomes such as satisfaction and commitment (Pelled, Eisenhardt & Xin, 1999). Groups that are highly diverse but have lower goal/task interdependence are expected to have lower levels of group commitment in comparison with more homogeneous ones (Qin et al., 2012). However, in those cases in which high goal/task interdependence is embedded, a highly diverse group will possibly have higher commitment and satisfaction (Newcomb, 1961). For example, due to a high state of interdependence, group members will become more integrated over time as a result of shared objectives and goals (Stewart & Johnson, 2009).

Therefore, the three-dimensional interaction between communication, interdependence, and group longevity may warrant positive group outcomes in cases in which groups are highly diverse. What needs to be considered, however, is the level of each factor and the weight attributed to each in the operationalisation of the process (Tajfel & Turner, 1986).

## **2.8 Control Variables**

### **2.8.1 Group Size**

Group size has been frequently included as a control variable in studies focusing on diversity and group outcomes. By controlling for group size, we can reduce

the probability that the effects of diversity are attributed to 'size-related phenomena' (Jackson & Joshi, 2003:688). The size of a group has a number of effects. First, researchers have reported that groups consisting of three to five members are ideal as they are easier to coordinate and communicate with compared to larger ones, which, in turn, positively affects efficiency and functionality (Bray, Kerr & Atkin, 1978; Fern, 1982; Shaw, 1981). This is reinforced by theoretical arguments that suggest that small group sizes increase social integration, coordination, and communication (Horwitz, 2005). Similarly, several studies have highlighted that large groups are affected by process losses and lower frequencies of communication among members (Mullen et al., 1989; Gooding & Wagner, 1985; Hare, 1952).

However, in these cases, group size is understood in a vacuum, in which its nature—its environment and task structure—is ignored. As a result, this may lead to a misinterpretation of the positive and/or negative influence of group size on group processes. For example, Hill (1982) suggested that large groups have an increased capacity to obtain resources “such as time, energy, money, and expertise”, which could possibly lead to an increased efficiency in routine tasks (Stewart, 2006:422). More specific to this research, some studies examining healthcare work groups found that large groups had achieved a higher standard of patient care and outcomes (Bower et al., 2000). From these findings, it is apparent that group size has an effect on group processes and it is thus necessary to include it as a control variable.

### **2.8.2 Task Complexity**

The nature of a group's task is an important variable that can significantly alter the results of this research; it underscores the extent of task interdependence found in any given work-related situation (goal and task interdependence). Also, studies have found that diverse groups perform better than homogeneous ones in complex tasks, especially as these require innovativeness and creative problem-solving (as predicted by IPT) (Jackson, 1992; Williams & O'Reilly, 1998). In practical terms, when faced with a highly complex task, diverse groups are required to come together and pool their informational and functional expertise in an effort to formulate a strategy and tackle the problem. Because this involves

discussions and constructive debates among cognitively diverse individuals, it facilitates the opportunity for a synthesis of perspectives aimed at the “successful accomplishment of complex tasks” (Horwitz, 2005:234). Contrastingly, “when the task is routine, or when speed is the goal, diversity may interfere with performance” because cognitive diversity is not necessary (Jackson, Joshi & Erhardt, 2003:817). This is because diversity is counterproductive, as the task does not require innovativeness or creativity but a concise and highly structured approach (Amason & Schweiger, 1994; Jehn, 1995; Fiol, 1994). I include task complexity as a control variable because it affects heterogeneous and homogeneous groups differently.

## **2.9 Research Hypotheses and Theoretical Framework**

### **2.9.1 Direct Relationships and hypotheses’ development**

#### ***2.9.1.1 Perceived diversity and group outcomes***

While SAT and SCT suggest negative effects of diversity on the levels of group outcomes, IPT asserts its positive role over them (Watson et al., 1993). It can be seen that various studies dealt with the objective dimensions of diversity rather than its subjective ones (Horwitz & Horwitz, 2007; Winquist et al., 1998). Strictly speaking, SAT and IPT consider that the seen or felt differences (heterogeneity) exist outside of the control of a given person (Winquist et al., 1998). As such, heterogeneity is a neutral concept that can be calculated precisely as it exists in nature beyond the self-consciousness of the observer (Horwitz & Horwitz, 2007). Consequently, in a group of persons, each will be able to easily identify so called demographical differences (colour, race, and gender), because they are expressions of surface-level diversity and, less easily, deep informational ones, because they are part of deep level diversity. As suggested by SAT, the neutral existence of diversity independent of the observer will lead to a negative impact on group processes. If considering IPT, the same will lead to positive effects, especially when the work and task require innovativeness (Vogt & Johnson, 2011). In that regard, the opposite is true when the task is not innovative. So, when the task is mechanical or routine, IPT posits that, because of the diversified nature of the group, there will be a negative effect on group processes (Wentling & Palma-Rivas, 1997; Wageman, 1995). In practical terms, the Saudi healthcare

sector context—particularly with regard to the aspects being explored by this thesis—by definition, does not require innovation in order to survive and compete in the market (Al-Ahmadi, 2002; Wagner et al., 1984). Hence, in this case, IPT and SAT (and SCT) converge in their prediction of the case with which this thesis is dealing (Vodosek, 2007). To explain the theoretical basis of SCT further, it suggests that whether a group is labelled as diverse or not depends on the person observing it (Williams & O'Reilly, 1998). As such, the existence of diversity is reliant upon the judgment of the observer and is not a standalone phenomenon (Harrison, Price & Bell, 1998; Van Knippenberg et al., 2004). For instance, consider two medical groups that have identical levels of diversity, but different group performance (Evans & Jarvis, 1980); such an observation cannot be explained by means of an objectively conceptualised definition of diversity but, rather, through a subjective lens in which it is understood that members may perceive differences or similarities that the objective eye cannot see. Thus, a group that may present higher perceived dissimilarities among its members would be expected to present a weaker group performance (Oetzel, 2001).

This analysis is compatible with the general outlines of SAT, SCT, and IPT in the context of non-innovative work/tasks. Accordingly, this paper hypothesises that:

***H1: There is a negative relationship between perceived diversity and group outcomes.***

Indeed, satisfaction, performance, and commitment, as components of group outcomes, are critical components of group member attitudes that are likely to be affected by perceived diversity. As group outcomes are subdivided into satisfaction, commitment, and performance, this paper will discuss the effects of diversity in general and of perceived diversity in particular in relation to the dimensions of group outcomes. With relevance to the concept of satisfaction, it can be broadly pointed out that the correlation that exists between group diversity and group satisfaction is quite a significant phenomenon. In this study, the impact of group diversity on group satisfaction has only been discussed to a certain extent. Nonetheless, several studies have done the groundwork regarding this process. For instance, Vodosek (2007) highlighted that group diversity has an adverse effect on group satisfaction levels. In the presence of increased levels of



group diversity, members have been very much dissatisfied with others having varied perceptions and opinions (Watson, 1993). This leads me to propose the following hypothesis:

**H1a** *There is a negative relationship between perceived diversity and group satisfaction.*

In the presence of perceived diversities, it is simply impossible to maintain integrity among group members (Allen et al., 2007). Group members' perceptions regarding diversity have an undesirable impact on their minds and thus increase dissatisfaction towards their jobs and, as such, lower their commitment to their workplaces (Allen et al., 2008). Moreover, it has been argued that perceived diversity is an important indicator when analysing the extent of group job satisfaction (Kickul & Gundry, 2001). However, some group leaders prefer a diversified workforce and tend to utilise older staff for their adequate work experiences and immense knowledge. Numerous studies, including three meta-analyses, have suggested that heterogeneity consistently undermines group performance. For instance, Shemla and Meyer (2012) highlight that diversity is the ultimate cause of divisions and therefore leads to stagnant performance and generally negative group outcomes. The overall message has been that individuals have a tendency to strive toward homophily and prefer settings with similar 'others' (Pfeffer, 1983; Thomas, 1990; Bowers et al., 2000; Webber & Donahue, 2001; Stewart, 2006; Ely, 2004). Further, ethnic diversity could lead to lower performance standards (Lawler et al., 2000). A study conducted on over 391 managers in almost 130 organisations in the US found that perceived diversity had a negative impact on performance and actually lead to the overall decline of organisational output (Ellis & Shockley-Zalabak, 2001).

**H1b:** *There is a negative relationship between perceived diversity and group performance.*

In relation to commitment, in non-innovative cognitive work/tasks, SAT, SCT, and IPT would indicate that high group diversity would adversely influence the level of commitment (Tsui et al., 1992). However, when considering the age factor, older group members can act as mentors and guide younger ones in their work, which is considered to be a positive aspect and increases organizational performance. Thus, high diversity in terms of age can be of great benefit as it helps to reduce the extra costs of communication and also helps overcome issues associated with the emotional disturbances between group members (Lawler et al., 2000). However, it has been argued that age differences have a negative impact on the productivity of group members. The differing preferences and values of individuals belonging to different age groups can adversely affect group members and cause dissatisfaction. Moreover, this is also true for high levels of gender diversity, which are said to create serious communication and interaction problems among members of a given group. In such a context, communication and coordination between group members has the chance of decreasing, thus leading to employee dissatisfaction and turnover.

**H1c:** *There is a negative relationship between perceived diversity and group commitment.*

In order to make sense of the above and all proposed hypotheses in a visual manner, please see Figure 2.1 for further clarification.

### **2.9.1.2 Perceived diversity and group mechanisms**

The aforementioned three theories—i.e., SAT, SCT, and IPT—have in common the indirect effects of diversity on group outcomes. However, while SAT and SCT suggest negative effects of diversity on the level of group outcomes, IPT asserts that it has a positive impact on them. A variety of meta-analyses focusing on the literature on diversity and its effects on group outcomes have found that there is no reliable and consistent support “for the notion that different types of diversity directly influence performance” (Mannix & Neale, 2005:42; Bower, Pharmer & Salas, 2000; Webber & Donahue, 2001). These findings were applicable to both surface- and deep-level diversity findings. Furthermore, as recent meta-analyses have reported that there is no reliable basis to directly establish a link between group diversity and group performance; some have indicated that moderators

and mediators may have a part to play (Wood, 1987; Allen et al., 2007). All theoretical frameworks discussed before support the premise that the determination of the effect of group diversity on group outcomes is dependent upon “the diversity present within the team’s broader social context” (Jackson & Joshi, 2003:685). Put differently, the challenge is to “determine the appropriate composition of variables that influences outcomes in teams” (Horwitz, 2005:221; Bowers, Pharmer & Salas, 2000).

With that in mind, context has been identified as an important factor because it encompasses the situational setting “in which workplace phenomena occur” (Joshi & Roh, 2009:601). Situational settings also present opportunities and constraints for any given group and thus may affect group outcomes in a number of ways (Johns, 2006). In other words, the argument is that group diversity can have a positive effect on group outcomes but only under certain circumstances (Schippers et al., 2003). From this, we understand that it is important to take group size, group task, and frequency and length of contact into consideration as control variables in an effort to account for a fragment of the innumerable elements present in any given context (Jackson & Joshi, 2003). The purpose is also to limit the errors associated with lack of contextual understanding (e.g., conflicting results may be accounted for by the uniqueness of the situation). All in all, this research follows the integrative models set out previously (Jackson, May & Whitney, 1995; Williams & O’Reilly, 1998) and implements, as its guiding framework, the notion that “group diversity influences group processes, which, in turn, influence group outcomes” as juxtaposed to group diversity directly influencing group performance (Jackson & Joshi, 2003:677). In doing so and in view of the lack of coherence found in the literature regarding this relationship, this research will focus on examining the indirect relationship between group diversity and group outcomes (Piekut & Valentine, 2016). As such, based on the previous discussion on the negative role played by diversity in general over levels of social integration and communication, it can be deduced that the presence of a high level of perceived diversity would lead to a lower level of group processes and therefore group outcomes (Sturgis et al., 2014). However, the existence of some level of similarity in terms of demography would not obviate the adverse effects on social mechanisms among group members if they perceived the group

to be highly diverse (Koopmans & Schaeffer, 2016; Piekut & Valentine, 2016). Consequently, this study suggests the following hypotheses:

**H2:** *There is a negative relationship between perceived diversity and group mechanisms:*

**H2a:** *Perceived diversity has a negative impact on social integration.*

**H2b:** *Perceived diversity has a negative impact on communication.*

### **2.9.1.3 Group mechanisms and group outcomes**

#### ***Social Integration and group outcomes***

Social integration is a social phenomenon that highlights the inclusion of a subgroup that differs from the majority within a wider group membership (Turner, 1987). In a group environment, this has many benefits. The effect of social integration on group outcomes is especially important as it ensures stronger group member performance, satisfaction, and commitment (Teachman, 1980). The positive relationship between social integration and group outcomes is often seen in workplaces; there are numerous examples of management using it to improve group outcomes in different settings. Therefore, social integration is likely to benefit the organization, something that is an established position, both theoretically and practically (Winqvist et al., 1998).

**H3:** *There is a positive relationship between group social integration and group outcomes:*

With regard to satisfaction, teamwork is based on the interrelation both of group members and of their expertise (Watson, Kumar & Michaelsen, 1993). Discharging one's duties no doubt gives satisfaction, but praise or acknowledgement for a job well done is also an added element (Van Der Veget et al., 2001). This cannot be facilitated in the absence of a positive environment and cohesion among group members. Such a positive effect can be embedded only through social integration. However, for the latter to occur, there has to be commonality and a bond—namely, members need to view others as their own and treat them as such. Such a process results in the satisfaction of individuals

(Tajfel, 1982). The successful discharge of duties also results in higher group member satisfaction and may mitigate the negative aspects of perceived diversity (Qin, 2007).

***H3a:*** *There is a positive relationship between group social integration and group satisfaction.*

Regarding performance, the relationship between social integration and group performance is interconnected, as the latter is dependent on group member cohesion and sense of belonging. No group can be formed in such a way that all its members share the same background, religion, or gender (Wagner et al., 1984); groups are usually formed on the basis of the skills required to successfully execute a given task. Therefore, social integration leads group members to become unified in their efforts. The performance of the group as a whole depends upon the performance of the individuals and on their understanding of the role of others and of the seamless transfer of duties, which cannot occur without social integration. As group member performance is also dependent upon the mutual inclusion and understanding of skills and backgrounds, there is another facet to the whole scenario. Without social integration, the cultures, religions, or even lifestyles of group members form a barrier between them, which may cause poor performance and dissatisfaction (Van der Vegt, Emans & Vliert, 2001). If even one group member falters in his duties or purposefully ignores them out of spite, then, in the worst-case scenario, the project becomes more liable to fail. Even if the other members of the group are adequately skilled to pull off the project, the quality or the schedule are often affected (Vodosek, 2007). It is an important fact that social integration—or, rather, the lack thereof—affects group performance by limiting or enhancing group effectiveness. Group performance is dependent on both the cohesion and co-operation of group members and the social integration of any minorities (Turner, 1987).

***H3b:*** *There is a positive relationship between group social integration and group performance.*

Other effects of social integration on groups include the level of commitment that one can observe (Webber & Donahue, 2001). The personal sense of belonging of group members is affected by their levels of perceived social integration—i.e., the extent to which they see themselves as being part of the group, as owning their roles, and contributing to overall goal/task attainment.

A positive example can be seen in those groups in which one individual is from a specific social or ethnic background while the rest are from another, but the former is accepted and valued as an equal by the latter. In that case, the performance of the individual and his/her contribution to the group is higher as his/her sense of belonging enables him/her to fully integrate with the group (Klein, 1991). On the other hand, should integration not occur, the individual may feel isolated and his/her commitment to the group may consequently be weak. This may lead to a lack of cohesion and co-operation and the effect would be evident when looking at group performance. Thus, social integration is in a positive relationship with group member commitment, which, in turn, has a positive effect on the outcome of group tasks (Jehn & Bezrukova, 2004).

***H3c*** *There is a positive relationship between group social integration and group commitment.*

The effect of social integration on group outcomes or on the results of group efforts is well established and the relationship seems to consistently be positive; many successful groups in the corporate world are indeed made up of people from diverse cultures and social backgrounds.

### ***Communication and Group Outcomes***

When considering the relationship between communication and group outcomes, one must note that (constructive) communication increases the level of sharing of knowledge among group members (Qin, 2007). Furthermore, encouraging communication among group members would support the process of creativity by increasing the quantity of newly generated ideas, which are vital for problem solving (Ebadi & Utterback, 1984). Accordingly, the level of group outcomes would be considerably strengthened (Roberts & O'Reilly, 1979). However, enhancing the capacity for technological innovation would not diminish the perils of developing a conflict amongst group members (Jehn & Mannix, 2001).

Constructive communication can be established among group members with high levels of perceived diversity (Lawrence, 1989). However, the negative facet of communication particularly appears in the presence of informal types of communication (Triandis, 1960). Such informal communication revolves around issues that are irrelevant to the main task of the group (Philips, 2006). As such, issues such as sex, religion, and politics may provide a fertile environment that may trigger discrimination and confrontational ideas. This, of course, may negatively influence group outcomes in terms of performance, satisfaction, and commitment (Qin, 2007). That is to say that the legal parameters limiting expression among group members in order to avoid negative ideas may not be effective in containing the informality in communication. In simple terms, for instance, it can be said that comedians are legally allowed to cross red lines when making a joke. Similarly, in the life of group members, informal communication may send adverse verbal, visual, and/or body language signals to other members, which can lead to an increase in the sense of dissatisfaction and a lowering of personal commitment (Oetzel, 2001). However, establishing formal communication among group members would pave the way to enrich the exchange of experiences and facilitate the formulation of new ideas; interestingly, the understanding of the problems faced by groups would be more easily tackled in those cases in which experiences and new ideas are generated in a heterogeneous environment. This was indicated by Williams & O'Reilly (1998), who concluded that increased diversity—especially in terms of age, tenure, and nationality—typically has positive effects on formal communication. It is worth noting that the theoretical basis for configuring the negative effects of informal communication over group outcomes in diversified environments is derived from SAT and SCT, and from IPT in groups where there are non-innovation tasks. As communication is distinguished from social integration, this study only considers the formal facet of communication. Hence, it hypothesises that communication has positive effects on group outcomes.

***H4: There is a positive relationship between group communication and group outcomes***

*Hence:*

*H4a: There is a positive relationship between group communication and satisfaction*

*H4b: There is a positive relationship between group communication and performance*

*H4c: There is a positive relationship between group communication and commitment*

#### **2.9.1.4 Task interdependence and group outcomes**

Task interdependence is defined as “the degree to which completing tasks requires the interaction of team members” (Horwitz, 2005:235; Stewart & Barrick, 2000; Shea & Guzzo, 1987). This entails the sharing of materials, expertise, knowledge, and work space in order to attain the desired output in any given task (Susman, 1976). In this case, task interdependence is operationalised and understood as a characteristic of a group as a whole (Campion et al., 1993; Saavedra et al., 1993). As such, one can deduce that, in high task interdependent groups, members are engaged in reciprocal and sequential exchanges of information and materials to accomplish tasks; conversely, in low task interdependent groups, individuals independently contribute towards the accomplishment of the group’s tasks (Van de Ven, Delbecq & Koenig, 1976; Thompson, 1967).

What would IPT predict with regard to task interdependence? According to IPT, if a group presents a high diversity and a high level of task interdependence, a positive relationship would be observed between group diversity and group performance because of the moderating effect of task interdependence. SAT predicts that individuals have an urge to align themselves with similar people and would do so under conditions of free choice; however, as conditions of high task interdependence make it necessary to share knowledge and information for the purpose of completing tasks, this study would further add that task interdependence counteracts and limits freedom of choice, as it makes it necessary to cooperate irrespective of any perceived differences. Based on the premises of SCT, this study argues that high task interdependence would also create the opportunity for members to re-categorise each other through coordination and cooperation. Re-categorisation presupposes an element of



social constructivism with respect to diversity; the process assumes the fluid nature of human characteristics and the importance of perception in re-shaping these. As illustrated earlier, for changes in perception and subsequent re-categorisation to take place, the passage of a suitable length of time is required. The exact time framework, however, is disputed among scholars and remains ambiguous. Put differently, an individual who was once categorised as belonging to an out-group may eventually be re-integrated into the perceived in-group.

Several studies have highlighted the potential role played by task interdependence as a moderator in the relationship between group diversity and group performance, with respect to greater interaction and coordination (Timmerman, 2000; Saavedra et al., 1993; Wong & Campion, 1991). These studies have pointed out that, under conditions of high task interdependence, group members depend upon each other's knowledge, information, and functional expertise to complete a task (Emery & Trist, 1960; Campion et al., 1993). In other words, task interdependence positively affects the relationship between group members and thus influences group outcomes (Wageman, 1995). Empirical evidence suggests that collaborative groups tend to produce favourable and beneficial outcomes that will elevate organizational standards. The inclusion of diversified opinions and ideas in a group helps individuals to gain adequate knowledge of various aspects of any given work from the perspective and expertise of their colleagues. Additionally, group members can share their experience and mutually exchange relevant information and resources to ensure effective group outcomes (Tseng, Wang, Ku & Sun, 2010).

Although group members may not always feel comfortable working with others in the presence of diverse opinions and ideas, researchers have pointed out that perceived group diversity is a key factor that may positively impact on group outcomes (Vodosek, 2007). Group members who are not very experienced or are unprepared and do not possess teamwork skills must work with others in interdependent and cohesive units that may help them learn from their more experienced and senior co-members (Van der Vegt, Emans & Van De Vliert, 2000). This type of task interdependence among group members will help enhance their skills and abilities and thus facilitate collaboration (Townsend & Scott, 2001).

Task interdependence gives rise to work flexibility and facilitates simultaneous interactions among group members (Wong & Campion, 1991). As such, a mutual understanding develops that assists members in successfully carrying out their activities with the help of other group members (Johnson & Johnson, 2009). It can be said that, the higher the degree of group member task interdependence is, the more effective group work performance will be; this, in turn, will yield beneficial group outcomes. Thus, one would expect a positive relationship between task interdependence and group outcomes.

*H5: There is a positive relationship between task interdependence and group outcomes*

*H5a: There is a positive relationship between task interdependence and satisfaction*

*H5b: There is a positive relationship between task interdependence and performance*

*H5c: There is a positive relationship between task interdependence and commitment*

#### **2.9.1.5 Group longevity and group outcomes**

Group longevity is in a positive relationship with group outcomes (Michel & Hambrick, 1992). The longer individuals work together in a group, the more effective will the group outcomes be. Cohesion between group members does not happen all at once (Evans & Dion, 1991). It takes some time to establish a close bond or unity among members of a specific group. Arguably, group members do not like frequent changes or alterations in their work environment. In any given group, members have different ages, cultures, experiences, skills, and education levels. Hence, they need to share their ideas and perceptions with each other in order to form a cohesive and integrated group (Schippers, Den Hartog, Koopman & Wienk, 2003). Being associated with a particular group for longer periods of time develops both emotional and professional attachments among its members. All group members are likely to develop standard and efficient work patterns that will help them collaborate and cooperate with each other (Katz, 1982).

Working with the same group members for longer periods of time will therefore help individuals become familiar and acquainted with each other's work abilities, skills, perceptions, and criteria. All members can become aware of each other's strengths and weaknesses; cohesive group work will thereby help to compensate for any shortcomings and encourage better group work (Messick & Mackie, 1989). Long term cooperation and collaborative group work will establish a strong connection among members and will enhance their work performance. Subsequently, both commitment and satisfaction will also increase to some extent (Schipper, Den Hartog, Koopman, & Wienk, 2003). Longevity keeps group members feeling confident in the stability of the overall group and provides a sense of security and a tradition of practices. As a result, work engagement is improved; in turn, this has a positive impact on group performance. Thus, I argue that there is a positive relationship between group longevity and group outcomes.

***H6:** There is a positive relationship between group longevity and group outcomes.*

***H6a:** There is a positive relationship between group longevity and satisfaction.*

***H6b:** There is a positive relationship between group longevity and performance.*

***H6c:** There is a positive relationship between group longevity and commitment.*

### **2.9.1.6 Task interdependence and group mechanisms**

Task interdependence is also correlated with the effectiveness of group mechanisms (social integration, communication). In the corporate context, it has been widely argued that diversity in the opinions and thoughts of group members tends to increase the potentiality of group outcomes, as including diversified perceptions at work can increase opportunities and innovativeness (Kramer, 1993). Group work provides a situation in which all employees involved will interact with each other and coordinate in order to bring out effective outcomes and attain group goals. As described earlier, task interdependence refers to a situation in which the members of a definite group mutually depend upon each other to complete their individual tasks, provided that all the essential resources are made available to them. Various studies have identified the role played by task interdependence in enhancing group functioning in an organizational setting (Kramer, 1991).

Coordination and cooperation among individuals can be facilitated by effective communication. Continuous communication will help individuals exchange opinions and perspectives, which, in turn, will enable them to increase their performance standards. Task interdependence is also facilitated when social integration among group members is promoted (Levine & Moreland, 1990). The more members are integrated, the more they are interdependent. Coordination, communication, and cooperation lead work units to successfully performing their tasks. In any particular group, all individuals have their respective skills and expertise; as they develop feelings of social integration and cohesiveness, they can depend on each other and provide immense support to their colleagues in their respective individual tasks (Evans & Jarvis, 1980).

For example, in the automotive industry, most workers are involved in car design and manufacturing. Each worker is assigned a specific task, such as planning the work approach, preparing the layout of the car, designing the features and other specifications of the car, monitoring the whole work process, etc. All workers assigned to the task of building a car are interdependent (Linnehan & Konrad, 1999). This interdependence would help the group manufacture a stylish and attractive car that can lead the company to achieve the maximum level of success and profitability. Were any one member unable to perform his/her work well, the entire group performance would decline and, as such, several organizational goals would not be achieved. By virtue of this example, it can be said that group members need to maintain unity, coordinate and cooperate with each other, and work beneficially (Allen et al., 2008). Hence, communication and social integration are important factors in encouraging task interdependence and benefiting group mechanisms.

***H7:** There is a positive relationship between task interdependence and group mechanisms.*

***H7a:** There is a positive relationship between task interdependence and communication.*

***H7b:** There is a positive relationship between task interdependence and social integration.*

### **2.9.1.7 Group longevity and group mechanisms**

Group longevity, as discussed earlier in the study, refers to the length of time group members work together (Messick & Mackie, 1989). The longer individuals can work collaboratively with each other, the more group performance effectiveness increases. Being associated with a particular group for longer periods of time means that group members develop emotional and professional attachments with each other (Mackinnon et al., 1993). By means of this collaboration, group members are able to derive knowledge of their colleagues' skills, efficacies, and work patterns. This knowledge will help them understand and become aware of the various attributes and behaviours of the group members with whom they work (Milliken & Martins, 1996). As group longevity increases, socialisation also becomes a factor among group members; this, in turn, enhances their compatibility. This compatibility can prove to be of immense benefit for the formation of a skilful group and can also ensure the effective execution of the assigned tasks.

Maintaining coordination with group members, however, requires a proper approach and attitude (Mitchell & Silver, 1990). It is impossible to adjust and depend upon others having different perceptions to complete a particular task. Indeed, if left unmanaged, differences in ideologies and thought processes may create difficulties in the execution of any given task. As a result, group mechanisms (communication, social integration) may decline and affect group outcomes (Mullen & Copper, 1994).

**H8:** *There is a positive relationship between group longevity and group mechanisms:*

**H8a:** *There is a positive relationship between group longevity and communication.*

**H8b:** *There is a positive relationship between group longevity and social integration.*

## **2.9.2 Indirect relationships and hypotheses' development – The Mediation Model**

### **2.9.2.1 Social integration**

In mitigating the conditions of social exclusion and social disintegration, individuals need to focus on creating a close and faithful bond with each other (Muller et al., 2005). It has been argued that, in organisational settings, individuals tend to create small groups in which people share similar opinions, thoughts, ethnicity, cultural values and/or beliefs, resources, etc. It is a most common tendency for people to consider themselves superior to others and unique and thus avoid mixing with those who have different opinions. Being associated with a group the members of which have diverse opinions may generate feelings of dissatisfaction and lack of motivation to perform the tasks assigned (Phillips & Loyd, 2006). Such a decrease in the level of satisfaction could increase employee turnover, as group members would not feel committed to their jobs. They would start feeling that adequate facilities and resources were not being provided to them and thus develop a sense of demotivation and lower their work performance.

By virtue of the dissimilarities felt by group members, helpful behaviours tend to change negatively, if not slowly deteriorate. When the point of view of one member does not match that of another, conflict may arise (Qin et al., 2009). Moreover, differences in educational levels and work expertise are also considered as potential barriers that hinder the social integration of group members. Indeed, feelings of superiority give rise to social exclusion and may facilitate the formation of subgroups from which some group members exclude perceived inferior others (Qin et al., 2012). Similar to the above, gender inequality and perceived differences also have a significant negative impact on group mechanisms and outcomes (Riordan & Shore, 1997).

***H9:** Social integration mediates the negative relationship between perceived diversity and group outcomes.*

***H9a:** Social integration mediates the negative relationship between perceived diversity and satisfaction.*

***H9b:** Social integration mediates the negative relationship between perceived diversity and performance.*

*H9c: Social integration mediates the negative relationship between perceived diversity and commitment.*

### **2.9.2.2 Communication**

In a particular group, it is of the utmost importance that all members collaborate and cooperate with each other to make their jobs much easier and effective (Stewart & Johnson, 2009). Within an organizational setting, it is crucial that the management or the group leaders understand the extent to which the perceived diversities among group members can negatively impact their work performances. When diversity is mismanaged, group mechanisms and outcomes are deeply and negatively affected. In order for groups to effectively accomplish their goals and tasks, members must understand and indeed recognise the variety of habits, attitudes, beliefs, and cultural perspectives that are different from theirs (Shaw, 1981). Subsequently and only when such recognition is present, will group performance be enhanced.

In order to highlight the issues related to perceived communication problems within any given working group, a range of factors can be explored (Tajfel, 1982). On several occasions, it has been observed that some individuals tend to break the flow of the conversation happening within a structured framework, which may create communication difficulties. Interruptions in conversations are a prominent phenomenon that can decrease the effectiveness of group outcomes. For example, in a group conversation, those individuals who consider themselves superior to others in terms of their ideologies and work experiences often tend to interrupt and give their expert opinions, ultimately preventing junior or low experienced members from speaking (Tajfel, 1981). This reduces the confidence level of the latter and thus causes them to fail to express themselves and present their opinions in front of other group members. As a result, a feeling of mistrust and fear is sowed in their minds, which stops them from communicating effectively with their co-workers.

Moreover, language discrimination is also a significant factor among group members (Wageman, 1995). People with a poor knowledge of English or who are less educated feel more comfortable when speaking in their native languages, which others do not understand. Thus, effective communication and interaction

are hindered and affect group outcomes. Cultural differences also give rise to serious communication barriers by which individuals belonging to different cultural backgrounds may tend to form subgroups. Variations in perspectives, thoughts and attitudes discourage them to move forward and interact with other group members (Lawler et al., 2000). Indeed, a number of studies have highlighted that, due to such differences, individuals avoid interacting with others and, as a result, group performance and overall outcomes decline. Thus, it can be argued that communication mediates the negative relationship between perceived diversity and group outcomes.

*H10: Communication mediates the negative relationship between perceived diversity and group outcomes.*

*H10a: Communication mediates the negative relationship between perceived diversity and satisfaction.*

*H10b: Communication mediates the negative relationship between perceived diversity and performance.*

*H10c: Communication mediates the negative relationship between perceived diversity and commitment.*

### **2.9.3 The role played by group contextual factors – The Moderated Mediation Model**

#### ***2.9.3.1 Perceived diversity X group longevity on group outcomes via social Integration***

Social integration, as mentioned earlier, refers to the bonding of group members that enhances overall working capabilities and performance. As group members work together over longer periods of time, their bonding is strengthened and thus they collaborate and cooperate better (O'Reilly et al., 1989). The more group members mix with each other, the more they can familiarise with each other's work patterns and skills, which will help them work together and achieve their group objectives. Conversely, it can be said that, in the presence of high perceived diversities—such as cultural, social, religious, work experiences and other aspects—group members may feel uncomfortable working with each other (Wu & Zumbo, 2008). Interestingly, there is also evidence suggesting that groups



that have been together for a very long time may show signs of fatigue. Put differently, the pattern of work and its execution becomes repetitive, tedious, and monotonous, which will negatively affect group members. This can lead to higher levels of turnover, lower satisfaction, and group member frustration (Schippers et al., 2003).

As a consequence of the above, the bonding between members weakens, which leads to social disintegration and social exclusion. Unsurprisingly, work performance is thus negatively affected. Moreover, arguably, group longevity also gives rise to selfishness and jealousy among group members, but only if left unmanaged. For instance, group leaders tend to reward or promote some individuals according to their work performances and abilities. This, of course, increases egotism among some group members, which can cause social exclusion (Zenger & Lawrence, 1989). Additionally, other members may feel ignored by their group leaders and hence lose interest in putting an effort in their work. Their commitment and loyalty towards their work will decrease and therefore affect group outcomes.

However, previous studies have consistently reiterated the positive relationship between social integration and group effectiveness and/or level of performance (Beal et al., 2003; Mullen & Cooper, 1994; Tekleab, Quigley & Tesluk, 2009; Wech et al., 1998). Further, research findings have also suggested a positive relation between social integration and task interdependence (Barrick et al., 2007; Gully, Devine & Whitney, 1995). For instance, higher social integration may lead to trust, cooperation, and friendship between group members (Andrews et al., 2008) and collective feelings of responsibility regarding tasks and task-outcomes (Tjosvold & Deemer, 1980).

Further, Michel & Hambrick (1992) proposed that group longevity is a proxy of social integration, which, in turn, affects group performance. They concluded that the longer a group worked together, the more the negative effects of group differences on group performance waned (Horwitz, 2005). Harrison et al. (1998) also found a similar relationship. Another study, however, highlighted the negative correlation between diversity and social integration (Jackson et al., 1992). In line with SAT, the premise is rooted in the idea that, due to dissimilarity leading to discomfort, one would expect there to be less integration “within the

group and a higher likelihood of turnover” (Milliken & Martins, 1996:408). Despite this, group longevity is thought to moderate the direct negative effect of group diversity on social integration and this, in turn, would lead to more positive outcomes for groups with high levels of longevity. Hence, this study considers the following hypotheses:

***H11:** Group longevity moderates the indirect effects of perceived diversity via social integration on group outcomes.*

***H11a:** Group longevity moderates the indirect effects of perceived diversity via social integration on satisfaction in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

***H11b:** Group longevity moderates the indirect effects of perceived diversity via social integration on performance in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

***H11c:** Group longevity moderates the indirect effects of perceived diversity via social integration on commitment in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

#### **2.9.3.2 Perceived diversity X group longevity on group outcomes via communication**

Group longevity also increases communication and interaction among group members. Indeed, as group members work together for significant periods of time, their work patterns and knowledge levels, along with their other attributes, become quite familiar and well known to each other (Katz, 1982). As a result, mutual trust and comfort levels increase, which then facilitate better work performance. Hence, they tend not to negatively communicate or interact with each other, as this could affect their inter-relationship.

Another point is that the causes of social exclusion that are likely to occur during the initial phases of group formation can also be behind low interaction and communication. As individuals find that their co-workers are being appreciated and rewarded for their work, they feel less important; as such, feelings of anger and insecurity crop up in their minds. They do not feel that their status within the group is recognised and so their commitment and loyalty decrease. The

satisfaction levels of those individuals also decrease to a considerable extent (Tseng et al., 2010). As such, it can be argued that group longevity moderates the indirect negative effects of perceived diversity, via communication, on group outcomes.

***H12:** Group longevity moderates the indirect effects of perceived diversity via communication on group outcomes.*

***H12a:** Group longevity moderates the indirect effects of perceived diversity via communication on satisfaction in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

***H12b:** Group longevity moderates the indirect effects of perceived diversity via communication on performance in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

***H12c:** Group longevity moderates the indirect effects of perceived diversity via communication on commitment in such a way that the indirect effect will be more positive for group members when group longevity is high rather than low.*

### **2.9.3.3 Perceived diversity X task interdependence on group outcomes via Social Integration**

Task interdependence negatively affects group outcomes through the medium of social integration. In today's business world, the presence of high levels of diversity in groups is a common phenomenon that, if left unmanaged, may cause a decline in overall work performance (Williams et al., 2007).

Group tasks are best facilitated and effective when individuals rely upon each other and exchange views pertaining to their work responsibilities (Hall, 2005). However, perceived diversities can make group members slow to depend on each other as some may regard themselves superior/inferior to others. Logically then, the more individuals remain task interdependent, the more effective will group outcomes and social integrity be.

On the other hand, it can be seen that excessive interdependence can lead to social exclusion and frequent collision among group members (Oetzel, 2001). In most cases, it has been evaluated and reviewed that, due to the presence of differing opinions, ideas, notions, attitudes, perceptions, and thought processes,

individuals cannot feel satisfied or comfortable in depending on others for their task. Variations in perceptions and points of view in regard to a specific task can lead to confusion and, as such, differing opinions and insights fail to synchronise with each other (Harrison et al., 2002). Competing views can arise due to the differences felt by group members in relation to their expertise, experiences and skills. For example, in a given task, it is quite likely that the perceptions and the thought processes of said individuals will differ from each other; thus, if not controlled and managed, conflict among them will arise, which can bring about social fragmentation and disintegration (Pelled et al., 1999). The results will negatively impact their work performance and, ultimately, overall group outcomes. Likewise, in a high task interdependence context, coordination and cohesion (i.e., social integration) are required for group members to function. In contrast, groups with low levels of task interdependence involve less coordination, thus social integration could be less important for group functioning (Steward & Barrick, 2000; Barrick & Bradley, 2007). Put another way, in the presence of task interdependence—which, in turn, requires groups to coordinate—one would expect the negative relationship between group diversity and social integration to decrease (Bonacich, 1987). This view emphasises the importance of the fit between group differences, social integration, and the level of task interdependence. In other words, in a context in which a diverse group has high task interdependence, one would expect the negative relationship between diversity and social integration to be weaker than it would be under conditions of low task interdependence.

***H13:*** *Task interdependence moderates the indirect effects of perceived diversity via social integration on group outcomes.*

***H13a:*** *Task interdependence moderates indirect effects of perceived diversity via social integration on satisfaction in such a way that the indirect effect will be more positive for group members with high task interdependence.*

***H13b:*** *Task interdependence moderates indirect effects of perceived diversity via social integration on performance in such a way that the indirect effect will be more positive for group members with high task interdependence.*

**H13c:** *Task interdependence moderates indirect effects of perceived diversity via social integration on commitment in such a way that the indirect effect will be more positive for group members with high task interdependence.*

#### **2.9.3.4 Perceived diversity X task interdependence on group outcomes via communication**

Communication is a multidimensional phenomenon, it happens at different frequencies, in different contexts, through different mediums and means, and for different lengths of time. For example, group communication may refer to face-to-face interaction, telephone or email, or even written notes (Smith et al., 1994; Shaw, 1981). Communication is considered a vital variable for the successful functioning of any group task or activity. Shaw (1981:150) stated that, if a group is to “function effectively, its members must be able to communicate easily and efficiently”. This is consistent with previous research, which found the benefits of communication among group members to include higher performance, quality of problem solving, “greater productivity and efficiency”, “higher goal achievement”, and “superior member satisfaction” (Smith et al., 1994:419; Hoogstraten & Vorst, 1978; Tziner & Vardi, 1983; Lott & Lott, 1961).

Yet, this is valid under the assumption that the group is homogeneous; conversely, and in line with SAT, groups that are highly diverse would have poor communication, which may lead to lower efficiency and higher turnover (Tajfel & Turner, 1986). This is because, within highly diverse groups, individuals are likely to differentiate and associate with people with whom they share a similar language, perspectives, values, norms, and even backgrounds (Williams & O’Reilly, 1998). This then has the effect of in-group members perceiving out-group ones negatively and possibly positioning them within a relevant group stereotype (Mannix & Neale, 2005). Similarly, Wiersema & Bantel (1992) highlighted a similar finding, in that “the unfamiliar language of people with dissimilar experiences, backgrounds, beliefs, and values will presumably lead to difficulties in communication” (Smith et al., 1994:420; Wagner, Pfeffer & O’Reilly, 1984) and, in turn, decrease the prospect of social integration.

Conversely, Steward & Barrick (2000) found that, in highly diverse groups, new communication channels can be opened in the presence of high coordination.

Put another way, in the presence of task interdependence—which, in turn, requires groups to coordinate—one would expect the negative relationship between group diversity and communication to decrease (Bonacich, 1987). What's more, I would argue that this negative relationship would further decrease in those cases in which a group has been together for a long time. In other words, in a context in which a diverse group has high group longevity, I would expect the negative relationship between diversity and communication to be weaker than it would be under conditions of low group longevity.

**H14:** *Task interdependence moderates the indirect effects of perceived diversity via communication on group outcomes.*

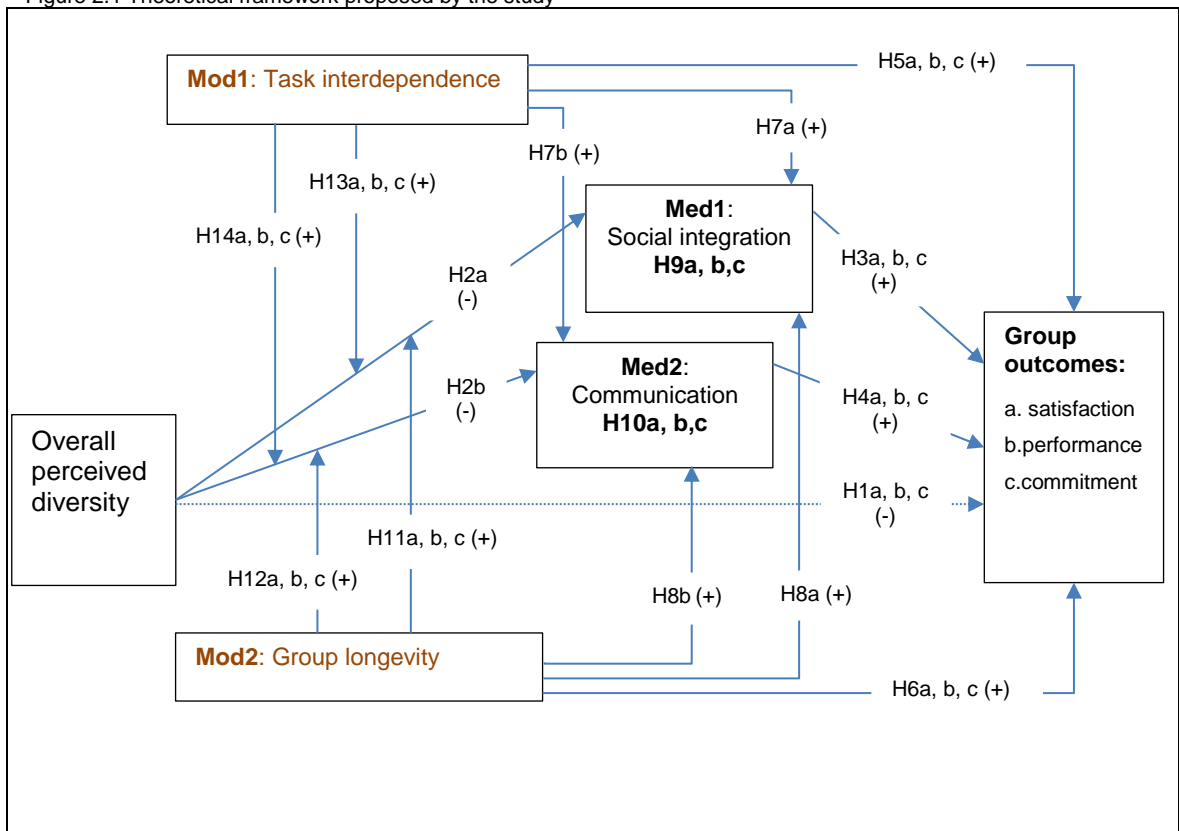
**H14a:** *Task interdependence moderates the indirect effects of perceived diversity via communication on satisfaction in such a way that the indirect effect will be more positive for group members with high task interdependence.*

**H14b:** *Task interdependence moderates the indirect effects of perceived diversity via communication on performance in such a way that the indirect effect will be more positive for group members with high task interdependence.*

**H14c:** *Task interdependence moderates the indirect effects of perceived diversity via communication on commitment in such a way that the indirect effect will be more positive for group members with high task interdependence.*

Based on the extensive deliberations and empirical findings presented in the previous sections, I have developed the model below as a visual reflection of the hypotheses presented in this research (please see figure 2.1).

Figure 2.1 Theoretical framework proposed by the study



## 2.10 Chapter Summary

This chapter covered multiple studies focusing on (perceived) group diversity and its effects on group outcomes (satisfaction, performance, and commitment). It served as the basis of identifying research gaps and, by building upon previous studies, seeks to develop an accurate understanding of the impact of perceived group diversity on group outcomes. I began by introducing the main aspects of diversity, namely, the concept itself, multi-dimensional form, different examples, the difficulties found in the literature related to its use, and several combinations used to find the optimal outcome for diverse groups in terms of group outcome. The field of group diversity is not short of studies. In that context, I followed several theoretical pillars to ascertain the best possible combination of mediators and moderators, which hopefully should lead to understanding how and when perceived group diversity could be a positive influence on group outcomes.

Correspondingly, this research is based on a synergy of the three approaches of Similarity-Attraction theory (SAT), Self-Categorisation theory (SCT), and

Information-Processing theory (IPT). These theories hold contradicting perspectives with regard to the effects of diversity. While IPT, *prima facie*, asserts that diversity plays a positive role for group outcomes, SAT, on the other hand, suggests the exact opposite. As discussed in a number of studies, bringing about a clearer view of the role played by diversity necessitates the adoption of mediators and/or moderators. Following this advice, I considered group mechanisms (communication and social integration) as mediators. In addition to this, I also examined two types of moderators, namely, group longevity and task interdependence.

To examine the above, this chapter critically analysed a number of studies that addressed each variable and its effect on perceived group diversity, I categorised each literature in themes covering the main dimensions that address the impact of perceived group diversity-group process-group outcome model. I finally conclude with a critical review of the main studies that have tested the indirect effects of perceived group diversity on group outcomes. As a result of this, I developed an eclectic theoretical framework that amalgamated all three theoretical approaches when necessary. Subsequently, I set a range of research hypotheses that aimed at unfolding the complex model forwarded. It should be noted that the model proposed by this thesis has not been tested effectively in previous studies, especially not in the field.

Given that groups are embedded in an organisational context characterised by social, structural, management, and culture, this constrains groups and influences their outcomes, therefore another literatures focusing on the background and the broader organisational context for this research was also reviewed and is presented in the following chapter.



## **Chapter 3 Saudi Arabia and the Saudi Healthcare Sector**

### **3.1 Introduction**

With a behemoth labour force and one of the fastest growing economies in the Middle East, Saudi Arabia is both internally and externally vulnerable to the winds of globalisation and the volatility of global economics. The pillars of Saudi economic policies are reform, development, and expansion; sponsored mainly from oil and petroleum products revenues (Alshahrani & Alsadiq, 2014). While its labour market is diverse, Saudi Arabia's economy features a heavy dependency on foreign expatriates, which increases the socio-political concerns at the macro-economic level, with particular regard to problems associated with the high unemployment rates found among Saudi nationals (as highlighted by Table 3.1, immigrants constitute 30% of the total Saudi population). Indeed, this has become such an issue that, according to Cassell (2012) and Aldossari & Bourne (2014), the country's collectivist culture and character, which is particularly reflected in its HR practices, has led to the implementation of a Saudisation policy as a measure aimed at integrating Saudi Arabian nationals into the labour force. Such a policy is foreseen to show significant effects by late 2018 (Waqas, 2013). Yet, unsurprisingly, the policy has received much public and private condemnation from several organisations, especially as it has led to increasing homogeneity in the workplace (Mellahi & Wood, 2001). What effect does this have, if any, on the behaviour of the labour force? Is diversity or homogeneity better for Saudi Arabia? In order to address such questions, it is necessary to recognise the level of diversity in the labour market—specifically by region—as well as, more importantly, examine the elements and impact that such diversity has on the Saudi workforce.

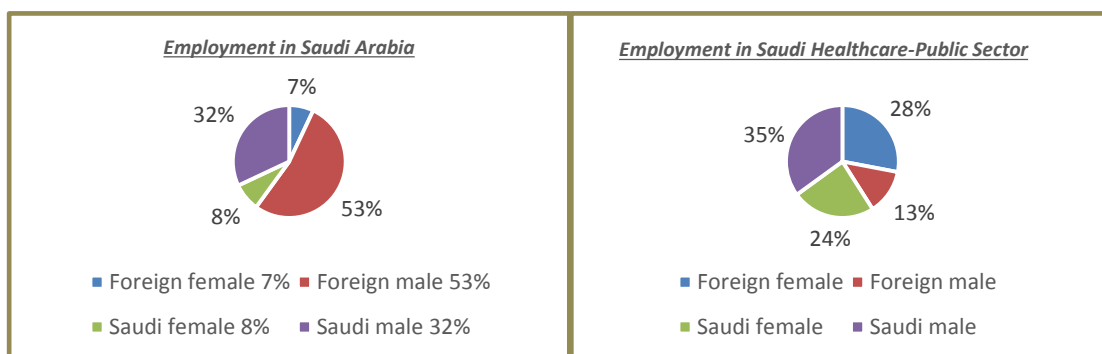
To begin with, this chapter is dedicated to a discussion of the macro-economic and labour market characteristics of Saudi Arabia in general. The objective is to provide an understanding of the context in which the organisations surveyed operate. Subsequently, the chapter explores the healthcare sector, which is considered to be one of the fastest growing in the country. Then, a discussion and review of the human resources in the healthcare sector ensues, focussing specifically on the issue of diversity at present and challenges in the future.

Table 3.1 The Saudi Arabia Context – Fast Facts

### **Population**

The following figures show population estimates by gender and nationality (Saudi/Non Saudi) in Saudi Arabia for the year 2014:

<b>Nationality</b>	<b>Male</b>	<b>Female</b>
Saudi (%)	10,398,993 (50.2%)	10,303,543 (49.8%)
Non-Saudi (%)	6,867,332 (68.2%)	3,200,507 (31.8%)
Total (%)	17,266,325 (56.1%)	13,504,050 (43.9%)



- The population is expected to reach 54.7 million by 2050
- Immigrants make up more than 30% of the total population.
- Approximately 56.1% of the population are male and 43.9% are female.
- Median Age: male 27.3 years; female 25.3 years; overall 26.4 years.
- Population growth rate 1.49% (2007-2009).
- Ratio of Saudis Employments to Total Saudis Population is 35.8%
- Unemployment Rate is 5.7%; and for Saudi Citizens is 11.6%

### **Growth**

- Saudi Arabia is Middle East's fastest-growing economy, and it is the world's largest producer of oil; oil extraction accounts for 46% of the GDP.
- Saudi Arabia's GDP Annual Growth Rate is 3.80% (2015) and average income is estimated to reach \$25,700

### **Healthcare services**

- Most government expenditure is on healthcare and education services, aimed at raising labour productivity.
- The Saudi healthcare system is ranked 26th among 190 countries of the world's health systems (WHO).
- Health expenditure is 3.7% of the GDP

Source: Saudi Central Department of Statistics & Information (2015); World Bank (2015); WHO (2013); Alshahrani & Alsadiq, (2014).

## **3.2 The Kingdom of Saudi Arabia: A Historical Perspective**

### **3.2.1 Macro-economic background**

Since the discovery of oil in a desert plateau near the Arabian Gulf in 1938, Saudi's economic prosperity has been intrinsically linked to the *black gold*. Indeed, beginning with the 1940s, the era of oil exploration was characterised by increases in direct foreign investments and the establishment of bureaucratic government institutions. A victim of the 1970s oil crisis, Saudi Arabia's economy underwent a considerable transformation for the better. A worrying aspect of its economy, however, is the lack of diversification; 75% of total budget revenue is accumulated from oil and natural gas products; 90% of all export earnings are from oil and gas; oil extraction constitutes 46% of the country's total GDP. Nevertheless, the agriculture, industry, and service sectors, which constitute the main component of the country's non-oil economy, have been growing incrementally (Alkhudairy, 2008).

The balance between achieving developmental goals and managing risks, especially that of oil price volatility, is addressed by the Saudi government through reforms at the macro-economic policy level, specifically through the creation of a favourable environment for job creation and private sector investment (IMF, 2014). While this is in progress, the Saudi economy is heavily monopolised by large state corporations, for instance, the Saudi Telephone Company (STC) or the Saudi Basic Industries Corporation (SABIC) (Mellahi & Wood, 2001). Despite this, the government has managed to increase fiscal outcome to the point that its deposits at the Saudi Arabian Monetary Agency (SAMA) have reached approximately 60% of the GDP. Furthermore, this is complemented by the government being a large stakeholder in several large multinational companies (IMF, 2014). Evidently, these government efforts are aimed at diversifying the sources of economic income and lessening dependency on oil and gas products. Indeed, the 7<sup>th</sup> National Development Plan (2000-2005) was aimed at sustaining privatisation and economic diversification while simultaneously increasing the training and employment of the entire Saudi population (Achoui, 2009). What's more, while the Kingdom's public investment portfolio is generally aligned with the global average, several improvements are evident. The increased value for money and improved resource allocation,

particularly considering the volume of Saudi public investment programmes, are a testament of progress (IMF, 2014).

### **3.2.2 Socio-cultural background**

The volatility of global economic elements in particular, and of globalisation in general, is increasingly having an impact on organisations stationed in Saudi Arabia, both at the local and national levels. Locally speaking, public organisations are gradually transforming themselves to include the element of profitability in their strategic planning. From a national and global perspective, large companies and multinational corporations are increasingly required to adapt to different social contexts to succeed; cultural and political nuances especially are being extensively taken into account. A corollary of such practices is a range of visible changes in Saudi HRM management and procedures (Alsharif, 2014).

Indeed, Saudi Arabia positions respect for its culture as a precondition to commencing business dealings. The business environment effortlessly accommodates times for prayer and fasting, and the required days of rest. Nonetheless, the wealth gap in the Kingdom is widening, specifically due to the notion of cultural heritage being a precursor of power. Decision-making in Saudi Arabia is a centralised process in which respect for authority—an accepted norm and value in Saudi culture—is emphasised across the board. It should be noted that, above all, Saudi society privileges collectivism over individualism; it values long-term commitment to one's group and considers loyalty to be an essential trait (Cassell, 2012).

### **3.2.3 Labour market background**

The Saudi Arabian labour market is distinct in its form due to high numbers of foreign expatriates and immigrants. The private sector employs approximately only 10 to 15% of Saudi nationals, the remaining workforce being made up of foreigners (Aldossari & Bourne, 2014). Out of a population of 31 million people, ten million are foreign citizens, who make up around 60% of the entire working population and above 90% of the private sector working population. One reason

for such a huge influx of foreign workers in Saudi Arabia was the high economic growth caused by oil resources. Certainly, the rapid increase of revenue and economic development had structural connotations, with the government implementing a comprehensive development plan, inclusive of heavy investment in hospitals, schools, transportation, airports, and other infrastructural sectors. This was a seismic shift for the Saudi economy, which had previously been based on low-level nomadic trade and is now characterised by large petroleum, construction, and service sectors. Such a shift required the creation of a new skills base, which could not be found locally at the time (Aldossari & Bourne, 2014). Despite a fast-growing educational sector, unemployment amongst nationals is still high; this may be due to the aforementioned factors, especially because of the early reliance on adequately skilled foreign labour to maintain the newly developed sectors, such as oil and gas. The future implications of such a situation spurred the Saudi government to undertake drastic measures such as the Saudisation programme; a dual-purpose measure designed, on the one hand, to control the influx of foreign expatriates and, on the other, to provide training and employment for Saudi nationals. Essentially, the programme's objective is to encourage the development of Saudi manpower and to equip human resource management in order to address the local recruitment problem (Aldossari & Bourne, 2014). It should be noted, however, that the programme is not cognizant of or does not focus on the low female participation in the labour market—especially in the private sector—which may be due to cultural constraints (Achoui, 2009).

Evidently, the approach is based on the notion that, by equipping Saudi nationals with the required skills, expertise, and know-how to become employed in the labour market, a shift would occur from an economy based on a foreign labour force to one based on local supply. Yet, there is a problem of mentality. There seems to be a misalignment between the aims and objectives of the Saudisation policy and the general preferences of Saudi nationals with regard to jobs and employment; the latter would mostly prefer to land a government job (i.e., in the petroleum sector) rather than a private sector one. This may be due to the former being characterised by higher salaries and long-term stability (Achoui, 2009). Other issues may also arise; for example, a slowdown in productivity due to the shift in labour force from foreign to a local.

### **3.3 An Overview of the Saudi Healthcare Sector**

Saudi Arabia has a universal healthcare system catering to its 31 million citizens; however, life-threatening illnesses or emergency admissions are handled based on a different structure. The ten million strong foreign workforce is by law obliged to obtain company health insurance. Structurally speaking, the Ministry of Health (hereafter MoH) oversees the PHCs and most hospitals. With regard to government departments and Universities, these are directly linked to state medical centres, which provide medical treatment for all employees as well as their dependents. To put it in perspective, in 2012, 59.5% of all hospitals were under the responsibility of the MoH, 31.5% were privately owned and 9% were operated separately by other state agencies. Despite several incentives and measures in place to encourage private sector participation in Saudi government-led expansion programmes, any applying organisations/companies only qualify if they are partly Saudi-owned (OBG, 2014). The next subsections discuss the development and organisational structure of Saudi healthcare, including the structure of the PHCs, in more detail. Information regarding human resource planning and expected HR challenges within the healthcare context is also provided.

#### **3.3.1 Healthcare development**

The empirical evidence attests to the steady increase in the number of doctors and practicing nurses throughout the Saudi Kingdom. A large increase in additional physicians (approximately 15%) was documented from 2011 to 2012. During the same year, the average number of doctors per 10,000 inhabitants in PHCs stood at 290, having increased by 60 since 2008. According to MoH figures and statements, the Saudi government's policies and programmatic investments in health infrastructure have positioned human capital at its crux. However, high quality staff are hard to come by, especially with the increasing numbers of hospitals being built, making recruitment a constant constraint for HR. Correspondingly, pay rises have also increasingly taken their toll on the Kingdom's budget; since 2011, a physician's pay has increased by almost 30%, and that of other medical staff by up to 20%. This, of course, has directly impacted

the profitability and indeed the viability of private hospitals, both decreasing at a slow pace (Boslaugh, 2013; OBG, 2014).

Despite such constraints, the investment in infrastructure, which enabled the construction of several new hospitals, led to health service providers employing more Saudi nationals. From 2008 to 2014, the proportion of physicians with Saudi nationality employed increased by 14.4%, while the proportion of nurses with Saudi nationality grew by 4.7%. This is also evident in other healthcare profiles, with an average increase of 18%. What's more, during the period in question, MoH figures demonstrate a staggering 100% growth in the number of new Saudi graduates majoring in health-related fields. While foreign doctors still account for the highest percentage in this particular sector, the increased focus on Saudi nationals becoming a part of the healthcare system has shown its results and may eventually lead to the almost total localisation of the healthcare system (OBG, 2014).

### **3.3.2 Healthcare structure**

The ability to provide healthcare in Saudi Arabia is fundamentally dictated by the structure and management of financial resources (Almalki et al., 2011). The central component and lever of the healthcare system is the MoH, which, as mentioned before, operates the PHCs and most of the hospitals (Shoult, 2005; OBG, 2014). Its competences extend to providing primary, secondary, and tertiary healthcare services to the general population (Almalki et al., 2011). Parallel to the MoH are several government bodies including, but not limited to, referral hospitals, army medical services, Ministry of Higher Education hospitals, and Saudi Arabian Oil Company hospitals (visually presented in Figure 3.1). Criticism has focused on the inefficiency and lack of communication and coordination channels between and across these sectors resulting from this scattered structure, especially with regard to training opportunities and equipment sharing schemes (Almalki et al., 2011; Sheikh, 2015). What's more, part of the MoH's strategic planning report stressed that there is an increasing need to address the financial disparity between the MoH and the other government bodies linked to the healthcare sector. This is particularly important as the MoH, being available to the entire population, is subject to the largest financial

constraints; patients constantly experience long waiting times and limited access to laboratory services, equipment, and other important health services (Sheikh, 2015). Geographically, most healthcare services are concentrated in the three largest regions, which are Riyadh, Jeddah, and Al-medina (Almalki et al., 2011). In 2012, Saudi Arabia maintained 435 hospitals; 259 of which were operated by the MoH, 39 by different government bodies, and 137 by the private sector. As part of the Saudi infrastructural investments, the Ministry of Finance reported that an additional 16 hospitals were in the process of being completed. According to the above Ministry, noticeable improvements across the healthcare sector are expected as a result of such investments (OBG, 2014).

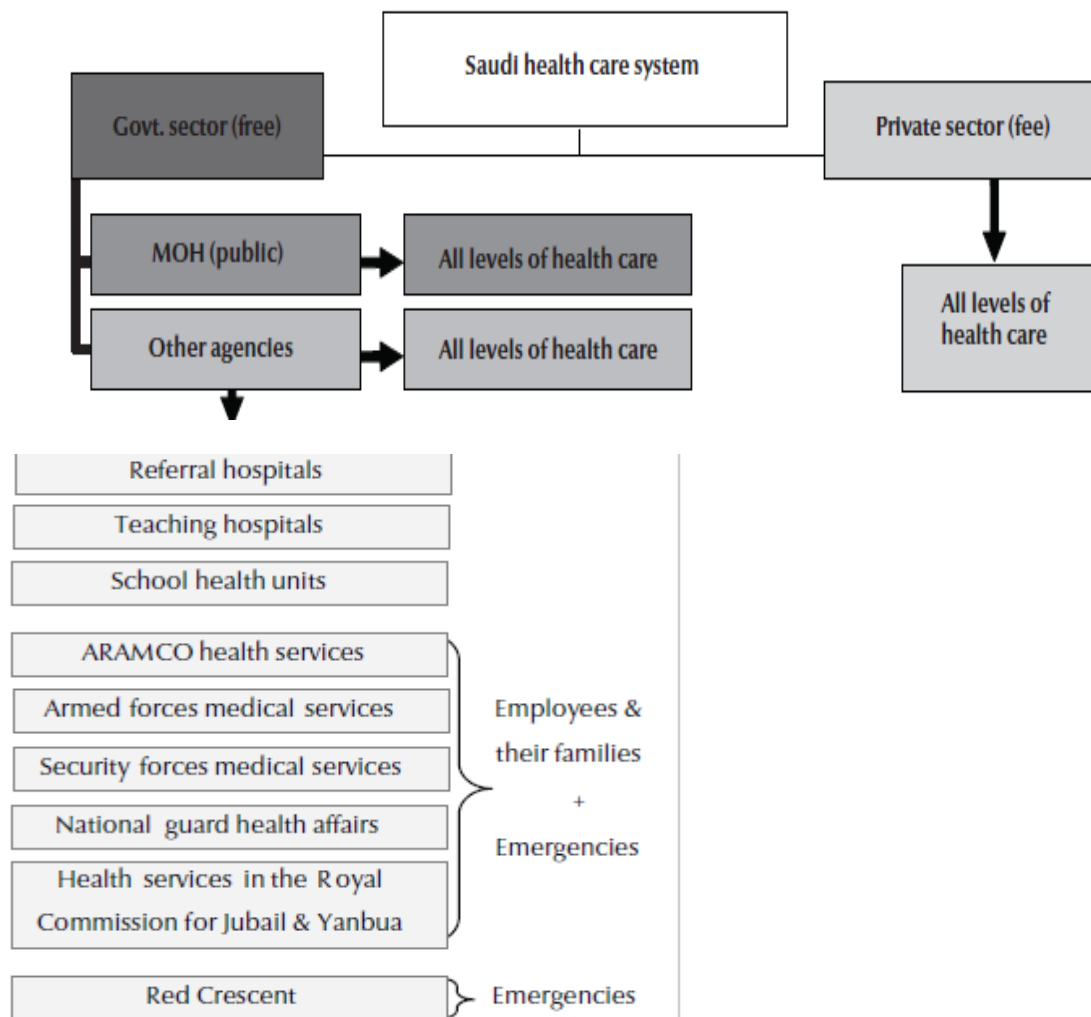


Figure 3.1 Healthcare structure in KSA (Source: Almalki et al., 2011, p.786)



Figure 3.2 below outlines the number of hospital services provided by the MoH, government bodies, and the private sector. The figure also visually underscores that MoH provides the largest share of hospital services, followed by the private sector and the other government bodies.

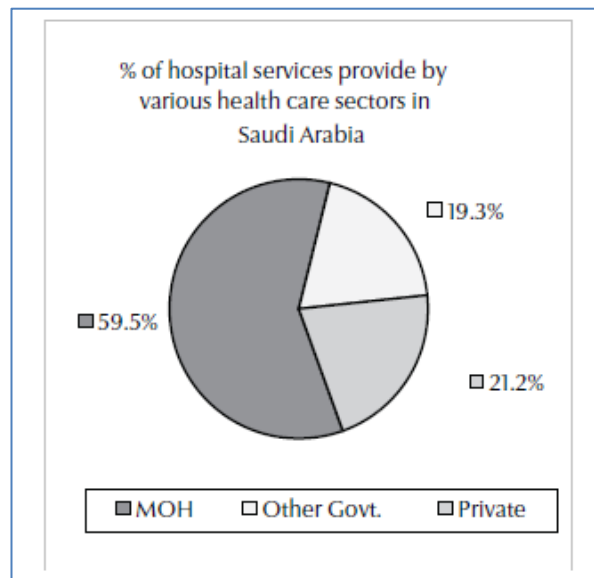


Figure 3.2 Percentages of hospital services provided by the healthcare sector in the KSA (Source: Almalki et al., 2011, p.786)

### ***Primary Healthcare Centres (PHCs):***

Established in 1980 by ministerial decree as the primary providers of healthcare services, PHCs also serve as gatekeepers and refer patients to more advanced healthcare services at secondary levels (e.g., public hospitals) (Almalki et al., 2011). The main objective of PHCs, as stated by the MoH, is early prevention, in other words, it is a preventive healthcare service. Once established throughout the Kingdom's territory, PHCs were grouped and categorised according to area proximity. For instance, where small districts had health posts providing healthcare services, these have now become PHCs, which have a connected structure between and across districts. In terms of numbers, there are currently 2,037 PHCs, representing approximately 60% of the total health services provided in Saudi Arabia (Almalki et al., 2011). The Saudi government has extensively focused on developing and maintaining PHCs. Indeed, this was done

to the extent that, between 2004 and 2009, a further 189 PHCs were established (see Figure 3.3) (Almalki et al., 2011).

PHCs approach the provision of healthcare through eight steps, which are: 1) educating the general population on the prevalent health issues and on the preventive measures that can be taken; 2) ensuring a clean and safe water supply; 3) raising awareness and promoting a good nutritional diet and food supply; 4) providing maternal and child basic healthcare services; 5) monitoring and preventing contagious infections or diseases among children through immunisation; 6) monitoring and preventing locally embedded diseases; 7) providing treatment for commonly known diseases; and 8) providing quality medicinal supplies (Almalki et al., 2011).

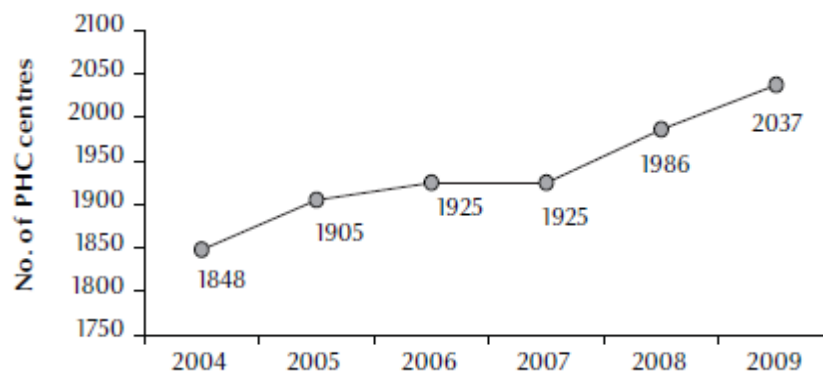


Figure 3.3 Increasing number of PHCs in KSA (2004-2009) (Source: Almalki et al., 2011, p. 788)

Such measures have contributed to a significant reduction in outpatient visits, indirectly lowering the burden on specialised hospitals and secondary service referrals. With time, PHCs have become more effective as patient consultations and their timeliness have improved due to the establishment of patient health records, which include prescribing practices, past diseases or complications, etc.

### ***PHC Structure:***

PHCs are independent team-based public institutions with their own budgetary oversight. A variety of teams are employed in PHCs; all of these report directly to the Chief Executive Officer (CEO) who, in turn, reports to the Directorate in the

allocated geographic region. Certain PHC team members also serve as members of the 'Health Friends' advisory committees, which include influential community members. In order to become members of such committees, PHC representatives must be aware of local practices and norms, particularly as the role of the 'Health Friends' committees is to liaise between the communities and the PHCs themselves (Almalki et al., 2011).

### 3.3.3 Human Resources in the Saudi Healthcare Sector

Empirical speaking, the statistical evidence gathered from the MoH suggests that the Kingdom's healthcare sector contains a highly diverse working population (Boslaugh, 2013; OBG, 2014). Such a context makes for an excellent sample to explore and test how a diverse workforce maintains stability, cohesion, and communication, and strives to work towards achieving the objectives set by the Saudi healthcare system (Gulf Research Centre, 2014). The total workforce within the MoH is highlighted in the table below:

Table 3.2 Manpower in MOH by Category, Sex and Nationality (MOH, 2015)

Category		Saudi	Non-Saudi	Total
Physician	Male	7,639	19,804	27,443
	Female	3,844	7,171	11,015
	<b>Total</b>	<b>11,483</b>	<b>26,975</b>	<b>38,458</b>
Nurses	Male	22,198	1,455	23,653
	Female	32,587	35,614	68,201
	<b>Total</b>	<b>54,785</b>	<b>37,069</b>	<b>91,854</b>
Pharmacist	Male	1,779	115	1,894
	Female	852	168	1,020
	<b>Total</b>	<b>2,631</b>	<b>283</b>	<b>2,914</b>
Allied health personnel	Male	40,079	1,154	41,233
	Female	9,228	2,616	11,844
	<b>Total</b>	<b>49,307</b>	<b>3,770</b>	<b>53,077</b>

Having a diverse workforce may create numerous challenges for HR as well as compromise the desired organisational outcomes. For instance, among the challenges associated with a diverse workforce is the achievement of harmony between educational and training programmes on the one hand, and an ever-changing labour-market demand in the healthcare field on the other. Similarly,

equipping Saudi nationals with the necessary skills and expertise in the healthcare field while also maintaining similar levels of skills provisions in expatriates, mainly to instil uniformity of expertise, is also challenging (Achoui, 2009). A diverse workforce may also lead to decreasing employment tenures, particularly due to high numbers of immigrants, which directly situate the security of the healthcare sector on precarious grounds. Indeed, Saudi Arabia may construct a number of new hospitals and drastically improve its infrastructure; however, without a sufficiently skilled medical workforce and a functional HR management sector, it would all be to no avail (Boslaugh, 2013; OBG, 2014).

#### **3.3.4 Lack of workforce diversity-related research**

Considering the fact that Saudi Arabia's healthcare sector harbours a highly diverse workforce, there is a widespread negligence, both empirical and academic, with regard to studying the effects and influence of such diversity on team outcomes. Mellahi & Wood (2001) succinctly stressed that the failure to understand the impact of a diverse workforce can lead to misguided assumptions, sectorial underperformance, and increased discrimination. Furthermore, such an approach may also lead to foreign expatriates perceiving local citizens as being unskilled, incompetent, culturally inept, or lacking in work ethic (Al-Waqfi & Forstenlechner, 2010). Therefore, a study exploring and analysing workplace diversity, which could also enhance our understanding of skills and performance, could improve the overall productivity not only of Saudi nationals but also that of foreign expatriates in the healthcare system (Mellahi and Wood, 2001).

### **3.4 Chapter Summary**

Saudi Arabia has long been, and continues to be, in a strong fiscal position. Characteristics such as the employment of a skilled and diverse workforce have been the bastion of such a position. Nevertheless, the high unemployment rate among Saudi nationals has been a worrying issue for the government, something it has sought to tackle through a variety of programmatic agendas. With regard to the Saudi healthcare system, its unique structural layout, in which the MoH serves as the main provider of healthcare services, continues to be a significant

priority of the Saudi government. Yet, a lack of attention persistently undermines the understanding and analysis of workplace diversity in the Saudi healthcare system, despite the fact that such a study would yield a clear comprehension of how such a characteristic affects not only the Saudi nationals employed in the healthcare sector, but also foreign expatriates. Indeed, a long-term challenge for the Saudi government has been integrating Saudi nationals in the healthcare sector and providing them with much needed education and training to develop their competence and skill bases.

## **Chapter 4 Research Methodology and Design**

### **4.1 Introduction**

Chapter 2 developed and presented a framework that combines both mediators and moderators in order to elucidate the relationship between team diversity and team outcomes in the context of the Saudi Arabian healthcare system. This chapter sets out the methodological rationale utilised in this research. It begins by explaining the philosophical perspectives and the quantitative approaches used in this study. Thereafter, it covers the research design, sampling process, data collection and procedures, and research instruments (i.e., measurements). Lastly, it explains the questionnaire design, the fieldwork outcome, and the data analysis techniques employed.

### **4.2 Philosophical Perspectives and Selected Research**

#### **Approach**

In his discussion on philosophical discourses, Guba (1990:17) defined them as “basic belief system(s) or world view(s) guiding the researcher in ontological and epistemological directions.” In that regard, for one to develop a philosophical perspective it is necessary to explore several questions and deconstruct a range of assumptions related to ontology (i.e., “the nature of reality” or what is believed to be true) (Lincoln & Guba, 1985:37), epistemology (i.e., knowledge of reality), human nature (e.g., whether it is pre-determined, socially crafted, or biologically developed), and methodology (i.e., the manner in which one studies a particular phenomenon, and the tools and approach used) (Burrell & Morgan, 1979; Guba, 1990; Greene, 2008). Empirically speaking, researchers have long known that such assumptions are consequential and intermingled, regardless of one’s social or scientific persuasions. Put differently, one’s understanding of ontology invariably effects one’s perception of epistemology, which, in turn affects one’s viewpoint of human nature and, incidentally, one’s choice of methodology (Guba & Lincoln, 1989).

Scholars in organisational research display a variety of research paradigms such as positivism, critical realism, constructivism (interpretivism), feminism, and post-

modern perspectives (Guba & Lincoln, 2005). Table 4.1 displays more information relating to such research paradigms.

Table 4.1 Comparison of Major Research Paradigms Informing Social Research

<b>Issue</b>	<b>Positivism</b>	<b>Pos-positivism</b>	<b>Critical Theory et al.</b>	<b>Constructivism (interpretivism)</b>
<b>Ontology</b>	Naive realism - "real" reality but apprehensible	critical realism - "real" reality but only imperfectly and probabilistically apprehensible	historical realism - virtual reality shaped by social, political, cultural, economic, ethnic and gender values crystallized over time	relativism - local and specific constructed realities
<b>Epistemology</b>	dualist/objectivist: findings true	modified dualist/objectivist; critical tradition/community; findings probably true	transactional/ subjectivist; value mediated findings	transactional/ subjectivist; created findings
<b>Methodology</b>	experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	dialogic/dialectical	hermeneutic/dialectical
<b>Inquiry aim</b>	explanation: prediction and control		critique and transformation; restitution and emancipation	understanding; reconstruction
<b>Nature of knowkdge</b>	verified hypotheses established as facts or laws	nonfalsified hypotheses that are probable facts or laws	Structural/historical insights	individual reconstructions coalescing around consensus

Source: Guba & Lincoln (2005: 193-194).



In brief, there are two prevalent research paradigms: positivism (science oriented) and interpretivism (aka phenomenology). In purist terms, the positivist philosophy is associated with and articulated by quantitative researchers, whereas qualitative ones seek to establish the superiority of interpretivism, as a discourse and a point of view, in understanding social sciences (Johnson & Onwuegbuzie, 2004). In terms of ontology, positivists, unlike interpretivists, assume that reality is objective and can be measured as such; i.e., that reality exists beyond human perception (Sale, Lohfeld & Brazil, 2002). In other words, reality can be objectively studied by means of analytical and scientific methods (e.g., statistics, experiments, etc.), rather than being inferred subjectively through sensation or intuition (Easterby-Smith and Lowe, 2002). Epistemologically speaking, positivism views the investigator and the phenomenon as being independent of each other. Indeed, according to positivists, investigators can study a phenomenon without influencing or being influenced by it (Sale, Lohfeld & Brazil, 2002).

Another important research paradigm in the philosophy of social science is realism (Greene, 2002). In general, philosophical realism was defined by Phillips (1987:205) as "the view that entities exist independently of being perceived, or independently of our theories about them." Realism—including different terms of it such as critical realism—is an alternative philosophical perspective that brings together the two opposing philosophical stances of positivism and interpretivism (Bryman & Bell, 2007). Therefore, it validates and supports important aspects (e.g., methodological characteristics) of the quantitative and qualitative approaches (Mark, Henry & Julnes, 2000). Critical realism has some features in common with positivism in that it supports the notion that researchers use the method that is the most appropriate based upon the purpose of the research (Wass & Wells, 1994).

In accordance with the above and its reasoning, particularly the aspect of objectivity, this research seeks to measure and analyse the causal relationships between factors—in this case, group diversity and group outcomes—through a value-free framework (e.g., surveys distributed through a random sampling process) based on the development and testing of hypotheses. The choice is primarily guided by the aim of this research, the sample size, and the structured and well-defined set of practices found in positivism in contrast to qualitative

studies. As such, this is achieved by a deductive quantitative approach that uses several techniques such as, but not limited to, randomisation and self-administered questionnaires with no predetermined respondents (Creswell, 2013).

### **4.3 Research Design**

The research design of any given study underscores the essence of its direction, organisation, and methods. While being based on experience and context, a sound research design utilises the methodological tools appropriate to elucidate a particular research problem or to test hypotheses (Bhattacharjee, 2012). As such, the choice of design is significant due to the impact it has throughout the study, whether it be the choice of tools or of the manner in which a problem is approached. For instance, a focus group approach would be an excellent choice for an exploratory study, field surveys would be great for cause-and-effect studies, etc. (Bhattacharjee, 2012; Creswell, 2013; Law, 2004; Collis & Hussey, 2003). Thus, when selecting the research design, a number of elements must be considered—namely, the nature of the problem and the goals to be achieved, the philosophical approach adopted, and any time/cost constraints.

As this research seeks to explore and understand whether—and how and under which conditions—perceived group diversity affects group outcomes, the underlying question is that of causation; what causes group diversity to affect, if indeed it does, group outcomes. Understanding such multivariate relations requires an adequately sized sample incorporating a diverse range of individuals and groups. Interviews are not a feasible option due to the length of time they would take. Most importantly, interviews are generally of little use when research reflects preconceived theories and concepts to answer its questions, as in the case of this study. Focus groups are not a plausible choice for the same reasons: the time and the process required to quantify the opaque and subjective data gathered. It is clear, then, that self-administered questionnaires represent a feasible data collection instrument for this research (Bryman & Bell, 2003). This is due to their low cost and timing and unobtrusive nature, and to the possibility of gaining a large dataset. Indeed, a cross-section survey design is able to

simultaneously examine both the independent and dependent variables (Bhattacharjee, 2012).

## **4.4 Sampling**

In order to gain insights into the research question, I used a *two-stage cluster* approach to sampling, defining its features depending on the different stages of the study (Creswell, 2013; Bryman, 2012). As I moved along, I outlined the target population, the sampling technique itself, and the number of participating organisations.

### **4.4.1 Target Population**

To begin with, the sample was entirely based in the Kingdom of Saudi Arabia—specifically, its healthcare system: Primary Healthcare centres (hereafter PHC). Due to their diverse nature and interdependent tasks, medical staff members seemed the appropriate population upon which to test the hypotheses developed. Indeed, unlike other Saudi sectors, there is an abundance of information—both quantitative and qualitative—regarding the demographic make-up and organisational structure of the Saudi healthcare system (see section 3.1 and 3.3). The figures evidence that there is a high level of workforce diversity and group-based structure, both of which are prerequisites for the feasibility of my study (Almalki et al., 2011). As such, I decided to conduct my research on group diversity-process-outcomes in Saudi PHC venues. The groups within the PHC differ vastly and are, at times, geographically diverse and distributed across different localities. Therefore, mainly due to time, cost, and accessibility constraints, I did not approach all PHC groups, but randomly selected organisations in three highly populated Saudi Arabian regions.

### **4.4.2 Sampling technique**

I utilised a *two-stage cluster* sampling technique. The first step involved selecting geographical clusters—in this case, the areas were Riyadh, Jeddah, and Al-Madinah. The reason was simple: according to the Ministry of Health, these areas

were home to the highest number of PHCs in Saudi Arabia (MOH, 2014). The second step involved randomly selecting groups from those found in the three pre-selected regions. This was done by a) contacting authorities in Saudi Arabia to obtain permission for the survey, b) contacting regional authorities and hospitals to understand whether there are any further regulations that may hinder the distribution of the surveys, c) with the consent of all authorities and the population in the organisation, the surveys were sent to random staff members in the clusters (three areas) that were selected.

The groups sampled by means of this technique included, among others, healthcare management, administrative, quality improvement, learning and development, health promotion, interdisciplinary and care delivery, etc. (MOH, 2014).

The selection of the groups—i.e., their characteristics—was particularly inspired by Hackman's (1987) poignant definition of groups as "composed of individuals who both see themselves and are seen by others as an interdependent social entity." Therefore, the inclusion of respondents and of the teams to which they belonged was determined by a participation criterion which measured the length of time each group had been established, whether its members worked interdependently, and how many members were part of it (Levine & Moreland, 1990; Guzzo & Shea, 1992). The above information was obtained with the permission of the regional and local authorities, which were so kind to offer all the help they could. Those groups that managed to fulfil the criteria set forth were invited to participate in the study and were provided with an information booklet containing their rights as respondents, their guarantee of anonymity, and the way the data would be guarded and utilised in this research.

With the group leaders agreeing to participate and thereafter heralding their group to complete the questionnaire, 56 groups altogether agreed to participate, as evidenced by the copies of the consensual agreement form to participate that were signed and returned (see Appendix C). This form asked for the group's name, the names of its members, and the size of the group. Through the pilot study, the appropriateness and means of asking these questions was tested and the most suitable technique was implemented thereafter. As a result, the data collection went smoothly, the identification of *principal groups* was completed,

and the ethical approval forms were obtained and gathered in each pre-selected region.

Indeed, such *two-stage cluster* sampling method is considered a type of probability sampling that is consistent with my aim of representing the three areas and their work-groups. While it may be farfetched to conclude that the data gathered will be representative of the entirety of Saudi Arabian healthcare and of the groups found within it, it nevertheless is representative of the PHCs in the pre-selected regions (Bryman, 2012; Creswell, 2013).

It should be noted that in Table 4.2 the terms “Regional Organisation” stands for the authorities that have under their responsibility several hospitals. In that sense these regional organisations are simply regional authorities under the central control of the state, which are responsible for the healthcare in the region that they are operating in.

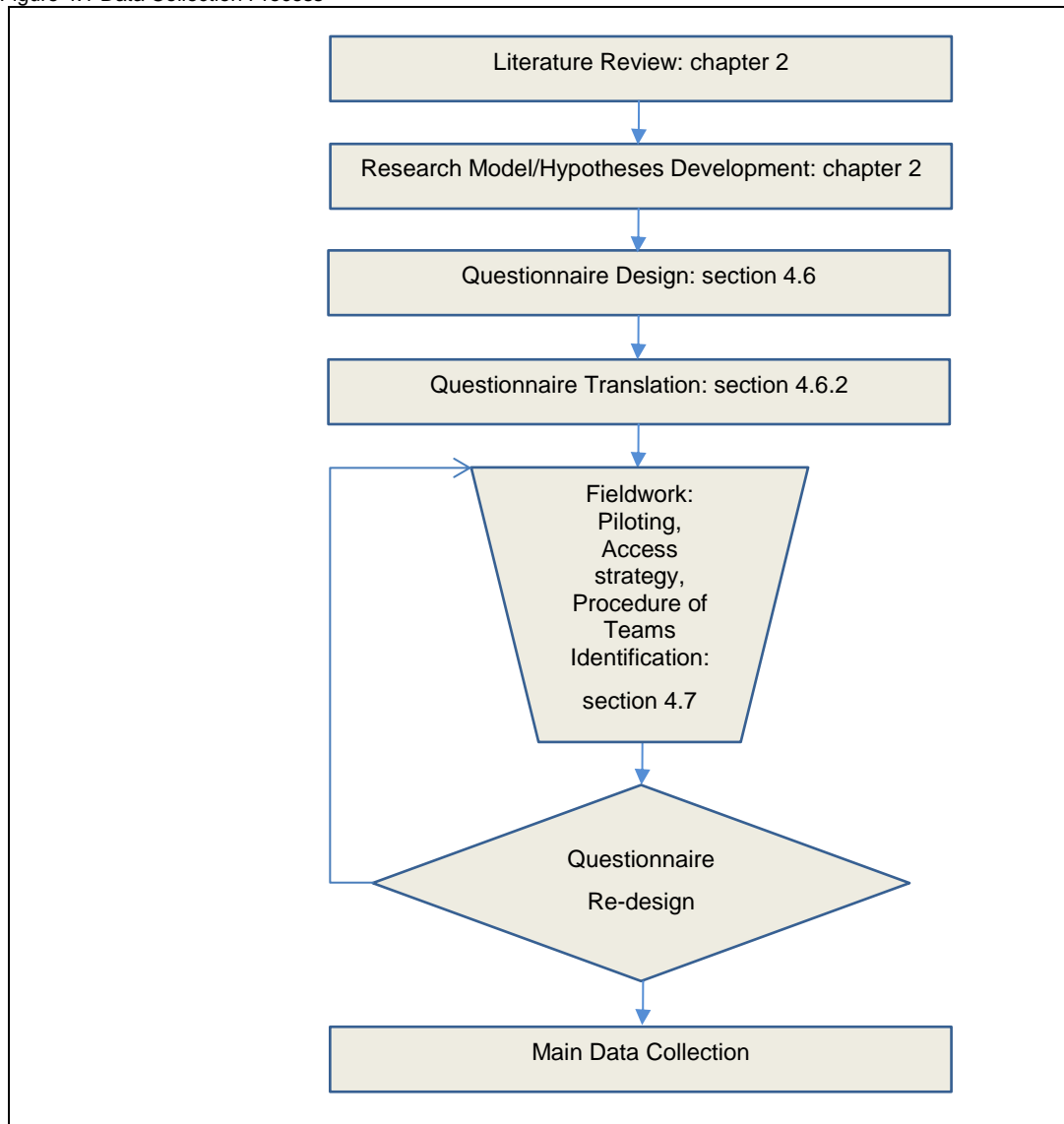
The groups were selected based on the criteria developed by Hackman (1987)—namely, whether the groups surveyed are ‘real teams’ or simply ‘working groups’. The sample groups targeted were made up of healthcare professionals and employees in three Saudi Arabian districts; they also were asked whether, in their opinion, a postal, email, drop and collect, or web-based questionnaire would be more suitable. Considering the feedback received, the recommended questionnaire distribution mode was that of drop-and-collect surveys (DCS). Therefore, I went to Saudi Arabia and directly delivered the questionnaires in person (see Figure 4.1. for process).

Table 4.2 Employee and team distribution across the three participating regions

	<b>Organisation and Region</b>			<b>Total</b>
	Regional organisation no. 1	Regional organisation no. 2	Regional organisation no. 3	
No. of Employees working in the organisation	579	1,855	1,069	3,503
No. of teams agreeing to participate in the study	19	29	8	56
No. of Employees agreeing to participate in the study	201	296	180	677
<b>No. of returned valid questionnaires</b>				<b>591</b>
No. of eligible teams included in the study (two-thirds of a team responded)				47
No. of final questionnaires included in the study				561
<b>Employee response rate</b>				<b>87%</b>
<b>Team-level response rate</b>			<b>Ranging from 25% to 100%</b>	
<b>Within-team response rate</b>				<b>84%</b>

Notwithstanding the utility of secondary data in developing the hypotheses concerned with the research problem at hand, primary data were collected by distributing self-administered questionnaires in three Saudi Arabian districts with the purpose of investigating whether, why, and how group diversity affects group outcomes (Bryman & Bell, 2003; Collis & Hussey, 2003).

Figure 4.1 Data Collection Process



## 4.5 Measurements

Inputting clearly and precisely defined constructs in the questionnaire makes it a viable and appropriate tool to clearly understand the variables under investigation (Bryman & Bell, 2003). All the measures utilised in this study's questionnaire had been used in previous studies (see table 4.3 for the measurement scale). The appropriateness of each measure was carefully evaluated and only then selected based on the type of theories and variables examined. Where available, for the majority of constructs, I utilised multiple indicators/items in order to build a strong basis for their operationalisation (see chapter 2 for details). Using only single

items to measure my constructs did not seem appropriate, as it would have led to low levels of content validity and several other issues during the analysis phase (Churchill & Iacobucci, 2002). Table 4.3 clearly illustrates the measures I selected for the study's constructs, which were used in the self-administered questionnaire.

The selection of both the items and scale used were grounded in theory and sought to avoid the cross-level confusion and errors associated with the lack of a grounded theoretical lens. To avoid such confusion, I followed the academic practice of aligning the level of my constructs with that of the measurements and analysis (Rousseau, 1985; Klein, Dansereau & Hall, 1994; Mathieu & Chen, 2011). As shown in table 4.3, the scale items selected are interrelated and coalesced with the theoretical basis of the constructs selected. For example, group interdependence strengthens the "affective reactions of team members to intragroup interdependence" while simultaneously stimulating "the development of cooperative behaviours among group members" (Van der Vegt, Emans & Van de Vliert, 2001:55). While group interdependence refers directly to the group as a whole, the construct was conceptualised to measure individual-level constructs and matched with the item referent (e.g., "I", first person). This was also the case for communication (the mediator), satisfaction and commitment (the dependent variables), and perceived group diversity (the predictor). What was done differently for the perceived diversity construct, however, was that it measured self-to-group heterogeneity as a means of measuring both individual-level and group-level outcomes (e.g., Hobman et al., 2003; Moore, 2008; Liao et al., 2008). In the same way, during the questionnaire design phase, I sought to pay close attention to matching the theoretical understandings of the main constructs of the group mechanisms and the measures accompanying them (e.g., social integration). Hence, the measures associated with social integration are related to individual perceptions of 'group spirit' or 'group pride' (Seashore, 1977:10), and were therefore constructed using the group referent (e.g., "we" get on personally very well).



#### **4.5.1 Measurement Items**

##### **Independent Variables**

*Perceived group diversity.* As illustrated by table 4.3 and by the questionnaire itself, perceived group diversity was conceptualised utilising the perceptual model in order to measure the impact of diversity in the workplace. Different dimensions (where objective diversity categories are: age, gender, nationality, ethnicity, educational background, and functional background) as well as other psychological differences (i.e., personality attributes, personal values, and work attitudes) were adopted to operationalise perceived group diversity. Together, they were measured as perceived differences, and the average of these were operationalised as a measure of general perceived diversity (e.g., van Dick et al. 2008). Question 1.2, through a seven-point Likert scale taken from Liao et al. (2008), Van Dick et al (2008) and Hobman et al. (2003, 2004), measured perceived group diversity. The Likert scale ranged from 1 (not being diverse) to 7 (having high diversity). I used nine items: age, gender, ethnicity, nationality, functional background, educational background, work attitudes, work values, and work personality. Examples from the questionnaire included, among others, “How diverse do you perceive your work group to be with regard to age”, “How diverse do you perceive your work group to be with regard to gender”, “How diverse do you perceive your work group to be with regard to nationality”, “How diverse do you perceive your work group to be with regard to work attitudes”.

##### **Dependent Variables**

*Group outcomes:* In order to measure this construct effectively, it was necessary to include three categories: performance, satisfaction, and commitment.

*Group outcome 1: Performance:* I based my understanding of team performance on Horwitz & Horwitz (2007), who defined it as a “multi-dimensional construct” and therefore suggested that there are numerous ways to measure it. However, I also acknowledged the fact that a number of scholars applied continuance scales (e.g., Schippers et al, 2003; Ancona & Caldwell, 1992). Thus, to measure the *performance* variable, I utilised questions such as, among others, “[our team] ... deserves a positive evaluation” or “[our team] ... adhered to the budget set by

the Saudi healthcare” adopted and developed by Roe et al. (1995) and Ancona & Caldwell (1992) (see question 1.6 in Table 4.3).

*Group outcome 2: Satisfaction.* Question 1.7 sought to measure the participants’ degree of satisfaction through a seven-point Likert scale utilised previously by Van der Vegt & Emans (2000), Wageman et al. (2005), and Passos & Caetano (2005). Among the items were: “I am satisfied with my present colleagues” and “I am satisfied with working in this team.”

*Group outcome 3: Commitment.* As shown by question 1.1, the commitment category measures the extent of the respondents’ commitment towards the group. I achieved this by a seven-point Likert scale taken from a study conducted by Van der Vegt et al (2000). Due to the convoluted nature of measuring commitment, I used six items. Among these were: “I feel proud to belong to this team”, “I am glad to belong to this team and not another team”, “I feel very committed to this team”.

### **Moderators**

*Group Interdependence.* In order to measure such a specific category, I applied seven items that had previously been used by Van der Vegt et al. (2001), Pearce & Gregersen (1991), Kiggundu (1983), and Mohr (1971). Among the items were measures such as: “I have similar goals to other members of the group”, “I cannot achieve my work unless my colleagues also achieve theirs”, and “Group members are informed about the goals they should attain as a group”. Evidently, these variables are situated at the individual-level.

*Task Interdependence.* Similar to the above, six items were utilised from a previous study conducted by Van der Vegt & Janssen (2003), who adopted a high-low scale ranging from 1 (strongly disagree) to 7 (strongly agree). Examples from the questionnaire itself included, among others, “I have similar tasks to other members of the group”, “To finish my tasks, I require the knowledge and resources of other group members”, and “I am required to work together with my colleagues to complete specific tasks”. Additionally, there was also a negatively charged statement that was taken as a precaution and measure of whether the respondents were paying attention when completing the questionnaire. While it

would not conclusively highlight whether the respondents were paying attention, it was a measure that would require higher attention and less automated responses from respondents.

*Group Longevity.* Acknowledged as an important factor in the theoretical literature, this category was measured by question 3.5, with indicators adopted from a study conducted by Pelled et al. (1999). An example of a question is “the average length of time the members of a team had belonged to that team”.

### **Mediators**

*Communication:* A major component of any health related work group, this variable was measured by question 2.3 through the use of four items adopted from Lester et al. (2002). The scale I utilised, as in the case of Lester et al., focussed specifically on communication, and not on coordination, something that needs to be clearly stated and defined. Among the measurement items were, for instance, “Members are willing to share information with other team members about their work”, “When members talk to each other, there is a great deal of understanding”, and “Team members are comfortable talking to each other about what needs to be done”.

*Social Integration:* Corresponding to greater group performance and identified as a mediator in previous studies, this variable was measured by using nine items presented in the form of a seven-point Likert scale, all of which were adopted from Smith et al.’s previous study (1994). Examples of the items included are: “Most of the time we get on personally very well”, “The members of my group are quick to defend each other from criticism by outsiders”, and “Everyone’s input is incorporated into the most important decisions”.

### **Control Variables**

*Task Complexity.* As suggested in the literature (Jackson, 1992; Williams & O’Reilly, 1998; Jackson, Joshi & Erhardt, 2003), task complexity may have an effect on the outcome variables, thus I selected this variable as a control variable in the model to avoid the issue of creating a non-causal connection between perceived diversity and group outcomes. I utilised four items taken from Pelled et

al. (1999) to measure task complexity. These were laid out through a Likert scale and included statements such as, among others, “The task, required skills, and information needed by the team are constantly changing”, and “During a normal work week, exceptions frequently arise that require substantially different methods or procedures for the team”.

*Group Size.* This item was measured by utilising Mason’s (2006) item that questioned respondents about the size of their group, including themselves. This was then taken and the average group size was calculated. The purpose of this control variable was simple: to control the effect of group size on the group outcomes.

## **4.6 Questionnaire Design**

Acknowledging that the design of the questionnaire was the main contributory pillar to this research, I consulted a number of colleagues and survey design specialists regarding its content and length. Similar to other studies utilising questionnaires, I provided an introductory page outlining: a) the purpose of the study, b) information related to the rights of respondents, assurances of anonymity and confidentiality, and c) the length of time it would take to fill out the questionnaire. Taking the advice given by colleagues, I split the questionnaire in three distinct sections, all of which had their own introductions and signposted the content for respondents (See Appendix A). Section 1 was concerned with the respondents themselves and their teams (titled: *You and the team*) and included questions about what they felt about the group, how they perceived themselves in relation to the group, etc. The specific focus remained on their perceptions of group performance, satisfaction, and commitment (group outcome categories). Section 2 explored the respondents’ team characteristics (title: *Team Characteristics*) and focussed on their goal and task interdependence, social integration, and communication in the overall group setting. Last but not least, section 3 gathered demographic and descriptive respondent information and, more importantly, information regarding their groups, such as number of employees, group tenure, communication frequency, etc.

#### 4.6.1 Timeframe

As a number of questions were both time-specific and sensitive by nature, I ensured that I unambiguously stated the time frame I was seeking to explore in order to avoid confusing or misleading the respondents. Indeed, a number of scholars, including Van de Ven & Ferry (1980) suggested that it is important that the time frame be clearly highlighted. As such, in designing the questionnaire, I decided that the timeframe of interest would be the previous five months. The reason for this decision stems from the fact that 12 months is quite a long time and individuals may not remember that far back, especially with reference to mundane or everyday matters. Five months seemed a time frame short enough not to overly challenge the memory, but also long enough to gain insightful information on the habits and workings of the respondents within a group setting. These conclusions are not only my own; numerous studies have shown that group outcomes are mostly reliable and become available only after a certain amount of time has elapsed (see West & Anderson, 1996, who decided to utilise a six-month time frame). The time frame was thus highlighted above all questions that required a time-sensitive answer from respondents.

#### 4.6.2 Translation

While the original questionnaire was designed in English, it was necessary, for obvious reasons, to translate it into Arabic as well. I decided that experts should handle the translations in order to ensure that, between the English and Arabic versions, there would be no disparity or serious differences that could have caused any error or bias during the analytical phase (Law, 2004). To ensure clarity, this was completed in four steps as suggested by Brislin (1970). **Step 1**, the English language questionnaire was translated into Arabic by the researcher. **Step 2**, the questionnaire was translated from English to Arabic by a professional translator. **Step 3**, considering both translations, a few questions were modified, and finalised versions were produced. **Step 4**, as a final check, an additional professional translator was also employed in order to translate the questionnaire back from Arabic to English.

After completing the process of translating the questionnaire from English to Arabic, and before I commenced the pilot study, it was imperative that I circulate

the questionnaire among some Saudi academic colleagues, particularly those with expertise in questionnaire design, to have a look and provide any comments, suggestions, or criticism, which they did. I managed to obtain feedback from 13 of them. During the period in which the academics were filling out the questionnaire, I made sure to observe and take notes on their behaviours, which was quite helpful in understanding whether they were getting bored, took the questionnaire seriously, etc. Once they had completed the questionnaire, I made sure to discuss and probe for feedback regarding the questionnaire as a whole. Much of the discussion involved the layout, length, sequencing of questions, as well as phrasing questions appropriately from Arabic to English and vice-versa. Such pre-test helped in making the questionnaire better and more functional, which included some changes to the wording, particularly in the Arabic version.

Table 4.3 Measurement Scale

CONSTRUCTS:	Measurement Items	Scale	Sources
<p><b>(INDEPENDENT VARIABLES)</b></p> <ul style="list-style-type: none"> <li>▪ <i>Perceived Group Diversity</i> (Independent Variables)</li> </ul>	<p><b>1.2 How diverse do you perceive your group is with regard to:</b></p> <p><b>Six Demographic attributes:</b> Age, gender, Nationality, ethnicity, functional background, educational background.</p> <p><b>And other psychological dimensions such as:</b></p> <ol style="list-style-type: none"> <li>1. with respect to work attitudes</li> <li>2. with respect to work values</li> <li>3. with respect to work personality attributes</li> </ol>	<p>Seven-point Likert scale</p>	<p>Harrison et al. (2002); Liao et al. (2008); Van Dick et al. (2008); Shemla et al. (2014)</p>
DEPENDENT VARIABLES:	Measurement Items	Scale	Sources
<ul style="list-style-type: none"> <li>▪ <i>Performance</i></li> </ul>	<p><b>1.6 With regard to group performance, to what extend do you feel that your team ...</b></p> <ol style="list-style-type: none"> <li>1. ... meets the <i>standards of quality</i> expected by the Saudi healthcare</li> <li>2. ... meets the standards of quantity expected by the Saudi healthcare</li> <li>3. ... meets the deadlines expected by the Saudi healthcare</li> <li>4. ... adheres to the budget set by the Saudi healthcare</li> <li>5. ... deserves a positive evaluation</li> <li>6. ... warrants no or only a few complaints about the quality of work</li> </ol>	<p>Seven-point Likert scale</p>	<p>Roe et al. (1995) Ancon and Caldwell (1992)</p>
<ul style="list-style-type: none"> <li>▪ <i>Satisfaction</i></li> </ul>	<p><b>1.7 To what extent do you agree with the following statements about your satisfaction??</b></p> <ol style="list-style-type: none"> <li>1. I am satisfied with my present colleagues</li> <li>2. I am satisfied with working in this group</li> <li>3. I am able to take part in the planning of my own work</li> <li>4. I am able to apply my own ideas in work</li> </ol> <p><b>1.7 To what extent are you satisfied with...</b></p>	<p>Seven-point Likert scale</p>	<p>Van der Vegt (2000); Wageman et al. (2005); Schippers et al. (2003);</p>

CONSTRUCTS:	Measurement Items	Scale	Sources
	... group functioning, communication among group members, group leadership, relationship climate.	Seven-point Likert scale	Passos & Caetano (2005);
<ul style="list-style-type: none"> <li>▪ <b>Commitment</b></li> </ul>	<p><b>1.1 How Accurate do the statements resemble your personal feelings about other members in your group?</b></p> <ol style="list-style-type: none"> <li>1. I talk up this team to my friends as a great team to work in</li> <li>2. I feel a sense of ownership for this team rather than being just an employee</li> <li>3. I feel proud to belong to this team</li> <li>4. I am willing to exert extra effort for the success of this group</li> <li>5. I am glad to belong to this group and not another group</li> <li>6. I feel very committed to this group and its members</li> </ol>	Seven-point Likert scale	<p>Jehn at al. (1999); Wageman et al. (2005); Van der Vegt et al. (2000); Schippers et al. (2003);</p>
CONTROL VARIABLES:	Measurement Items	Scale	Sources
<ul style="list-style-type: none"> <li>▪ <b>Task Complexity</b></li> </ul>	<p><b>2.4 To what extent do the statements below reflect the nature of the tasks your group encounters</b></p> <ol style="list-style-type: none"> <li>1. The task is constantly changing</li> <li>2. The required skills needed by the group are constantly changing</li> <li>3. The information needed by the group is constantly changing</li> <li>4. During a normal working week, exceptions frequently arise that require substantially different methods or procedures for the group</li> </ol>	Seven-point Likert scale	Pelled et al. (1999)
<ul style="list-style-type: none"> <li>▪ <b>Frequency of contact</b></li> </ul>	<p><b>2.1 In the last five months, how often have you interacted on work related matters with your colleagues?</b></p>	Seven-point Likert scale	Van de Ven & Ferry (1980)
<ul style="list-style-type: none"> <li>▪ <b>Group size</b></li> </ul>	<p><b>3.1 How many individuals in total work in your team including yourself?</b></p> <p>A single item, and the average will be calculated to obtain a measure of the size of the group.</p>	Nominal	Mason. 2006



CONSTRUCTS:	Measurement Items	Scale	Sources
<b>MEDIATION VARIABLES:</b> ▪ <i>Social Integration</i>	<b>1.3 To what extent do the below statements reflect your everyday interaction with the members of your group?</b>  1. Most of the time, we get on personally very well 2. The members of my group are quick to defend each other from criticism by outsiders 3. Everyone's input is incorporated into the most important decisions 4. Relationships between members of the group are best described as "win-lose"; if he/she wins, I lose (reverse-coded) 5. The members of the group are always ready to cooperate and help each other 6. The members of the group get along together very well	Seven-point Likert scale	Smith et al. (1994) Janssen et al. (1999) Carles and De Paola (2000)
▪ <i>Communication</i>	<b>2.3 In your opinion, how accurate are the statements below regarding the communication between the members of your group?</b>  1. You are willing to share information with other group members about their work 2. You enjoy talking to each member in the group 3. When you talk to each other in the group, there is a great deal of understanding 4. You are comfortable talking to each other about what needs to be done	Seven-point Likert scale	Lester et al. (2002); Barrick, Bradley, (2007); Smith et al. (1994)
CONSTRUCTS:	Measurement Items	Scale	Sources
<b>MODERATION VARIABLES:</b> ▪ <i>Task Interdependence</i>	<b>2.2 Please circle to what extent you agree or disagree with the following statements:</b>  1. I have similar tasks to other members of the group 2. To finish my tasks, I require the knowledge and resources of other group members 3. I am required to work together with my colleagues to complete specific tasks 4. My job requires me to coordinate my actions with those of my colleagues 5. I am unable to perform my job effectively if certain colleagues are unavailable 6. I have a one-person job, I rarely have to check or work with others (reverse-coded)	Seven-point Likert scale	Rossi (2008) Van Der Vegt et al. (2001) Schippers et al. (2003)

CONSTRUCTS:	Measurement Items	Scale	Sources
<ul style="list-style-type: none"> <li>▪ <b>Goal Interdependence</b></li> </ul>	<ol style="list-style-type: none"> <li>1. I have similar goals to other members of the group</li> <li>2. I cannot achieve my work goals unless my colleagues also achieve theirs</li> <li>3. Group members are informed about the goals they should attain as a group</li> <li>4. Group members receive feedback on the basis of their collective performance</li> <li>5. My colleagues and I are all working toward a common and shared goal</li> <li>6. I am often encouraged to aim for personal goals at work</li> </ol>	Seven-point Likert scale	
<ul style="list-style-type: none"> <li>▪ <b>Group Longevity</b></li> </ul>	<p>3.5 How long have you worked with this team?</p> <p>This is a single item to measure the average length of time the members of a team had belonged to that team. A team with a higher average has a longer history of working together.</p>	Nominal	Smith et al. (1994); Pelled et al. (1999)

## 4.7 Fieldwork: Pilot Study, access strategy, and response rate

**Pilot study:** Once the questionnaire design had been finalised, I conducted a pilot study to assess the functionality and efficiency of the items. This was done in conditions similar to those of the actual study. CEOs in the three pre-selected regions were approached and asked whether they would be willing to cooperate in identifying potential pilot study groups, to which they happily agreed. I conducted the pilot study before the main field surveying had begun; it was essentially a means of testing the ground and the potential the questionnaire had to provide me with the data I was seeking (Bryman, 2012; Bhattacharjee, 2012). Such a step is essential to endow the questionnaire with some degree of validity and prevent any mistakes from happening in the main study (Bryman & Bell, 2003).

Through the cooperation afforded by the CEOs, I managed to pilot the questionnaire and gather information from 67 respondents representing nine work groups. The accumulated data was coded and analysed using the SPSS package. I assessed the internal consistency of the scale using Cronbach's alpha. Judging from the results obtained, there was high reliability across most items, with only a few having very low reliability (e.g., Question 1.2—four items—from the *Social Integration* category). Accordingly, I made sure to omit these items in the final version of the questionnaire. Indeed, by doing so, Cronbach's alpha increased from 0.544 to 0.658. As shown below in Table 4.4, the rest of the variables varied within an acceptable range from 0.658 to 0.896.

Table 4.4 Cronbach's alpha of the pilot study

Scales in the study	N	N of items	Cronbach's Alpha	N of items omitted	Cronbach's Alpha
Commitment	67	6	0.846	None	0.846
Social Integration	67	11	0.544	4	0.658
Perceived diversity	67	6	0.763	None	0.763
Group performance	67	7	0.896	None	0.896
Group satisfaction	67	8	0.884	None	0.884
Group interdependence	67	13	0.706	None	0.706
Communication	67	4	0.779	None	0.779
Task complexity	67	4	0.666	None	0.666

**Access strategy:** To gain access to the PHCs, I directly contacted the regional high authorities in the three pre-selected regions—namely, Riyadh, Jeddah, and Al-Madinah. This was done through colleagues, courier letters with information about my study and the benefits to be had, and face-to-face meetings. After several days of email and telephone correspondence, I went to Saudi Arabia to meet them in person. This way, I succeeded in gaining their trust and cooperation and was able to identify the organisations and/or institutions that were relevant for my research. The process, of course, also included the ethical approval gained from the Regional Research Ethical Committees (RRECs). Additionally, through the contacts made in the regional high authorities, I liaised with key stakeholders in the Saudi healthcare system in the pre-selected regions, who helped me to identify the *principal groups* I was searching for—namely, diverse working groups.

**Response rate:** A total of 56 groups, totalling 677 workers, were invited to participate in the research. Teams sizes ranged from four to 22 employees (mean = 13.1,  $SD = 4.4$ , median = 11.5). The overall return sample for surveys was  $N = 591$  (87%), with the return rate at the team level ranging from 25% to 100% (mean = 85%,  $SD = 19$ , median = 90%). In order to ensure that the sample was valid and that the “principal groups” identified were representative of the sample as a whole—specifically those that had agreed to partake in the study—a further criterion was used. Only once two-thirds of a given team had responded (i.e., 66% of a team) was the criterion satisfied and the team not omitted (Schippers et al., 2003). Forty-seven of the 56 teams (84%) met this criterion, with an employee-level return sample in these teams of 561 (out of 616 group members; 91%). The mean size of the teams meeting the inclusion criterion was larger (from six to 22 employees, mean = 13.1,  $SD = 4.0$ , median = 13) than that of the excluded ones (four to ten employees, mean = 6.8,  $SD = 1.9$ , median = 7),  $t(55) = 4.59$ ,  $p < 0.001$ .

## 4.8 Data Analysis Methods

Structural Equation Modelling (SEM) was selected over other forms of data analysis such as ANOVA and regression. This was because SEM is capable of

“simultaneously examining a series of interrelated dependence relationships among measured variables” with more precision and validity than any other form of data analysis, particularly when considering the complexity of testing moderators and mediators as proposed in this study (Hair et al., 2005:70).

As such, the rest of this chapter is dedicated to discussing the advantages and disadvantages of utilising SEM, especially its two-step modelling approach that employs a series of measurement models by using Confirmatory Factor Analysis (CFA) (i.e., in order to establish scale reliability and validity), and structural model using goodness-of-fit indices (i.e., to evaluate how well the specified model accounted for the data). Beyond this, it also discusses the mediation and moderation methods used for this research within the context of SEM. Lastly, and in correspondence with Hair et al.’s (2005) suggestion, the analytical procedure follows a six-step stage that coalesces the theoretical literature with each step taken through SEM.

#### **4.8.1 Structural Equation Modelling**

According to Hair et al. (2005:70), SEM is a "multivariate technique combining aspects of factor analysis and multiple regression which enables the researcher to simultaneously examine a series of interrelated dependence relationships among measured variables and latent constructs as well as between several latent constructs". SEM was selected due to its unique features. First, it allows multiple independent variables and dependent variables—either discrete or continuous—to be critically explored and analysed (Tabachnick & Fidell, 2001).

What is more, unlike other statistical methods, SEM makes it possible to explore multiple relationships in which a dependant variable in one equation becomes an independent one in another, all of which is happening in the same analytical framework and procedure. Indeed, such capacity can highlight the variance in the model that has been specified, an aspect that is limited with other analytical techniques (MacCallum & Austin, 2000; Tabachnick & Fidell, 2001; Kline, 2005; Hair et al., 2010). This is highly appropriate when considering the current model proposed in this research; one in which group diversity affects group process variables (communication and social integration), which then affect multiple team outcomes. In this case, group processes are both independent and dependent

constructs. As such, the hypotheses generated by this study are examined and tested by using SEM as a tool.

Moreover, SEM also improves the reliability and validity of the results due to the fact that it is able to take measurement errors into consideration for each variable (Tabachnick & Fidell, 2001). By contrast, other traditional analysis methods merely provide straightforward significance tests in order to determine the relationship between variables, group differences, and the amount of variance explained (Hair et al., 2010), while assuming that measurements occur without any errors (Kline, 1998). Hence, SEM was essentially performed utilising a two-step approach including measurement modelling and structural modelling.

#### **4.8.2 Two-Step Structural Equation Modelling**

A two-stage SEM was conducted to analyse the data collected in this research. SEM commonly takes either a one- or two-stage approach (Anderson & Gerbing, 1988). A one-stage approach involves performing the measurement and structural model estimation analyses simultaneously, whereas a two-stage approach conceptually distinguishes and analyses separately the measurement and structural models. Anderson & Gerbing (1988) consistently stressed that it is not meaningful to examine specified theory (e.g., the structural model) if the measurement models do not hold. Put differently, if a latent variable is not being measured by its indicators/items, then modification in the specified theory is the next step necessary before the structural relationships are tested. Subsequently, the current study firstly addressed the measurement model, and then evaluated the structural model. Figure 4.2 displays the requirements and activities in each step.

##### ***4.8.2.1 The measurement model***

The measurement model identified the relationships between observed (the indicators) and unobserved variables (the latent variables) using Confirmatory Factor Analysis (CFA). In the measurement model, the latent variables were specified and operationalised through a range of observed indicators. The latent variables that were precisely defined were assessed by measuring the extent to which the indicators interrelated. If the indicators assessed were weakly related,

then this was a signpost of their poor definition of latent variables, which may have led to a model misspecification in the hypothesised relationships (Khine, 2013). Therefore, in order to appraise the results of the measurement model, this study conducted several different tests: reliability internal consistency, goodness of fit (GOF) indices, and construct validity (also called convergent validity and discriminant validity) (Hair et al., 2006).

### ***Reliability and Validity***

Following Kline (1998) and Haire et al. (2010), two components of current research validity were evaluated. Firstly, content validity (also referred to as theoretical validity) was assessed by using a wide-range of appropriate academic resources and literature, ratings by 'expert judges', and feedback during the questionnaire design as part of the pre-test and pilot study phases to qualitatively assess the correspondence between each item and its concept (Hair et al., 2010). (For more details, see sections 4.6.2 and 4.7)

Secondly, quantitative measurement validity, unlike content validity, was evaluated to reassess the quality of elements in a specific manner outlined by the theory of construct (Bhattacharjee, 2012). This research conducted measurement validity through CFA/SEM in order to evaluate the a) convergent validity, b) construct validity, and c) discriminate validity (i.e., empirical validity). The former is achieved when a set of items are assumed to measure the same construct (Kline, 1998). As illustrated in Figure 4.2, the current study is based on previously established cut value of average variance extracted (AVE) (Haire et al., 2010), where a value of 0.5 or higher indicates sufficient convergence. On the other hand, discriminate validity (i.e., that which refers to the distinctiveness of different constructs), is achieved if the correlations between latent constructs is below 0.85 (Campbell & Fisk, 1959) (see the results in section 5.3.2).

Scale reliability was also taken into consideration along with already established theoretical validity. Bhattacharjee (2012:56) defined reliability as "the degree to which the measure of a construct is consistent or dependable". In the current study, reliability was evaluated through diagnostic measures of internal consistency. 'Cronbach's omega' was used to assess the individual items of the scale (McDonald, 1978) and present both the original and revised scales (see

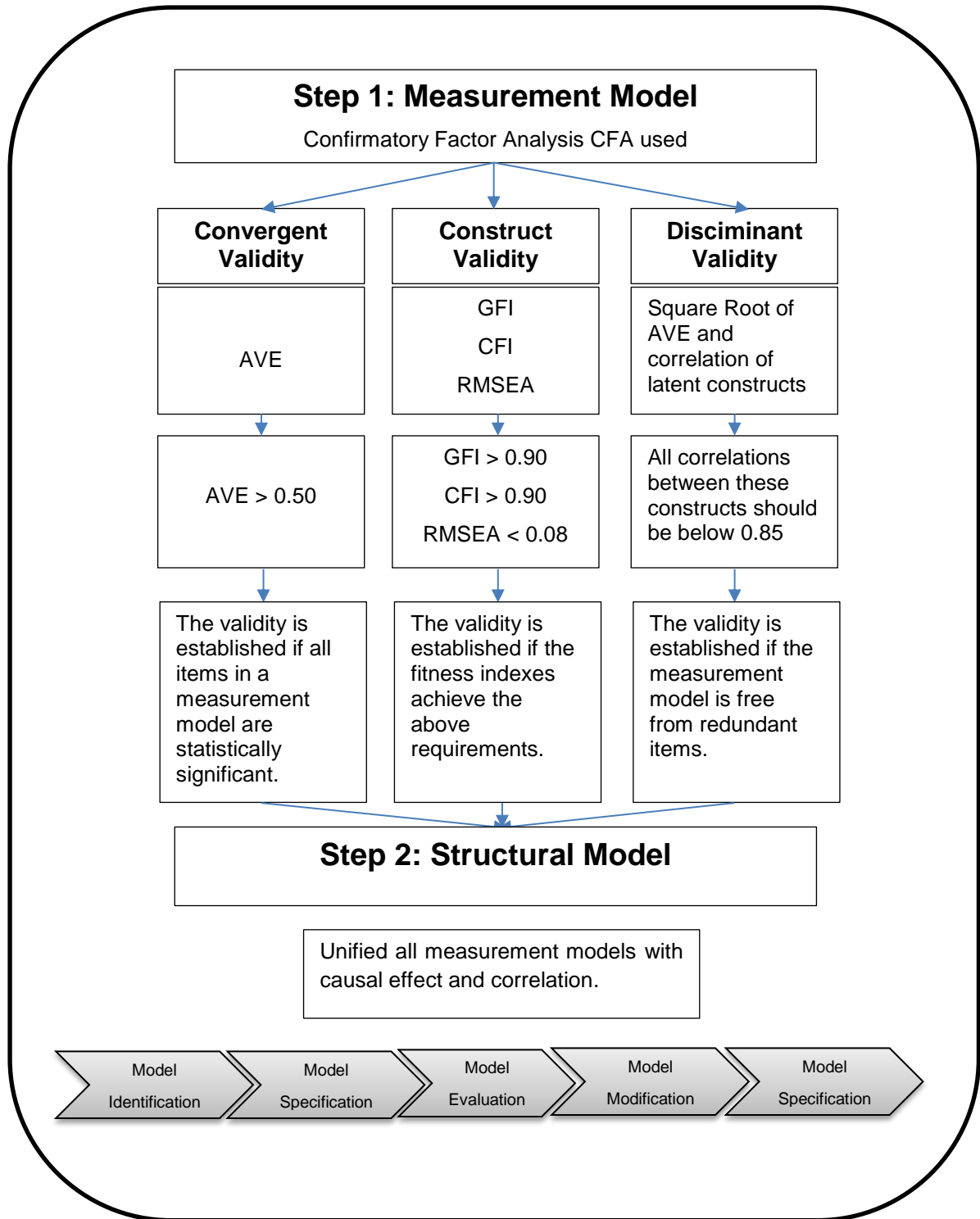
section 5.3.2.2 for omega results). Alpha reliability was not used to avoid the likely violation of tau-equivalence assumption. That is, individual items loading equally into their respective constructs.

#### **4.8.2.2 The structural model**

The second step in the SEM process is the structural model; this is part of the model identification process aimed at testing the direct and indirect relationships among the latent variables. It is distinct from the measurement model because it places more emphasis on the magnitude of the relationships between latent variables, rather than between latent variables and their indicators, and, as such, describes the extent of the explained and unexplained variance in the model (Hair et al., 2010). Congruently, the hypothesis generated by this research is that Group Outcomes (GO) are a function of *Group Mechanisms* (GM) and *Perceived Group Diversity* (PGD). Thus, GO are affected by PGD. Put differently, GM mediate the effects of PGD on GO. What's more, this research assumes that the mediating effect is moderated by other latent variables (e.g., group task interdependence and longevity).



Figure 4.2 Two-Step SEM

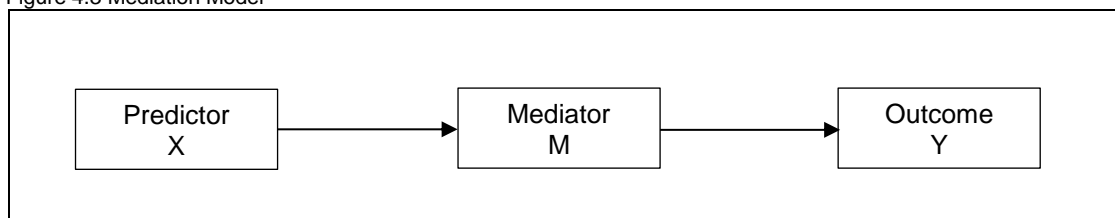


## 4.8.3 Mediation and Moderation analyses

### 4.8.3.1 Mediation analysis

Mediation analysis is extensively employed in social psychology and management research (Baron & Kenny, 1986; Mackinnon, 2008). A mediation model is used in an attempt to answer the question of “How” a relationship exists between variables, as it explains the process and/or emergent state (e.g., communication and social integration in the current study) through which the predictor variable exercises its influence on the outcome one. Through such a model, one can hypothesise that the effects of predictor variables on an outcome operate, either fully or in part, through intervening or mediator variables (see figure 4.3).

Figure 4.3 Mediation Model



From the mid-1980s until very recently, organisational behaviour researches testing for mediation were typically performed using the four-step method (also called the causal steps approach) suggested by Baron & Kenny (1986). They proposed that, to show mediation, one has to complete the following four steps. First, ignoring M, the predictor X needs to have a statistically significant non-zero effect on the outcome Y. This is known as the **total effect** of X on Y, denoted as the **c** path. Second, to show mediation, the predictor X needs to have a statistically significant non-zero effect on the mediator M. This effect is denoted as the **a** path. Third, that the mediator M needs to have a statistically significant non-zero effect on the outcome Y, denoted as the **b** path. Fourth, that, to show complete mediation, the unique effect of predictor X on the outcome Y, when controlling for mediator M, (denoted as the direct effect or c' path) needs to not be statistically significant. According to Hayes et al. (2011: 44):

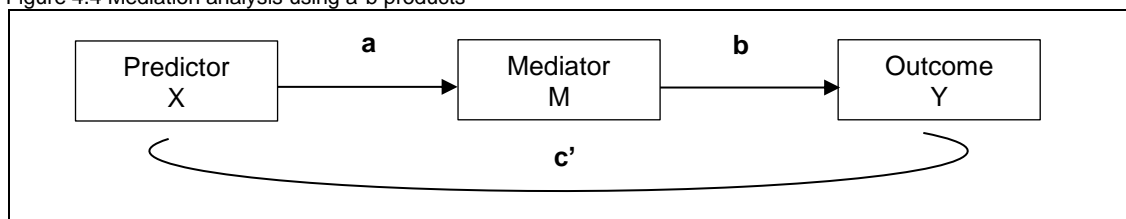
*“...the causal steps approach first asks whether there is evidence of an effect to be mediated. That is, is the total effect of X on Y (i.e., path c) statistically significant? If not, the investigator cannot claim mediation, as an effect that does not exist cannot be mediated, and further testing stops.*”

This method, however, has received several criticisms due to improved software that makes better alternative methods easier to implement. For example, Baron & Kenny’s method does not offer a single test for the effect of interest (Preacher & Hayes, 2008; Mackinnon, 2008)—i.e., the path from X to Y via M: the indirect effect. Rather, using multiple hypothesis tests for a single hypothesis may increase the probability of an incorrect decision. Furthermore, the first step in Baron & Kenny’s method is not necessary to establish a mediation effect, as this can logically exist even if **a** or **b** is not statistically significant, and even if the **total effect, c**, is not statistically significant (Preacher & Hayes, 2008; Edwards & Lambert, 2007).

Accordingly, an alternative method to test mediation adopted in this study is the single test for indirect effect (Mackinnon, 2008) called the Sobel test (see figure 4.4). This tests whether the indirect effect of the **a** and **b** paths—i.e. **a\*b**—is significantly different from zero. Such method predates the four-step method although the latter is easier to perform. Besides providing a single test for mediation, the indirect effect has some very useful properties. It forms part of the decomposition of the total effect into its direct and indirect parts. The simplified equation is as follows:

*The total effect **c** = indirect effect **a\*b** + direct effect **c'**.*

Figure 4.4 Mediation analysis using a\*b products



Arguably, if the **a\*b** data are not normally distributed, the Sobel approach is unreliable and hence is not optimal. To avoid such distributional assumptions, researchers have recommended that one instead compute a bootstrapped estimate of the confidence interval (CI) for the indirect **a\*b** effect. However, it is preferable for the current study to use the Sobel method (in some settings, referred to as testing the product of coefficients using a delta-method standard error). This is because the bootstrap is not straightforward in clustered data

(individual respondents within groups) and is not practical with such a computationally intensive model as the one proposed by this study.

#### 4.8.3.2 Moderation analysis

According to Preacher & Hayes (2008) and Mackinnon (2008), moderation covers the condition (i.e., team interdependence and team longevity in the current study) or, as in other instances, the level of differences (e.g., cultural values and individual personality) that may affect the strengths and/or signs of the relationships between predictor and outcome variables. While testing for mediation helps us explain “how” effects between variables exist, testing for moderation help us identify and explain “when” or for “whom” they exist.

The moderation models in this study are tested by using both the interaction terms  $X*W$  in addition to the main effect of  $X$  and  $W$ . Therefore, the path diagram is equivalent to the statistical model diagram, as illustrated by figures 4.5. and 4.6 respectively.

Figure 4.5 Moderation Model – Bath Diagram

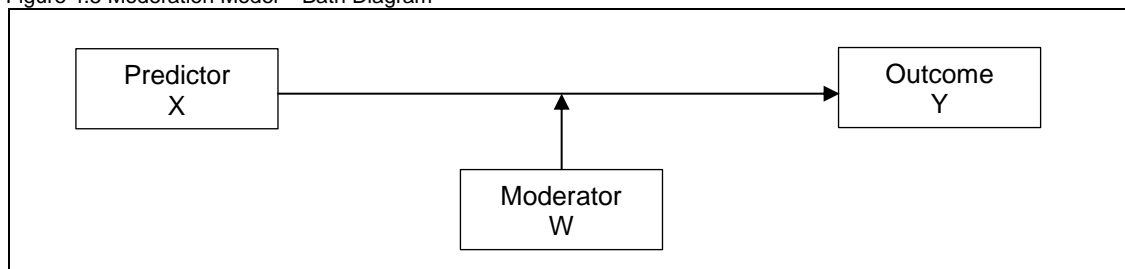
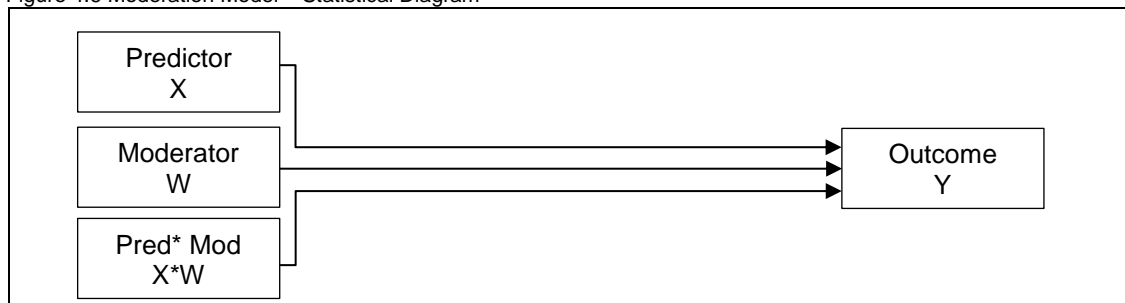


Figure 4.6 Moderation Model – Statistical Diagram



While ANOVA is the traditional approach used to test moderation, it is not applicable under such complex models. Instead, Mplus (Muthén & Muthén, 1998-2015) has the capacity to test any combination of categorical or continuous

predictors and/or moderators and simultaneously incorporate latent variables via the “XWITH” keyword. This evidently makes it less complex to link moderation and mediation, something that this research requires (Muller et al., 2005; Preacher & Hayes, 2007).

#### **4.8.4 Analytical Procedure in SEM**

In accordance with Hair et al.’s (2010) suggestions, a six-step decision process was implemented in order to satisfy and maintain a reliable and valid measurement model and to accurately specify the structural relationships among the selected variables. The process involves the following steps: 1) define the individual constructs, 2) develop and specify the measurement, 3) design a study to produce empirical results, 4) assess the measurement model validity, 5) assess the structural model validity, and 6) specify the structural model. Indeed, such procedures demonstrate the significant role played by the theory through which structural equation modelling analyses can be tested. Put differently, by adopting the *six-stages* outlined above, one can evaluate, through the use of SEM, the extent to which the studied theory fits reality, as presented by the data gathered. It should be noted that steps 1, 2, and 3 had already been implemented before collecting the data. The remaining three steps (i.e., 4, 5, and 6) represent the analytical procedure through which the dataset of this research was analysed as shown below.

##### **Step One: Assessment of Multivariate Assumptions**

The first step of the data analysis involved a close examination of the data in order to assess the assumptions underlying multivariate analysis, in accordance with Tabachnick & Fidell (2007) and Hair et al. (2010). It included checking for out-of-range values, non-normality, and outliers. Skewness, kurtosis, and the presence of ceiling or floor effects were used to assess non-normality, and box-plots for outliers (see section 5.3.1 for outcomes).

##### **Step Two: Measurement Modelling**

**Confirmatory factor analysis:** i.e., the measurement modelling (Tabachnick & Fidell, 2007). A simple-structure confirmatory factor analysis (CFA) was applied

to the original scales. Within the CFA framework, validity and reliability of the original scales were tested using various measures (see details in section 4.8.2.1). In addition, goodness of fit (GOF) measures, as presented in Table 4.5, were assessed based on the most common fit indices in CFA studies (Prudon, 2015). As the study proceeded, factor loading for each construct was also performed (see the results in section 5.3.2.1)

Table 4.5 GOF indices used in the study

fit indices	Recommended level
Chi-square ( $\chi^2$ )	Non-significant, OR
Relative $\chi^2 = (\chi^2) / (df)$	< 5
SRMR	< 0.08
RMSEA	< 0.08
CFI	>0.90 OR 0.95
TLI	>0.90 OR 0.95

**Internal consistency:** To evaluate internal consistency, I used coefficient omega rather than the more common alpha (McDonald, 1978). Coefficient alpha has a number of drawbacks, including assumptions of unidimensionality and tau-equivalence (identical loadings and residual variances) and sensitivity to the number of items in a scale (Green et al., 1977). Coefficient omega is based directly on CFA results and does not have these drawbacks. A further advantage of coefficient omega is that bootstrapped confidence intervals can be generated. Coefficient omega is interpretable on the same metric as alpha.

### Step Three: Structural Modelling

Finally, to test the hypotheses, a single structural equation model was estimated in Mplus v7.4. It incorporated the hypothesized relations in the structural model, including the mediating, moderating, and moderated mediation relations. The moderation of the effects of the latent task interdependence and group longevity by perceived group diversity were calculated using Mplus's XWITH feature, which uses a random-effects model to implement the latent moderated structural equations method (LMS) for evaluating interactions that include latent factors (Klein & Moosbrugger, 2000). The more detailed hypotheses were tested by

calculating combinations of the parameter estimates from the primary model, for which *Mplus* computes delta-method standard errors.

## **Mplus**

All analyses beyond simple descriptive statistics, were conducted in the structural equation modelling (SEM) software *Mplus* v.7.4 (Muthén & Muthén, 1998-2015). It was done by using the software's facility for accommodating complex samples (individuals within groups) and missing data with a robust full-information maximum likelihood estimator (MLR), which utilized the Satorra-Bentler scaled chi-squared statistic and sandwich estimators for standard errors (Satorra & Bentler, 1994). The *Mplus* statistical software offers several advantages. For instance, testing a theoretical framework (as proposed in this research) with multiple paths/outcomes simultaneously, calculating indirect paths, such as moderated ones, including latent variables by using its special functions. However, poor plotting facilities and poor data management should be acknowledged in the *Mplus* software. The next chapter outlines the findings of the study.

## **4.9 Research ethics**

Research ethics play a significant part both in negotiating access to an organisation and its employees, and in data collection (Bryman & Bell, 2003). Accordingly, the researcher considered ethical issues throughout the period of research. This study involves studying employees in hospitals by means of questionnaires. Ethical concerns were addressed in three ways. First, the overall data collection methods and the research instruments were approved by RH University's research ethics committee. Second, the researcher followed the policy and procedures required by Saudi healthcare; thus, ethical approvals were also gained from the three Regional Research Ethical Committees (RRECs). Third, all respondents were made aware of the purely academic purpose of the research, and anonymity and confidentiality were emphasised on a number of occasions in order to achieve optimal participation. Also, all participants were made aware of the voluntary nature of their participation and of their rights prior to the data collection process. No personal information was collected and all

appointments were obtained in advance if required. In this study, ethical standards were maintained by respondent compliance, freedom to participate, and voluntary access. Following such a protocol ensured high levels of ethical compliance for this study.

#### **4.10 Chapter Summary**

This chapter has presented the methodological approach employed in this research. It began by discussing the reasons for choosing a positivist quantitative approach as the philosophical foundation of the study. Regarding research methods, the study employed a field survey using the quantitative method. This was done based on the fact that the study of the factors affecting team outcomes in a diversified group is a well-developed area of research; as such, a firmly built knowledge and a multiplicity of theories are available to the researcher. The major source of data collection was a self-administered questionnaire that was distributed to a number of 56 healthcare teams selected randomly from three geographical areas in Saudi Arabia (i.e., Jeddah, Riyadh and Al-Madinah). The fieldwork outcome was also presented. The last part of the chapter explained that a structural equation model (SEM), as an appropriate statistical method, was applied to this study by means of a statistical software called Mplus. This includes *the "measurement model"* and the issues pertaining to reliability and validity measures within it (Kline, 2005). Finally, the chapter discussed mediation and moderation analyses within *"the structural model"*. That is, the use of the Sobel test in preference to Baron & Kenny's four steps. The next chapter will provide further details regarding the results of the descriptive and SEM analyses.



## **Chapter 5 Findings**

### **5.1 Introduction**

In chapter 4, I presented the methodology used in the current study, including the SEM analysis technique. This chapter is organised in two parts: descriptive analysis (part I) and SEM analysis (Part II). Both parts present several results generated by means of different types of analysis software. For example, the descriptive statistics were conducted using SPSS and SAS, whereas Mplus v.7.3, as a structural equation modelling software, was also used to accommodate complex samples (individuals within groups).

Part I of this chapter presents descriptive results and examines whether the selected sample groups met the criteria suggested by Hackman (1987). This includes, for example, examining the “between-group” vs. “within-group” level of interdependence, and hence describing the variation among groups either as ‘real teams’ or as mere ‘working groups’. The second part covers the results of the three steps of the SEM analysis: 1) data preparation and treatment in order to examine several key assumptions in SEM; 2) measurement model (i.e., the results obtained by conducting CFA and several reliability and validity tests); and 3) structural model (i.e., the results obtained by testing the hypotheses, including the mediation and moderation models). The last two steps represent the vital part of the results.

### **5.2 Data Analysis Part I – Descriptive Analysis**

#### **5.2.1 Group-level Descriptives**

Table 5.1 shows team-specific demographic information. With regard to the size of the sample teams, considerable variation can be observed, as the teams had an average size of approximately 13 members, but ranged between 6 and 22. As suggested by Hackman (2002), group size is strongly correlated with group outcomes. Thus, I used group size as a control variable for the statistical analysis in the current study. Another inspection shows that aggregate team level member age averaged 36 (s.d. = 3.3), but there was substantial variability within the teams: individual team member age ranged between 23 and 58, with an average of 36 (s.d. = 8.31). The average team member tenure was of 3.92 years (s.d. =

0.97). The figures relative to team member meeting frequency indicate that team members met at least once a week. On the whole, the figures show that the participating teams' characteristics met the predetermined team selection criteria of having been in existence for more than five months, working interdependently, and having three or more members.

Table 5.1 Team-level Demographics (n = 47)

<b>Team Demographics</b>	<b>N</b>	<b>Range</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Team longevity</b>	47	3.50	0.17	3.67	1.47	1.10
<b>Team size</b>	47	16	6	22	13.01	4.00
<b>Averaged age</b>	47	14.15	26.40	40.55	35.99	3.33
<b>Frequency of contact</b>	47	2.33	4.44	6.78	5.88	0.54
<b>Team interdependence</b>	47	2.85	3.17	6.01	5.08	0.86

### 5.2.2 High team Interdependence vs. Low team Interdependence

Additional analysis revealed a reasonable “between-team interdependence” variation, with a mean of 5.08 (s.d. = 0.86), and values ranging from 3.17 to 6.01. This was also shown by conducting Intraclass Correlation (ICC). The result of ICC for the task interdependence factor was 0.833, meaning that 83% of the observed variance in the factor was attributable to group, and 17% to individual within group. This reflects a higher and reasonable between-group variability relative to within-group variability, and indicates that some groups show high levels of interdependence, and others low ones. Theoretically, those groups characterised by low levels of interdependence are often referred to as “working groups”, whereas those with high ones are more often labelled as “real teams” (Katzenbach & Smith, 1993; Hackman, 2002; Barrick & Bradley, 2007). Ultimately, the selection of the sample teams carried out satisfied the criteria used in this study in terms of various levels of task interdependence among groups, which appears to be suited to this research in order to test the moderating effects.

### 5.2.3 Sample-level Descriptives

As indicated in Table 4.2, page 110, the survey was carried out on 561 employees from three regions, and provided the final data for the current study. The average percentage of women in a team was 67.02%. Table 5.2 further indicates that the largest group of participants by educational qualifications was made up of university graduates, with an overall percentage of 41.4%. Other participants had high school (0.2%), advanced (4.8%), and college diplomas (24.6%); postgraduate participants made up the second largest group (163 employees) with an overall percentage of 29.1%. The figures related to job titles showed different backgrounds spread throughout the sample.

All in all, the sample used for the current study can be characterised as being highly diverse with regard to nominal variables (i.e., gender, age, educational and job backgrounds, team tenures, and team sizes) across the three regions. Hence, this might facilitate the generalization of the research results.

Table 5.2 Participants Demographics (N = 561)

Demographic Variables	Category	Frequency	Percent
<b>Gender</b>	Female	376	67.0
	Male	185	32.1
<b>Educational level</b>	high school	1	0.2
	advance diploma	27	4.8
	College	138	24.6
	Bachelor	232	41.4
	Postgraduate	163	29.1
<b>Job title</b>	Admin	70	12.5
	Practice Nurse	187	33.3
	District Nurse	94	16.8
	Receptionist	19	3.4
	General Doctor	78	13.9
	Social Worker	32	5.7
	Practice Manager	25	4.5
	Midwife	48	8.6
	Pharmacist	4	0.7
	Community Psychiatric Nurse	4	0.7
<b>Group tenure</b>	2 years or more	144	25.67
	Between 1 and 2 years	150	26.74
	Less than 1 year	136	24.24
	Less than 6 months	131	23.35

## **5.3 Data Analysis Part II – Structural Equation Modelling**

As proposed by the analytical procedures (see section 4-8-4, page 133), this section presents the findings of the three fundamental steps in structural equation modelling analysis. First, the data treatment is discussed in order to evaluate key assumptions in SEM—i.e., missing data, outliers, and normality. This is followed by the results of the measurement and structural models respectively.

### **5.3.1 Stage One: Data Preparation**

To start with, the data matrix (entered in SPSS) was tested for any coding errors. At this stage, the original questionnaires were revised to correct any errors found (Baumgartner & Homburg, 1996). Before model estimation and testing, the next step was to understand the characteristics of the data by evaluating several assumptions; this is an important early step in almost every multivariate analysis. As presented in Chapter 4, using SAS (PROC UNIVARIATE) and Mplus, the row data were checked against three main issues: missing data, outliers, and normality (Tabachnick & Fidell, 2007; Hair et al., 2010). Skewness, kurtosis, and the presence of ceiling or floor effects were verified to assess non-normality and box-plots for outliers.

An inspection of the results (i.e., a Moment Descriptive Statistic), presented in Table 5.3, suggests that there were almost no missing data. The only quantitative variables with any missing data at all were FREQCONT (one case) and AGE (nine cases). Secondly, in general, both skewness and kurtosis were interpreted to verify whether they were statistically different from zero and fell within the -1 to 1 range (Preacher & Hayes, 2008). The results presented in Table 5.3 show that none of the items went far beyond that. The MLR estimator (i.e. maximum likelihood parameter estimates with standard errors) accommodates a degree of non-normality of variables.

Table 5.3 Univariate Higher – order Moment Descriptive Statistics

Construct/Items	N	Skew	kurtosis	Mean	S.D
<b>Commitment</b>					
I talk up this team to my friends as a great team to work in	561	-0.325	-1.144	4.378	1.883
I feel a sense of ownership for this team, rather than being just an employee	561	-0.203	-1.152	4.364	1.794
I feel proud to belong to this team	561	-0.364	-1.129	4.610	1.755
I am willing to exert extra effort for the success of this group	561	-0.180	-1.168	4.465	1.697
I am glad to belong to this group and not another group	561	-0.440	-0.913	4.749	1.688
I feel very committed to this group and its members	561	-0.119	-1.176	4.225	1.721
<b>Perceived Group Diversity</b>					
How diverse do you perceive your work group in terms of Age?	561	-0.966	0.896	5.485	1.255
How diverse do you perceive your work group in terms of Gender?	561	-0.553	-0.454	4.774	1.484
How diverse do you perceive your work group in terms of Ethnicity?	561	-0.264	-0.725	4.709	1.266
How diverse do you perceive your work group in terms of Nationality?	561	-0.713	0.236	4.970	1.147
How diverse do you perceive your work group in terms of Functional Background?	561	-0.068	-0.006	5.091	0.977
How diverse do you perceive your work group in terms of Educational Background?	561	-0.554	-0.185	5.075	1.308
<b>Perceived Group Diversity/ Deep</b>					
How diverse do you perceive your work group with respect to Work attitudes?	561	0.482	-0.739	2.970	1.471
How diverse do you perceive your work group with respect to Work values?	561	0.230	-1.132	3.221	1.549
How diverse do you perceive your work group with respect to Work personality attributes?	561	-0.751	-0.337	4.668	1.517
<b>Social Integration</b>					
Most of the time we get on personally very well	561	-0.285	-1.214	4.673	1.652
The members of my group are quick to defend each other from criticism by outsiders	561	-0.225	-1.213	4.716	1.620
Everyone's input is incorporated into the most important decisions	561	-0.342	-1.297	4.600	1.829
Relationships between members of the group are best described as "win-lose"; if he/she wins, I lose	561	0.373	-1.356	3.434	1.953
The members of the group are always ready to cooperate and help each other	561	-0.338	-1.352	4.880	1.790
The members of the group get along together very well	561	-0.207	-1.143	4.717	1.644
<b>Group Performance</b>					
...meets the standards of quality expected by the Saudi healthcare	561	-0.508	-0.943	4.859	1.660
...meets the standards of quantity expected by the Saudi healthcare	561	-0.414	-1.247	4.770	1.844
...meets the deadlines expected by the Saudi healthcare	561	-0.728	-0.201	5.262	1.421
...adheres to the budget set by the Saudi healthcare	561	-0.533	-0.831	4.758	1.503
...deserves a positive evaluation	561	-0.537	-1.000	4.934	1.793
...warrants no or only a few complaints about the quality of work	561	-0.377	-0.888	4.658	1.565
<b>Group Satisfaction</b>					
I am satisfied with my present colleagues	561	-0.586	-0.716	5.114	1.530
I am satisfied with working in this group	561	-0.310	-1.229	4.807	1.697
I am able to take part in the planning of my own work	561	-0.400	-0.982	4.586	1.629
I am able to apply my own ideas in work	561	-0.581	-0.547	4.950	1.489
I am satisfied with the group functioning	561	-0.501	-0.500	4.913	1.438
I am satisfied with communication among group members	561	-0.257	-0.875	4.706	1.440
I am satisfied with group leadership	561	-0.691	-0.482	4.799	1.681
I am satisfied with the relationship climate in the group	561	-0.184	-1.274	4.774	1.563
<b>Frequency of Contact</b>					
In the last 5 months, how often have you interacted on work related matters with your colleagues?	560	-0.571	-0.054	5.886	0.847
<b>Task Interdependence</b>					
I have similar tasks to other members of the group	561	-0.301	-0.600	5.171	1.202

<b>Construct/Items</b>	<b>N</b>	<b>Skew</b>	<b>kurtosis</b>	<b>Mean</b>	<b>S.D</b>
To finish my tasks, I require the knowledge and resources of other group members	561	-0.755	0.726	5.635	0.959
I am required to work together with my colleagues to complete specific tasks	561	-0.701	0.457	5.310	1.136
My job requires me to coordinate my actions with those of my colleagues	561	-0.502	0.287	5.686	0.892
I am unable to perform my job effectively if certain colleagues are unavailable	561	-0.597	0.644	5.755	0.921
I have a one-person job, I rarely have to check or work with others	561	-0.909	0.084	5.011	1.525
<b>Goal Interdependence</b>					
I have similar goals to other members of the group	561	0.628	0.003	3.242	1.399
I cannot achieve my work goals unless my colleagues also achieve theirs	561	-0.329	-1.025	4.590	1.620
Group members are informed about the goals they should attain as a group	561	-0.191	-1.068	4.638	1.666
My colleagues and I are all working toward a common and shared goal	561	-0.492	-0.828	4.768	1.630
Group members receive feedback on the basis of their collective performance	561	-0.494	-0.407	4.674	1.329
I am often encouraged to aim for personal goals at work	561	0.222	-1.196	3.422	1.647
<b>Communication</b>					
You are willing to share information with other group members about their work	561	-0.441	-0.592	5.048	1.369
You enjoy talking to each member in the group	561	-0.534	-0.732	4.881	1.641
When you talk to each other in the group, there is a great deal of understanding	561	-0.282	-0.775	4.777	1.458
You are comfortable talking to each other about what needs to be done	561	-0.308	-0.965	5.114	1.390
<b>Task Complexity</b>					
The task is constantly changing	561	-0.432	-0.396	5.258	1.177
The required skills needed by the group are constantly changing	561	0.175	-0.282	4.335	1.034
The required information needed by the group are constantly changing	561	-0.519	0.787	5.611	0.864
During a normal working week, exceptions frequently arise that require substantially different methods or procedures for the group	561	-0.053	-0.573	4.964	1.138
<b>Average Team Size</b>					
How many individuals in total work in your team including yourself?	561	0.426	-0.613	13.01	4.00
<b>Team Tenure</b>					
How long has the Team been established?	561	-0.068	-1.333	2.547	1.108
<b>Educational level</b>					
What is the level of qualification that you have received?	561	-0.409	-0.498	4.943	0.861
<b>Team Longevity</b>					
How long have you worked in this team?	561	0.931	-0.254	1.479	1.181
<b>Age</b>					
How old are you?	552	0.500	-0.649	36.007	8.298

Finally, the PROC UNIVARIATE Box-and-whisker plot (see Appendix D for descriptive outputs) was used to identify outliers (Tukey, 1977). The Box plots are simpler to observe and univariate outliers can be visible in the plots as points that lie at a considerable distance from other. The results only suggested possible outliers for PRSURFD1 (Age), FREQCONT, TASKCMP2, and TASKCMP3. By looking at the histograms and frequencies, however, all of them except TASKCMP2 are really just skew, and TASKCMP2 reflects a small standard deviation. None of the histograms really show outliers per se.

### **5.3.2 Stage Two: The Measurement Model**

Having introduced the data preparation and multivariate assumption tests in the previous section, the next part of this chapter presents the essential process and findings of CFA and internal consistency in order to accomplish *step 2*—measurement modelling, prior to *step 3*—structural modelling as specified in the analysis method (see section 4.8, page 124).

#### **5.3.2.1 Confirmatory factor analysis**

The initial measurement model was a simple-structure, clustered-data (as respondents were clustered within work-groups), confirmatory factor analysis (CFA), in which all items on a given scale loaded on a single factor, and the factors for the scales were allowed to freely covary. Covariates were also included in this model, freely covarying with all latent variables.

The resulting reduced CFA model converged, but fit the data poorly,  $\chi^2(1,439, N = 561) = 4,625.19, p < 0.001$ , est. Root Mean Squared Error of Approximation (RMSEA) = 0.063 (90% CI: 0.061, 0.065), Confirmatory Fit Index (CFI) = 0.84, Tucker-Lewis Index (TLI) = 0.83, Standardized Root Mean Squared Residual (SRMR) = 0.077. The criterion for the  $\chi^2$  test of absolute fit is non-significance. For the approximate fit indices, the commonly accepted standards for RMSEA are a 90% confidence interval's upper bound being below 0.08 for acceptable fit, CFI and TLI greater than 0.90 or 0.95, and SRMR less than 0.08 (Hu & Bentler, 1995; Hair et al., 2006). Even acknowledging the  $\chi^2$  test's sensitivity to small deviations (Tanaka, 1987), CFI and TLI are below the accepted standard,

and structural equation models, including CFA, are only deemed to fit adequately by approximate measures if all indices are in the acceptable ranges.

The initial standardized factor loadings are presented in Table 5.4. As can be seen, a small number of items show large negative loadings, indicating inconsistency with other items on the scale (the tabled loadings shown are after reverse-coding). Otherwise, all scales, except Task Complexity, show uniformly strong, positive factor loadings.

Table 5.4 Factor loading of measurement scales

Scales/Items	Loading	P-value
<b>Perceived Group Diversity (PERCGRD)</b>		
<b>PERCEIVD1:</b> How diverse do you perceive your work group in terms of <i>Age</i>	0.76	<0.001
<b>PERCEIVD2:</b> How diverse do you perceive your work group in terms of <i>Gender</i>	0.70	<0.001
<b>PERCEIVD3:</b> How diverse do you perceive your work group in terms of <i>Eth</i>	0.75	<0.001
<b>PERCEIVD4:</b> How diverse do you perceive your work group in terms of <i>Nationality</i>	0.71	<0.001
<b>PERCEIVD5:</b> How diverse do you perceive your work group in terms of <i>Functional Background</i>	0.37	<0.001
<b>PERCEIVD6:</b> How diverse do you perceive your work group in terms of <i>Educational Background</i>	0.80	<0.001
<b>PERCEIVD7:</b> How diverse do you perceive your work group with respect to <i>Work attitude</i>	0.80	<0.001
<b>PERCEIVD8:</b> How diverse do you perceive your work group with respect to <i>Work values</i>	0.86	<0.001
<b>PERCEIVD9:</b> How diverse do you perceive your work group with respect to <i>Work personality attributes</i>	-0.47	<0.001
<b>Social Integration (SOCIINT)</b>		
<b>SOCIINT1:</b> Most of the time we get on personally very well	0.86	<0.001
<b>SOCIINT2:</b> The members of my group are quick to defend each other from criticism by outsiders	0.90	<0.001
<b>SOCIINT3:</b> Everyone's input is incorporated into the most important decisions	0.91	<0.001
<b>SOCIINT4:</b> Relationships between members of the group are best described as "win-lose"; if he/she wins, I lose	-0.84	<0.001
<b>SOCIINT5:</b> The members of the group are always ready to cooperate and help each other	0.80	<0.001
<b>SOCIINT6:</b> The members of the group get along together very well	0.89	<0.001
<b>Communication (COMMUNI)</b>		
<b>COMMUNI1:</b> You are willing to share information with other group members about their work	0.84	<0.001



Scales/Items	Loading	p-value
<b>COMMUNI2:</b> You enjoy talking to each member in the group	0.86	<0.001
<b>COMMUNI3:</b> When you talk to each other in the group, there is a great deal of understanding	0.86	<0.001
<b>COMMUNI4:</b> You are comfortable talking to each other about what needs to be done	0.82	<0.001
<b>Group Satisfaction (GROPSAT)</b>		
<b>GROPSAT1:</b> I am satisfied with my present colleagues	0.82	<0.001
<b>GROPSAT2:</b> I am satisfied with working in this group	0.90	<0.001
<b>GROPSAT3:</b> I am able to take part in the planning of my own work	0.86	<0.001
<b>GROPSAT4:</b> I am able to apply my own ideas in work	0.78	<0.001
<b>GROPSAT5:</b> I am satisfied with the group functioning	0.82	<0.001
<b>GROPSAT6:</b> I am satisfied with communication among group members	0.78	<0.001
<b>GROPSAT7:</b> I am satisfied with group leadership	0.84	<0.001
<b>GROPSAT8:</b> I am satisfied with the relationship climate in the group	0.88	<0.001
<b>Commitment (COMMITM)</b>		
<b>COMMITM1:</b> I talk up this team to my friends as a great team to work in	0.89	<0.001
<b>COMMITM 2:</b> I feel a sense of ownership for this team rather than being just an employee	0.86	<0.001
<b>COMMITM 3:</b> I feel proud to belong to this team	0.88	<0.001
<b>COMMITM 4:</b> I am willing to exert extra effort for the success of this group	0.88	<0.001
<b>COMMITM 5:</b> I am glad to belong to this group and not another group	0.86	<0.001
<b>COMMITM 6:</b> I feel very committed to this group and its members	0.87	<0.001
<b>Group Performance (GROPPER)</b>		
<b>GROPPER1:</b> ... met the standards of quality expected by the Saudi healthcare	0.85	<0.001
<b>GROPPER2:</b> ... met the standards of quantity expected by the Saudi healthcare	0.89	<0.001
<b>GROPPER3:</b> ... met the deadlines expected by the Saudi healthcare	0.76	<0.001
<b>GROPPER4:</b> ... adhered to the budget set by the Saudi healthcare	0.84	<0.001
<b>GROPPER5:</b> ... deserves a positive evaluation	0.87	<0.001
<b>GROPPER6:</b> ... warrants no or only a few complaints about the quality of work	0.77	<0.001
<b>Task Interdependence (TASKINT)</b>		
<b>TASKINT1:</b> I have similar tasks to other members of the group	0.77	<0.001
<b>TASKINT2:</b> To finish my tasks, I require the knowledge and resources of other group members	0.81	<0.001
<b>TASKINT3:</b> I am required to work together with my colleagues to complete specific tasks	0.88	<0.001
<b>TASKINT4:</b> My job requires me to coordinate my actions with those of my colleagues	0.90	<0.001

Scales/Items	Loading	p-value
<b>TASKINT5:</b> I am unable to perform my job effectively if certain colleagues are unavailable	0.90	<0.001
<b>TASKINT6:</b> I have a one-person job, I rarely have to check or work with others	0.27	0.016
<b>Task Complexity (TASKCMP)</b>		
<b>TASKCMP1:</b> The task is constantly changing	0.70	<0.001
<b>TASKCMP2:</b> The required skills needed by the group are constantly changing	0.41	<0.001
<b>TASKCMP3:</b> The required information needed by the group are constantly changing	0.42	<0.001
<b>TASKCMP4:</b> During a normal working week, exceptions frequently arise that require substantially different methods or procedures for the group	0.16	0.282

**Model modifications:** further post-hoc changes were made to the model based on the factor loadings and item content (Jackson et al., 2009), and comparing the modified models against a priori fit criteria. These changes included:

- Removal of one negatively-loading item from Perceived Diversity, “How diverse do you perceive your work group with respect to work personality attributes?”: PERCEIVD9.
- Removal of one negatively-loading item from Social Integration: SOCIINT4, “Relationships between members of my group are best described as “win-lose”; if he/she wins, I lose.”
- Removal of one non-significantly loading item from Task Interdependence: TASKINT6.
- Removal of one non-significantly loading item from Task Complexity: TASKCMP4, “During a normal working week, exceptions frequently arise that require substantially different methods or procedures for my group.”

The resulting model showed improved fit. As presented in Table 5.5, the test of absolute fit was still significant,  $\chi^2(954, N = 561) = 3,110.73, p < 0.001$ ; and the model regarded as unacceptable. However, some scholars disregard this index if both the sample size exceeds 200 and other indices indicate that the model is acceptable, which has been found to be the case in this study. Additionally, the relative chi-square (also called the normed chi-square) might be less sensitive to

sample size, and was thus calculated in this research; i.e., the chi-square was divided by the degrees of freedom. The criterion for acceptance varies across researchers, ranging from less than 2 (Ullman, 2001) to less than 5 (Schumacker & Lomax, 2004). The relative chi-square estimated in this study ( $\chi^2$  3,110.73 / 954 (df) = 3.26), indicates that the model is acceptable.

With regard to other indices, the estimated RMSEA did not change noticeably, 0.063 (90% CI: 0.061, 0.066), but CFI, 0.89, TLI, 0.90, and SRMR 0.047, showed improvement. The CFI was still below common standards, while TLI met the acceptable ranges. As a result, no further *post hoc* changes indicated by the analysis were clearly consistent with item content and the researcher settled with this measurement model to avoid over-fitting to the sample.

Table 5.5 Validation of measurement scales through CFA

Fit Index	Initial Model	Modified Model	Recommended level	Reference
<b>Chi-square (<math>\chi^2</math>)</b>	4625.19, $p < .001$	3110.73, $p < .001$	Non-significant	Hu & Bentler (1995); Hair et al. (2010); Schumacker & Lomax, (2004)
<b>Degree of freedom (df)</b>	1439	954	OR	
<b>Relative <math>\chi^2 = (\chi^2) / (df)</math></b>	3.32	3.26	<5	
<b>SRMR</b>	0.07	0.04	<0.08	
<b>RMSEA</b>	0.06	0.06	<0.08	
<b>CFI</b>	0.84	0.89	>0.90 OR 0.95	
<b>TLI</b>	0.83	0.90	>0.90 OR 0.95	

*Note: SRMR=Standardized Root Mean Residual; RMAES= Root Mean Square Error of Approximation; CFI=Comparative Fit Index; TLI=Tucker-Lewis Index.*

Factor loadings and factor inter-correlations for the modified model are presented in Tables 5.6 and 5.7. Some factors showed a pattern of moderate to strong positive loadings, with the exception of Task Complexity. A further assessment was conducted by the following analyses including convergent and discriminant validity.

### **Convergent validity**

For further investigation, convergent validity (a subtype of construct validity) was performed by calculating the average variance extracted AVE for the key constructs in the current study. AVE indicates the total amount of variance that is

captured by the latent construct in relation to the amount of variance as a result of measurement errors. The suggested value of AVE is proposed at 0.50 or greater for sufficient convergence. Following Fornell & Larcker (1981), AVE was calculated using the following formula:

$$\frac{(\text{summation of squared factor loadings})}{(\text{summation of squared factor loadings}) + (\text{summation of error variances})}$$

As displayed in table 5.6, the AVE is higher than 0.50 for all latent constructs, with the exception of Task Complexity, showing 0.28. This result of average variance extracted is well below the suggested value, pointing at an issue of convergent validity for the construct of Task Complexity. In this case, convergent validity was achieved for all constructs, excluding Task Complexity, which might indicate that the variance due to measurement error is greater than the variance due to the construct. Hence, Task Complexity was removed from any further analysis.

Table 5.6 Factor Loadings for the Post Hoc

Scale	Item	Loading	p-value	AVE
<b>(PERCGRD)</b> <b>Perceived Group Diversity</b>	PERCEIVD1	0.77	<0.001	<b>0.55</b>
	PERCEIVD2	0.75	<0.001	
	PERCEIVD3	0.75	<0.001	
	PERCEIVD4	0.71	<0.001	
	PERCEIVD5	0.37	<0.001	
	PERCEIVD6	0.81	<0.001	
	PERCEIVD7	0.81	<0.001	
	PERCEIVD8	0.84	<0.001	
<b>(SOCIINT)</b> <b>Social Integration</b>	SOCIINT1	0.87	<0.001	<b>0.78</b>
	SOCIINT2	0.90	<0.001	
	SOCIINT3	0.91	<0.001	
	SOCIINT5	0.91	<0.001	
	SOCIINT6	0.89	<0.001	
<b>(COMMUNI)</b> <b>Communication</b>	COMMUNI1	0.84	<0.001	<b>0.71</b>
	COMMUNI2	0.86	<0.001	
	COMMUNI3	0.86	<0.001	
	COMMUNI4	0.82	<0.001	
<b>(GROPSAT)</b> <b>Group Satisfaction</b>	GROPSAT1	0.82	<0.001	<b>0.70</b>
	GROPSAT2	0.90	<0.001	

Scale	Item	Loading	p-value	AVE
	GROPSAT3	0.84	<0.001	
	GROPSAT4	0.78	<0.001	
	GROPSAT5	0.82	<0.001	
	GROPSAT6	0.78	<0.001	
	GROPSAT7	0.85	<0.001	
	GROPSAT8	0.88	<0.001	
<b>(COMMITM)</b> <b>Commitment</b>	COMMITM1	0.89	<0.001	<b>0.76</b>
	COMMITM2	0.86	<0.001	
	COMMITM3	0.88	<0.001	
	COMMITM4	0.88	<0.001	
	COMMITM5	0.86	<0.001	
	COMMITM6	0.87	<0.001	
<b>(GROPPER)</b> <b>Group Performance</b>	GROPPER1	0.84	<0.001	<b>0.70</b>
	GROPPER2	0.89	<0.001	
	GROPPER3	0.75	<0.001	
	GROPPER4	0.85	<0.001	
	GROPPER5	0.87	<0.001	
	GROPPER6	0.76	<0.001	
<b>(TASKINT)</b> <b>Task Interdependence</b>	TASKINT1	0.77	<0.001	<b>0.73</b>
	TASKINT2	0.81	<0.001	
	TASKINT3	0.88	<0.001	
	TASKINT4	0.90	<0.001	
	TASKINT5	0.90	<0.001	
<b>(TASKCMP)</b> <b>Task Complexity</b>	TASKCMP1	0.49	0.078	<b>0.28</b>
	TASKCMP2	0.60	0.035	
	TASKCMP3	0.48	0.001	

### ***Discriminant validity***

After assessing the construct validity (i.e. absolute fit indices, factor loadings and AVE), The researcher proceeded to assess the discriminant validity using two measures *in parallel*: 1) the correlation index among the latent constructs (suggested at < 0.85) (Kline, 2005); and 2) the square root AVE of each latent construct (proposed to be higher than inter-correlation among latent constructs) (Hair et al., 2010). Looking at table 5.7, it can be concluded that the square root AVE (on the diagonal of inter-correlations in bold) of each latent factor is larger than the factor inter-correlations for all of the constructs, and none of correlations above the suggested level of 0.85.

Table 5.7 Inter-correlation for Post Hoc and square root of the AVE

	PERCEIVD	SOCIINT	COMMUNI	GROPSAT	COMMITM	GROPPER	TASKINT
<b>PERCEIVED GROUP DIVERSITY</b>	<b>.741</b>						
<b>SOCIAL INTEGRATION</b>	.30	<b>.883</b>					
<b>COMMUNICATION</b>	.27	.79	<b>.842</b>				
<b>GROUP SATISFACTION</b>	.24	.29	.61	<b>.837</b>			
<b>COMMITMENT</b>	.25	.14	.21	.31	<b>.871</b>		
<b>GROUP PERFORMANCE</b>	.25	.27	.71	.64	.17	<b>.837</b>	
<b>TASK INTERDEPENDENCE</b>	.18	.29	.41	.52	.18	.46	<b>.854</b>

Note: Diagonal values are squared roots of AVE; off-diagonal values are the estimates of inter-correlation between the latent constructs.

### 5.3.2.2 Internal Consistency

The final stage of the measurement modelling involved evaluating the internal consistency of the factors, both original and after post-hoc modification to the scales on the basis of the CFA work. Coefficient omega for the scales presented in Table 5.8. Omega was computed using the –MBESS- package v3.3.3 in R v3.2.2 (Kelly & Lai, 2012; Core, 2015). As can be seen, it made a substantial difference to the internal consistency of Perceived Diversity as well as Task Interdependence. Consistent with conclusions from the CFA, internal consistency was high for most scales used in this research.

Table 5.8 Internal Consistency of the Original and Modified Scales Based on Coefficient Omega:

Item	Original Scale	Revised Scale
Perceived Group Diversity	0.61	0.63
Commitment	0.95	*
Social Integration	0.94	0.94
Group Performance	0.94	*
Group Satisfaction	0.94	*
Task Interdependence	0.66	0.76
Communication	0.91	*

*Tabled values are coefficient omega.*

*\*Scale was not modified.*

*\*\*Scale had insufficient items for computing omega*

To this end, the results of stage one (i.e., the evaluation of multivariate assumptions) along with those of stage two (i.e., the CFA and internal consistency) have established an acceptable level of reliability and validity resulting in the final variables being qualified (in the measurement model) in order to proceed to the third stage (i.e., the structural model). Using Mplus SEM, the next section presents the results of all the hypothesised relationships proposed by this study.

### 5.3.3 Stage Three: The Structural Model

The hypotheses were evaluated in a single structural equation model in *Mplus* v7.4.: Figure 5.1 and Figure 5.2 showed the estimated model as a schematic, simplified for clarity given the moderated mediation model. In summary:

- Perceived Group Diversity (latent variable) was treated as a predictor (X variable).
- Social Integration (latent variable) and Communication (latent variable) were treated as mediators (M variables).
- Group Longevity (single indicator), and Task Interdependence (latent variable), were treated as moderators (Z variables) and, correspondingly, as additional predictors.
- The interaction terms of Perceived Group Diversity with Task Interdependence were estimated using the LMS method (i.e., Latent Moderator SEM) as implemented in the XWITH syntax in *Mplus*. *Mplus* treats such interaction terms as exogenous random variables.
- Interaction terms between Perceived Group Diversity with Group Longevity were included as predictors, and were estimated using the LMS method (i.e. Latent Moderator SEM) as implemented in the XWITH syntax in *Mplus*. Similar to the above predictors, *Mplus* treats these interaction terms as exogenous random variables.
- Average Group Size (single indicator) was treated as an exogenous covariate (W variable). This variable was modelled as predicting all other variables in the model except the LMS terms, as noted above.



### **5.3.3.1 Results of overall hypothesised model fit**

Prior to the hypotheses testing in this study, the overall fit of the structural model was assessed in order to validate whether the model sufficiently represented the full set of suggested causal relationships. In order to be consistent with CFA, the estimation used the measures of absolute model fit. These are  $\chi^2$ , RMSEA CFI, and TLI. The results were also consistent with measurement model estimation, in that the  $\chi^2$  test = 3,324, df=1,174,  $p < 0.001$ ,  $\chi^2/df = 2.83$ , CFI= 0.89, TLI= 0.90, RMSEA= 0.057, and SRMR= 0.041. Consequently, the structural model can be construed as marginally acceptable as the Comparative Fit Index, the Tucker-Lewis Index, the Standardized Root Mean Squared Residual, and estimated RMSEA are all in good to acceptable ranges. Put differently, the model is structurally saturated, and therefore has identical fit to the data as in the acceptable CFA.

### **5.3.3.2 Results of hypotheses testing**

I conducted a path analysis with Mplus to examine the direct, indirect, and moderated mediation hypothesised relationships among perceived group diversity variable with other six latent variables (i.e., task interdependence, communication, social integration, commitment, satisfaction, performance). The majority of the hypotheses of interest, however, are reflected in linear and nonlinear combinations of individual coefficients and are reported here. These combinations were estimated using the MODEL CONSTRAINT Mplus syntax, which calculates delta-method standard errors for the combinations.

The control variable (group size) was also included as group size seems to be related to group outcomes (Hackman, 2002). It was treated as a control variable for statistical analysis in the current study (modelled as an exogenous covariate) to predict the outcome variables in the model. The result revealed that group size did not add a significant prediction to the results, Satisfaction,  $\beta = .120$ ,  $z = 1.791$ ,  $p = .073$ ; Performance,  $\beta = .118$ ,  $z = 1.676$ ,  $p = .069$ ; and Commitment:  $\beta = .191$ ,  $z = 1.699$ ,  $p = .055$ . The second proposed control variable i.e. Task Complexity was not included in the structural model due to measurement issue found at the early stage of conducting CFA model.

Following the strategies suggested by Hayes et al. (2011) and Hayes (2013), a two-step investigation was completed for testing a moderated mediation model in this research. Firstly, I tested the direct relationships between perceived group diversity and group outcomes, including all specific direct paths. Secondly, I examined the paths representing the conditional indirect effects of both moderators (i.e., task interdependence and team longevity) on the two mediators (i.e., communication and social integration) as well as on group outcome variables. The results, including the standardized coefficients ( $\beta$ ) along with the corresponding significance levels, are outlined in the remaining sections of this chapter.

### ***Evaluation of direct relationships***

As proposed by the theoretical model in Chapter 2 (see Figure 2.1, page 86), 21 hypothesised specific/direct relationships were tested at the outset (H1 – H8). Table 5.9 shows that perceived diversity is neither directly associated with the outcome variables nor with the mediator (social integration) rejecting H1a, H1b, H1c, and H2a. However, social integration and communication are positively related to team outcome variables such as satisfaction, performance, and commitment supporting H3a, H3b, H3c, H4a, H4b and H4c. The rest of the direct relationships were found to be significant and consistent with the proposed hypotheses, supporting H5 – H8. The results are outlined below.

***H1: There is a negative relationship between perceived diversity and group outcomes: H1a Satisfaction, H1b Performance, and H1c Commitment***

The quantities tested for this model were the sums of the total effects of the perceived diversity variables on each of the three outcomes, tested relative to their delta-method standard errors. The total effect of perceived diversity was not significant for satisfaction,  $\beta = 0.116$ ,  $z = 1.783$ ,  $p = 0.053$ , and for group performance,  $\beta = 0.119$ ,  $z = 1.759$ ,  $p = 0.066$ . There was also no significant aggregate effect for commitment,  $\beta = 0.125$ ,  $z = 1.741$ ,  $p = 0.078$ . Based on the results, H1a, H1b, and H1c are not supported.

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**H2:** *There is negative relationship between perceived diversity and group mechanisms:*

**H2a:** *Perceived diversity has a negative impact on social integration.*

This coefficient was not significant,  $\beta = 0.120$ ,  $z = 1.760$ ,  $p = 0.061$

**H2b:** *Perceived diversity has a negative impact on communication.*

The coefficient from perceived diversity to communication was also not significant,  $\beta = 0.194$ ,  $z = 1.778$ ,  $p = 0.059$ .

Based on the above results, both H2b and H2a did not receive support.

-----

**H3:** *There is a positive relationship between group social integration and group outcomes: **H3a** Satisfaction, **H3b** Performance, and **H3c** Commitment*

The quantities tested for H3 were the coefficients from the two mediators (Social integration and Communication) to each outcome. Separately, the path coefficient from social integration was significant for: team satisfaction,  $\beta = 0.211$ ,  $z = 1.924$ ,  $p = 0.040$ ; team performance,  $\beta = 0.159$ ,  $z = 2.074$ ,  $p = 0.023$ . It was also significant for commitment,  $\beta = 0.146$ ,  $z = 2.695$ ,  $p = 0.003$ .

These results supported H3a, H3b and H3c.

**H4:** *There is a positive relationship between group communication and group outcomes: **H4a** Satisfaction, **H4b** Performance, and **H4c** Commitment.*

The path coefficient from communication was positive and significant for Satisfaction,  $\beta = 0.194$ ,  $z = 3.487$ ,  $< 0.001$ ; and for team performance,  $\beta = 0.177$ ,  $z = 2.275$ ,  $p = 0.011$ . The coefficient for team commitment was also significant,  $\beta = 0.198$ ,  $z = 1.786$ ,  $p = 0.050$ .

Based on this finding, H4a, H4b and H4c are all supported.

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**H5:** *There is a positive relationship between task interdependence and group outcomes: **H5a** Satisfaction, **H5b** Performance, and **H5c** Commitment*

The coefficients were positive and significant for all team outcomes variables: satisfaction,  $\beta = 0.137$ ,  $z = 2.707$ ,  $p = 0.002$ , performance,  $\beta = 0.140$ ,  $z = 2.274$ ,  $p = 0.011$ , and commitment,  $\beta = 0.177$ ,  $z = 2.103$ ,  $p = 0.022$ .

As shown above, H5a, H5b, and H5c are all supported by the findings.

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**H6:** There is a positive relationship between group longevity and team outcomes:  
**H6a** Satisfaction, **H6b** Performance, **and H6c** Commitment

Similar to the previous results, these coefficients were positive and significant for the three outcome variables: Satisfaction,  $\beta = 0.171$ ,  $z = 2.873$ ,  $p = 0.002$ , Performance,  $\beta = 0.204$ ,  $z = 2.263$ ,  $p = 0.013$ , and Commitment,  $\beta = 0.166$ ,  $z = 2.691$ ,  $p = 0.004$ .

The results for H6a, H6b, and H6c are consistent with the proposed hypotheses and are supported by the findings.

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**H7:** There is a positive relationship between task interdependence and group mechanisms: **H7a** Social integration, **H7b** Communication

The quantities tested for H7 were the coefficients from the moderator (i.e., task interdependence) to each mediator. Separately, the path coefficient from task interdependence was significant for the two mediators:

The coefficient was positive and significant for social integration H7a,  $\beta = 0.206$ ,  $z = 2.388$ ,  $p = 0.010$ , and for communication H7b,  $\beta = 0.168$ ,  $z = 2.699$ ,  $p = 0.003$ .

In line with the proposed hypotheses, the results support H7a and H7b.

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**H8:** There is a positive relationship between group longevity and group mechanisms: **H8a** Social integration, **H8b** Communication

In a similar vein, the quantities tested for H8 were the coefficients from the moderator (i.e., team longevity) to each mediator. Separately, the path coefficient from team longevity was significant for the two mediators:

The coefficient was positive and significant for social integration H8a,  $\beta = 0.205$ ,  $z = 2.266$ ,  $p = 0.012$ , and positive and significant for communication H8b,  $\beta = 0.128$ ,  $z = 2.229$ ,  $p = 0.017$ .

Based on the results, both H8a and H8b are supported.

All in all, given the results reported above regarding the direct relationships between perceived group diversity, group mechanisms, and group outcomes, next chapter discussed their findings in relation to the wider framework of theories used in this study to answer the research objective set previously in chapter one.

Table 5.9 Assessment of the direct effects

Direct Path	Standardised Estimate	Z-value	P-value	Results	
<i>H1a: Perceived diversity has a negative influence on satisfaction</i>	0.116	1.783	0.053	Non-Sig	<b>rejected</b>
<i>H1b: Perceived diversity has a negative influence on performance</i>	0.119	1.759	0.066	Non-Sig	<b>rejected</b>
<i>H1c: Perceived diversity has a negative influence on commitment</i>	0.125	1.741	0.078	Non-Sig	<b>rejected</b>
<i>H2a: Perceived diversity has a negative impact on social integration</i>	0.120	1.760	0.061	Non-Sig	<b>rejected</b>
<i>H2b: Perceived diversity has a negative impact on communication</i>	0.194	1.778	0.059	Non-Sig	<b>rejected</b>
<i>H3a: Social Integration is positively related to satisfaction</i>	0.211	1.924	0.040	Sig	<b>supported</b>
<i>H3b: Social Integration is positively related to performance</i>	0.159	2.074	0.023	Sig	<b>supported</b>
<i>H3c: Social Integration is positively related to commitment</i>	0.146	2.695	0.003	Sig	<b>supported</b>
<i>H4a: Communication is positively related to satisfaction</i>	0.194	3.487	***	Sig	<b>supported</b>
<i>H4b: Communication is positively related to performance</i>	0.177	2.275	0.011	Sig	<b>supported</b>
<i>H4c: Communication is positively related to commitment</i>	0.198	1.786	0.050	Sig	<b>supported</b>
<i>H5a: Task interdependence is positively related to satisfaction</i>	0.137	2.707	0.002	Sig	<b>supported</b>
<i>H5b: Task interdependence is positively related to performance</i>	0.140	2.274	0.011	Sig	<b>supported</b>
<i>H5c: Task interdependence is positively related to commitment</i>	0.177	2.103	0.022	Sig	<b>supported</b>
<i>H6a: Team longevity is positively related to satisfaction</i>	0.171	2.873	0.002	Sig	<b>supported</b>
<i>H6b: Team longevity is positively related to performance</i>	0.204	2.263	0.013	Sig	<b>supported</b>
<i>H6c: Team longevity is positively related to commitment</i>	0.166	2.691	0.004	Sig	<b>supported</b>
<i>H7a: There is a positive relationship between task interdependence and social integration</i>	0.206	2.388	0.010	Sig	<b>supported</b>

Direct Path	Standardised Estimate	Z-value	P-value	Results	
<i>H7b: There is a positive relationship between task interdependence and communication</i>	0.168	2.699	0.003	Sig	<b>supported</b>
<i>H8a: There is a positive relationship between group longevity and social integration</i>	0.205	2.266	0.012	Sig	<b>supported</b>
<i>H8b: There is a positive relationship between group longevity and communication</i>	0.128	2.229	0.017	Sig	<b>supported</b>

### ***Evaluation of indirect effects –Mediation –***

After testing the direct relationships, a mediation model was tested to answer the question “how” a relationship exists between perceived diversity variables and team outcomes through the proposed two mediators. I hypothesised that the effect of the perceived diversity variable on team outcomes, either fully or in part, is mediated through social integration and communication.

I used SEM software Mplus, applying the method of a single test (Mackinnon, 2008) for indirect effect, including the Sobel test. Specifically, the indirect effect of the **a** and **b** paths; i.e., whether **a\*b** is significantly different from zero (more details in section 4.8.3.1). Such method predates the four-step method proposed by Baron & Kenny (1986), although this is easier to test. The indirect effect forms part of the decomposition of the total effect into its direct and indirect parts. The simplified equation is as follows:

$$\text{Total effect } \mathbf{c} = \text{indirect effect } \mathbf{a*b} + \text{direct effect } \mathbf{c'}$$

The Sobel approach was used in this research under the condition of “in parallel multiple mediators” (but not in series). The mediators—i.e., communication and social integration—are conceptually distinct. Thus, they should not be too highly correlated when tested together. Moreover, it should be noted that the first step (direct relations) proposed in Baron & Kenny’s method is not necessary to establish a mediation effect, as mediation can logically exist even if **a** or **b** are not statistically significant, and even if the **total effect, c**, is not statistically significant (Preacher & Hayes, 2008; Edwards & Lambert, 2007). For example, Frazier et al. (2004) found various conditions in which a mediational effect might occur regardless of whether there is significant relationship between the independent and dependent variables. This has been found to be the case in this research; while perceived diversity was not found to be directly and significantly related to group outcome variables, there is, however, an indirect relationship between perceived diversity and group outcome through the influence of social integration and communication.

As proposed by the theoretical model in this study (see Figure 2.1, page 86), a total of six hypothesised indirect relationships were tested prior to testing the



moderated mediation model (Hypothesis 9–10). Table 5.10 shows that there is a mediational model consistent with the following hypotheses:

**H9:** *Social integration mediates the negative relationship between perceived diversity and group outcomes: **H9a** Satisfaction, **H9b** Performance, and **H9c** Commitment*

**H10:** *Communication mediates the negative relationship between perceived diversity and group outcomes: **H10a** Satisfaction, **H10b** Performance, and **H10c** Commitment*

The quantities tested for H9 and H10 were the sum of the products of coefficients:  $a_1 \cdot b_1 + a_2 \cdot b_2$  . . . for the perceived diversity measure via the two mediators (i.e., the paths through social integration and communication), separately for each outcome in order to test H9 and H10.

For social integration, this quantity was significant for all three outcomes: group satisfaction,  $\beta = 0.025$ ,  $z = 2.050$ ,  $p = 0.025$ ; group performance,  $\beta = 0.191$ ,  $z = 3.483$ ,  $p < 0.001$ ; commitment,  $\beta = 0.017$ ,  $z = 1.897$ ,  $p = 0.046$ . This quantity via communication was also significant for the three outcomes: group satisfaction,  $\beta = 0.037$ ,  $z = 2.144$ ,  $p = 0.020$ ; group performance,  $\beta = 0.034$ ,  $z = 3.495$ ,  $p = 0.021$ ; commitment,  $\beta = 0.038$ ,  $z = 1.902$ ,  $p = 0.034$ .

Thus, both H9 and H10 are supported by the results as shown above.

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Table 5.10 Assessment of the mediation effects

Indirect Path	Standardised Estimate	Z-value	P-value	Results	
<i>H9a: Social integration mediates the negative relationship between perceived diversity and satisfaction.</i>	0.025	2.050	0.025	Sig	Supported
<i>H9b: Social integration mediates the negative relationship between perceived diversity and performance.</i>	0.191	3.483	***	Sig	Supported
<i>H9c: Social integration mediates the negative relationship between perceived diversity and commitment.</i>	0.017	1.897	0.046	Sig	Supported
<i>H10a: Communication mediates the negative relationship between perceived diversity and satisfaction.</i>	0.037	2.144	0.020	Sig	Supported
<i>H10b: Communication mediates the negative relationship between perceived diversity and performance.</i>	0.034	3.495	0.021	Sig	Supported
<i>H10c: Communication mediates the negative relationship between perceived diversity and commitment.</i>	0.038	1.902	0.043	Sig	Supported

### Evaluation of the moderated mediation model

The moderated mediation model was evaluated in this research to cover the condition of team level context (i.e., group task interdependence and group longevity in the current study), which may affect the strengths and/or signs of the relationships between both perceived group diversity and group outcomes. The moderated mediation models in this study are tested by using both the interaction terms  $X*W$  in addition to the main effect of  $X$  and  $W$ . Mplus (Muthén & Muthén, 1998-2015) is capable of testing any combination of categorical or continuous predictors and/or moderators and, simultaneously, of incorporating latent variables via the “XWITH” keyword. Evidently, this makes it less complex to link moderation and mediation, something that this research requires (Muller et al., 2005; Preacher & Hayes, 2007). However, poor plotting facilities and poor data management should be acknowledged in the Mplus software. Simplified for clarity, the statistical model diagram is illustrated below in figure 5.1. and figure 5.2. for the two moderators

Figure 5.1 The statistical model with group longevity as a moderator

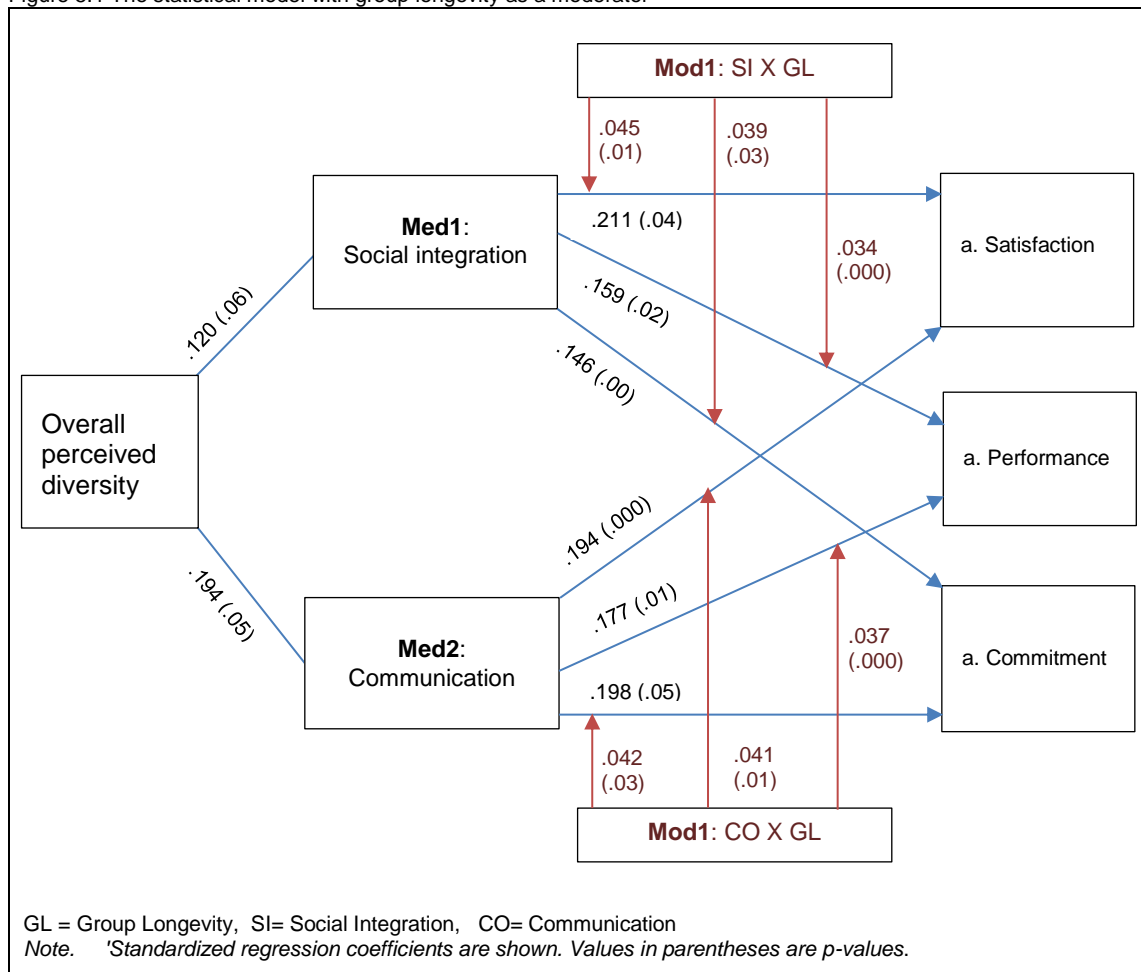
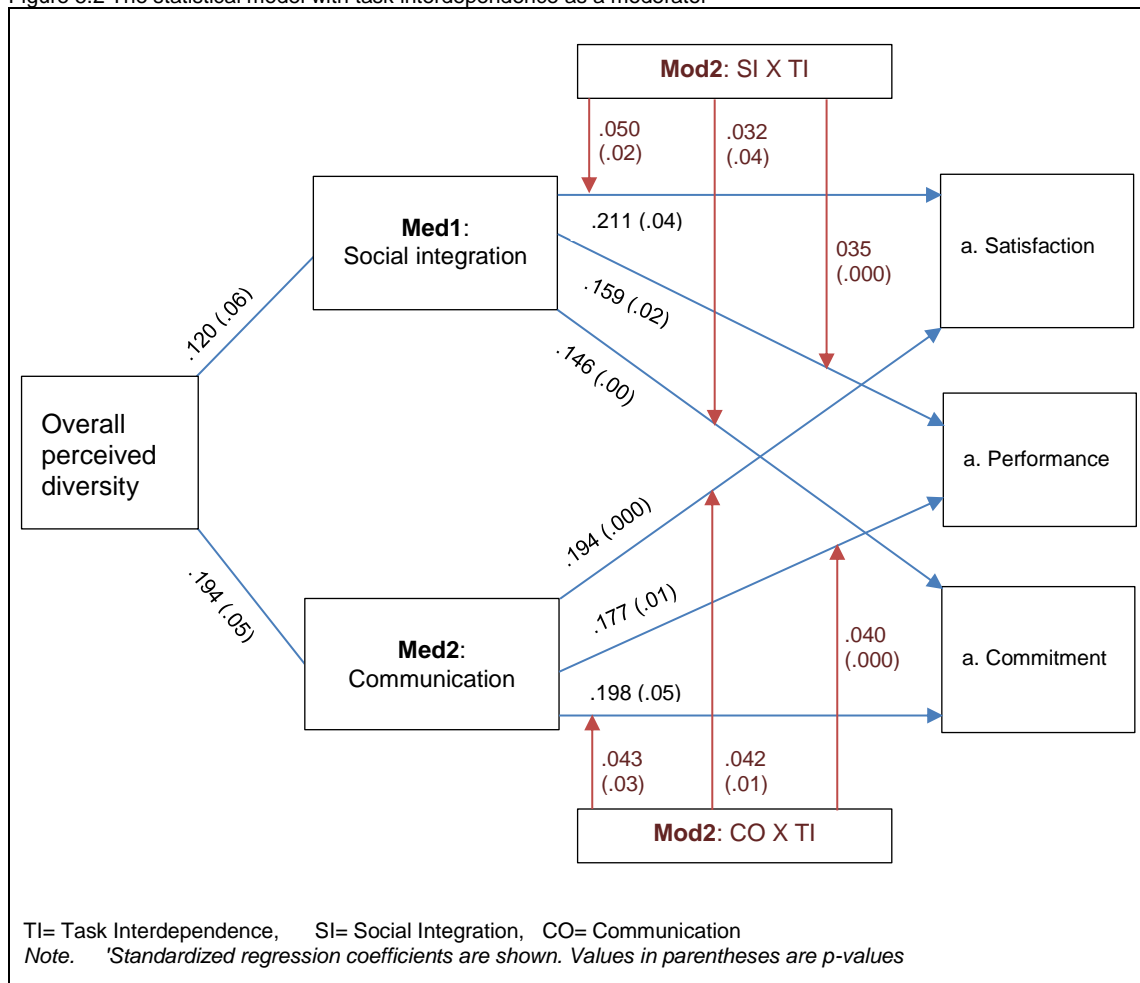


Figure 5.2 The statistical model with task interdependence as a moderator



To examine whether the proposed two moderators (i.e. group longevity and task interdependence) moderates the direct effect of diversity on group process, a prior step was assessed (an example of “first stage moderation”, as described by Hayes et al., 2011). This is to demonstrate the existence of the interaction effects of perceived diversity and group longevity on social integration and communication as well as the interaction effects of perceived diversity and task interdependence on social integration and communication. The analyses revealed that the products of the coefficient linking the interactive effect (*Perceived diversity X Group longevity*) were significant to social integration,  $\beta = 0.213$ ,  $z = 2.011$ ,  $p = 0.032$ ; and to communication,  $\beta = 0.211$ ,  $z = 2.612$ ,  $p = 0.031$ . Also, the interactive effect (*Perceived diversity X Task interdependence*)

to social integration was significant,  $\beta = 0.221$ ,  $z = 2.301$ ,  $p = 0.040$ ; and significant to communication,  $\beta = 0.219$ ,  $z = 2.410$ ,  $p = 0.042$ .

In accordance with the proposed theoretical model in this study, and to examine whether the proposed two moderators (i.e. group longevity and task interdependence) moderates the indirect effect of diversity on group outcomes (Hypotheses 11-14), a total of 12 hypothesised moderated indirect relationships were tested (Hypotheses 11–14) (an example of second stage moderated mediation, as described by Hayes et al., 2011). That is, to examine whether the indirect effect of perceived diversity on group outcome through group process is a function of the moderators. Overall, Table 5.11 reveals that, as expected, evidence was found for the moderated mediation model with indirect effects of perceived diversity on group outcomes, mediated via communication and social integration, and moderated by task interdependence and group longevity. The results are reported below.

***H11:** Group longevity moderates the indirect effects of perceived diversity via social integration on group outcomes: **H11a** Satisfaction, **H11b** Performance, **H11c** Commitment, so that the indirect effect will be more positive for groups with high levels of longevity.*

These hypotheses were evaluated as the products of the coefficient linking the interactive effect (*Perceived diversity X Group longevity*) to social integration (*a* path) and the coefficients linking social integration to each outcome (*b* paths). All of these three quantities were significant: satisfaction,  $\beta = 0.045$ ,  $z = 2.203$ ,  $p = 0.018$ ; performance,  $\beta = 0.034$ ,  $z = 3.496$ ,  $p < 0.001$ ; commitment,  $\beta = 0.039$ ,  $z = 1.960$ ,  $p = 0.031$ .

Based on the results, H11a, H11b, and H11c are all supported.

***H12:** Group longevity moderates the indirect effects of perceived diversity via communication on group outcomes: **H12a** Satisfaction, **H12b** Performance, **H12c** Commitment, so that the indirect effect will be more positive for groups with high levels of longevity.*

These hypotheses were evaluated as the products of the coefficient linking the interactive effect (*Perceived diversity X Group longevity*) to communication (*a1* path) and the coefficients linking communication to each outcome (*b1* paths). All of these three quantities were significant: Satisfaction,  $\beta = 0.041$ ,  $z = 2.197$ ,  $p = 0.019$ ; Performance,  $\beta = 0.037$ ,  $z = 3.502$ ,  $p < 0.001$ ; Commitment,  $\beta = 0.042$ ,  $z = 1.938$ ,  $p = 0.039$ .

Consistent with the proposed hypotheses, the findings support H12.

**H13:** *Task interdependence moderates the indirect effects of perceived diversity via social integration on group outcomes: H13a Satisfaction, H13b Performance, H13c Commitment, so that the indirect effect will be more positive for groups with high levels of task interdependence.*

These hypotheses were evaluated as the products of the coefficient linking the interactive effect (*Perceived diversity X Task interdependence*) to social integration (*a2* path) and the coefficients linking social integration to each outcome (*b2* paths). Consistent with Hypothesis H14, all three quantities were positive and significant: satisfaction,  $\beta = 0.050$ ,  $z = 2.142$ ,  $p = 0.020$ ; performance,  $\beta = 0.035$ ,  $z = 3.495$ ,  $p < 0.001$ ; commitment,  $\beta = 0.032$ ,  $z = 1.904$ ,  $p = 0.042$ .

**H14:** *Task interdependence moderates the indirect effects of perceived diversity via communication on group outcomes: H14a Satisfaction, H14b Performance, H14c Commitment, so that the indirect effect will be more positive for groups with high levels of task interdependence.*

These hypotheses were evaluated as the products of the coefficient linking the interactive effect (*Perceived diversity X Task interdependence*) to communication (*a3* path) and the coefficients linking communication to each outcome (*b3* paths). Consistent with Hypothesis H15, all three quantities were positive and significant: Satisfaction,  $\beta = 0.042$ ,  $z = 2.239$ ,  $p = 0.016$ ; Performance,  $\beta = 0.040$ ,  $z = 3.512$ ,  $p < 0.001$ ; Commitment,  $\beta = 0.043$ ,  $z = 1.933$ ,  $p = 0.039$ .

As shown by the results above, both H13 and H14 are supported by the findings.

In summary, the results reported above concerning the mediation and the moderated-mediation models are discussed in the next chapter in line with the theoretical framework and research objectives set previously in first chapter.

Table 5.11 Assessment of moderated mediation model

Interaction Path	Standardised Estimate	Z-value	P-value		Result
<i>H11a: Group longevity moderates the indirect effects of perceived diversity via social integration on <b>satisfaction</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.045	2.203	0.018	<b>Sig</b>	<b>Supported</b>
<i>H11b: Group longevity moderates the indirect effects of perceived diversity via social integration on <b>performance</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.034	3.496	***	<b>Sig</b>	<b>Supported</b>
<i>H11c: Group longevity moderates the indirect effects of perceived diversity via social integration on <b>commitment</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.039	1.960	0.031	<b>Sig</b>	<b>Supported</b>
<i>H12a: Group longevity moderates the indirect effects of perceived diversity via communication on <b>satisfaction</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.041	2.197	0.019	<b>Sig</b>	<b>Supported</b>
<i>H12b: Group longevity moderates the indirect effects of perceived diversity via communication on <b>performance</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.037	3.502	***	<b>Sig</b>	<b>Supported</b>



Interaction Path	Standardised Estimate	Z-value	P-value	Result	
<i>H12c: Group longevity moderates the indirect effects of perceived diversity via communication on <b>commitment</b>, in such a way that the indirect effect will be more positive for group members when longevity is high rather than low</i>	0.042	1.938	0.039	<b>Sig</b>	<b>Supported</b>
<i>H13a: Task interdependence moderates the indirect effects of perceived diversity via social integration on <b>satisfaction</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.050	2.142	0.020	<b>Sig</b>	<b>Supported</b>
<i>H13b: Task interdependence moderates the indirect effects of perceived diversity via social integration on <b>performance</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.035	3.495	***	<b>Sig</b>	<b>Supported</b>
<i>H13c: Task interdependence moderates the indirect effects of perceived diversity via social integration on <b>commitment</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.032	1.904	0.042	<b>Sig</b>	<b>Supported</b>
<i>H14a: Task interdependence moderates the indirect effects of perceived diversity via communication on <b>satisfaction</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.042	2.239	0.016	<b>Sig</b>	<b>Supported</b>

Interaction Path	Standardised Estimate	Z-value	P-value	Sig	Result
<i>H14b: Task interdependence moderates the indirect effects of perceived diversity via communication on <b>performance</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.040	3.512	***	Sig	Supported
<i>H14c: Task interdependence moderates the indirect effects of perceived diversity via communication on <b>commitment</b>, in such a way that the indirect effect will be more positive for group members with high levels of task interdependence</i>	0.043	1.933	0.039	Sig	Supported

## **5.4 Chapter Summary**

In this chapter, I presented the results of the testing of the proposed hypotheses (see chapter 2). These findings were generated by using different statistical software such as SPSS, SAS, and Mplus. The latter is a SEM software that makes better alternative methods easier to implement. For example, by using Mplus, the researcher tested multiple paths simultaneously through its special feature for conducting conditional indirect paths including latent variables.

The empirical results yielded support for 33 out of 39 hypotheses, including direct and indirect relationships and paths for moderated mediation model. All in all, by implementing SEM in this research, evidence was found with regard to the diversity-outcome process model being contingent to a group member's task characteristics and to the length of time a group has existed. Such pattern of results has enabled the further understanding of the interrelations between perceived group diversity and group outcomes. The following chapter will discuss the empirical results with the aim of answering the research questions as proposed in the introduction chapter.

## Chapter 6 Discussion

### 6.1 Introduction

Having analysed the gathered data and tested the generated hypotheses, this chapter positions the findings of this research within the wider framework of this field's research and theories. In order to remain consistent, this chapter follows the chronology previously laid down in the findings chapter. The logic is to juxtapose the evidence gathered with the objectives set previously in chapter 1. To this end, I discuss three major sections. First, the focus is placed upon the existence of a direct relationship. The question is whether there is a direct relationship between perceived diversity and group outcomes; between perceived diversity, communication, and social integration (or vice-versa); between the two moderators and the mediators; and between the two moderators and group outcomes. Following this, the focus shifts to the results of the diversity-process model to provide a more articulated understanding of the relationship between perceived diversity and group outcomes. Indeed, this is done by critically exploring the mediating role played by communication and social integration and how it affects perceived diversity and group outcomes. Last, but certainly not least, this research critically discusses the moderating role played by task interdependence and group longevity in order to understand the relationship between perceived diversity, group mechanisms, and group outcomes.

### 6.2 Discussion of the direct relationships

#### 6.2.1 Perceived group diversity and group outcomes relationships

**Hypothesis 1:** There is a negative relationship between perceived diversity and group outcome: **H1a** Satisfaction (*rejected*), **H1b** Performance (*rejected*), **H1c** Commitment (*rejected*)

Why, how, or when diversity affects group outcomes have always been striking questions with which the diversity literature continues to struggle. This research seeks to alleviate such struggle by focusing upon, and ultimately aiming at, elucidating whether affective consequences (commitment and satisfaction) and (self-rated) group performance are affected by perceived diversity. The results of this study indicate that perceived diversity is neither significantly related to

commitment and satisfaction nor to group performance. As such, we can reject hypotheses H1a, H1b and H1c. Such a finding however, is neither unexpected nor surprising. Indeed, much research has highlighted that which types of diversity are related to group outcomes, or which can have negative or positive effects is rather unclear (see Van Knippenberg et al., 2007). The examination of previous research, including performing a meta-analysis of the literature, highlighted no consistent pattern or findings but, rather, an array of mixed results attributed to different assumptions, obtained in diverse contexts, and at different times (Bowers, Pharmer & Salas, 2000; Webber & Donahue, 2001). Nonetheless, a discourse prevalent within the diversity literature makes the assumption that high levels of diversity do lead to lower levels of satisfaction and performance. Such research made its assumptions based on the tenets of SCT (Bercheid & Walster, 1978; Jackson et al., 1993; Wagner, Pfeffer & O'Reilly, 1984), which purports that perceived similarity directly increases interpersonal attraction and liking among group members, which then leads to higher performance. Contrastingly, from the perspective of IPT, higher levels of perceived diversity may have the effect of promoting different opinions, perspectives, and knowledge, which then facilitates creative solutions and better performance (Williams & O'Reilly, 1998). Yet, such a process is not as straightforward as it sounds. Contextual factors are of paramount importance and may be the key to understanding when perceived diversity can have a positive effect on group outcomes. Accordingly, the aim of this research was not to investigate the direct relationship between perceived diversity and group outcomes, particularly because such a proposal would not be fruitful, as shown by a range of diversity studies. Therefore, H1 being unsupported does not undermine the validity and legitimacy of this research, as it was not its primary objective.

Considering that there is no evident direct relationship, this study reinforces the notion that the relationship between perceived diversity and group outcomes is complex and thus requires an equally shrewd framework (see Van Knippenberg et al., 2007; Joshi & Roh, 2009; Shemla et al., 2014). In the present literature, a range of elements involved in the above relationship still remain unknown; empirical evidence supporting the idea of a direct relationship between perceived diversity and group outcomes is rare and contradictory. Subsequently, the inclusion of mediators and moderators to further comprehend the above

relationship can be useful, if not actually necessary. To the best of my knowledge, only a handful of studies have tested and integrated mediators and moderators within the framework of a single study, a measure that this research has taken.

### **6.2.2 Perceived group diversity and group mechanisms**

**Hypothesis 2:** There is a negative relationship between perceived diversity and group mechanisms (social integration and communication):

**Hypothesis 2a:** Perceived diversity has a negative impact on social integration (*rejected*).

**Hypothesis 2b:** Perceived diversity has a negative impact on communication (*rejected*).

Along with most studies found in the group processes literature and the traditional inputs-process-outputs model (hereafter IPO) (Ilgen et al., 2005), the above findings suggest that social integration and communication are positively associated with perceived diversity, though the results are not statistically significant; thus, H2a and H2b are rejected. In contrast to the main literature, only partial support is found for perceived diversity being positively associated with group mechanisms (Jackson et al., 1992; Barrick & Bradley, 2007).

A possible explanation for this may be that the social integration construct may not represent a direct measure of group member processes, especially when comparing it to the case of communication. Put differently, one can argue that social integration is a construct that emerges over time and is gradually, if ever, reached by a group (Barrick & Bradley, 2007); it is a complex and dynamic construct that requires further research.

Further to this, the negative relationship between perceived diversity and communication might be conceptualised as an instinctive rejection that group members present to communicating with each other because of a lack of common social, demographical, or informational backgrounds. Communication is a pillar of good performance and is a pure practical necessity for the fulfilment of individual tasks. Yet, it remains unknown when or why group members with a higher perceived diversity move from obstructive forms of communication (e.g., conflict, withholding information) to *good* ones (e.g., sharing) that lead to better

performance; further research is needed on this topic. Obstructive communication, or no communication at all, threatens the group's ability to understand or fulfil its tasks. It is clear that the structure of a task may have something to do with the move from obstructive to *good* communication between high-perceived diversity group members (Ilgen et al., 2005).

According to Merten (2014), the establishment of a deeper level of communication does not require a similar or parallel level of deeper social integration. Indeed, social integration is not a penultimate condition for efficiently and/or effectively performing tasks (Hambrick, 1994). Similar to the above, Jackson et al. (1992) highlighted that a higher level of social integration will subsequently lower the level of perceived diversity. Simply put, once group members begin to see each other as being similar and become deeply integrated, perceived diversity may become concealed and/or diminished, particularly as the perception of diversity hinges on noticing social non-integration based on differential group member characteristics (Akyol & Garrison, 2014).

This fits well with the idea of social categorisation; specifically, the notion that, through frequent communication and/or social integration, out-group members may be re-categorised as in-group ones. Of course, this is highly dependent on several contextual factors, such as group longevity, the nature of the tasks, and interdependence. Overall, perceived diversity has an impact on communication and social integration; a result that possibly hinges on the latter's complex nature and construction.

### **6.2.3 Group mechanisms and group outcomes**

**Hypothesis 3:** There is a positive relationship between group social integration and group outcomes: **H3a** Satisfaction (**supported**), **H3b** Performance (**supported**), **H3c** Commitment (**supported**);

**Hypothesis 4:** There is a positive relationship between group communication and group outcomes: **H4a** Satisfaction (**supported**), **H4b** Performance (**supported**), **H4c** Commitment (**supported**).

The results of this research are mostly in support of H3 and H4. Group mechanisms, as measured by social integration and communication, are

positively associated with group outcomes (satisfaction, performance, commitment). Such a result is consistent with and reiterated by previous studies in this field (see Qin et al., 2012; Wech et al., 1998; Beal et al., 2003; Tekleab, Quigley & Tesluk, 2009). Most notably, it is clear that communication is a vital construct and a telling variable when it comes to the successful functioning and performance of any group task and activity. Indeed, this is reinforced by several studies attesting that the benefits of communication extend to greater productivity, higher performance, and satisfaction (see Hoogstraten & Vorst, 1978; Smith et al., 1994). Show (1981:150) succinctly summarised the argument that, for a diverse group to “function effectively, its members must be able to communicate easily and efficiently”.

Regarding the positive relationship between social integration and group outcomes, this study found that social integration does increase the level of group outcomes. Indeed, a negative relationship between social integration and group satisfaction cannot logically be imagined; commitment and performance, as matters of satisfaction to the group, are intrinsically included in the definition of social integration. In more detail, according to O'Reilly, Caldwell & Barnett (1989:22), social integration is “the *attraction* to the group, *satisfaction* with other members of the group, and social interaction among the group members” [emphasis added]. From its definition, it can be seen that social integration involves attraction to the group, and attraction towards a group cannot be logically interpreted without accepting that there is some level of commitment towards the group itself. Furthermore, a level of satisfaction constitutes a necessary requirement for being socially integrated; hence, being, at the same time, socially integrated and less satisfied with the group cannot logically be imagined. In other words, being socially integrated on the one hand and being less satisfied and less committed on the other are mutually exclusive. As a high level of social integration is positively connected with satisfaction and commitment, it is in a positive relationship with performance. This is because higher social integration increases friendship, trust, and cooperation amongst group members (Andrews et al., 2008); furthermore, it creates collective feelings of responsibility towards the performance of group tasks (Tjosvold & Deemer, 1980). Indeed, the positive relationship between social integration and performance in this study reiterates



the results obtained by other studies (e.g., Beal et al., 2003; Mullen & Cooper, 1994; Tekleab, Quigley & Tesluk, 2009; Wech et al., 1998).

#### **6.2.4 Task interdependence and group outcomes**

**Hypothesis 5:** There is a positive relationship between task interdependence and group outcomes: **H5a** Satisfaction (*supported*), **H5b** Performance (*supported*), **H5c** Commitment (*supported*)

Depending on whether there is a competitive context, task interdependence can constitute a positive facilitator of cooperation and collaboration between group members—especially when they share a common goal—or a negative influence when there is a ‘zero-sum game’, with group members perceiving each other as competitors in a shared task, having differential goals (Stewart & Barrick, 2000). Indeed, in the latter context, if one increases the level of task interdependence, there is a higher probability of interpersonal conflict—with members withholding key information—and negativity.

However, in the presence of a correlation between the group members’ goals and of an increase in task interdependence, one can expect higher levels of communication and cooperation (Van der Vegt & Janssen, 2003). Such a positive process can also be understood through the lens of information-processing theory: task interdependence may promote substitutability, which stipulates the degree to which the acts of one group member substitute those of another (Chen & Chiu, 2010). This, of course, occurs when group members are encouraged to achieve the same goal and thus aid each other’s efforts to that end (Van der Vegt & Janssen, 2003).

Contextually speaking, such a result cannot be achieved by promoting competitive in-group relationships. The substitutability of the group, that is the main positive effect of task interdependence, would be adversely affected by a competitive context (Chen & Chiu, 2010). Put differently, to a certain degree, a competitive context promotes a level of direct or indirect antagonism amongst group members and thus may decrease the level of performance or satisfaction. Evidently, task interdependence can have a positive effect on group performance

only in the presence of minimisation of in-group competition (Janssen et al., 1999).

What's more, task interdependence positively increases the level of empathy between group members, a process that then promotes openness to others and a mutual commitment amongst members, either to each other's ideas or the group's goal as a whole (Johnson & Johnson, 2005). Such a process can also be understood by considering the group mentality induced by task interdependence (ibid.), which has been found to maximise productivity as well as satisfaction for each group member (Van de Vliert & De Dreu, 1994).

### **6.2.5 Group longevity and group outcomes**

**Hypothesis 6:** There is a positive relationship between group longevity and group outcomes: **H6a** Satisfaction (**supported**), **H6b** Performance (**supported**), **H6c** Commitment (**supported**)

Group longevity has the potential, if not the ability, to incrementally phase out the supposed adverse effects of perceived diversity on group members (Schippers et al., 2003). Consistent with previous studies, the findings show that high group longevity supports the re-categorisation of individuals from being out-group members to being in-group ones (Goodman & Leyden, 1991). In other words, group longevity will lead to a reduction in the level of perceived diversity amongst group members; hence, it re-creates or re-defines the criteria of heterogeneity and homogeneity between members. As such, what was perceived as being different at the beginning of a group's creation would not be perceived as such after having spent time together. That is, a person who had been classified from the group as being an outsider or alien would be accepted as an insider after some time. In practice, this can be evidenced when comparing the achievements of a group at its beginnings and after a period of time. Anyhow, this study took a similar approach as it measured the direct effect of perceived diversity on group outcomes; and then measured the indirect effect of perceived diversity after considering group longevity as a moderator. Notably, it found a positive effect in the indirect relationship between perceived diversity and group outcomes.

Theoretically speaking, SCT best explains the shift from out-group to in-group membership that occurs when group members are consistently together for long periods of time. Indeed, due to this shift, a sense of belonging is instilled amongst group members and, hence, an increase of commitment (Bergami & Bagozzi, 2000); a notion that is supported by this study's findings. Linked to a high level of commitment is the notion that a group can only achieve such a psychological state with the prerequisite of group member satisfaction (Williams & Anderson, 1991). Similarly, performance is also positively affected by group longevity as the latter enables individuals to get to know each other, their respective fields of expertise and paces, and to communicate and accumulate daily experience by successfully achieving their tasks and goals (Goodman & Leyden, 1991).

Interestingly, group outcomes seem to be tightly intertwined, which, analytically speaking, adds a further layer of complexity and process uncertainty. In other words, how commitment affects satisfaction or vice-versa is unsure; such a question can be raised also with regard to performance—i.e., how does performance affect satisfaction and commitment? While it is beyond the scope of this research to answer the above string of questions, it is clear that, to differing degrees, group outcomes also affect and/or impact each other.

Nonetheless, a number of studies attested that increases in group member efficiency and levels of performance are the result of higher levels of communication and of routinely accumulated on-the-job experiences (see Goodman & Leyden, 1991). In this respect, group longevity is the condition through which group members get used to dealing with each other, irrespective of their differences. By doing so, a multitude of positive group outcomes come into being. Thus, this study suggests that lower group longevity, specifically in settings of highly perceived diversity, cannot overcome the inter-group contradictions and animosities that lead to poorer group outcomes (Milliken & Martins, 1996). While indirectly supporting the notion—put forward by SAT—that perceived diversity negatively affects group outcomes, this study also finds that, under conditions of high group longevity, SCT best summarises the shift from this negative effect on group outcomes to a positive one.

## 6.2.6 Task interdependence and group mechanisms

**Hypothesis 7:** There is a positive relationship between task interdependence and group mechanisms: **H7a** Social integration (**supported**), **H7b** Communication (**supported**)

Consistent with the findings supporting H5, high levels of task interdependence indicate that there is a substantial degree of interaction between group members (Shea & Guzzo, 1987). Logically, to fulfil interdependent tasks, group members must communicate and build mutual platforms to exchange knowledge, experience, and work spaces, all of which contribute towards more frequent communication (Van de Ven, Delbecq & Koenig, 1976; Saavedra et al., 1993; Stewart & Barrick, 2000). As such, the above finding highlights a positive relationship between task interdependence and communication. Sharma & Yetton's (2007) study also found this to be the case. Their research highlighted the intrinsic and inextricably intertwined relationship between a higher level of task interdependence and a deeper level of communication, arguing that one cannot possibly exist without the other.

Despite being more complex, the positive relationship found between task interdependence and social integration can be explained by considering the various kinds of mutual sharing (experience, knowledge, problems, skills) that task interdependence necessitates and the effects these have on group members (Campion et al., 1993). For instance, sharing materials, workspaces, and requiring one another's experience to achieve a given task place group members in a context of reciprocal and sequential exchange on all levels. This, in turn, promotes closer union and an increased level of social integration (Thompson, 1967).

The findings of this research suggest that higher levels of task interdependence increase levels of communication and social integration, specifically because of the necessity to jointly complete tasks. As mentioned previously, this is only evident when tasks are not competitively driven. Broadly speaking, if there is a high level of perceived diversity within a group, instilling task interdependence will eventually lead to an increase in communication and social integration.

### **6.2.7 Group longevity and group mechanisms**

**Hypothesis 8:** There is a positive relationship between group longevity and group mechanisms: **H8a** Social integration (*supported*), **H8b** Communication (*supported*)

One explanation of the positive relationship between group longevity and group mechanisms is that spending a long period of time within a particular group brings about frequent opportunities for communication among members (Goodman & Leyden, 1991). Indeed, higher longevity may break down communication barriers amongst group members, particularly when it comes to formal and informal kinds of mutual communication. Such a notion is supported by SAT, which postulates that, the longer group members stay together, the higher the level of social integration and the smoother the forms of communication (Milliken & Martins, 1996). This hypothesis was tested by several other studies, most of which highlighted that an increase in group longevity provides members with the time to socially integrate with each other via informal language. This can also be seen to aid members in overcoming contradictions, especially those arising from high levels of perceived group diversity (Milliken & Martins, 1996).

Considering the above findings, in order for group mechanisms to have a positive impact on group outcomes—especially in a highly diversified healthcare sector, such as that found in Saudi Arabia—two conditions need to be satisfied. First, groups must be established with a long-term vision for members in order to decrease turnover and promote longevity. Second—and as a corollary of the first—group members should have high levels of task interdependence. Both conditions, of course, involve the consideration of numerous other factors; however, group longevity and task interdependence should be a priority.

## **6.3 Discussion of the indirect relationships**

### **6.3.1 General Notes for Mediational and Moderated-Mediation Models**

A lot of ink has been put to paper in relation to identifying the impact of diversity on group outcomes, with results ranging from positive, to negative, to neutral (see Qin et al., 2012; Jehn & Bezrukova, 2004). Evidently, much research has supported the claim that the relationship between perceived diversity and group

outcomes is rather complex and more dependent on context than previously thought (Christian et al., 2006). On the one hand, we have IPT, which continues to advocate and highlight that diversity contributes to improved levels of group outcomes and increases employee capabilities by diversifying the range of knowledge and personnel to which he or she has access (Joshi et al., 2006). On the other hand, SAT supports the claim that low employee commitment, low job satisfaction, and lower performance come as a result of high diversity within a group (Dickens & Hall, 2006).

All this notwithstanding, it is clear that the employment of a more complete model—one that takes into account moderators and mediators—may promote a clearer understanding of the above processes. Indeed, by considering indirect relationships, this study has found that perceived diversity is positively associated with group outcomes. Unsurprisingly, by analysing indirect relationships, it has become clear that breaking down the process to include moderating and mediating effects can substantiate the direct relationship claimed in H1, albeit not in that form.

Nevertheless, the results highlight that the adoption of a moderated mediation model has affected the standardised estimate values found in the mediation model; **H9a**  $\beta = 0.025$  with ***p-value* < 0.025** for the mediator model, and  $\beta = 0.045$  with ***p-value* < 0.018** for the moderated mediator one. That is, there is a slight increase in the positive effect of perceived diversity when it comes to satisfaction, particularly with longevity as a moderator. Similarly, for **H9b** (perceived diversity → social integration → performance), the result is  $\beta = 0.191$  with ***p-value* < \*\*\***, while, for **H11b** (perceived diversity → social integration → performance, with longevity as moderator), the result is  $\beta = 0.034$  with ***p-value* < \*\*\***.

There is a slight increase in  $\beta$ , indicating that the moderator-mediator effect only marginally shifts the positive effect of the independent variable over the dependent one. This, when compared with the clear and substantial effect of the mediator model, shows a genuine relationship compared to the rejected direct relationship (**H1b**). Indeed, these findings and the argumentation for them are highlighted throughout this study, which examines the specific effect of perceived diversity on group outcomes (satisfaction, performance, and commitment) moderated by group longevity.

For instance, when considering the perceived diversity → social integration → commitment path, as seen in **H9c**, the results are  $\beta = 0.017$  with  $p\text{-value} < 0.046$ ; whereas, with the moderated-mediation model **H11c** (perceived diversity → social integration → commitment path moderated by group longevity), the results become  $\beta = 0.039$  with  $p\text{-value} < 0.031$ . Likewise, when situating communication as a mediator in the perceived diversity → communication → satisfaction path in **H10a**, the results are  $\beta = 0.037$  with  $p\text{-value} < 0.020$ . However, when integrating group longevity as a moderator in **H12a**, the results become  $\beta = 0.041$  with  $p\text{-value} < 0.019$ . And again, when considering the perceived diversity → communication → performance path in **H10b**, the results are  $\beta = 0.034$  with  $p\text{-value} < 0.021$ ; whereas, when one adds group longevity as a moderator, as seen in **H12b**, the results become  $\beta = 0.037$  with  $p < 0.001$ . In addition, for the perceived diversity → communication → commitment path (**H10c**),  $\beta = 0.038$  with  $p < 0.043$ , which, in the presence of the moderating effect of group longevity, became  $\beta = 0.042$  and  $p < 0.039$ .

From the findings and discussion above, two important findings arise. First, that adding a moderator to a relationship that contains a mediator does not necessarily change the findings in a consistent manner; likewise, that integrating group longevity as a moderator only marginally alters the mediating effect of group mechanisms (communication and social integration). Consequently, if one finds lower levels of communication and/or social integration in a group, members of that group spending a longer time together will not considerably affect the indirect effect of perceived diversity on group outcomes.

What does this mean for organisations, specifically those in Saudi Arabia's healthcare sector? It is clear that pursuing a strategy aimed at maintaining group longevity would only marginally tilt the outcome in one's favour. There are clearly other forces at play, and group longevity is but one intertwined element. This research supports the assertion that organisational efforts should be directed at supporting a context that encourages social integration and communication without substantially promoting the role of group longevity. Academically speaking, group longevity should not be a substantial factor when using the moderated-mediation model. However, it should be noted that the above interpretation considers only the role played by group longevity as a moderating

feature, rather than its unique effect on group outcomes, which was discussed previously.

The following subsections will further elucidate the roles played by moderators and mediators in understanding the impact of perceived diversity on group outcomes.

### **6.3.2 Discussion of Mediation Model**

This research confirms many of the findings found in the extant literature related to the mediator role played by group mechanisms when considering perceived diversity and group outcomes, particularly performance (Andreatta, 2010; Mackinnon et al., 1993). Within the context of Saudi Arabia's diverse healthcare sector—and, possibly, other similar ones (e.g., education)—such findings can unleash positive potentials and underscore a better understanding of the dynamics apparent when considering diversity in the workplace. This is particularly important for decision makers and policy makers, who require contextual knowledge and intricate details related to organisational behaviour in general, and group behaviour in particular.

Congruent with previous research, such as the one conducted by Pfeffer (1983), this study's results support the idea that groups tend to develop positive group outcomes only when even rudimentary social integration and communication takes place among group members. In that manner, those members of a high perceived diversity group that maintain a high level of social integration and communication tend to feel less isolated and do better in a diversified environment (Andreatta, 2010). More information regarding the results of the two mediators that were examined in this study is discussed below in H9 and H10.

#### ***6.3.2.1 Perceived diversity, group mechanisms, and group outcomes***

This subsection discusses the positive results found when adopting social integration and communication as mediators in the group-process-outcomes model.



**Hypothesis 9:** Social integration mediates the negative relationship between perceived diversity and group outcomes: **H9a** Satisfaction (*supported*), **H9b** Performance (*supported*), **H9c** Commitment (*supported*)

The empirical findings concerning H9 revealed that the perceived diversity-social integration-satisfaction path has  $\beta = 0.025$ ,  $p = 0.025$ , the perceived diversity-social integration-performance path has  $\beta = 0.191$ ,  $p < 0.001$ , and the perceived diversity-social integration-commitment path has  $\beta = 0.017$ ,  $p = 0.046$ .

Social integration is operationalized as a dynamic process in which group members participate in dialogue, maintain a collaborative tone, and support each other in meeting group tasks (Berkman et al., 2000). It does not imply the forced assimilation of a member or members; on the contrary, it stipulates a voluntary move towards a stable and safe group condition that, among other things, protects one from social disintegration and exclusion. It also shields the group, or members of the group, from social fragmentation and in-group polarization (ibid.).

As a construct, social integration is highly relevant in the case of Saudi Arabia's healthcare sector, where a high level of diversity exists among employees (see Chapter 3). Focusing on facilitating social integration has the potential of enabling minorities to gain access to opportunities and rights to services. A further potential is that of promoting a diversified pool of expert knowledge that may facilitate creative and innovative solutions to prevalent problems. Such a path is consistent with the tenets of information-process theory, suggesting that, by integrating socially excluded group members and diversifying the group itself, the potential for creativeness and unique solutions is increased. Moreover, the results indicate that, in order to overcome or mitigate the negative aspects of high diversity, the achievement of a high level of social integration among group members may need to be considered, as assumed by SAT.

**Hypothesis 10:** Communication mediates the negative relationship between perceived diversity and group outcomes: **H10a** Satisfaction (*supported*), **H10b** Performance (*supported*), **H10c** Commitment (*supported*)

The findings show that the perceived diversity-communication-satisfaction path has  $\beta = 0.037$ ,  $p = 0.020$ , the perceived diversity-communication-performance path has  $\beta = 0.034$ ,  $p = 0.021$ , and the perceived diversity-communication-commitment path has  $\beta = 0.038$ ,  $p = 0.043$ .

This study has opted to include communication as a mediator; it has done so specifically because several studies had highlighted its role in attaining positive performance in particular, and group outcomes in general. Indeed, based on the above findings, and in the absence of communication, the assumption put forward by SAT—namely, that in-group members would discriminate against out-group ones—would be true and substantiated. However, in the presence of communication and as assumed by IPT, one can argue that the members of a group would exchange ideas, knowledge, and experiences that could potentially lead to innovative and creative solutions. Put differently, by removing the mediating effect of communication, the relationship between perceived diversity and group outcomes would be negative (Shemla et al., 2014).

This, to some extent, may also explain why some studies on the direct relationship between perceived diversity and group outcomes found varying results, either positive or negative—i.e., those finding a negative relationship may have stumbled upon diverse groups with low levels of communication, while those finding a positive relationship may have examined a higher number of diverse groups in which communication was present. Of course this is not true of all studies focusing upon a direct relationship; it is simply a possibility when not considering a model that also includes mediators and moderators.

### 6.3.3 Discussion of Moderated Mediation Model

#### 6.3.3.1 *The interaction effect of perceived diversity and group longevity on group outcomes via social integration and communication*

**Hypothesis 11:** Group longevity moderates the indirect effects of perceived diversity via social integration on group outcomes: **H11a** Satisfaction (*supported*), **H11b** Performance (*supported*), **H11c** Commitment (*supported*), so that the indirect effects will be more positive for groups with high levels of longevity.

The findings of the above moderated-mediation model highlight that social integration mediates the relationship between perceived diversity and group outcomes. This result corresponds with what Smith et al. (1999) suggested—namely, that the level of social integration could well account for a significant degree of variance in the relationship between diversity and group outcomes.

Moreover, the findings in this study also suggest that group longevity moderates the effect between the independent and dependent variables, which are mediated by social integration. As a moderating variable, group longevity influences the degree of strength and relationship between other variables. This study confirms that the inclusion of social integration as a mediator and of group longevity as a moderator increases the positive effect of perceived diversity on group outcomes. The theoretical logic behind the findings of this study is discussed as follows. As discussed in section 6.2.3 of this study, social integration leads to positive group outcomes because the concept of social integration is defined as an expression of the group members' attraction to and satisfaction with the group itself; accordingly, being socially integrated, on the one hand, and being satisfied and committed, on the other, are mutually inclusive (Caldwell & Barnett, 1989). Furthermore, as discussed in subsection 6.2.5 of this study, group longevity is a decisive factor that, over time, helps to re-categorise groups by moving individuals from being outsiders or aliens to the group to being accepted as insiders. Thus, in other words, group longevity increases the level of social integration amongst group members as it reduces the negative perception of group heterogeneity (Goodman & Leyden, 1991).

Indeed, such results are not yet fully documented by the diversity literature and require further hypothesis-testing and confirmatory research. What's more, to the

best of my knowledge, this is the first study of its kind to adopt a moderated-mediation model in the context of Saudi Arabia's public healthcare sector.

**Hypothesis 12:** Group longevity moderates the indirect effects of perceived diversity via communication on group outcomes: **H12a** Satisfaction (**supported**), **H12b** Performance (**supported**), **H12c** Commitment (**supported**), so that the indirect effects will be more positive for groups with high levels of longevity.

When considering the perceived diversity → communication → group outcomes path with the moderating effect of group longevity, there is a slight but trivial change in the strength of the indirect relationship. For example, with the moderating effect of group longevity, the results were  $\beta = 0.045$  with  $p\text{-value} < 0.019$  for satisfaction;  $\beta = 0.034$  with  $p\text{-value} < ***$  for performance; and  $b = 0.039$  with  $p\text{-value} < 0.039$  for commitment. Without moderating effect of group longevity, the results became  $\beta = 0.037$  with  $p\text{-value} < 0.020$  for satisfaction;  $\beta = 0.034$  with  $p\text{-value} < ***$  for performance; and  $\beta = 0.038$  with  $p\text{-value} < 0.021$  for commitment.

What is noticeable, however, is that the *beta coefficient* does not change substantially whether one adds or removes the moderating effect of group longevity. Therefore, in light of such findings, this study reasonably concludes that the moderating effect of group longevity is insignificant. It could be suggested that this study's cross-sectional design prevented the researcher from fully examining a longitudinal relationship to test the contention that members of diverse groups may communicate better over time due to the self-reinforcing nature of their interactions. Further study is needed in order to test such hypotheses using longitudinal data. This may increase our understanding of the influence of diversity on group communication and group outcomes over time, in particular, when taking into consideration the group developmental stages model (i.e., forming – storming – norming – performing) (see Tuckman, 1965, for more details).

### **6.3.3.2 The Interaction Effect of Perceived diversity and Task Interdependence on Group Outcomes via Social Integration and Communication**

**Hypothesis 13:** Task interdependence moderates the indirect effects of perceived diversity via social integration on group outcomes: **H13a** Satisfaction (**supported**), **H13b** Performance (**supported**), **H13c** Commitment (**supported**), so that the indirect effects will be more positive for groups with high levels of task interdependence.

The result of the hypothesis testing highlights a positive increase in the indirect influence of perceived diversity on group outcomes (satisfaction, performance, commitment). Several studies have pointed to the utility of integrating a moderator when considering a mediated relationship. Indeed, studies conducted by, among others, Saavedra et al., (1993), Timmerman (2000), and Wong & Campion (1991) all suggested that such a moderated-mediated model would lead to changes in the strength of the relationship between perceived diversity and group outcomes. This is because moderators—in this case, task interdependence and group longevity—elucidate when and under what circumstances a positive relationship between perceived diversity and group outcomes can be expected. The results of this research contradict a number of studies that, based on SAT assumptions (Byrne, 1971), indicated that the negative effects of diversity would be prevalent irrespective of the moderating effects of high-level task interdependence.

Nonetheless, it is important to not overemphasise the role played by moderators. Indeed, this study's results show the moderating effect of task interdependence to be modest and not extensive. For example, when juxtaposing the perceived diversity → social integration → satisfaction path without the moderating effect of task interdependence, the results were **H9a  $\beta = 0.025$**  with ***p-value* < 0.25**. By integrating task interdependence as a moderator, the results became  **$\beta = 0.050$**  with ***p-value* < 0.020**.

Similarly, when considering performance as a criterion variable, one can notice the considerable effect of task interdependence as a moderator when compared to the perceived diversity → social integration → performance path. Before moderating the above path, the results were  **$\beta = 0.191$**  with ***p-value* < \*\*\***. After

moderating the path, they became  $\beta = 0.035$  with  $p\text{-value} < ***$ . Evidently, the *beta coefficient* did not change significantly.

Additionally, the examination of the perceived diversity → social integration → commitment path without and with the moderating influence of task interdependence saw a slight increase in both the *beta coefficient* and the moderating effect on performance (**H9c**  $\beta = 0.017$  with  $p\text{-value} < 0.046$  without the moderator; **H13c**  $\beta = 0.032$  with  $p\text{-value} < 0.042$  with the moderator).

Considering the previous juxtapositions, it is clear that integrating task interdependence as a moderating force with regard to the relationship that maintains social integration as a mediator does not positively increase the indirect effect of perceived diversity on group outcomes. The adopted moderator within this study has limited strength in shifting the relationship between perceived diversity, group processes, and group outcomes.

The practical question that should be asked by decision makers in Saudi Arabia's healthcare system is not how the indirect effect of perceived diversity on group outcomes can be maximised; rather, it is how mediators can affect such causality (Baron & Kenny, 1986).

The results' implications are clear in that they highlight group mechanisms (communication, social integration) as telling and effective mediators that can create significant and positive relationships between the predictor variable (perceived diversity) and the criterion one (group outcomes). Most promisingly, however, is the fact that task interdependence has a significant impact on group outcomes and should not be discarded. Nonetheless, this study's preliminary conclusion is that task interdependence, as a moderator, may not be as important in maximising the strength of the indirect relationship between perceived diversity and group outcomes.

Although a number of theoretical studies underscored the paramount role of a moderated-mediation path model in understanding the effect of perceived diversity on group outcomes (Joshi & Roh, 2009; Bell, 2007; Mannix & Neale, 2005; Van Knippenberg et al., 2004; Harrison et al., 2002), this study finds that utilising a mediator model might also facilitate a better understanding of and captures the positive influence of perceived group diversity on group outcomes.

**Hypothesis 14:** Task interdependence moderates the indirect effects of perceived diversity via communication on group outcomes: **H14a** Satisfaction (*supported*), **H14b** Performance (*supported*), **H14c** Commitment (*supported*), so that the indirect effects will be more positive for groups with high task interdependence.

In a similar vein to what was discussed in regard to **H13**, the moderating effect of task interdependence on the perceived diversity → communication → group outcomes path is highlighted by the following results:  $\beta = 0.042$  with *p-value* < **0.016** for satisfaction,  $\beta = 0.040$  with *p-value* < \*\*\* for performance, and  $\beta = 0.043$  with *p-value* < **0.039** for commitment. This pattern of results showed insignificant differences when considering the increase in the indirect effect of the predictor variable over the criterion one, which is indicated in the mediator model's results:  $\beta = 0.037$  with *p-value* < **0.020** for satisfaction,  $\beta = 0.034$  with *p-value* < **0.021** for performance, and  $\beta = 0.038$  with *p-value* < **0.043** for commitment. Thus, one can argue that, in the case of low levels of communication within a group, adding task interdependence would not substantially change the strength of communication's mediating role.

As previously mentioned, there is a general consensus that, in order to have effective task interdependence, a group requires a certain level of communication (Horwitz, 2005; Stewart & Barrick, 2000). Logically, then, in the presence of low levels of communication, low levels of task interdependence would be eventually expected to emerge (Rico & Cohen, 2005). Therefore, it would be unsound to consider a moderator-mediator model in which low levels of communication were accompanied by high levels of task interdependence (ibid.). Ultimately, it is important to notice that communication is a preliminary condition that must be fulfilled before task interdependence can be assumed and/or integrated. This, in turn, enables one to argue that the mediating role played by communication is a strong indicator that warrants the non-inclusion of task interdependence as a moderator.

## 6.4 General Comments Regarding the Overall Discussion

With regard to the direct relationships, the results of this study further confirm that the one between perceived diversity and group outcomes is neither positive nor significant. Such a result is not unexpected and consistent with previous studies on the relationship between perceived diversity and group outcomes. This study suggests that the direct relationship is too simple and does not reflect the complexity of the apparent causal relationship. As such, the focus should be on the interactive effect—instead of the main/direct one—of perceived diversity on group outcomes. Ultimately, this study does not consider the direct relationship between perceived group diversity and group outcomes as a primary objective.

By focusing on the indirect effect of perceived diversity on group outcomes—specifically through a perceived diversity → group mechanism (social integration, communication) → group outcomes (satisfaction, performance, commitment) path—this study is able to highlight a significant positive effect on group outcomes. This, I believe, is due to the utility of perceived as compared to actual diversity, which is a multi-dimensional and, at times, contradictory variable. Indeed, when adopting group mechanisms, actual diversity, whether deep- or surface-level, results in contradicting effects that may be positive, negative, or null. On the contrary, by employing a perceived diversity variable, respondents do not resort to various pre-determined classifications, but rather provide a subjective evaluation of the context and their groups. Due to this very point, perceived diversity has been found to have a positive indirect effect on group outcomes when mediated by social integration and communication. As supported by SCT, both group mechanisms have been found to affect the shift from out-group to in-group membership.

With regard to moderated-mediation, this study has found that the moderating effects of task interdependence and group longevity have limited power to affect the strength of the mediated indirect relationship. Such a result contradicts the former diversity-process model, which suggested that the underlying processes were contingent upon task interdependence and group longevity as moderating variables. As such, this study underscores the importance of group mechanisms (social integration, communication) as mediators when considering the indirect positive relationship between perceived group diversity and group outcomes.



Similarly, the results of this study highlight that high levels of task interdependence and group longevity cannot exist without high levels of communication and social integration. In other words, high levels of social integration and communication are preliminary conditions and prerequisites for high levels of task interdependence and group longevity. Such an assertion was also made by Michel & Hambrick (1992), who suggested that group longevity is but a proxy for social integration. Similarly, Rico & Cohen (2005) highlighted that task interdependence is also a proxy of communication.

## **Chapter 7 Conclusions and Implications of the Study**

### **7.1 Introduction**

This dissertation has covered a particular segment of the perceived diversity-process-outcome model through a moderated mediation framework. In doing so, it has contributed to our understanding of how communication and social integration (mediators), when both are present, contribute positively towards group outcomes, namely, satisfaction, performance, and commitment. In addition to this, the moderated influence of task interdependence and group longevity were also tested, but were found to be of smaller significance in comparison to the mediators. Correspondingly, the analysis phase of the study adhered to a well-crafted structural model, based on wide-ranging and supportive literature, and SEM as a tool to understand underlying patterns. As this chapter will summarise the entirety of this thesis, it will provide the main contributions of the research, theoretical, methodological and practical. It will also discuss the research limitations and point towards possible future research into this field of study.

### **7.2 Contributions**

#### **7.2.1 Theoretical contributions**

Theoretically speaking, this study contributes by adopting, and indeed mixing, organisational demography with perceived diversity to examine the impact of workforce diversity on processes and outcomes for organisations. It does this by applying Similarity-Attraction Theory (SAT), Social Categorisation Theory (SCT), and Information-Processing Theory (IPT). Indeed, the utility of these theoretical blocks has not been extensively tested on perceived diversity and rather rests on 'objectively' defined demographic diversity (Shemla, et al., 2014). Indeed, this study suggested a wider understanding of group diversity by adopting the notion of perceived diversity.

Additionally, and to the best of my knowledge, only a handful of empirical studies have focused on the relationship between perceived group diversity and group outcomes by using a moderated-mediation model. This dissertation considers the moderating effect of group longevity and task interdependence with the mediating

effect of communication and social integration (Baron & Kenny, 1986; Mannix & Neale, 2005). By adopting a complex moderated mediation model, this dissertation has sought to enhance and deepen our understanding of the relationship between perceived group diversity and group outcomes. Indeed, this came about through the examination of recent reviews and meta-analysis studies that confirmed the inconsistent nature of seeking to elucidate a direct relationship between perceived group diversity and group outcome (Van Knippenberg & Schippers, 2007; Webber & Donahue, 2001; Bowers et al., 2000). While providing a systematic approach for explaining the underlying mechanisms between perceived diversity and group outcomes, this study confirmed that it might be only the 'interaction effects' that could further clarify our understanding of the effects of diversity.

Beyond this, this thesis also contributes to the literature by examining the abovementioned process through field-based data obtained from Saudi Arabia's healthcare sector. Apart from being the first to consider Saudi Arabia's context in this manner, it also highlights, within that context, the important role played by intervening variables (moderators and mediators) in affecting the relationship between perceived diversity and group outcomes.

### **7.2.2 Methodological contributions**

Methodologically speaking, the SEM analysis conducted in this study could contribute to the field of diversity in various ways. Through the use of advanced statistical software such as Mplus, SEM enabled this research to test a complex model integrating both moderators and mediators.

According to the path coefficient analysis, group longevity and task interdependence (the suggested moderators) were found to be statistically significant factors in the prediction of group outcomes in the case of Saudi Arabia's healthcare sector. However, the roles played by group longevity and task interdependence as moderators were found not to be statistically significant in the relationship between perceived diversity and group outcomes.

The role played by the mediators (i.e., communication and social integration) should be considered, as they significantly shifted the effect of perceived diversity

on group outcomes; while that played by the moderators (i.e., group task interdependence and group longevity) was discarded as their effects were found to be trivial and negligible.

Compared to most studies in this field—e.g., Schippers et al. (2003) and Pelled et al. (1999)—I used the best method available to answer the research question on the mediating effects—i.e., the Sobel approach. I utilised the revised version of the structural model, in which I adapted the method to adequately fit the observed data due to all fit indices— $\chi^2/df$ , TLI, CFI, RMSEA, and SRMR—being found within their threshold level.

In their study, Pelled et al. (1999) explicitly stated that they would have used SEM if their sample size had supported it (p.13), which the one of this study indeed does. Additionally, Schippers et al.'s paper used an out-dated assessment of mediation, as suggested by Barron & Kenny's causal steps approach, conducted 30 years ago (1986). Schippers et al.'s study relies on comparing a significant coefficient and a non-significant one, which is not a test of the significance of the difference between them. Specifically, the significance or non-significance of the direct effect has no bearing on that of the indirect one. This was convincingly demonstrated by the results of this study; whereas perceived diversity was not found to be directly and significantly related to team outcome variables (the study did not find any empirical evidence to suggest that perceived diversity plays a direct role in predicting group outcomes); however, a significant indirect relationship brought about by the influence of social integration and communication was found to exist between the two. In that sense, the role played by group mediators was statistically significant in the relationship between perceived diversity and group outcomes.

### **7.2.3 Practical contributions**

In practice, this study could help decision makers in Saudi Arabia's healthcare sector to adopt new strategies that focus on maintaining adequate levels of group communication and integration in any given highly diversified team. This could be done in order to increase their group outcomes (i.e., satisfaction, commitment, performance). This study hopes to expand the awareness of practitioners concerning the possible effects of perceived diversity in the workplace and its

effects on group communication, integration, and outcomes. Depending on their preferences and the goals they set for their teams, practitioners can make more conscious decisions concerning the degree of workforce diversity they desire. Other relevant concepts that this study has discussed are communication and social integration. They were found to be immensely important to enable groups to function. Group members should be encouraged to communicate among themselves. This can be achieved through promoting interdependent tasks and/or goals, promote leadership and a culture of cooperation. Improving and encouraging group unity, thus enhancing communication and social integration within diverse workplaces, would help bring about the work environment desired by both local employees and expatriates, whether male or female, old or young.

### **7.3 Limitations and recommendations for future research**

This section presents the possible limitations of the current study. Its results should be interpreted with these limitations in mind. In particular, the limitations are related to sampling and response rates, and research design and measurement issues as presented below.

#### **7.3.1 Limitations related to Sampling and Response Rates:**

- There is a slight chance of my sample under-representing the population I sought to study. The data collected for this research was gathered using a two-stage cluster sampling for three main Saudi regions (Jeddah, Riyadh and Al-Madinah). This sampling technique does have its drawbacks. A number of scholars have described it as yielding samples that are significantly unrepresentative of the population it targets, especially compared with other probability sampling techniques (Bradley, 2007). This is specifically due to the tendency of the individuals sampled to share similar or identical characteristics, which may be detrimental to the aims and objectives of my research. Nonetheless, due the fact that the three pre-selected regions in this study are a good representation of the whole population (i.e., Saudi Primary Healthcare), this issue may not be crucial for this study. In Saudi Arabia, PHC centres have organisationally comparable structures, and follow the policies,

procedures, and practices outlined by the Ministry of Health (MOH, 2014), which also includes their strategic goals, aims, and objectives. (see chapter 3 for detailed information).

### **7.3.2 Limitations related to design and measurement Issues**

- The teams studied in this research were limited to the Saudi healthcare sector. As a result, the findings cannot be generalised across all industries. Future research should examine the effects of perceived diversity in multi-disciplinary industries or crosscutting departments. It might be interesting to apply a multiple case study design to compare the effects of diversity on highly diversified (e.g., the Healthcare sector) and less diversified organisations (e.g., the Banking sector) in Saudi Arabia. Indeed, the evidence collected from multiple case studies would be more convincing as it would cover different contextual conditions, and thus could substantially expand the generalizability of the study's finding to a broader array of contexts (Yin, 2003).
- This research primarily used a quantitative approach to achieve its purpose. This may have limited its ability to present a comprehensive picture of the topics related to the participants' perceived diversity and to its effects on group outcomes. Furthermore, perceived diversity could be ascribed to the idea that the tendencies, beliefs, and practices of the participants with regard to matters such as group mechanisms tend to shift with time.
- There was only one point in time of measurement and the influence of time was not taken into consideration. Regarding the effects of perceived diversity, the participants' assumptions, beliefs, and awareness with regard to the perception of diversity are likely to change over time (Harrison et al., 2002). Likewise, concerning the variable of team longevity, retrospective data was used as a way to incorporate the aspect of time into the research model. For example, instead of tracking groups over time, I asked group members how long their team had been working together. Nevertheless, even when taking team longevity into account, it is still impossible to determine causality. The changes in the variables, their mutual influence, and causality can only be measured when measurements are taken over suitable time periods (Klein & Kozlowski, 2000).

- Self-reported measures were employed to assess group performance. Thus, issues linked to common method variance may have arisen in relation to using a single method to measure employee outcomes. That is to say that the participants may have been tempted to offer socially acceptable answers rather than to convey their true beliefs or practices. Such potential self-report bias could be reduced by using multiple methods (e.g., interviewing line managers or group leaders), at least for one construct. Unfortunately, most of the group leaders did not participate in this research, resulting in most of the data being collected from the perspective of group members.

### **7.3.3 Limitations related to diversity research**

- A number of unaccounted possible variable combinations could have better influenced the results of this study. An example of such a variable could have been deep-level value diversity. Indeed, the elements that could anticipate group outcomes (satisfaction, commitment, and performance) differ vastly depending upon the type of diversity utilised (perceived, demographic, psychological, and informational). Similarly, studying the interaction role played by “group openness to diversity” was not examined in this research. According to Mitchell et al. (2009), “group openness to diversity” is another element of diversity or a moderator that could have been included in this study to gain a better understanding of the ways in which participants shape their level of communication and social integration. It is worth noting that the role played by these elements could be essential in view of the special nature of perceived diversity, as more psychological factors affect human communication and social integration between group members. Thus, the adoption of perceived diversity could be more susceptible to the prevailing diversity values and group members’ openness to diversity values.
- In a similar vein, due to measurement issues, control variables that were not included in the final model could have impacted the results when testing perceived diversity and group process. For instance, ‘task complexity’ and ‘communication frequency’. This is because IPT posits that, if a task is cognitively challenging, a diverse work group integrates and communicates better and, in turn, achieves better results than a homogeneous one. In terms

of frequency of communication, this is simply a further indicator of the degree of communication that members have with each other.

## **7.4 Future Research**

As mentioned before, this research is limited by some shortcomings that could be taken into consideration in forthcoming studies. In detail, the adoption of a mixed-method approach (quantitative and qualitative) could provide a more detailed clarification of this research's findings. By taking such an approach, researchers would be able to take two epistemological positions—i.e., objectivist and constructivist. Furthermore, the data would be based upon text and numbers. As a result, researchers would have the opportunity to exploit the benefits of qualitative research—i.e., to collect a considerable amount of data from a highly concentrated sample—and this, in turn, would give them the ability to deepen their knowledge and develop a comprehensive understanding of the essence of the studied subject (Bhattacharjee, 2012). It is important to note that, despite their combined strength, there is also the possibility of having to deal with both paradigms' weaknesses. For that reason, it is important that the synergy be done mindfully rather than as a means to an end.

Similarly, taking into account that the findings of this research relied on cross-sectional data, a longitudinal study could provide more credibility, enabling the formulation of statements on the causality of relationships. Indeed, gathering data from the same respondents at two different points in time would increase the reliability of the findings (Klein & Kozlowski, 2000). An interesting avenue for future research could be to examine a longitudinal relationship to test the contention that, over time, a diverse group might communicate better due to the self-reinforcing nature of the interaction between its members. This might increase our understanding of the influence of diversity on group communication and group outcomes over time, in particular when taking into consideration the group developmental stages model (i.e., forming – storming – norming – performing) (see Tuckman (1965) for more details).

Moreover, although this study suggested certain mediators and moderators, the literature review shows other types worthy of being studied and confirmed in upcoming studies—on other diversity types or in other contexts—to see whether



their paths will act in the manner noted in this study. For example, while this research added communication and social integration as mediating factors in the adopted model, other significant factors, such as conflict, were not investigated in this study and consequently should be given attention in order to provide a more complete picture concerning their mediating effect between perceived diversity and group outcomes.

This study focused on the effect of perceived diversity on group outcomes; yet, deep level and other types of diversity, such as “group openness to diversity”, could be important to study in future research and in the Saudi context. A stimulating research question could involve exploring the potential impact of the interaction between perceived and value diversity on both group processes and outcomes. Equally important would be examining the interaction between perceived diversity and group members’ openness to diversity. Openness to diversity is posited to facilitate open communication and a higher level of integration within groups. As group members learn to value diversity and encourage difference in perspectives, their interactions should become fairer and less biased (Cox, 1991; Larkey, 1996). This is because individuals are more likely to gain accurate personal information about each other, rather than relying on stereotypes (Elsass & Graves, 1997). By contrast, groups with low openness to diversity may fail to regard and effectively utilise the diversity available and, in turn, express negative biases associated with social categorization processes (SCT). Thus, future research is needed to test the hypothesis that perceived group openness would moderate the associations between perceived diversity and group outcomes. In addition, future work should also pay attention to control variables—namely, task complexity, frequency of communication, and objective indicators of diversity—in order to compare and comprehend the underlying impact of perceived diversity on group processes.

The existence of a systematic process in suggesting and confirming the conceptual model of this study opens views to expand, re-employ, and recheck this model. All in all, to the extent that resources and statistical procedures allow for it, it would be advisable for future research to expand the conceptual model. Including more variables and/or control variables could do this. Likewise, there is a lack of empirical research examining more complex models better suited to understanding the relationship between perceived diversity and group outcomes.

After conducting this research, there are still several relationships that are unclear. To see the actual effect of perceived diversity on group outcomes, and whether this relationship is mediated by communication and social integration or moderated by group interdependence and longevity is a long-term ambition. Indeed, with future research adding further case studies and increasing the sample size, there is a higher likelihood of finding significant relationships. This study gathered its data from only three regions in Saudi Arabia (Jeddah, Riyadh and Al-Madinah); future studies in the Saudi context should take in the whole of the country's territory by including other regions and groups working in the healthcare sector in urban, suburban, and rural areas. Extending the range of the participants to cover various locations in Saudi Arabia would increase the level to which the selected sample reflects the overall population.

## **7.5 Chapter Summary**

This chapter was devoted to providing the key conclusions reached by this study and illustrated its main research contributions and limitations. Finally, this chapter suggested a number of directions worth considering for future studies. It has elucidated and adapted the moderated mediation framework to understand the perceived diversity – process – outcome model. To this end, the utility of SEM has been outlined as a tool in highlighting patterns and causation. Beyond methodological implications, theoretically this thesis has amalgamated and applied three divergent strands relate to behaviour and our expectation of diversity, process, and outcome. Most significantly, it has included the use of perceived diversity as opposed to other operationalisations of diversity seen in other studies (i.e. surface/deep).

This chapter also summarised the contributions of the thesis by outlining the fact that it is one of the few empirical studies conducted on this study, if not the only one focusing on Saudi Arabia's context. Accordingly, this chapter also makes clear the potential utility of decision-makers that this thesis may have, especially for health care. Besides, this chapter has outlined the limitations as being the sampling being slightly under-representative of the population. There is also the concern of being too quantitative-centric with a limited understanding of the notions being measured. Apart from this, there are also possible limitations with

the operationalisation of diversity as it is quite a convoluted notion, however this has to some extent been addressed throughout the thesis.

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## Appendix A. The questionnaire – English version



### Royal Holloway University Workforce Diversity and Group Outcome

Dear Sir/Madam,



First and foremost, I would like to thank you in advance for taking the time and patience to complete this questionnaire, which is the core of my PhD research project “Workforce Diversity and Group Outcome”. The research project focuses on the relationship between group diversity, group processes such as communication and social integration in the work environment, and group outcomes. To gain an insight into this area, I would appreciate your views regarding the work group you are currently work in and the information about yourself. This research is done without any third-party funding and does not hinge on the interests of foreign actors; it is the sole responsibility of the researcher and abides by the aims and objectives set by him.

The questionnaire is to be completed in anonymously and will be kept confidential at all times. This should not be taken as a test. There is no right or wrong answer to any of the questions. So, please answer each item as honestly as possible. I assure you that all the information gathered is kept confidential and at no point are the names of companies or individuals that have taken part made publicly available. It should be clear that apart from me, no other individual/researcher is allowed to view your answers. The questionnaire should take about 10-15 minutes to complete. I would appreciate it if you could return the completed questionnaire to -----  
-----.

For any queries or any further questions regarding the nature of the survey, please do not hesitate to contact me:

**Majed Alsolamy**

*PhD Candidate at Royal Holloway University of London*

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## Section 1: *You and the Team*

### 1.1 To what extent do you agree with the following statements?

*(please refer to the past 5 months)*

*(Please circle: 1 = Strongly Disagree; 7 = Strongly Agree)*

I talk up this team to my friends as a great team to work in	1	2	3	4	5	6	7
I feel a sense of ownership for this team rather than being just an employee	1	2	3	4	5	6	7
I feel proud to belong to this team	1	2	3	4	5	6	7
I am willing to exert extra effort for the success of this group	1	2	3	4	5	6	7
I am glad to belong to this group and not another group	1	2	3	4	5	6	7
I feel very committed to this group and its members	1	2	3	4	5	6	7

### 1.2 How diverse do you perceive your work group is with regard to:

*(Please circle: 1 = Not at all; 7 = Very Diverse)*

Age	1	2	3	4	5	6	7
Gender	1	2	3	4	5	6	7
Ethnicity	1	2	3	4	5	6	7
Nationality	1	2	3	4	5	6	7
Functional Background	1	2	3	4	5	6	7
Educational Background	1	2	3	4	5	6	7
... work attitude	1	2	3	4	5	6	7
... work values	1	2	3	4	5	6	7
... work personality attributes	1	2	3	4	5	6	7

### 1.3 To what extent do the below statements reflect your everyday interaction with the members of your group? *(please refer to the past 5 months)*

*(Please circle: 1 = To a very small extent; 7 = To a very large extent)*

Most of the time we get on personally very well	1	2	3	4	5	6	7
The members of my group are quick to defend each other from criticism by outsiders	1	2	3	4	5	6	7
Everyone's input is incorporated into the most important decisions	1	2	3	4	5	6	7
Relationships between members of the group are best described as "win-lose"; if he/she wins, I lose	1	2	3	4	5	6	7
The members of the group are always ready to cooperate and help each other	1	2	3	4	5	6	7
There is a great deal of competition between members of the team	1	2	3	4	5	6	7
The members of the group get along together very well	1	2	3	4	5	6	7

**1.4 With regard to group performance, to what extent do you feel that your team...**

*(please refer to the past 5 months)*

**Please circle: (1 = To a very small extent; 7 = To a very large extent)**

... met the <i>standards of quality</i> expected by the Saudi Ministry of heal	1	2	3	4	5	6	7
... met the <i>standards of quantity</i> expected by the Saudi Ministry of heal	1	2	3	4	5	6	7
... met the <i>deadlines</i> expected by the Saudi Ministry of heal	1	2	3	4	5	6	7
... adhered to the <i>budget</i> set by the Saudi Ministry of heal	1	2	3	4	5	6	7
... deserves a positive evaluation	1	2	3	4	5	6	7
... warrants no or only a few complaints about the quality of work	1	2	3	4	5	6	7

**1.5 To what extent do you agree with the following statements about your satisfaction?\_***(please refer to the past 5 months)*

**(Please circle: 1 = Strongly Disagree; 7 = Strongly Agree)**

I am satisfied with my present colleagues	1	2	3	4	5	6	7
I am satisfied with working in this group	1	2	3	4	5	6	7
I am able to take part in the planning of my own work	1	2	3	4	5	6	7
I am able to apply my own ideas in work	1	2	3	4	5	6	7
I am satisfied with the group functioning	1	2	3	4	5	6	7
I am satisfied with communication among group members	1	2	3	4	5	6	7
I am satisfied with group leadership	1	2	3	4	5	6	7
I am satisfied with the relationship climate in the group	1	2	3	4	5	6	7

**Section 2: Team Characteristics**

<b>Frequency of Contact</b>	Not at all	Less than once a month	About once a month	More than once a month	About once a week	Frequently during the week	On a daily basis
<b>2.1</b> In the last 5 months, how often have you interacted on work related matters with your colleagues?	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>

**2.2 Please circle to what extent you agree or disagree with the following statements: (please refer to the past 5 months)**

**(1 = Strongly Disagree; 7 = Strongly Agree)**

I have similar tasks to other members of the group	1 2 3 4 5 6 7
I have similar goals to other members of the group	1 2 3 4 5 6 7
To finish my tasks, I require the knowledge and resources of other group members	1 2 3 4 5 6 7
I cannot achieve my work goals unless my colleagues also achieve theirs	1 2 3 4 5 6 7
I am required to work together with my colleagues to complete specific tasks	1 2 3 4 5 6 7
I often need to work directly with my colleagues in order to effectively perform my job	1 2 3 4 5 6 7
My job requires me to coordinate my actions with those of my colleagues	1 2 3 4 5 6 7
I have a one-person job, I rarely have to check or work with others	1 2 3 4 5 6 7
I am unable to perform my job effectively if certain colleagues are unavailable	1 2 3 4 5 6 7
Group members are informed about the goals they should attain as a group	1 2 3 4 5 6 7
My colleagues and I are all working toward a common and shared goal	1 2 3 4 5 6 7
Group members receive feedback on the basis of their collective performance	1 2 3 4 5 6 7
I am often encouraged to aim for personal goals at work	1 2 3 4 5 6 7

**2.3 In your opinion, how accurate are the statements below regarding the communication between the members of your group? (please refer to the past 5 months)**

**(Please circle 1 = Very Inaccurate; 7 = Very Accurate)**

You are willing to share information with other group members about their work	1 2 3 4 5 6 7
You enjoy talking to each member in the group	1 2 3 4 5 6 7
When you talk to each other in the group, there is a great deal of understanding	1 2 3 4 5 6 7
You are comfortable talking to each other about what needs to be done	1 2 3 4 5 6 7

**2.4 To what extent do the statements below reflect the nature of tasks your group encounters (please refer to the past 5 months)**

**(Please circle: 1 = To a very little extent; 7 = To a very large extent)**

The task is constantly changing	1 2 3 4 5 6 7
The required skills needed by the group are constantly changing	1 2 3 4 5 6 7
The required information needed by the group are constantly changing	1 2 3 4 5 6 7
During a normal working week, exceptions frequently arise that require substantially different methods or procedures for the group	1 2 3 4 5 6 7

### Section 3: *Background Information*

#### 3.1. Average Group Size:

How many individuals in total work in your team including yourself? \_\_\_\_\_ (*insert number*)

#### 3.2. Group Tenure:

How long has the *Team* been established? \_\_\_\_\_ *Years*

#### 3.3. What is the level of qualification that you have received?

1. Did Not Complete High School       2. High School       3. Advanced Diploma   
4. College       5. Bachelor Degree       6. Postgraduate level qualification   
7. No formal qualifications

Others (*please specify*) \_\_\_\_\_

#### 3.4. What is your job title?

1. Administrative & Clerical staff       2. Practice Nurse       3. District Nurse   
4. Receptionist       5. General Doctor       6. Social Worker       7. Practice Manager   
8. Midwife       9. Health Visitor       10. Pharmacist       11. Community Psychiatric Nurse   
12. Other (*please specify*) \_\_\_\_\_

#### 3.5. Group Longevity:

How long have you worked in this team? *Years* \_\_\_\_\_ *months* \_\_\_\_\_

#### 3.6. Are you

Male       Female

#### 3.7. How old are you?

\_\_\_\_\_ *years* \_\_\_\_\_ *months*

#### 3.8. What is your nationality?

Thank you ever so much for completing this questionnaire. It will serve as a valuable contribution to this study about workforce diversity and its relationship to group outcomes and may help to improve the relationship between members of healthcare groups in Saudi Arabia.

**Thank you for your participation!**

**Finally, may I kindly ask you to return this questionnaire to**

\_\_\_\_\_

## Appendix B. The questionnaire – Arabic version



جامعة رويال هولواي

تنوع القوى العاملة وعلاقتها بانتاجية فريق العمل

الادارة وعلم النفس الاجتماعي


عزيزي/عزيزتي

بداية أتقدم لكم بالشكر الجزيل على إعطائنا بعضاً من وقتكم الثمين لتعبئة الاستبيان المرفق والمتعلق بدراسة الدكتوراه حول موضوع التنوع والاختلاف الديموغرافي وأثره على إنتاجية فريق العمل داخل وزارة الصحة. الوقت المتوقع لتعبئة الاستبيان ما بين ١٠ الى ١٥ دقيقة. يؤكد لكم الباحث انه سيتم التعامل مع جميع البيانات بسريه تامه ولم ولن يتم نشر اجاباتكم أو ارائكم لأي طرف اخر. وللاجابة على اسئلة الاستبيان، نوضح لكم انه لا يوجد اجابه صحيحه او خاطئة، لذلك يرجى اختيار الاجابه التي ترون انها اقرب للواقع قدر الإمكان. في حالة الانتهاء من تعبئة الاستبيان يرجى التكرم بإعادته الى \_\_\_\_\_ خلال مده اقصاها ثلاثة ايام.

كما أنه في حالة وجود اي استفسار حول أسئلة البحث يرجى عدم التردد في التواصل مع الباحث على العناوين أدناه،

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ولكم وافر التقدير والاحترام

القسم الأول: أنت والفريق الذي تعمل معه

1-1: إلى أي مدى تتفق مع الجمل التالية (برجاء الإشارة إلى الخمسة شهور الماضية)

(برجاء وضع دائرة حول: 1= لا أوافق بشدة 7= أوافق بشدة)

7 6 5 4 3 2 1	أتحدث مع أصدقائي عن هذا الفريق كفريق عظيم يستحق العمل فيه
7 6 5 4 3 2 1	لدي إحساس بالتملك في هذا الفريق بدلاً من كوني موظفاً فيه
7 6 5 4 3 2 1	أحس بالفخر لانتمائي لهذا الفريق
7 6 5 4 3 2 1	إنني على استعداد لبذل أي جهد إضافي لإنجاح هذه المجموعة
7 6 5 4 3 2 1	يسعدني الانتماء لهذه المجموعة وليس لمجموعة أخرى
7 6 5 4 3 2 1	أحس بالالتزام التام نحو هذه المجموعة وأعضائها

2-1: كيف ترى تنوع وتعدد القوى العاملة داخل فريق عملك فيما يتعلق بالخصائص ادناه؟

(برجاء وضع دائرة حول: 1= ليس على الإطلاق 7= متنوع جداً تماماً)

7 6 5 4 3 2 1	السن
7 6 5 4 3 2 1	الجنس
7 6 5 4 3 2 1	الأصل العرقي
7 6 5 4 3 2 1	الجنسية
7 6 5 4 3 2 1	الخلفية الوظيفية
7 6 5 4 3 2 1	الخلفية التعليمية
7 6 5 4 3 2 1	.....التوجهات نحو العمل
7 6 5 4 3 2 1	..... قيم العمل
7 6 5 4 3 2 1	..... سمات الشخصية في العمل

3-1: إلى أي مدى تعكس الجمل المذكورة أدناه تفاعلك اليومي مع أعضاء مجموعتك؟ (برجاء الإشارة إلى الخمسة شهور

الماضية (برجاء وضع دائرة حول: 1= إلى حد ضئيل جداً 7= إلى حد كبير جداً)

7 6 5 4 3 2 1	عادة ما تكون العلاقات الشخصية على ما يرام في معظم الأحيان
7 6 5 4 3 2 1	أعضاء مجموعتي لديهم السرعة في الدفاع عن كل منهم الآخر ضد أي انتقاد يوجهه لهم أعضاء آخريين من خارج الفريق
7 6 5 4 3 2 1	يتم تضمين آراء أعضاء الفريق في معظم القرارات الهامة
7 6 5 4 3 2 1	أفضل وصف للعلاقات بين أعضاء المجموعة هي "مكسب-خسارة". أي أنه إذا كسب هو/هي خسرت أنا
7 6 5 4 3 2 1	أعضاء المجموعة على استعداد دائم للتعاون ومساعدة كل منهم الآخر
7 6 5 4 3 2 1	العلاقات بين أعضاء الفريق ممتازة

**4-1: فيما يختص بأداء المجموعة إلى أي مدى تعتقد أن فريقك ..... (برجاء الإشارة إلى الخمسة شهور الماضية كبير جداً)**  
 و(برجاء وضع دائرة حول: 1= إلى حد ضئيل جداً 7= إلى حد

7 6 5 4 3 2 1	... يفى بمعايير الجودة المتوقعة من قبل وزارة الصحة السعودية
7 6 5 4 3 2 1	... يفى بالمعايير الكمية المتوقعة من قبل وزارة الصحة السعودية
7 6 5 4 3 2 1	... يلتزم بمواعيد الانجاز المحددة والمتوقعة من قبل وزارة الصحة السعودية
7 6 5 4 3 2 1	... يلتزم بالميزانيه المحددة من قبل وزارة الصحة السعودية
7 6 5 4 3 2 1	... يستحق التقييم الإيجابي
7 6 5 4 3 2 1	... يضمن عدم وجود أي شكاوى أو بضع شكاوى عن جودة العمل

**5-1: إلى أي مدى تتفق مع الجمل التالية عن مدى رضائك اثناء العمل في مجموعتك؟ (برجاء الإشارة إلى الخمسة شهور الماضية)**  
 و(برجاء وضع دائرة حول: 1= إلى حد ضئيل جداً 7= إلى حد كبير جداً)

7 6 5 4 3 2 1	إنني راضٍ عن زملائي الحاليين
7 6 5 4 3 2 1	إنني راضٍ عن العمل في هذه المجموعة
7 6 5 4 3 2 1	لدي القدرة على المشاركة في التخطيط لعملي الخاص
7 6 5 4 3 2 1	لدي القدرة على تطبيق أفكارى الخاصة في العمل
7 6 5 4 3 2 1	إنني راضٍ عن اداء المجموعة
7 6 5 4 3 2 1	إنني راضٍ عن التواصل بين أفراد المجموعة
7 6 5 4 3 2 1	إنني راضٍ عن قيادة المجموعة
7 6 5 4 3 2 1	إنني راضٍ عن مناخ العلاقات في المجموعة

### القسم الثاني: سمات الفريق

ليس على الإطلاق	أقل من مرة في الشهر	حوالي مرة في الشهر	أكثر من مرة في الشهر	حوالي مرة في الأسبوع	مراراً أثناء الأسبوع	على أساس يومي
1	2	3	4	5	6	7

1-2: خلال الخمسة شهور الماضية كم مرة تفاعلت فيها مع زملائك في العمل فيما يختص بالموضوعات المتعلقة بالعمل؟

**2-2: برجاء وضع دائرة حول إلى أي مدى تتفق أو تختلف مع الجمل التالية:** (برجاء الإشارة إلى الخمسة شهور الماضية)

و(برجاء وضع دائرة حول: 1= أعترض بشدة 7= أوافق بشدة)

7 6 5 4 3 2 1	لدي مهام مماثلة لمهام الأعضاء الآخرين في فريق العمل
7 6 5 4 3 2 1	لدي أهداف مماثلة لأهداف الأعضاء الآخرين في فريق العمل
7 6 5 4 3 2 1	لإنهاء مهامي أحتاج للمعرفة والمصادر التي لدى الأعضاء الآخرين في فريق العمل
7 6 5 4 3 2 1	لا أستطيع تحقيق أهدافي إلا إذا حقق زملائي أهدافهم أيضاً
7 6 5 4 3 2 1	يستلزم الأمر أن نعمل سوياً أنا وزملائي في العمل لإكمال مهام معينة
7 6 5 4 3 2 1	طبيعة وظيفتي تتطلب مني تنسيق الأعمال مع أعمال زملائي في العمل
7 6 5 4 3 2 1	لست قادراً على إنجاز عملي بكفاءة في حالة عدم توافر زملاء معينين
7 6 5 4 3 2 1	عملي يعتمد على العمل الفردي (شخص واحد) ونادراً ما أحتاج إلى المراجعة أو العمل مع الآخرين
7 6 5 4 3 2 1	أعضاء المجموعة مطلعين بشأن الأهداف التي يجب تحقيقها كمجموعة
7 6 5 4 3 2 1	أنا وأعضاء الفريق نعمل معا لتحقيق أهداف مشتركة
7 6 5 4 3 2 1	أعضاء المجموعة يتلقون التغذية الراجعة على أساس الأداء الجماعي
7 6 5 4 3 2 1	غالباً ما أتلقى التشجيع للوصول إلى أهداف شخصية في العمل

**3-2: في رأيك ما مدى دقة الجمل المذكورة أدناه فيما يختص بالتواصل بين أعضاء المجموعة:** (برجاء الإشارة إلى الخمسة شهور الماضية)

و(برجاء وضع دائرة حول: 1= غير دقيق للغاية 7= دقيق للغاية)

7 6 5 4 3 2 1	أنت على استعداد للمشاركة بالمعلومات مع أعضاء المجموعة التي تختص بعملهم
7 6 5 4 3 2 1	إنك تجد متعة في التحدث مع كل عضو في المجموعة
7 6 5 4 3 2 1	عندما يتحدث كل منكم مع الآخر في المجموعة هناك قدر كبير من التفاهم
7 6 5 4 3 2 1	تشعر بالراحة عندما تتحدث مع كل منكم الآخر بشأن الاحتياجات التي يجب تنفيذها

**4-2: إلى أي مدى تعكس الجمل المذكورة أدناه طبيعة المهام التي تؤديها مجموعتك :** (برجاء الإشارة إلى الخمسة شهور الماضي)

و(برجاء وضع دائرة حول: 1= إلى حد ضئيل للغاية 7= إلى حد كبير للغاية)

7 6 5 4 3 2 1	تتغير المهمة بصورة مستمرة
7 6 5 4 3 2 1	المهارات اللازمة التي تتطلبها المجموعة تتغير بصورة مستمرة
7 6 5 4 3 2 1	المعلومات اللازمة التي تتطلبها المجموعة تتغير بصورة مستمرة
7 6 5 4 3 2 1	أثناء أسبوع العمل المعتاد غالباً ما تنشأ الاستثناءات التي تتطلب بصورة جوهرية طرقاً أو إجراءات مختلفة خاصة بالمجموعة



القسم الثالث: المعلومات الأساسية

<p><b>1-3: كم عدد الأفراد في العمل الكلي في فريقك بما فيهم أنت؟</b> ..... (أدخل العدد)</p>																									
<p><b>2-3: كم مدة تأسيس الفريق؟</b> ..... سنة</p>																									
<p><b>3-3: ما هو مستوى المؤهل العلمي الذي حصلت عليه؟</b></p> <table border="0"> <tr> <td><input type="checkbox"/></td> <td>مؤهل بكالوريوس</td> <td><input type="checkbox"/></td> <td>لم يتم اسكمال المرحلة الثانويه</td> </tr> <tr> <td><input type="checkbox"/></td> <td>مؤهل في مستوى الدراسات العليا</td> <td><input type="checkbox"/></td> <td>مؤهل الثانويه العامه</td> </tr> <tr> <td><input type="checkbox"/></td> <td>بدون مؤهلات علمية رسمية</td> <td><input type="checkbox"/></td> <td>دبلوم متقدم أو دبلوم مهني</td> </tr> <tr> <td></td> <td>أخرى (حدد من فضلك) -----</td> <td><input type="checkbox"/></td> <td>كلييه</td> </tr> </table>		<input type="checkbox"/>	مؤهل بكالوريوس	<input type="checkbox"/>	لم يتم اسكمال المرحلة الثانويه	<input type="checkbox"/>	مؤهل في مستوى الدراسات العليا	<input type="checkbox"/>	مؤهل الثانويه العامه	<input type="checkbox"/>	بدون مؤهلات علمية رسمية	<input type="checkbox"/>	دبلوم متقدم أو دبلوم مهني		أخرى (حدد من فضلك) -----	<input type="checkbox"/>	كلييه								
<input type="checkbox"/>	مؤهل بكالوريوس	<input type="checkbox"/>	لم يتم اسكمال المرحلة الثانويه																						
<input type="checkbox"/>	مؤهل في مستوى الدراسات العليا	<input type="checkbox"/>	مؤهل الثانويه العامه																						
<input type="checkbox"/>	بدون مؤهلات علمية رسمية	<input type="checkbox"/>	دبلوم متقدم أو دبلوم مهني																						
	أخرى (حدد من فضلك) -----	<input type="checkbox"/>	كلييه																						
<p><b>4-3: أي نوع من أنواع العاملين تشكل مجموعتك؟ (يمكنك وضع علامة على أكثر من مربع)</b></p> <table border="0"> <tr> <td><input type="checkbox"/></td> <td>قابلة</td> <td><input type="checkbox"/></td> <td>إداريين وكتبة</td> </tr> <tr> <td><input type="checkbox"/></td> <td>زائري صحي</td> <td><input type="checkbox"/></td> <td>موظف استقبال</td> </tr> <tr> <td><input type="checkbox"/></td> <td>صيدلي</td> <td><input type="checkbox"/></td> <td>مدير عيادة</td> </tr> <tr> <td><input type="checkbox"/></td> <td>ممرض نفسي مجتمعي</td> <td><input type="checkbox"/></td> <td>ممرضة</td> </tr> <tr> <td><input type="checkbox"/></td> <td>أخصائي اجتماعي</td> <td><input type="checkbox"/></td> <td>ممرضة منطقة</td> </tr> <tr> <td></td> <td>أخرى (حدد من فضلك) _____</td> <td><input type="checkbox"/></td> <td>دكتور عام</td> </tr> </table>		<input type="checkbox"/>	قابلة	<input type="checkbox"/>	إداريين وكتبة	<input type="checkbox"/>	زائري صحي	<input type="checkbox"/>	موظف استقبال	<input type="checkbox"/>	صيدلي	<input type="checkbox"/>	مدير عيادة	<input type="checkbox"/>	ممرض نفسي مجتمعي	<input type="checkbox"/>	ممرضة	<input type="checkbox"/>	أخصائي اجتماعي	<input type="checkbox"/>	ممرضة منطقة		أخرى (حدد من فضلك) _____	<input type="checkbox"/>	دكتور عام
<input type="checkbox"/>	قابلة	<input type="checkbox"/>	إداريين وكتبة																						
<input type="checkbox"/>	زائري صحي	<input type="checkbox"/>	موظف استقبال																						
<input type="checkbox"/>	صيدلي	<input type="checkbox"/>	مدير عيادة																						
<input type="checkbox"/>	ممرض نفسي مجتمعي	<input type="checkbox"/>	ممرضة																						
<input type="checkbox"/>	أخصائي اجتماعي	<input type="checkbox"/>	ممرضة منطقة																						
	أخرى (حدد من فضلك) _____	<input type="checkbox"/>	دكتور عام																						
<p><b>5-3: كم مدة عملك في هذا الفريق؟</b> (مثال: كم مدة عملك ك ممارس عام في المركز الصحي؟ ..... سنة ..... شهر</p>																									
<p><b>7-3: كم عمرك؟</b> ..... سنة ..... شهر</p>	<p><b>6-3: هل أنت:</b> ذكر <input type="checkbox"/> أنثى <input type="checkbox"/></p>																								
<p><b>8-3: ما هي جنسيتك؟</b> -----</p>																									

شكراً جزيلاً على استكمال هذا الاستبيان  
سيعتبر هذا الاستبيان بمثابة مساهمة قيمة في هذه الدراسة  
حول  
تنوع القوى العاملة وعلاقتها بانتاجية فريق العمل  
كما أنه سيساعد في تحسين العلاقة بين أعضاء  
العاملين في فرق العمل في وزارة الصحة بالمملكة العربية السعودية

أشكركم على مشاركتكم!

وأخيراً يرجى التكرم بإعادة هذا الاستبيان إلى \_\_\_\_\_

## Appendix C. Team Data Collection Form



Enquiry regarding the participation in the research “Group Diversity and Group Outcome”

Dear Madam or Sir,

I am conducting research that aims to explore the practical implications of group diversity on performance, satisfaction, and commitment to work. The goal is to gain practically useful knowledge which may serve as a platform for the betterment of management practices. To do this, it is necessary to include real life examples of group interaction in the work environment. It would be enormously helpful if you and your team would agree to participate in this research.

There is a single survey that includes questions about the team you are a part of, the interactions within it, your views about the tasks and goals of the group, and your perception of other group members. The questionnaire will take around 15-20 minutes to complete.

Why participate?

Beyond the fact that this would serve the purpose of advancing our understand of management, I also offer – based on the staff member’s answers – a **single-team feedback report** which reflects the opinions and perceptions of staff members; whether they are satisfied, committed, communicate sufficiently, and understand the tasks and goals set. Participating in this research would also be rewarded by an **overall report of the project** and the practical implications for management.

You have agreed to participate, what’s next?

Once you and your team have agreed to take part in the research, please complete the “**Data Collection Form**” (attached) and send it via email to Majed Qabil Alsolamy.

Thank you sincerely.

Kind Regards,

**Majed Qabil Alsolamy**

## Data Collection Form

<b>(1) Name of your group</b> (This should be a name or description that members of your team will recognise)	
<b>(2) Team leader/manager</b> (Please provide either an address and email or phone number)	
<b>(3) Contact person for completed questionnaires</b> (Please provide either an address and email or phone number)	
<b>(4) Name of group members</b>	<b>Title (e.g., Dr., Mr, Ms.)</b>
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	

