

Diverse Workgroup Functioning and Transformational Leadership

Volume I

By

Mohanad Dahlan

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Coventry University

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Abstract

Two theoretical perspectives guide workgroup diversity research: information processing and social identity. The information processing perspective suggests that cognitively diverse groups benefit from increased task-related knowledge, skills and abilities of members with diversified information sources, positively affecting group performance. The social identity perspective suggests that homogeneous groups are more productive as their members are mutually attracted by similar attributes, resulting in efficient group processes and performance. Contrastingly, it is argued that heterogeneity undermines communications and cohesion within groups, resulting in conflicts; and homogeneity offers limited potential for learning and problem-solving, hampering the development of creative ideas and innovative solutions. Despite the appeal of these theoretical perspectives, meta-analyses examining main effects relationships between diversity and group effectiveness have reported inconsistent findings. Research also offered mixed results over the influence of intragroup conflicts and the dysfunctional effects of their inevitable co-occurrence on workgroup functioning. Furthermore, although the literature points to the potential of transformational leadership in limiting dysfunctional conflicts and enhancing diversity's positive impact on group effectiveness, this field remains under-researched.

This study aims to develop a conceptualisation that addresses the associations between diversity and group effectiveness, the effects of intragroup conflicts and their co-occurrence on this association, and the potential influence of transformational leadership in decreasing this effect. By doing so, the researcher hopes to provide an explanation for the reported inconsistencies and fill a gap in the literature. To achieve this aim, the literature was analysed, and a model of relationships derived. A concurrent mixed methodological approach was used, and questionnaire data was collected from 56 academic workgroups in three private universities in the Middle East, a total of 354 questionnaires were returned. Twenty interviews were also

conducted. Results from hierarchical regression confirmed the model, displaying linear and non-linear relationships, with the co-occurrence of task and relational conflicts mediating the relationship between diversity and group effectiveness, and transformational leadership moderating these relationships. Findings from thematic analysis of the interviews offered insights which supported the model and triangulated with the results from the questionnaire. The findings add to the literature by explaining the inconsistencies of previous research. Implications of the findings were discussed, and limitations of the study highlighted which offered potential opportunities for further research.

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Dedication

This Thesis is dedicated to my father Dr Abdullah Sadiq Dahlan and Mother Sahar Mohammed Mosley for being my success compass for the early years of my life and for their support, encouragement, and replicated motivation which have inspired my career development and sustained me throughout my life. My gratitude and love for my mother will not diminish by writing this following verse expressing how I feel about my father who, of late, has suffered untold pain but has not lost faith.

to my father
who gave so much
no words no deeds are enough
no amount of love is enough
for my father has given our world so much



Declaration

I declare that this research project is the result of my own work, and all the written work and investigations are my own, except where stated and referenced otherwise. This thesis has not been accepted or submitted for any comparable award elsewhere.

I have given consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

Chapter 1

Introduction

The shift from jobs organised around individuals to a group-based work, it is argued, is critical for organisations' success and survival in rapidly changing and highly competitive environments (Kozlowski & Ilgen, 2006). This is because groups are seen as the basic units of organisational structure that can achieve more flexible and rapid responses to anticipated or unexpected environmental changes (Manz & Sims, 1993). With the wide diversity of the workforce in the workplace and prevalence of workgroups, the study of the relationship between group diversity and group processes and outcomes has become an intriguing topic (Horwitz & Horwitz, 2007). Even though this study has occupied a prominent place on the agenda for researchers, a growing body of evidence suggests that this relationship remains unclear. Successive meta-analyses and numerous other studies examining main effects relationships between diversity and group outcomes have reported mixed results, as their cumulative findings have been weak and inconsistent (e.g., Ayoko & Konrad, 2012; Bell *et al.*, 2011; Harrison & Klein, 2007; Horwitz & Horwitz, 2007; Jackson *et al.*, 2003; Leung *et al.*, 2008; Mannix & Neale, 2005; Neumeyer & Santos, 2020; Shin & Zhou, 2007; Valls *et al.*, 2016; Van der Vegt & Bunderson, 2005; Van Dijk, 2017; Van Veelen & Ufkes, 2019; Van Knippenberg *et al.*, 2004).

1.1 Aim and objectives of the study

The current study aims to achieve three objectives. First, offering a fresh treatment of the association between diversity and workgroup effectiveness; second, bringing into focus the centrality of the harmful effect of the co-occurrence of task and relationship conflicts, as a group process, on this association; and third, highlighting the potential influence of transformational leadership in decreasing this harmful effect.

With regards to the first objective, the group diversity literature advances two opposing perspectives to explain the nature of diversity and its consequences: information processing and social categorisation. The information processing perspective is consistent with the idea that diversity improves the positive outcomes of the group. This is because highly diverse groups benefit from increased task-related knowledge, skills and abilities of group members with multiple and varied sources of information; thus, enabling cross-fertilisation of ideas and perspectives in solving complex problems, and enhancing creative group performance (e.g., Chi *et al.*, 2009; Tyran & Gibson, 2008; Van Knippenberg & Schippers, 2007). In contrast, the social categorisation perspective is consistent with the idea that diversity undermines the positive outcomes of the group. It suggests that diversity encompasses factors that obstruct the group's information benefits, manifested by lack of cohesion, weak mutual communication, and increased personal conflicts (Williams & O'Reilly, 1998). Consequently, homogeneous groups are seen to be more productive than heterogeneous groups as their members are mutually attracted by their similar attributes, resulting in more efficient group processes and better performance (Wiersema & Bantel, 1992).

In this study the researcher argues that choosing one perspective independently or both perspectives simultaneously to explain the relationship between diversity and its consequences depends on the basis of its conceptual relevance to the outcome of interest. If the outcome variable includes information-related aspects, it is more appropriate to choose an information perspective while if it involves aspects related to psychological or social issues, the choice lies with the categorisation perspective. If the outcome features both information and psychological aspects, it is more appropriate to use both perspectives simultaneously. For example, the information perspective is more relevant in explaining the role of diversity in promoting individual creativity because the latter is limited to information-related aspects only. Group creativity, on the other hand, requires both perspectives simultaneously because, in addition to

information processing it needs high-quality interpersonal interactions among members (Shin *et al.*, 2012). Therefore, in this thesis, both perspectives were used simultaneously to demonstrate the relationship between diversity and group performance, whereas the categorisation perspective was employed to explain the relationship between diversity and group viability. Accordingly, this study follows past empirical studies that reported that curvilinear relationships between diversity and performance appear to be responsible for the mixed findings of linear analyses. This also builds upon research that documented the existence of negative associations between group diversity and social integration variables, such as group viability (Jackson, 1996; Milliken & Martins, 1996; Schoenecker *et al.*, 1997).

In relation to the second objective, the inconsistent main effect results for analysing diversity versus group outcome directed the attention of diversity researchers to the input-process-output (I-P-O) model (see Hackman, 1987; McGrath, 1984), incorporating processes which mediated the relationship between team input and team output, and considering which factors exerted a strong influence on explaining team performance and viability. Although many studies have suggested several processes that could explain the relationship between diversity and group effectiveness, such as learning behaviour, communication, conflict, identification, and cohesion, (e.g., Bui *et al.*, 2019; Kearney & Gebert, 2009; Marlow *et al.*, 2018; Tekleab *et al.*, 2016; Valls *et al.*, 2016; Van der Vegt & Bunderson, 2005), the picture is still incomplete. One of the missing mechanisms in the literature examining the relationship between diversity and group effectiveness, that this research seeks to highlight, is the co-occurrence of task and relationship conflict (CTRC). In this study, CTRC is treated as a collective-level bivariate construct that refers to the strength of interrelationship between task conflict and relationship conflict within a group. Although research has unfailingly reported high positive correlations between task conflicts and relationship conflicts and the inevitability of their co-occurrence in

workgroup functioning (e.g., Amason & Sapienza, 1997; Mooney *et al.*, 2007), there is a stark absence of studies on the impact of diversity on the co-occurrence of task and relationship conflict. Moreover, although some studies have inspected the effects of the co-occurrence of task and relationship conflict on group outcome, the potential role of this co-occurrence in explaining the relationship between diversity and group outcome is not fully investigated.

As a reference point for the third objective, the published research looking at the influence of leadership on group processes and group outcomes is sparse even though empirical studies on leadership attributes and behaviours are abundant (see: Avolio & Yammarino, 2002; Nishii & Mayer, 2009; Ospina & Foldy, 2009). Studies that pointed to the effectiveness of transformational leadership reported that leaders with high levels of inspiration and communication of vision are likely to mitigate the relationship between diversity and conflict, enhance learning in diverse teams, and limit the likelihood of task conflict escalating to relationship conflict (e.g., Ayoko & Callan, 2010; Ayoko *et al.*, 2008, 2012; Gibson & Vermeulen, 2003; Kearney & Gebert, 2009; Marlow *et al.*, 2018; Nishii & Mayer, 2009; Stewart & Johnson, 2009). However, this field remains under-researched, with very few empirical studies investigating the moderating influence of transformational leadership in the context of group diversity and performance (e.g., Kearney & Gebert, 2009; Shin & Zhou, 2007). The current study is looking at academic workgroup functioning, where it is acknowledged that members of these groups are normally engaged in knowledge creation, communication, and exchange (Chua, 2002; Pusser *et al.*, 2010; Thani & Mrikamali, 2018). Accordingly, it may be argued that the team leaders of these workgroups are more likely to be facilitative and participative (e.g., Mews, 2019), exhibiting transformational leadership behaviours (see, Avolio & Bass, 2004; Avolio & Yammarino, 2013).

This study thus attempts to develop a conceptualisation that addresses the associations between diversity, co-occurrence of task and relationship conflict, and group effectiveness, and to examine how transformational leadership may influence these relationships. By doing so, the researcher hopes to provide some explanation for the reported inconsistencies and fill an important gap in the workgroup diversity literature. Just as importantly, the researcher hopes that this study would contribute to a more effective leadership and management of the very diverse academic faculty in the three universities, where this research was conducted. Moreover, gaining insight into how team leaders, in these universities, tend to manage work-related conflicts could point to the need for training on how to lead and manage diverse academic groups and how to provide a workplace climate that would promote cross-fertilisation of diverse knowledge and experiences and enhance more effective and creative group performance. Unleashing the faculty's creative potential would potentially improve the performance of individual team members, the team, and the organisation. It would also help these universities to fulfil their ambitious missions (see 'section 1.3 Context of the study'), providing excellent education and learning environments for their students, and high knowledge-based services for their business partners and local communities. The benefits would also be felt through attracting and retaining a high calibre and diverse academics.

To achieve the study's aims, the relevant literature was first analysed to derive a model of relationships which links the various constructs together. Empirical research was then conducted through interviews to develop an insight into the theoretical relationships and through a questionnaire survey to statistically test these relationships. It is hoped that the findings from the interviews triangulate with the results from the questionnaires to obtain a fuller understanding and explanation of workgroup functioning in the studied context.

Analysis of the literature was guided by several logical imperatives. The first imperative was to treat the construct of diversity as consisting of two distinct groupings: cognitive diversity and demographic diversity (Kilduff *et al.*, 2000). Furthermore, because of the inescapable intertwining of task and relationship conflicts, the second imperative was to treat this entwining of conflicts as a single bivariate construct and assign to it the convenient term of ‘co-occurrence of task and relationship conflict’ (CTRC). Group effectiveness was used instead of group outcome, leading to the third imperative of treating group effectiveness as composed of two distinct components: group performance and group viability (McGrath, 1984; Sundstrom *et al.*, 1990). Group viability further encompasses maintaining the ability of team members to work together again in the future and satisfaction of group members’ needs (Hackman, 1987).

1.2 The structure of the thesis

The thesis is structured in a traditional format spreading over six chapters. The current chapter presents the introduction which sets the scene and points to some of the salient points of the study. It is followed by a review of the relevant literature (chapter 2), focusing on the functioning of diverse workgroups, drawing on the multi-disciplinary literature of diversity, conflict, leadership, workgroups and performance studies. In this chapter, the researcher explored the nature of workgroups and their central role within modern organisations. The discussion of the literature was structured within the framework of the input-process-output (IPO) model of workgroup effectiveness, where the constructs constituting the model’s input, process and output dimensions were briefly looked at, while discussing in detail the constructs from each dimension that are central to this thesis. Thus, from the input dimension, team composition was touched upon, while discussing in much greater detail the two team composition constructs of ‘workgroup diversity’ and ‘transformational leadership behaviours and attributes’; both are central to this study. Within the team process dimension, the discussion

focused on ‘intra-group conflicts’, another central construct of this study, and their effects on team effectiveness. The output dimension of group effectiveness and its constituent parts of group performance and group viability permeates the whole thesis and form the focal construct of the review and the thesis. Synthesis of the literature allowed a number of associations to be developed between diversity, co-occurrence of task and relationship conflicts (CTRC), and group effectiveness. An argument was also developed over the moderating influence of transformational leadership in these associations. The review culminates in a theoretical model of relationships (fig. 2.1) which forms the research problem of this study.

The methodological design adopted in this research is presented in chapter 3. It starts with a brief philosophical discussion about the nature of knowledge; identifying the ontological, epistemological, and methodological underpinnings of various paradigms regarding what constitutes knowledge, how to access this knowledge and how to present it. Because of their relevance to this research, a more detailed discussion is offered of pragmatism and the associated mixed methods research approach. The study’s concurrent mixed methods design is then presented, displaying the quantitative research method adopted to test the theoretical model, including its sampling, scale development, and procedures for testing of the model’s hypotheses. The qualitative research method is also displayed; it was concurrently undertaken with the quantitative research to gain an insight into diverse workgroup functioning and ascertain the extent to which its findings triangulate with the results of the quantitative research and consequently with the theoretical model. The sampling, data collection, and thematic analysis procedures, issues of credibility and dependability as well as ethical considerations associated with qualitative research are also discussed.

The study's qualitative analysis is presented in chapter 4, where the researcher analyses the data obtained from the interviews using thematic analysis with the aim of developing themes that might throw light on the relevant areas of diverse team functioning in the studied context. The data and extracted themes are then discussed in relation to theoretical concepts, constructs and relationships that were identified as relevant to team functioning. The discussion is focused on developing relationships and exploring the extent to which these relationships are informed by the constructed theoretical model. This chapter's structure follows a similar logic to that of 'section 2.4 Investigating and developing relationships' of the Literature Review. The thematic analysis starts with exploring the association between diversity and group effectiveness, followed by the association between diversity, co-occurrence of task and relationship conflict and group effectiveness. The potential influence of transformational leadership in moderating the effects of diversity on the co-occurrence of conflicts and group effectiveness is then discussed, and the chapter closes with a section on reflexivity.

The quantitative analysis part is undertaken in chapter 5, whose aim is to test the relationships of the hypothesised model of relationships. The introduction to the chapter is presented, followed by a discussion of the sample characteristics, and sampling and data collection procedures. Testing the measurement scales and establishing the factorability of these scales is then undertaken, including testing their validity through the estimation of the goodness of fit using confirmatory factor analysis technique in AMOS, as well as testing the reliability of the scales. Aggregation of individual level data to group level data is also conducted, followed by testing of the model's hypotheses.

Chapter 6 discusses the findings of this research in relation to the relevant literature, displaying the extent to which the results of the quantitative analysis triangulated with the findings of the qualitative analysis, and the extent to which the study's results and findings relate to the

literature. The chapter also highlights the contributions and implications of this study to theory and practice, points to its limitations and suggests areas for further research.

1.3 The Context of the Study

1.3.1 The study population

The population chosen for the study consists of three universities:

- 1) Ahlia University located in Manama, Bahrain.
- 2) Al Esraa University College located in Baghdad, Iraq.
- 3) University of Business and Technology located in Jeddah, Saudi Arabia.

All three universities are establishments located in the Gulf Region that strive for academic excellence and have close collaborative relationships. In what follows I will briefly look at the Gulf region, then introduce the three universities, present their visions, missions and objective, all the while explaining the reason why they were handpicked to form this study's population.

The Gulf Region

The Arab Gulf is a very diverse region of the world. Even excluding expatriates who make up a significant proportion of the population, Gulf citizens come from a wide range of ethnic, cultural and religious backgrounds. The natural conditions that challenge the small Gulf countries also define these countries' potential. While oil and gas have been the drivers of growth and wealth, transportation and logistics have already become central to these economies. The Gulf is a natural waypoint between Europe and East Asia, as well as between Africa and Central and East Asia.

This geographical reality reaches farther than the present logistical advantages it confers. A tradition that comes from being in this position, a crossroads for sea trade and desert routes, has allowed for cultures that are open to outsiders, with an understanding of how to work and interact with people that come from different backgrounds, races and regions of the world. The greatest economic opportunities come from the ability, geographically and culturally, to bridge East and West.

In the past few decades, an inherent diversity has been augmented by the influx of a vast body of expatriate workers, many having lived there for over two generations. But diversity, old and new, in religion, language, and race has been a hallmark of the Gulf throughout its long history. Much ethnic diversity was imparted to the Gulf population by the introduction of new settlers (primarily artisans, skilled and unskilled labourers and marriages with foreign partners) for millennia via trade and political connections with other oceanic societies around the rim of the Indian Ocean and South China Sea. The genetic imprint of East Africa, Southeast Asia, and the Indian subcontinent was already strongly present in the Gulf population long before the twentieth century. The recent oil boom and the flood of expatriate workers into the region have just increased that diversity, not created it. The most fascinating point is that a vast majority of the newly arrived expatriates in the Gulf area are not just from the continental Middle East, but from other countries around the Indian Ocean and the South China Sea with which the Gulf shares a common history stretching back into antiquity, as well as, from Europe and Northern America.

Bahrain

The Kingdom of Bahrain is rich with its heritage, culture, traditions, arts, and cuisine. Since the nineteenth century, Bahrain has had a history of dealing with the West, especially Great Britain. In the 1830s, the British signed several treaties with Bahrain, offering protection from the Turks in exchange for access to the Persian Gulf. In 1869, Britain put its own emir in place, in 1935, it placed its main Middle Eastern naval base in Bahrain, and in 1946, it stationed the senior British officer in the region there.

The atmosphere of Bahrain is very progressive, bringing together different parts of society, and prides itself on a great amount of friendliness and acceptance of other cultures and religions. In this small country of just over 1.7 million inhabitants, there are Muslims, Christians, Jews, Baharna, Ajams, Huwala, Balush and people from African ancestry. There are many immigrant

workers who constitute 20 percent of the total population. On top of that, half of the population is foreign-born. They are mostly from Iran, India, Pakistan, Philippines, Great Britain and the United States.

Iraq

Iraq's past spans the breadth of history, giving rise to a unique culture and multiplicity of beliefs. From ancient Mesopotamia, Iraq has been a major contributor to world civilization. It is the starting point of countless prophets, including Abraham, revered by Muslims, Jews, and Christians. From writing, accounting, science, art, culture and myriad religious influences and belief systems, Iraq is not merely the patrimony of one nation but that of much of the modern world.

Iraq has been an ethnically diverse country for millennia, with Kurds, Assyrians, and Turkmen representing the three largest non-Arab minorities in the country. It is also the home of many religions: while Islam is the religion of the majority, Christianity, Judaism and Mandeism found an even earlier home in Iraq. Each group has a unique heritage and connection to Iraq. There's a multitude of religious sites across Iraq that attest to Iraq's diversity and significance as a centre of religious and ethnic diversity.

Iraq is naturally of great importance to the Muslim world and is home to many significant religious sites, such as the "Askari" and "Abbas" Mosques in Samarra and the "Gailani" Mosque in Baghdad. But from its extreme north to its extreme south, every region of Iraq harbours historical sites revered by Christians, Jews, Yezidis, and others. Nenawa province abound in early Christian churches, and a Christian church dating to the 5th century CE has been found near the city of Karbala. Some sites are venerated by more than one religious group. Immigration statistics show that year after year foreigners travelling to the country for work and education are drastically increasing. This is mainly due to the fact that the country is

becoming more and more secure, and the economic development is ensuring a brighter future for anybody seeking a professional or academic career in Iraq.

Saudi Arabia

In Saudi Arabia, while the majority are Sunni Muslims, there is a significant Shia minority primarily concentrated in the Eastern Province and Zaidis and Ismailis in the South. There are also numerous ethnic minorities especially in the Hijaz area, most of them descendants of Hajj pilgrims who settled in the country decades ago. There are ethnic Saudi communities from every Muslim country in the world.

The total number of non-Saudis in the country is estimated to be around eleven million as of 2018. Around two and a half million of them are Syrians seeking refuge in Saudi Arabia after they fled their country as a result of the ongoing war taking place over there. They are given free access to education and healthcare, as well as encouraged to take up jobs in the country. There are also over a million and a half Indians, and over a million Pakistanis and Egyptians each, while westerners represent around a hundred and twenty thousand expatriates in the Saudi population.

This diversity is valued and celebrated by the locals, with people from different backgrounds feeling no pressure to conform and give in to the dominant overarching identity.

I. Ahlia University

Established in 2001, Ahlia University (AU) was the first private University to be licensed by the Government of Bahrain. Right from the start, the founders articulated their vision of a distinctive institution of higher education to ensure that science, humanities, business and education take their rightful place in the building and advancement of society.

Ahlia University is an autonomous institution, independently chartered, funded and managed by the private sector. All the professional programmes offered by AU are recognised by

Bahrain's higher education council as well as highly reputed and distinguished leading Universities in the UK and USA. The university was amongst the first Bahraini private universities to be recognised by the Kuwaiti ministry of higher education.

The first batch of students was enrolled in February 2003. Since then, the university has grown in all aspects: more students, more courses, more international collaborations, whilst maintaining their reputation for the highest quality in higher education.

In 2017, a new purpose-built state of the art campus was completed. Located on a beautiful island in the northern part of Bahrain, accessible by its own causeway, the campus provides the best facilities, technology and learning resources available in Bahrain for its existing and future students and faculty members.

Ahlia University's success derives from the contribution of its staff, the involvement of its stakeholders, the support of the government of the Kingdom of Bahrain and the guidance of their board of trustees and founding body, the Arab Academy for Research and Studies.

Ahlia University currently consists of five colleges:

- 1) College of arts and science
- 2) College of business and finance
- 3) College of engineering
- 4) College of information technology
- 5) College of medical and health sciences

Ahlia University offers students throughout the Gulf and internationally, the opportunity to join a truly productive and challenging University to receive a technologically sophisticated education and a highly distinctive liberal arts education. All the courses are taught by leading faculty who possess outstanding academic credentials and have all the relevant practical and professional experience to ensure their students receive a first-class education.

AU recognises its responsibility to support the society in its transition toward sustainability. To create a more sustainable future, AU generates the needed knowledge and cultivates citizens and leaders who have the skills and commitment to put that knowledge into practice. The decisions and actions taken by AU reflect its role and duty to the current and future generations. The University provides the strategic guidance, support, and resources to be an institutional model of sustainability for society, and thrives for sustainable research, education, connectivity, operations, and governance.

Vision. Ahlia University aspires to become an outstanding regional and international academic institution by promoting the highest level of integrity in the achievement of excellence in education and research within a broad range of high-quality professional services to the community.

Ahlia means ‘family’ in the Arabic language. At AU, the ties between faculty, students and the administrative staff have been described by many as a close family. The university cares about its students and staff alike and vows to work tirelessly to ensure that everybody’s experience at AU is a memorable one.

Learning and knowledge sharing across the world is critical to the future. AU strives to keep on developing its international partnerships in order to give local and regional students opportunities to study abroad, as well as welcoming international students to its campus in Bahrain. Coupled with a faculty from 34 different countries with credentials from some of the best Universities in the world, these partnerships ensure that AU continues to work with its students to prepare them for the global market.

Mission. As a leading institution for higher education, Ahlia University's Mission is to move forward the frontiers of human knowledge and elevate the social and living standards of society. In support of this mission, the University is committed to:

- Producing graduates who are distinguished by their professional competence, humanistic outlook and uncompromising ethics.
- Providing the facilities and support for its staff to pursue innovative research.
- Establishing Ahlia University as an acknowledged centre of excellence in certain fields of knowledge.
- Working in partnership with local and regional communities to support societal and economic needs.

Objectives and Core Values. Ahlia has a framework of ten strategic core values and objectives, which serve as a framework to deliver their vision and mission. Essential to their vision, mission and strategy are the following core values:

- 1) Academic Excellence: AU seeks excellence in all their academic activities, particularly in teaching and learning and academic support activities. The university is committed to developing programmes that are viable, innovative and relevant to market needs, and to uphold the commitment to national, regional and international accreditation of its programmes.
- 2) Educational Opportunity: AU sustain its commitment to enrol, educate and graduate students without regard to age, ethnicity, gender, country of origin, socioeconomic background or special educational needs.
- 3) Personal Growth: AU articulates and encourages growth of individuals as a means to achieving personal independence and self-satisfaction. It also views personal growth as a key factor to higher contribution to the university and to the society at large.

- 4) **Social Responsibility:** AU promotes active participation in constructive social change through volunteerism, leadership and civic action on the part of its faculty, staff and students. The university also accepts a responsibility to contribute to the growth of society through supporting worthy causes, conducting research that strives to advance human welfare, and by preparing professionals for leadership roles in their professions and their communities.
- 5) **Respect:** AU appreciates the gifts and unique contributions of every person in the university's community and values their diverse perspectives.
- 6) **High Ethical and Moral Standards:** AU vows to exhibit a high standard of professionalism, which embodies behaviours that are ethical, respectful, trustworthy and competent.
- 7) **Integrity:** AU is committed to be truthful, equitable and committed to intellectual honesty. The university believes that a learning community is required to maintain intellectual and personal honesty in learning, teaching and research; ensures fairness in institutional standards, practice and procedures and creates a climate of mutual trust to encourage free exchange of ideas and advance the quest for truth and knowledge.
- 8) **Supporting Research and Development:** AU works with faculty members, students and external partners in both industry and community to support world-class research and enterprise and to develop a sustainable portfolio of activities that strengthens and underpins the university's research base.
- 9) **Transparency:** AU values transparency where actions and decisions are made more visible to the public as an essential means to gain the trust of stakeholders, develop and enhance its educational programmes and motivate its staff.

10) Providing service of the highest quality: AU values high quality service to all its stakeholders. The university strives for excellence in its service by continuously maintaining and enhancing its own knowledge and skills.

Ahlia University is proud of its growing reputation as a provider of quality higher education in the Kingdom of Bahrain and the wider Gulf region. The high quality of education at Ahlia University is at the core of everything and the reviews by the Quality Assurance Agency continue to recognise the quality of its teaching and learning.

Academics and graduate students are continuously undertaking research. Published in hundreds of international journals, research has been carried out in subjects as diverse as ‘Women and the Politics of Military Confrontation’ and ‘Building Knowledge Capacity for Sustainable Development in the Arab World’. Amongst the many resources and facilities available to the students, AU’s library gives access to 2.5 million e-journals, 40,000 e-books and 8,000 printed books. The laboratories are state of the art and enable students to learn and practice the technical skills required in a perfect environment, and a partnership with King Hamad University Hospital the medical students first-hand experience in their respective medical departments. On top of that, AU offers leading internship programs allowing every student to gain on-site experience in the real world before graduation, helping them be better prepared for employment after graduation. Therefore, it’s no surprise that AU’s graduates are highly sought after by the public and private sectors both regionally as well as internationally.

Facts and figures (as of 2018)

- Number of students: 2500
- Student ratio: 54% female, 46% male
- Student nationalities: 30
- Faculty members nationalities: 34

II. Al Esraa University College

Al Esraa University College is located in Baghdad, the capital of the country of Iraq. It was established to be an academic and cognitive monument to be added to the university educational system in Iraq, and the college obtained the approvals and recognition of the Iraqi Ministry of Higher Education and Scientific Research in 2013.

In its first year, the college opened five scientific departments, then gradually expanded the number of departments recognised by the ministry to eighteen:

- 1) Accounting
- 2) Architecture
- 3) Building and construction technologies engineering
- 4) Business administration
- 5) Civil engineering
- 6) Computer technologies engineering
- 7) Construction engineering and project management
- 8) Dental medicine
- 9) English language
- 10) Law
- 11) Media
- 12) Medical device technologies engineering
- 13) Medical laboratory techniques
- 14) Nursing
- 15) Pharmacy
- 16) Physical education and sports sciences
- 17) Refrigeration and air conditioning technologies engineering
- 18) Road and bridge engineering

As part of its main goals, objectives and ambitions, the university aims to create a number of scientific, humanitarian and medical departments in the near future. On top of that, the university has been keen to include a group of top professors and researchers with vast experience in its various scientific and humanitarian specialisations, which sets the scientific, knowledge and expertise standards in the college at very high levels.

The distinguished geographical location coupled with the tailored buildings, facilities, classrooms, laboratories and specialised studios, prepare the ideal scientific, knowledge and skill-acquisition atmosphere for the students, and the board has been keen on expanding its buildings and facilities in line with the high demand in the various specialisations it offers, in order to accommodate the largest possible number of students, and to insure that the campus atmosphere and spaces are aligned with the high standards that the college seeks to guarantee. In fact, buildings of a distinct architectural character have been opened on site, and medical clinics have been created as per the requirements of the Dental Department. The clinics are equipped with the latest medical devices, meet all scientific and medical standards and attract the finest qualified professors from all types of science backgrounds.

Vision. In the future, the college is keen on partnering with various international universities that share the same standards in scientific integrity and academic accreditation and is keen to adhere to the laws and standards issued by the Ministry of Higher Education and Scientific Research. This includes opening specialised courses in teaching methods, seminars and lectures to develop its teaching staff, and the participation in scientific, medical and sports conferences. The university also encourages the teaching staff to interact and participate in scientific discussions with all the students. On top of that the university is proactive in its efforts to be at the forefront of social activities and voluntary actions such as blood donation campaigns and the creation of charitable sources in support of the people in need, as well as opening medical outlets that give access to medical care to people who otherwise wouldn't have the means to.

Al Esraa University College, with its eighteen specialised departments, scientific capabilities, human and material resources, has been able to attract people from all over Iraq at first, and then from all over the Gulf region and recently from several international countries as well. Students from all sorts of backgrounds, ethnicities and beliefs have been attracted by the teaching standards and the specialised courses that are offered at affordable tuition fees. This trend will only increase going forward as Iraq continues its social development following a difficult start to the twenty first century.

Mission. The college strives to work to achieve development and improvement in the quality of its educational outcomes in order to embody the satisfaction of others in its provisions. It also seeks to support the academic progress in Iraq with everything that would contribute to effectively develop scientific knowledge for the nation's youth, facilitating university education options and increasing academic study opportunities within the initial undergraduate university stages, and aims to reach graduate studies in the future.

Objectives and core values. The core principles the university follows in order to achieve its objectives are as follow:

- 1) Commitment to accreditation standards of all kinds, to be a course of action to express the ability of the educational institution. To build, develop and improve its educational outputs and build capacity within the framework of knowledge management with the inputs, processes and outputs of the educational institution.
- 2) Applying the effectiveness of procedural control methods for educational operations programs according to the quality management system of the international standard ISO 9001, the basis for achieving the goals within the requirements of the beneficiaries and the labour market.

- 3) Work to ensure that the university's educational programs and plans are transparent and understandable, and that the corresponding educational institutions and others trust them.
- 4) Belief in embodying the principle of sustainable development in building educational projects while maintaining scientific integrity.

Based on these values, the university has set its sights on accomplishing the following objectives:

- 1) Embodying the culture of quality management system and academic accreditation in the educational institution.
- 2) Enhancing the spirit of teamwork through the active participation of all employees in the programs and plans of the educational institution.
- 3) Achieving the requirements of the beneficiaries and the labour market.
- 4) Stimulating the spirit of competition within the educational sector with the other educational institutions.
- 5) Developing and improving the quality of education and research processes, community services, sustainable development, and evaluation of work mechanisms through audit reports for senior management.
- 6) Gaining the satisfaction and confidence of the students and the population with the quality of the university's programs and educational outputs.
- 7) Activating the institution's methodology with educational programs towards teaching and learning.

Al Esraa university college has been able after such a short time since its inception to become well-known and sought after for its academic performance. The university has become, in a record period of time comparable and in several aspects superior to well established Iraqi and Arab universities, because of its teaching staff who are distinguished by great scientific skills

and experience, diverse degrees, modern and advanced equipment and techniques, and state of the art laboratories.

According to the university dean professor Abd Al-Razzaq Al-Majidi, Al Esraa college university has gained a brilliant reputation locally, regionally and internationally, by extending bridges with Arab and international universities, the latest advanced scientific curricula and methods have been applied, and it has proceeded to achieve academic accreditation by preparing plans to reach the best quality standards, applying them in all its departments, formations and college units, in order to serve its students and the country of Iraq as a whole. All of this is reflected in the college's tendency to be more creative and forward-looking than the local educational institutions, by constantly looking to improve all aspects of the college.

III. University of Business and Technology (UBT)

The University of Business and Technology (UBT) was founded in 2000 to fill the need for specialised and quality business education that would be of benefit to the labour market in Saudi Arabia.

UBT began as a simple junior college in the year 2000, offering classes to both genders that granted business-related diplomas, and quickly progressed by 2003 into a full-fledged four-year college (CBA) offering six programs. UBT has grown gradually and progressively from a Junior College to a fully-fledged four-year college (CBA) offering six programs. In 2008 it added the College of Engineering and Information Technology offering five programs, and then in 2011 the College of Advertising joined in after being approved by the ministry of higher education as the third college. On 22 May 2012 UBT was officially announced as the University of Business and Technology by the Higher Council of the Saudi Higher Education. UBT has become a university in a short period of only 12 years.

Over a short period of 12 years, UBT expanded tremendously by implementing the key factors of effective and courageous leadership while prioritising a high value for quality education.

By the year 2015, the Research and Consultation Centre was in place, adding even more advantage to those who sought Higher Education. Currently, UBT is successfully operated under its governing body which consists of The Board of Trustees (BOT), The University Council, The Scientific Council, The College Council/s, The Departmental Council/s, all of which are approved by the Supreme Council of Higher Education.

UBT's academic and governance structures have been through several evolutionary stages and are still subject to change. This is natural for a growing university; however, it should be emphasised that UBT's strategy is neither to be a duplicate of a public university, nor does it intend continuous growth. The capacity that UBT decided upon is to stay as a private small to medium size university of 5000 to 6000 students.

The University of Business and Technology was the pioneer of Saudi Universities to specialise in business studies. It was established to provide specialised and trained entrepreneurs, skilled professionals and business leaders for the public and private sector. Many years later, they are at the forefront of becoming a key source of Saudi Arabia's most qualified individuals who contribute to the enhancement and development of the country's financial infrastructure, as well as continue to advance the kingdom as a global economic competitor.

UBT was founded on the idea that theoretical application must be applicable to the practical real-life current job market. However, the major goal initiated by the university founders and management was to build an academic institution that rivalled, in national and global standing, any top world ranked university. After twelve years of hard work and dedication to this goal, the university reached a milestone by becoming the first college in the Kingdom of Saudi Arabia to receive NCAAA accreditation.

Attracting leading academics and elites in their respective fields, UBT's faculty staff come from more than 20 different nationalities. In coherence with UBT's vision, they match the standards and expectations of world-wide education, guiding students along their Education for job opportunities, both in Saudi Arabia and abroad.

UBT has developed distinguished relations and cooperation with a number of renowned international universities, higher education institutions and professional training centres around the world. The scope of such cooperation ranges from:

- Student exchange programs
- Double-degree programs
- Joint scholarship projects
- Consultations in academic affairs and development
- Joint research projects and publications.

Vision. UBT aspires to be a leading university, recognised nationally and internationally for high-quality interdisciplinary education, applied research, and strategic partnerships to develop skilled and competent leaders of the future. UBT is looking forward to being a model university, well known for its high-quality education worldwide in high specialised educational programs and applied scientific researching, through its partnership strategy to prepare future leaders with high skills and experiences. The university provides high quality educational programs which meet the requirements of the Saudi job market preparing students to excel as pioneers and leaders. Also, the university is determined to make use of its applied research creating the proper academic atmosphere stimulating a continuous educational environment. In addition, the university is looking forward to combining efforts with all pioneer universities in various fields and work to participate in discoveries and inventions, as it is clear that its role is more than that of just providing society with education, but also to adopt knowledge as basic

orbit of the educational process, producing and passing on knowledge, enhancing the culture of creation and creativity.

Mission. UBT is a private university that offers high-quality undergraduate and graduate education that caters to market needs. The university prepares students with transferable skills required to excel as industry leaders and entrepreneurs. UBT is committed to leveraging applied research and provides an environment that helps students, faculty, and alumni pursue life-long learning.

Objectives and core values. UBT strategic objectives reflect a holistic approach to achieving its vision and mission and were determined along three dimensions, education, research, and community. Eleven Strategic objectives have been identified across these dimensions that would help UBT realise its vision and mission. The university builds its objectives on the core values of leadership, innovation integrity, passion, efficiency and community involvement.

1) Education

- Attract high-calibre students and increase enrolments annually based on UBT's capacity.
- Ensure continuous improvement and maintenance of quality standards at the University aligned with national and international accreditation standards.
- Continuously develop and improve the quality of the academic staff.
- Attain and maintain national and international accreditation for all UBT programs.
- Promote entrepreneurial skills in UBT students to enhance the education al process.
- Enhance the administrative performance and effectiveness of UBT.

2) Research

- Attract qualified faculty members inclined to maintain high quality education and research.
- Promote applied research culture to encourage faculty to be involved in research activities.
- Promote collaboration with other organisations for joint research.

3) Community

- Institutionalise external affairs, alumni and industry relations and corporate social responsibility.

Facts and Figures (as of 2018)

- Number of students: 4061
- Student ratio: 63% male, 37% female
- Student nationalities: 40
- Faculty members nationalities: 20

1.3.2 Conclusion

From the information stated above, we can see clear similarities between the three universities. Ahlia University, Al Esraa University College and the University of Business and Technology have all grown to become academic and social hubs for students and faculty members not only from the Gulf region but from all over the world as well. These establishments have been able to gather faculty members and attract students from across the globe to form three academic and social entities that are rich in their diversities.

The three universities all strive for academic excellence, have similar visions of the future that mainly focus on expanding their programs, improving their academic standards, increasing their partnerships whilst maintaining an ethical moral code of conduct. They have also been adamant on making an inclusive environment where everybody from staff to students feel welcome. People from different countries, ethnicities, religions, beliefs and social backgrounds have all gathered here in order to look for opportunities to brighten their futures and broaden their horizons.

On the other hand, and despite their best intentions, that much diversity can be difficult to keep in check. All three universities have faculty members and students that come from dozens of different countries, countries where customs, beliefs and habits are bound to be different. And it is a normal state of affairs that the more diverse a group of people is, the more frequently conflicts can arise between two or more individuals of that group. The more variables there are to deal with, the more differences of opinions are frequent, and consequently the more likely disagreements and conflicts are to occur.

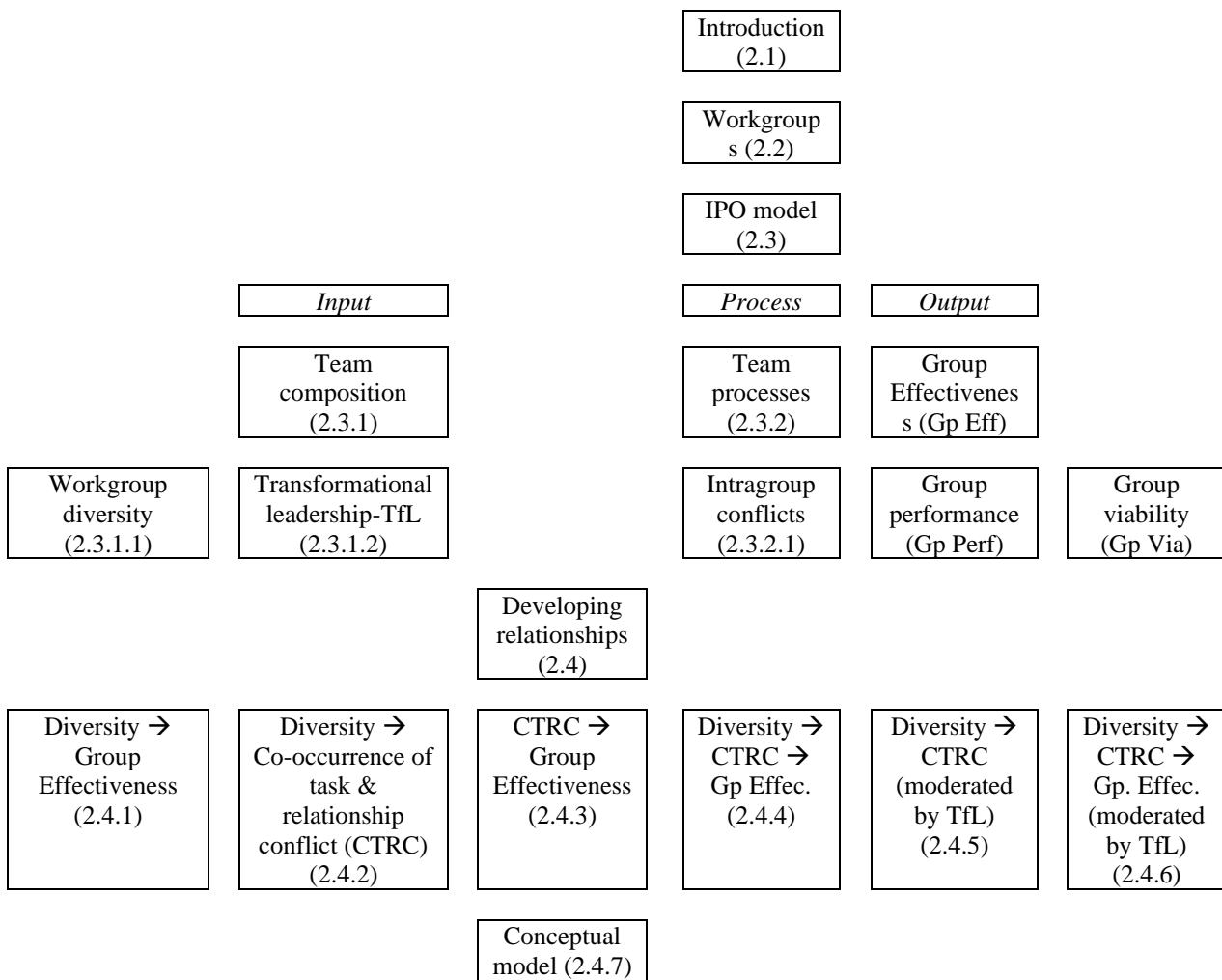
For this reason, the choice of these three universities was straightforward. We have three academic and social ecosystems where people from all sorts of backgrounds have come to coexist and share a journey in a foreign country where they have to adjust not only to the country's traditions and customs, but also to each other's differences and intricacies. This serves as a great opportunity to study what different kinds of conflicts can arise from this impressive diversity.

Chapter 2

Literature Review

2.1 Introduction

Chapter structure



The researcher analysed the literature on diverse workgroup functioning, focusing on the relationships between in-group diversity, intra-group conflicts and team effectiveness, as well as the influence of transformational leadership on these relationships. A large proportion of the cited studies were meta-analyses; many of the recent ones were building on previous meta-analyses. These studies together with the cited empirical research covered a wide variety of countries, industries/services, organisations, workgroups, and cultural contexts, applying, more

or less, similar methodological approaches. All the meta-analysis reported inconsistent results in relation to diversity's association with intragroup conflicts and with group effectiveness (performance and viability). Furthermore, empirical studies investigating this association, following different research methodologies and analytical techniques, also reported mixed results. These past studies are discussed systematically and at length in this chapter. The researcher has also tabulated the main studies, along with their research contexts; research type, place where the research was conducted, population and sample, research methods, main analytical techniques, and main findings (Appendix 1).

The chapter starts by exploring the nature of workgroups and why they are prevalent within modern organisations (section 2.2). A discussion of the input-process-output (IPO) model of workgroup effectiveness is given in section 2.3, where the constituent elements of the model's dimensions of input, process and output are briefly looked at, while discussing in detail the aspects that are central to this thesis. Thus, in sub-section 2.3.1, team composition is touched upon, focusing with much greater detail on the constructs of workgroup diversity and its impacts on group functioning (2.3.1.1), and transformational leadership behaviours and attributes (2.3.1.2). Within team processes (sub-section 2.3.2), the discussion focuses on team conflicts, another central construct in this study, and their effects on team effectiveness (2.3.2.1). In section 2.4 of this review, causal relationships are developed among the constructs which were discussed in the preceding sections and sub-sections. The association of diversity with group effectiveness is developed in sub-section 2.4.1; diversity's association with co-occurrence of task and relationship conflict in sub-section 2.4.2; co-occurrence of task and relationship conflict with group effectiveness in sub-section 2.4.3; and the mediated relationship between diversity and effectiveness via the co-occurrence of task and relationship conflict in sub-section 2.4.4. Subsection 2.4.5 discusses and develops the moderating influence

of transformational leadership on the association of diversity with co-occurrence of task and relationship conflict, and sub-section 2.4.6 looks into and develops an argument on the moderating influence of transformational leadership over the entire mediated relationship between diversity and group effectiveness via co-occurrence of task and relationship conflict. In the conclusion, subsection 2.4.7, the full model which emerged from analysing the literature is displayed, together with its hypotheses.

2.2 Workgroups

Increasing pressures driven by economic competition and social changes brought about by globalisation and technological innovations are transforming organisational structures from work arranged around individual jobs to team-based work structures (Lawler *et al.*, 1995). Workgroups are seen as the most appropriate structure with the required characteristics in terms of diverse cultures, demography, skills, expertise, and experiences that can meet the pressures for creativity and innovation (see Kozlowski & Ilgen, 2006). Workgroups are found in various types and sizes, in different contexts, functions, internal processes, and external networks. They are formed to perform organisationally relevant tasks, display task interdependency by sharing common goals, workflow, knowledge, and outcomes; they are maintained and managed within an organisational context that defines boundaries, constrains the team, and influences exchanges with other groups (Arrow *et al.*, 2000; Kozlowski & Bell, 2003). This suggests that individual group members, teams and organisations are bound together in a multilevel hierarchical system, which then requires the use of multiple levels to investigate team phenomena, particularly, when researchers try to attribute individual characteristics to the group as a whole (Kozlowski & Klein, 2000). Workgroups are thus embedded in a hierarchical organisational system of multiple nested levels, with top-down constraints on team functioning and processes that are in a constant tension with complex bottom-up team responses that

emerge from individual cognition, affect, behaviour, and interactions among members within the group (Kozlowski & Klein, 2000). This system requires the use of multiple levels (individual, team, and the higher-level context) in an effort to investigate team phenomena; this is particularly important when attributing individual characteristics to the team (e.g., team ability, team identity and team learning). Teams are embedded in an organisational context and themselves constitute a context for team members (Hackman, 1992). While organisational technology, structure, leadership, culture, and climate constrain and influence teams and their responses, teams in turn form a more proximal context for the individuals who compose those teams. Thus, team members function in a bounded interactive context which is partly created by their attributes and interactions. Their team-level shared expectations, perceptions and knowledge emerge from their individual interactions, which coupled with top-down organisational influence give rise to a contextual structure that constrains subsequent team processes. Furthermore, interactions among team members are influenced by the structural interdependencies between tasks or workflows, which links individual inputs, outcomes, and goals and has a critical influence on team processes and team effectiveness (McGrath, 1997; McGrath & Hollingshead, 1994). From an organisational systems perspective, task interdependence sets interaction requirements and constraints that must be considered in team theory, research, and practice. (e.g., McGrath & Hollingshead, 1994).

The concern with effective team functioning has led researchers to examine a number of factors which have bearing on group effectiveness. Among these factors is team type, focusing on describing, classifying, and distinguishing differences among teams, for example, Sundstrom *et al.*'s (2000) team typology of: production, service, management, project, action and performing, and advisory. Other more specific typologies include crews (e.g., Cannon-Bowers *et al.*, 1998); top management teams (TMT) (Jackson, 1992); and as a result of globalisation, cross-cultural, mixed-culture, and transnational teams (e.g., Chao, 2000; Earley & Erez, 1997),

as well as virtual teams (Bell & Kozlowski, 2002; Chen *et al.*, 2010; Gibson & Gibbs, 2006; Jackson *et al.*, 2003; Tsui *et al.*, 2007). These more specific typologies widened research into classifications based on particular compositional aspects of diverse teams (e.g., heterogeneity, team tenure, age, education and team size) in an effort to break through the barriers of different values, cultural assumptions, and stereotypes to jointly perform effectively. Other classifications are based on the external environment (e.g., environmental turbulence, market characteristics) to understand and assess their effects on organisational effectiveness (Hambrick *et al.*, 1996; Simons *et al.*, 1999; West & Anderson, 1996). Kozlowski and Bell (2013) argued for the need to focus on revealing the dimensions that underpin apparent differences in team typologies to help identify the variables that may determine the effectiveness of different types of teams and design operational processes that promote effectiveness for different teams. Consequently, they integrated the various dimensions and produced a classification that, they argued, captures the unique characteristics that distinguish different team forms. They identified a number of characteristics which include organisational context, task or workflow interdependence, team member composition, team diversity, and temporal characteristics. Team diversity composition, particularly, in terms of knowledge, experience, nationality, culture, age and gender is one of the central concerns of this thesis and will be much elaborated throughout this chapter.

2.3 Team effectiveness-IPO model

Team effectiveness is generally about processes involved in the interactions between team members relating to team tasks, their performance, and interventions to enhance team processes and performance. It is formulated around the Input-Process-Outcome (IPO) framework (see, Hackman, 1987; McGrath, 1984).

Team input represents the team's resources at the individual, group, and organisational levels, which comprise all the factors that can be manipulated to change processes and outcomes (Cohen & Bailey, 1997). Individual factors include skills, attitudes and personality characteristics (McGrath, 1991). Relevant factors at the group level comprise group size and structure, group performance and cohesiveness, group composition, tenure, and team leadership attributes (Cohen & Bailey, 1997; Gladstein, 1984; McGrath, 1991). At the organisational level, input factors may include, for example, training, reward structures, environmental pressure, industry characteristics, organisational structure, organisational climate, and task design (e.g., autonomy or interdependence) (e.g., Cohen & Bailey, 1997; Gladstein, 1984; McGrath, 1991).

Team processes are interdependent acts undertaken by team members that transform inputs into outcomes through task directed cognitive and behavioural activities to achieve the group's collective goals (Marks *et al.*, 2001). Team processes are thus mechanisms and behaviours that are influenced by group inputs, that constrain or enhance the ability of team members to combine their capabilities and behaviour, and that affect group outcomes. Examples of group behaviour and interactions that may have impacts on group outcomes include: effort, strategies used by the group, time spent together, communication, encouragement among group members, conflicts and conflict resolution, task discussion, boundary management, team learning, mutual performance monitoring, adaptability, supporting/back-up behaviour, team leadership behaviour, feedback, communication/information exchange, and information processing (Baker *et al.*, 2005; Brodbeck, 1996; Bui *et al.*, 2019; Cohen & Bailey, 1997; Edmondson, 1999; Hinsz *et al.*, 1997; Marlow *et al.*, 2018; McGrath, 1991). Group processes may be dysfunctional, yielding process losses or synergetic, producing process gains that enhance team outcomes (Hackman, 1987). Some of the team processes that are relevant for

this study, such as, those that increase team cohesion, communication, and conflict resolution are discussed later in this chapter.

Team output, synonymously known as team outcome or team effectiveness, refers to the degree to which team goals are achieved (Brodbeck, 1996). It represents different criteria to assess the effectiveness of team actions, and has both internal focus (e.g., member satisfaction and team viability) and external focus (e.g., productivity and performance) (Hackman, 1987); and as such, it is broadly defined, assessed, and measured (see, for example, Cohen & Bailey, 1997). Group outcomes are often interrelated and can occur at the individual, group, or organisational level. The literature makes a distinction between performance outcomes in terms of quality and quantity of output, and other outcomes, such as: group cohesiveness, member satisfaction, attitude change, and socio-metric structure (Cohen & Bailey, 1997; Guzzo & Dickson, 1996; Hackman, 1987; McGrath, 1991; Tannenbaum *et al.*, 1996). There is a general consensus amongst these authors over three group outcome evaluation criteria: 1) team performance displayed in the result of the groups' work in terms of quality or quantity of output, 2) team cohesiveness/viability in terms of team willingness and capability to continue working together in the future, and 3) the individual consequences of the collaboration (i.e., members' satisfaction, and physical and psychological safety). Kozlowski and Bell (2013) pointed out that some outcomes might be mutually exclusive, for example, smooth processes and good team climate may lead to individual satisfaction, but not necessarily to better team performance because there is no incentive to exert high effort; conflicts can lead to innovative ideas and better group processes and group performance; and easy tasks may not necessarily lead to better performance as they often result in building up of routines that fail when the environment changes.

Despite the static nature of the IPO-based team models, the IPO framework remains influential in conceptualising team effectiveness. It is, however, being adapted by a push to more explicitly acknowledge the reciprocal dynamics inherent among the IPO linkages. Critiquing the static nature of the IPO model, Ilgen *et al.* (2005) reformulated it as the Input-Mediator-Output-Input model to widen the range of mediating processes and to show the cyclical nature of team functioning. Subsequent studies further emphasised the multilevel system context, task relevant processes, temporal dynamics, emergent nature of team processes and effectiveness, episodic task cycles and developmental progression, and complex feedback linkages (see, Kozlowski & Ilgen, 2006; Mathieu *et al.*, 2008). Thus, although the basic conceptual structure of the IPO framework remains viable, the conceptualisation has been substantially expanded (Arrow *et al.*, 2000; Kozlowski & Klein, 2000; Marks *et al.*, 2001).

2.3.1 Team Composition

It is argued that team composition exercises a big influence on team processes and outcomes, and that understanding its effects can help in selecting and building more effective teams (Hollenbeck *et al.*, 2004). The term team composition encompasses team size, team diversity, personality and ability, team cognitive ability, values, and others.

In relation to *team size*, researchers have offered recommendations concerning the best size for various types of teams. Some researchers reported that size has a curvilinear relationship with team effectiveness such that too few or too many members lead to a reduction in performance (Nieva *et al.*, 1985). Other research has reported quite different results, with some studies finding team size to be unrelated to performance (Martz *et al.*, 1992), while other studies suggesting that increasing team size without limit actually improves performance (Campion *et al.*, 1993). These inconsistent results, it is argued, are likely since appropriate team size does

depend on the task and the environment in which the team operates (Guimerá *et al.*, 2005; Wuchty *et al.*, 2007). Research findings also suggest that team size may stabilise once an optimal size is reached (Guimerá *et al.*, 2005). This is because, it is claimed, that as teams become bigger in number, they are more likely to experience coordination problems that interfere with team performance, and motivation losses caused by a dispersion of responsibility (Sheppard, 1993).

Diverse group composition is also reported to have mixed effects on team effectiveness (e.g., Bantel, 1994; Campion *et al.*, 1993; Jackson *et al.*, 1991; Mannix & Neale, 2005; Pelled *et al.*, 1999; Wiersema & Bird, 1993). The subject of diversity in teams and its potential influences on group effectiveness is discussed at some length later in this chapter. Furthermore, team composition effects of constructs like *personality* and *cognitive ability* on team effectiveness have also been investigated. These individual-level psychological characteristics, Kozlowski and Klein (2000) argued, require the construction of theoretical models to conceptualise, measure, and have them represented at the team level. These authors viewed the absence of such an explicit theoretical model, “team personality” or “team ability” has questionable construct validity and research may yield spurious findings (Kozlowski & Klein, 2000).

Team collective cognitive ability is reported to be associated with team performance (Barrick *et al.*, 1998; Bell, 2007; Devine & Phillips, 2001; Neuman & Wright, 1999). In addition, LePine (2005) found that teams comprising members of higher cognitive ability were better able to adapt their role structure to an unexpected change in the task context. There is also evidence in emerging research that certain *values*, such as collectivism and preference for teamwork, are important for team performance. For example, Randall *et al.* (2011) reported that teams with higher average levels of psychological collectivism engaged in greater information sharing

during decision-making, and Bell's (2007) meta-analysis reported that both collectivism and preference for teamwork were positively related to team performance.

2.3.1.1 Diversity in Workgroup

Introduction

Organisations are becoming more diverse demographically (e.g., age, gender, ethnicity, and culture). They are also increasingly organising their employees in workgroups composed of people of different functional or educational backgrounds (Jackson *et al.*, 2003; Williams & O'Reilly, 1998). It is argued that group diversity exerts positive as well as negative effects on group performance, group cohesion and member satisfaction (e.g., Ilgen *et al.*, 2005; Jackson *et al.*, 2003; Kerr & Tindale, 2004; Williams & O'Reilly, 1998), which motivates research that is aimed at better understanding the processes that underlie these effects and how to manage them, both for academics and practitioners.

Two main theoretical perspectives inform diversity research: the information processing perspective which underpins, what will be referred to in this thesis as "cognitive diversity", and the social categorisation perspective embedded in social identity theory (Williams & O'Reilly, 1998) and underpins what is known as "demographic diversity".

The information processing perspective highlights the advantageous effects of workgroup diversity and suggests that cognitive diversity is more likely to be positively related to group performance than demographic diversity (Nijstad & Paulus, 2003; Peters & Karren, 2009; Van Knippenberg & Schippers, 2007). From this perspective, it is argued that groups with a high level of cognitive diversity benefit from increased task-related knowledge, skills and abilities brought about by group members with multiple and diversified sources of information; and that the needs for such groups to reconcile and integrate diverse information and perspectives makes their members pay careful consideration to issues, enabling cross-fertilisation of ideas and

perspectives and stimulating more creative thinking in solving complex problems and developing innovative solutions (e.g., Chi *et al.*, 2009; Jackson *et al.*, 2003; Tyran & Gibson, 2008; Van der Vegt & Bunderson, 2005; Van Knippenberg & Schippers, 2007; Van Knippenberg *et al.*, 2004; Webber & Donahue, 2001; Williams & O'Reilly, 1998). However, it is also argued that while cognitive diversity increases the opportunity for group creative performance, it also increases the likelihood of dissatisfaction amongst group members and their failure to identify with the group; undermining effective communications and cohesion within the group and resulting in dysfunctional conflicts (Milliken & Martins, 1996; O'Reilly *et al.*, 1997; van Knippenberg *et al.*, 2004).

Social identity theory, on the other hand, suggests that social structures and individual identity are connected through the meanings that individuals attach to their membership in salient demographic groups, identifying more with similar in-group members than with dissimilar out-group members (Abrams & Hogg, 1999; Ely & Thomas, 2001). Social categorisation thus indicates that in demographically diverse groups, people tend to favour, trust, and show more willingness to collaborate with similar others (e.g., Brewer & Brown, 1998; Jackson, 1992; Tajfel & Turner, 1986; Williams & O'Reilly, 1998). Accordingly, homogeneous groups are seen to be more productive than heterogeneous groups as their members are mutually attracted by their similar attributes, resulting in more efficient group processes and better performance (e.g., Wiersema & Bantel, 1992). Homogeneous groups are also more cohesive because of their members being more satisfied with their group (e.g., Brewer & Brown, 1998; Jackson, 1992; O'Reilly *et al.*, 1989; Tajfel & Turner, 1986; Williams & O'Reilly, 1998). However, it is also argued that demographic diversity is likely to evoke basic social categorisation responses, negatively influencing group performance through social processes. Furthermore, as homogeneous group members normally share similar knowledge, experiences and

perspectives, their potential for learning and problem-solving may not enable them to produce creative ideas and new solutions (see: De Dreu & West, 2001; Jackson *et al.*, 2003; Jehn *et al.*, 1999).

Typologies of Diversity

A number of typologies had been used to classify different dimensions of diversity. The dominant typology distinguishes between readily observable demographic attributes that are not job-related (e.g., gender, race/ethnicity, age) and more job-related attributes which are not so readily discernible, such as differences in educational or functional background (Jackson, 1992; Jehn *et al.*, 1999; Milliken & Martins, 1996; Pelled *et al.*, 1999; Schneider & Northcraft, 1999). Other typologies consider, in addition, differences that may not be readily visible or job-related, such as, differences in personality, attitudes, and values which research suggests may affect group performance (Bowers *et al.*, 2000; Beyer *et al.*, 1997, Chattopadhyay *et al.*, 1999, Cox *et al.*, 1991; Jehn *et al.*, 1999).

A number of studies point to diversity's connection to group member personality and team social integration (e.g., Barrick *et al.*, 1998; Bowers *et al.*'s (2000); Costa & Macrae, 1992; De Dreu & Van Vianen, 2001; Harrison *et al.*, 2002; Mohammed & Angell 2003; Neuman *et al.*, 1999). Some studies suggest a negative association between diversity in attitudes and values and group outcomes (e.g., Jehn & Mannix, 2001; Jehn *et al.*, 1999), while other studies show positive or no association (e.g., Harrison *et al.*, 1998, 2002). Bowers *et al.*'s (2000) integrative meta-analysis of 57 effect sizes from 13 studies (567 teams, 2,258 participants) reported that groups that are homogeneous with respect to ability, personality or gender achieve higher levels of performance than groups that are heterogeneous on each of these attributes. They further argued that the significant effects found in many of the included studies can be attributed to the type and difficulty of the task used in the investigation.

However, the results also showed that the combined effect sizes of these attributes are small, though not significant, in favour of heterogeneous groups. This result suggests that, for low difficulty tasks, moderate gains in performance can be expected from teams in which individual team members are of similar gender, attitude, ability, and personality. In high difficulty tasks, it appears that the opposite is true, where heterogeneous teams performed significantly better than homogeneous teams. Based on these results, Bowers *et al.* (2000) suggested that building teams homogeneously or heterogeneously based on any of the attributes noted above will not result in significant gains in team performance. Also, research centring on individual dissimilarity to the workgroup shows that being dissimilar to the other members of the workgroup is likely to affect group functioning and performance (Chatman & O'Reilly, 2004; Harrison & Klein 2005; Tsui *et al.*, 1992). These mixed findings support the need for more complex conceptualisation to understand the influence of the various facets of diversity (e.g., Harrison *et al.*, 1998; Van Knippenberg & Schippers, 2007).

Harrison and Klein (2007) argued that the oversimplification of the inherently complex construct of group diversity, in representing its effects on group processes as merely beneficial or harmful, can be blamed for the absence of clarity (see also; Bell *et al.*, 2011; Horwitz & Horwitz, 2007; Webber & Donahue, 2001). They pointed out that the construct of diversity requires re-examination and refinement to clarify the meaning of differences, particularly, within workgroups, and to provide theoretical and empirical rigour. They developed a diversity typology, where diversity is viewed as either separation, variety or disparity; each view has markedly different substance, pattern, operationalisation and consequences in relation to group outcome. Viewing diversity as separation among group members, they explained, reflects horizontal disagreement along a dissimilarity continuum in a particular attitude or value. As variety, they added, diversity is represented by differences in information, knowledge, or

experience among group members; and as disparity, it is vertical differences in concentration of valued social resources among members that privilege a few over many.

Group diversity researchers associate the perspectives of similarity-attraction and social categorisation most frequently with the concept of diversity as separation, where greater similarity or minimum separation results in psychological comfort, higher levels of cooperation, trust, and integration (e.g., Locke & Horowitz, 1990). Accordingly, groups whose members have a maximum separation difference experience polarisation, low cohesion, high conflict, high rates of withdrawal, and poor performance (e.g., Tsui *et al.*, 1995). When diversity as separation is central for group identity and task completion, the group's social network is likely to diverge into subgroups who will share opinions more often within the subgroup than with other subgroups, leading to irritation and disputes between the different factions, and negative consequences for group performance (Gibson & Vermeulen, 2003).

Differences between group members on variety or information diversity are usually positively associated with group outcomes, such as: problem-solving, group decision quality, and group performance; as information diversity is seen to broaden the cognitive and behavioural range of the group (e.g., Jehn *et al.*, 1999; McGrath *et al.*, 1995; Williams & O'Reilly, 1998). Minimum variety or homogeneity occurs when all group members belong to the same category of attribute variety. Maximum variety or heterogeneity is the highest possible distribution of information, where each group member comes from a unique variety category. It is argued that heterogeneous groups, whose members have different informational resources and external network ties, in terms of knowledge, functional background, experience, or range of external social ties make more effective decisions and produce more creative outcome than homogeneous groups whose members have the same source of resources (e.g., Argote &

Ingram, 2000; Austin, 2003; Beckman & Haunschild, 2002; Burt, 2002; Ferrier, 2001; Jackson *et al.*, 1995; Reagans & Zuckerman, 2001).

Disparity diversity relates to socially valued or desired resources, such as: pay, power, prestige and status; it is at its minimum when all group members occupy the same position - member parity. Maximum disparity is observed when only one group member outranks all others. The literature suggests that status, power, or pay disparity encourages competition, differentiation, and resentful deviance among group members (e.g., Bloom, 1999; Pfeffer & Langton, 1993; Siegel & Hambrick, 2005). Disparity might also foster conformity, silence, suppression of creativity, and withdrawal (e.g., Pfeffer, 1998). Keltner *et al.* (2003) observed that the structure of social network can also give rise to disparity diversity if the resource is social capital. As social capital is usually accessed and conveyed through interpersonal ties (Adler & Kwon, 2002), a highly centralised group network structure indicates an uneven distribution of network ties and influence (Wasserman & Faust, 1994).

Harrison and Klein (2007) argued that crucial attributes and relevant theoretical perspectives differ for each type of diversity, as do the group processes (e.g., group conflicts) and group outcomes. It is argued that in focusing predominantly on demographic and cognitive diversity effects on group performance, researchers have neglected other diversity facets which are less easily captured, though no less relevant to the understanding of workgroup functioning (Van Knippenberg & Schippers, 2007).

Williams and O'Reilly's (1998) systematic analysis of the literature on organisational demography and diversity within workgroups provided a comprehensive review of the diversity literature at the time. They examined 40 years of diversity research covering more than 80 studies. The focus of their review was to understand the effect of demographic (group tenure, functional / educational, age, sex and ethnicity) diversity on group process and performance. Their review yielded largely inconsistent results and led them to conclude that

the overall effect of increasing diversity is likely to have a U-shape form. They found that high diversity may add little in the way of unique information while undermining group functioning and cohesion. Furthermore, they argued that the curvilinear effects are likely to be moderated by contextual influences, such as task interdependence, common goals and identity, and collective culture that may ameliorate or hinder social categorisation and decision-making processes. Similarly, Van Knippenberg and Schippers (2007) pointed out that understanding diversity as objective or subjective differences between members of the group does not answer the important question of how to conceptually deal with diversity. This understanding, they argued, does not adequately explain the differential effects that diversity may have on group processes and performance. They advised researchers to go beyond conceptualising and operationalising diversity simply as dispersion on a single dimension of diversity. Rather, they suggested, researchers should consider a more complex conceptualisation of diversity, composed of multiple dimensions of differentiation in interaction. They further call for studies that pay more theoretical and empirical attention to non-linear effects, to group processes that underlie the effects of diversity on group performance, and to potential contextual variables that may moderate these processes. These more complex conceptualisations of diversity, it is argued, have the potential to enrich knowledge of the effects of diversity, and demand more research (Harrison & Klein, 2005; Homan, 2019; Van Knippenberg & Schippers, 2007).

2.3.1.2 Transformational Leadership

Bass and Avolio (1994) presented a full range leadership model consisting of: transformational, transactional, management by exception active, management by exception passive, and laissez-faire leadership. The current study focuses on transformational leadership as it is commonly viewed to enhance team functioning and outcomes (Ayoko & Callan, 2010; Ayoko *et al.*, 2008; Kearney & Gebert, 2009), and is thought to be prevalent in higher education (Mews, 2019).

The literature generally associates transformational leadership with high levels of team performance, member satisfaction, longevity, group identification and commitment (Bass & Avolio, 1993; Epitropaki & Martin, 2005; Saeed *et al.*, 2014). Transformational leaders are said to focus more on motivating their team members to move beyond self-interest and work for the collective good of the group, increasing the confidence and motivation of members to perform beyond expectations (Avolio & Yammarino, 2002; Pieterse *et al.*, 2010; Seibert, Wang & Courtright, 2011; Wang *et al.*, 2011). Also, by highlighting the importance of co-operative teamwork, transformational leaders increase the awareness of team members of the importance of task interdependence and common goals (Bass, 1990).

The literature characterises transformational leadership behaviour as one of inspirational motivation, idealised influence, intellectual stimulation, and individualised consideration (Bass, 1985). The leadership's inspirational motivation behaviour is manifested in motivating, inspiring and challenging team members by developing and communicating a shared vision with high expectations, providing reassurance that obstacles will be overcome, promoting confidence in achievement and execution of goals and tasks, talking optimistically about the future, and providing an exciting image of organisational change (Bass & Avolio, 1994).

The vision projected by transformational leaders, Rafferty and Griffin (2004) explained, is their expression of an idealised picture of the future based around group and organisational values, while inspirational motivation is the expression of positive and encouraging messages about the group that enhance motivation and confidence. Bass (1998) reported that team members feel highly motivated and strongly connected to transformational leaders because of the latter's self-confidence, enthusiasm and awareness of the emotional needs of their team members (Cherulnik *et al.*, 2001). It is further argued that transformational leaders exhibit their inspirational motivation behaviours through symbolic actions and have the ability to infuse

high levels of motivation in their teams. This increases their confidence, inspires them and gives meaning to their tasks; it also fosters optimism and increases the intrinsic value of their performance (e.g., Avolio & Bass, 2004; Borman & Motowidlo, 1993; Seibert *et al.*, 2011; Wang *et al.*, 2011; Yammarino *et al.*, 2005; Zhang *et al.*, 2011).

Inspirational motivation leadership is thus exhibited in behaviours which inspire team members to improve their outcomes, explain how the organisation will change over time, foster a strong sense of purpose among team members, link individual team members and organisational goals, and aid them to succeed to a greater extent than they expect (e.g., Avolio & Bass, 2004; Wang *et al.*, 2011; Zhang *et al.*, 2011).

Transformational leadership's idealised influence, on the other hand, is exercised through serving as a role model and by actions that accord with the vision (Avolio & Bass, 2004). It instils pride in team members for being associated with the leader, induces them to go beyond self-interest for the good of the group, demonstrates and infuses in members the belief that identification with the team and commitment to it enhances their social identity (Avolio & Bass, 2004; Parr *et al.*, 2013; Van Knippenberg & Hogg, 2003). Idealised influence behaviour is thus about promoting a broad, inclusive vision, leading by example, showing strong commitment to goals, creating trust and confidence in team members, and representing team and organisational goals, culture, and mission (Avolio & Bass, 2004; Parr *et al.*, 2013).

Leader's intellectual stimulation behaviour is viewed to promote intelligent rational thinking and careful problem-solving; the leadership's intellectual stimulation works on the cognitive capacity of team members, challenging their held assumptions and seeking their suggestions, ideas and viewpoints. Intellectual stimulation behaviour encompasses seeking differing perspectives in solving problems, suggesting new ways of examining how to complete tasks

and encouraging team members to question past ideas (Bass & Avolio, 1993, 1994). Moreover, leadership's intellectual stimulation encourages the team to appreciate the different perspectives of others and to explore new approaches and ideas (Bass & Avolio, 1993, 1994). This leadership behaviour, the literature suggests, stimulates members by reframing problems, by pushing them to develop creative and innovative ideas, and by approaching old situations in new ways (Bass *et al.*, 2003). As such, intellectual stimulation behaviour is displayed through encouraging team members' creativity, challenging the status quo, aiming for consistent innovation, empowering team members to disagree with leadership, and risk-taking when appropriate to achieve team goals (Bass & Avolio, 1993, 1994; Bass *et al.*, 2003).

Transformational leadership's individualised consideration behaviour entails attending to the needs of team members, treating them as unique individuals to engender trust and a feeling of satisfaction (Podsakoff *et al.*, 1990). It is exhibited through spending time in teaching and coaching, helping others to develop their strengths and listening attentively to others' concerns (Bass & Avolio, 1994). Through individualised consideration, transformational leadership assures team members that their individual needs and viewpoints are considered and valued and encourages them to espouse creative ideas without fear of failure (Bass, 1985). Individualised consideration leadership behaviour, it is argued, thus provides a supportive climate and new learning opportunities for team members, and increases members' commitment to the team (Parr *et al.*, 2013), as members feel that their leader cares about their needs and interests and provides them with a supportive environment (Avolio & Bass, 2004; Bass *et al.*, 2003). Also, the transformational leader's individualised consideration behaviour is seen to strongly influence the behaviour of their subordinates, as it promotes and protects their interests (Yukl 1999; Bass & Riggio, 2006).

Individualised consideration leadership behaviour thus involves discussing and empathising with the needs of individual team members, making interpersonal connections with members, showing genuine compassion, and encouraging ongoing professional development and personal growth of members (Avolio & Bass, 2004; Avolio & Yammarino, 2002).

From the social identity perspective, it is argued that by engaging in team-supporting behaviours and enhancement of individual members' psychological attachment to the team, transformational leadership helps develop collective group identity and values, and integrate them into the individual member's own self-concept (Avolio & Yammarino, 2002; Bass, 1985; Restubog *et al.*, 2008). It is also argued that by doing so, transformational leadership galvanises in-group identity, provides team members with team-oriented motivation, and fosters their commitment to cooperative team goals (Bass, 1985). The literature also indicates that by increasing the social identification of group members and inspiring them to engage in altruistic behaviours, transformational leaders motivate their teams to contribute to the psychological and social job contexts, working for the good of the group (Bass & Avolio, 1993; Kouzes & Posner, 2002). Transformational leaders are thus seen to influence their teams to engage in contextual performance by serving as role models, putting the group's interests over their own interests (Van Knippenberg & Van Knippenberg, 2005).

Transformational leadership: team effectiveness, cohesion, communication

Following from the above, it can be argued that transformational leadership behaviour may positively impact teamwork processes as this behaviour is viewed to develop team communication and conflict management skills, and promote team cohesion (Dionne *et al.*, 2004; Marlow *et al.*, 2018; Yammarino *et al.*, 2004). There is consensus among academics over the likely positive association of transformational leadership with task performance

(e.g., Dionne *et al.*, 2004; Gong *et al.*, 2009; Liao & Chuang, 2007; Shin & Zhou, 2007). In a theoretical study, Dionne *et al.* (2004) discussed the construct of transformational leadership and provided a framework for investigating a leader's impact on team performance.

Considering team performance as a process-oriented construct enabled these authors to propose that transformational leadership's idealised influence, inspirational motivation, intellectual stimulation and individualised consideration could produce performance intermediate outcomes, such as, shared vision, team commitment, empowered team environment and functional team conflict. They added that these intermediate outcomes may positively affect team communication, cohesion and conflict management. Wang *et al.*'s (2011) meta-analysis of 117 independent samples from 113 studies, reported that transformational leadership exhibits a positive relationship with task, contextual, and creative individual performance; that the influence of transformational leadership is stronger for contextual performance than for task performance across most study settings; and that the positive relationship between transformational leadership and individual performance holds across organisational type, leader level, and geographic region. Furthermore, they found that transformational leadership has positive effects on individual, team, and organisational levels of performance, with the relationship being higher at the team level and augments the effect of transactional leadership on individual-level contextual performance and team-level performance but not individual-level task performance.

Other meta-analysis studies also reported that transformational leadership had a stronger association with employee attitudes and motivation than with employee performance (e.g., DeGroot *et al.*, 2000; Dumdum *et al.*, 2002; Judge & Piccolo, 2004). Dumdum *et al.* (2002), for example, conducted a meta-analysis on the association of transformational leadership with team performance effectiveness and satisfaction, covering studies over the period from 1995

to 2002. They reported that all transformational leadership scales were highly and positively correlated with effectiveness and satisfaction, and that for each of the transformational leadership sub-scales the coefficient for satisfaction was greater than for effectiveness. They also reported that organisational structure and how performance is measured may affect relationships between leadership style and performance. Similarly, a meta-analysis by Judge and Piccolo (2004) of 87 studies between 1995 and 2003 showed that transformational leadership has positive relationships with team member job satisfaction and motivation, leader satisfaction, job performance and rated leader effectiveness, and with group or organisational performance. Moreover, transformational leadership appeared to display stronger relationships with member satisfaction and motivation than with performance. In general, the results from Judge and Piccolo's (2004) study show that the effects of transformational leadership are more robust when moderated by a longitudinal than cross-sectional research design, and when the data are from different sources.

Leadership studies have also emphasised that engendering workgroup innovative behaviour and creative performance is consistent with the behaviour and function of transformational leadership (e.g., Bass, 1985; Basu & Green, 1997; Conger, 1999). Transformational leaders have also been associated with creative performance through their willingness to encourage and intellectually stimulate their team to challenge, question, take risks, suggest new ideas, and engage in divergent thinking (Jong & Hartog, 2010; Jung, 2001; Jung *et al.*, 2003; Shin & Zhou, 2003).

For instance, Jung *et al.* (2003) used a multisource approach to collect survey data from 32 Taiwanese companies in the electronics and telecommunications industry. Their results showed a direct positive association between transformational leadership and organisational

innovation, and a significant positive relationship between transformational leadership and both empowerment and an innovation-supporting organisational climate.

There is further evidence to show that the behaviour of a charismatic leader in communicating a shared vision with high expectations, increases team cohesion and improve team performance (Evans *et al.*, 1991; Mullen & Copper, 1994). Shamir *et al.* (1993) argued that an inspiring vision acts as empathetic language and reinforces the group's collective identity. Similarly, Sullivan (1988) suggested that the behaviour of developing and communicating a shared vision helps build rapport and bonding within the team. Empirical studies have also offered findings that displayed direct effects of transformational leadership on performance (Avolio & Yammarino, 2002; Bass, 1990; Bass & Avolio, 1994; Densten, 2002) and mediated effects through cohesion (Bass *et al.*, 2003; Carless *et al.*, 2000; Sosik & Jung, 2002). The evidence of a relationship between charismatic leadership, shared vision and group bonding (Shamir *et al.*, 1993; Sullivan, 1988) prompted Dionne *et al.* (2004) to suggest that there is likely to be a positive association between the transformational leadership behaviour of providing a shared vision and group cohesion through inspirational motivation and idealised influence (see also, Avolio *et al.*, 1999). Weaver *et al.* (1997) further argued that understanding the potential effects of transformational leadership behaviour on team cohesion is important, as the latter is seen to be critical for effective team performance. Studying 1440 employees from large Australian financial organisations using Global Transformational Leadership scale (GTL), Carless *et al.* (2000) found that cohesion mediated the relationship between transformational leadership and financial performance. Bass *et al.* (2003) had also surveyed 72 light infantry platoons in a USA army base using MLQ-Form 5X measure and SEM-partial least squares (PLS; Wold, 1985) regression. They reported that both transformational and transactional contingent reward leadership positively

predicted unit performance, and that the relationship of platoon leadership to performance was partially mediated by the unit's level of potency and cohesion. Similarly, examining core aspects of the adaptive self-regulation model, Sosik and Jung (2002) adopted a longitudinal multi-source field data in the USA, recruiting 64 managers and 192 subordinates. They also found that group cohesion mediated the relationship between transformational leadership and team creative outcomes. Research has also shown that transformational leadership is related to affective commitment and organisational commitment (Kane & Tremble, 2000; Rai & Sinha, 2000). Accordingly, Dionne *et al.* (2004) argued that exhibiting idealised, inspirationally motivating behaviours may be instrumental in building shared pride in being associated with, and committed to the leader, and has the potential of increasing group cohesion and positively affecting group performance (Arnold *et al.*, 2001; Atwater & Bass, 1994).

Listening and openness to suggestions, consideration of individuals' different needs, and time spent in coaching and teaching, are seen as necessary for effective team performance (Bass, 1985, 1990). Furthermore, as these behaviours are encompassed by individualised consideration behaviour of transformational leadership, it can be argued that individualised consideration is conducive for effective team communication (Bass, 1994). Individualised consideration behaviour is also likely to open and extend lines of communication between the leader and each member of the team, thereby creating a supportive and empowering team environment, and potentially positively impacting team performance (Yukl, 1998; Kark *et al.*, 2003; Marlow *et al.*, 2018). Studying a sample of 888 employees working under 76 branch managers at a large Israeli bank, Kark *et al.* (2003) tested the relationships between transformational leadership and the outcomes of members' dependence and empowerment. They analysed the questionnaire data using confirmatory factor analyses (LISREL) and

regressing and mediation analysis. They found that transformational leadership was positively related to both team members' dependence and empowerment, and that personal identification mediated the relationship between transformational leadership and members' dependence on the leader, while social identification mediated the association of transformational leadership with members' empowerment.

Transformational leadership: conflict management

Studies further suggest that conflict, particularly cognitive or task conflict, can be an antecedent to increased team effectiveness and performance (Jehn, 1994, 1995). Jehn (1995) conducted a survey of 79 workgroups and 26 management teams (589 employees) from an international freight organisation in Australia; she used linear and quadratic regression analysis and found that group norms that are open to, and tolerant of disagreement were positively related to task conflict. This suggests that where a developing team's attitudes and norms are receptive to the functional benefit of task conflict, this may improve the team's ability to constructively manage conflict (Dionne *et al.*, 2004). Kotlyar and Karakowsky (2007) argued that as conflict is seen to have a significant impact on team outcomes (see also, Jehn, 1997), transformational leaders' behaviours of communicating and promoting an inspiring vision motivate team members to implement the vision (Bass, 1985) and set the pace for effective team interaction behaviours that produce positive team task outcomes. The literature suggests that team members' reactions to conflict and its outcomes are influenced by the team leaders' vision and inspirational motivation which encourage team members to appraise more positively any negative events and obstacles that occur (Ayoko & Callan, 2010).

Furthermore, Dionne *et al.* (2004) argued that intellectual stimulation creates an environment where questioning assumptions and offering new ideas stimulates a healthy form of conflict (Bass, 1985, 1990). By exhibiting intellectual stimulation behaviour, a leader demonstrates a

belief that when conflict is carefully and constructively managed, the outcome resulting innovation can lead to better team performance and decision-making (Bass & Avolio, 1994; Mannix & Neale, 2005). De Cremer and Van Knippenberg (2002) further indicated that leaders' charisma is positively correlated with followers' cooperation; however, research is sparse on leaders' conflict management behaviour and its consequences (Van Dierendonck *et al.*, 2002).

It is further argued that transformational leadership's intellectual stimulation behaviour is likely to create functional conflict which may directly and through subsequent constructive conflict management affect team performance (Dionne *et al.*, 2004). Through constructive conflict management, a team may benefit from conflict by developing quality solutions which may also help to prevent team infighting, strengthen relationships within the group and can lead to better team performance (Stevens & Campion, 1994). Chen and Tjosvold (2002) investigated how conflict management can contribute to team effectiveness by developing justice. They collected data from 126 MBA students involved in group projects and used structural equation modelling to analyse the data. They found that a cooperative, as opposed to avoidance, approach to conflict leads to distributive, procedural, and interactive justice, and promotes team effectiveness. In particular, intellectual stimulation behaviour, it is argued, can create an environment where questioning assumptions, seeking different perspectives, suggesting new ways of looking at problems and encouraging non-traditional thinking may promote a healthy task-oriented conflict (Bass, 1985, 1990).

Moreover, it is argued that transformational leaders trigger cognitive and affective processes among their team members, including emotional attachment and motivational arousal, through creating and implementing an inspiring vision and adopting communication styles

that reduce divergence of views and conflict (Conger & Kanungo, 1998; Groves, 2005; Howell & Hall-Merenda, 1999). Their inspirational motivation and individualised consideration behaviours help employees in coping with difficult conditions and problems at work (McColl-Kennedy & Anderson, 2002). A widely used conflict management model is Thomas and Killmann's (1977), offering five approaches to conflict management, namely, competing, accommodating, avoiding, collaborating, and compromising. Singh and Antony (2006) also suggested that effective resolution of conflicts requires, among other things, improved communication skills, team counselling, relinquishing, accommodating, collaborating, listening, responding, and understanding. Yukl (2006) argued that through intellectual stimulation, transformational leaders enable employees to solve task-oriented problems in new and different ways and overcome challenges in analysing and solving task problems (see also, Rafferty & Griffin, 2004). Furthermore, the individualised consideration behaviour of these leaders helps to support employees in achieving self-actualisation and fulfilling their expectations (Rowe, 2007). Consequently, employees will be more able to develop better inter-personal relationships among themselves and avoid or minimise conflict (Nemanich & Keller, 2007; Birasnav *et al.*, 2011).

Team leaders exhibiting transformational leadership behaviour are said to communicate an inspirational vision, provide intellectual stimulation, and develop a high-quality leader-member exchange relationship with their team members; and these behaviours, it is argued, are associated with improved task achievement and productive conflict management (Doucet *et al.*, 2009; Elkins & Keller, 2003; Gardner & Avolio, 1998; Mumford *et al.*, 2002). It is further argued that the collaborative and integrative behaviour of transformational leadership in handling interpersonal conflicts makes conflicts more productive and is crucial for a successful conflict resolution (Jordan & Troth, 2002). Such a behaviour encourages

conflicting parties to satisfy their interest through exchanging information (Meyer, 2004). Moreover, the integrating behaviour has a strong association with job satisfaction and job performance (Bass, 1985). By directing their conflicting team members toward an integrative and collaborative solution, transformational leaders reduce the conflict to a problem that needs to be solved mutually (Bass & Riggio, 2006). Their behaviour enhances team cohesion and strengthens the collective identity of the group (Tourish & Pinnington, 2002).

Transformational leadership's conflict management behaviour can thus be described as one of collaborating, accommodating and compromising with high contribution from the leader; communicating an inspirational vision, providing intellectual stimulation, and developing a high-quality leader-member exchange; establishing positive feelings and minimising feelings of anger, threat or defensiveness by depersonalising the problem; and developing a climate of cooperation, creating a common vision and incorporating the needs of employees; in exhibiting these behaviours, the transformational leader aims to achieve a win-win outcome (see, for example, Bass & Riggio, 2006; Jong & Hartog, 2010; Jordan & Troth, 2002; Jung *et al.*, 2003; Meyer, 2004; Tourish & Pinnington, 2002; Yukl 1999).

2.3.2 Team processes

Team processes that are viewed as supportive of effective team functioning have been categorised as *cognitive*, *affective*, and *behavioural* processes (e.g., Kozlowski & Ilgen, 2006).

2.3.2.1 Cognitive processes

Cognitive processes include *team learning*, *team mental models*, *transactive memory*, and *macro-cognition*.

Team Learning. Team learning is a multi-level, individual *and* team, dynamic and emergent process, whose outcomes are manifested in different ways over time and can shape team effectiveness (Edmondson *et al.*, 2007). Research has showed, for instance, that team learning was positively associated with the performance of multidisciplinary teams, and that it mediated the effect of expertise diversity and collective identification on team performance (Van der Vegt & Bunderson, 2005). Similar associations have been reported between team learning and team performance, efficiency and innovativeness (Ellis *et al.*, 2003). Research also suggests that psychological safety (i.e., a shared belief that the team is safe for interpersonal risk taking) contributes to team learning behaviours, such as seeking feedback, sharing information, experimenting, asking for help, and acknowledging mistakes; and ultimately improving team performance (Edmonson, 1999). Research further suggests that leaders play a central role in shaping the psychological safety climate within their teams (Edmondson *et al.*, 2001); and that information sharing, team learning, and team effectiveness were higher when team members perceived higher levels of cooperative outcome interdependence (De Dreu, 2007).

Shared mental model. It has been further reported that team performance and effectiveness will improve if members have an appropriate shared mental model of understanding of the task, team, equipment, and situation (e.g., Cannon-Bowers *et al.*, 1993; DeChurch & Mesmer-Magnus, 2010). Klimoski and Mohammed (1994) referred to team mental models as team members' shared, organised understanding and mental representation of knowledge about key elements of the team's task environment. These encompass knowledge of equipment and tools used by the team; knowledge of the work that the team is to accomplish, such as, its goals and performance requirements and the problems facing the team; awareness of team member characteristics, and knowledge by team members of what are effective processes (Cannon-Bowers *et al.*, 1993). Furthermore, it is suggested that team leaders can play a central role in

developing team coherence by leading the team through a *learning cycle* of goal setting, performance monitoring, error diagnosis, and process feedback (Kozlowski *et al.*, 1996). There is evidence to indicate that team mental models and performance were enhanced with structured leader pre-briefs and de-briefs regarding effective strategies to use (Marks *et al.*, 2000).

Team transactive Memory. This is a group-level shared system for encoding, storing, and retrieving information (Wegner, 1986). It implies that each team member keeps current on who knows what, channels incoming information to the appropriate person, and has a strategy for accessing this information (Mohammed & Dumville, 2001). It also involves storing new information with individuals who have matching expertise and accessing relevant material from others in the system (Wegner, 1995). It is presumed that transactive memory offers teams the advantage of cognitive efficiency, as through the encoding and information allocation processes, individual memories become more specialised and part of a differentiated collective memory that is more beneficial to the group. This in turn reduces cognitive load, provides access to an expanded pool of expertise, decreases redundancy of effort, improves decision-making and enhances team performance (Austin, 2003; DeChurch & Mesmer-Magnus, 2010).

Macro-cognition. Macro-cognition is conceptualised as a process of building an internalised knowledge by individual team members that is then transformed through information exchange and sharing processes to externalised knowledge (Fiore *et al.*, 2010). Such externalised knowledge can then be used to solve task-related problems. Fiore *et al.* (2010) developed a theoretical framework for building macro-cognitive knowledge that can be used in team decision-making. Kozlowski and Chao (2012) developed a team knowledge typology to capture team knowledge that emerges from the core processes of Fiore *et al.*'s (2010) model

of macro-cognition. They claimed that their typology is multilevel, dynamic, and emergent and incorporates features of all the four cognitive processes discussed above.

2.3.2.2 Affective processes

These processes encompass the constructs of *team cohesion*, *team affect* or mood, *collective efficacy*, *conflict*, and *communication*.

Team cohesion. Group cohesion refers to the commitment of members to the group's task and to member attraction to the group (Goodman *et al.*, 1987). It is viewed as a multi-dimensional construct because of its mixed effects on team performance; consequently, three cohesion dimensions have been recognised: interpersonal attraction, task commitment, and group pride (see, Beal *et al.*, 2003; Craig & Kelly, 1999; Mullen & Copper, 1994). In a review of the literature on work teams' effectiveness, Kozlowski and Bell (2013) found that the relative impacts of the different dimensions of cohesion may depend on the effectiveness outcome being examined. Studies found that cohesion was more strongly related to performance behaviours than performance outcomes and was more strongly related to performance efficiency than performance effectiveness (e.g., Beal *et al.*, 2003). In a meta-analysis of 46 studies, Gully *et al.* (1995) found that the level of analysis and task interdependence moderate the relationship between cohesion and performance, as the group can coordinate better, whereas coordination is not so important for more independent tasks. Similarly, and in what is described as a refinement of Gully *et al.*'s (1995) study, Beal *et al.* (2003) meta-analysed 64 studies, using RBNL meta-analytic procedures (Raju & Drasgow, 2003); they reported that the association between cohesion and performance became stronger as team workflow increased. Specifically, they found stronger correlations between cohesion and performance when performance was defined as behaviour rather than outcome, when it

was assessed with efficiency rather than effectiveness measures, and as patterns of team workflow became more intensive. They also reported that the three main components of cohesion (interpersonal attraction, task commitment and group pride) were independently related to the various performance domains (see also Craig & Kelly, 1999). Research suggests that highly cohesive teams show less absenteeism, high involvement in team activities and high levels of member coordination during team tasks (Morgan and Lassiter, 1992). Furthermore, Bettenhausen (1991) associated team cohesion with team satisfaction, productivity and member interactions; and Swezey and Salas (1992) viewed cohesion as a primary category of teamwork process principles, and as such may help distinguish effective teams from ineffective ones. Studies further show that team cohesion is a critical motivational factor influencing team performance (e.g., Beal *et al.*, 2003; Craig & Kelly, 1999; Mullen and Copper, 1994; Weaver *et al.*, 1997). There is thus enough evidence to suggest that team cohesion has positive association with team performance. These findings also indicate that having the right mix of individuals and clear norms and goals may enhance team cohesion and help teams to develop both task and interpersonal cohesion (Barrick *et al.*, 1998).

Team Affect or Mood. The literature offers two approaches on how to capture group affect (Barsade & Gibson, 1998). One approach focusses on examining how the feeling and behaviours of individual team members arise from group dynamics. The second approach examines the ways in which individual level emotions combine at the team level to influence team outcomes. Studies suggest that affective group homogeneity is beneficial as similarity between individuals attracts them to each other, making interpersonal interactions much easier; generating more cooperation, trust, social integration and cohesion, and positively influencing group effectiveness (Barsade & Gibson, 1998; Barsade *et al.*, 2000). Barsade *et al.* (2000), for example, conducted a questionnaire survey of CEOs and 239 TMTs of 62 various US

companies, using hierarchical regression analysis. They found that affective similarity between senior management teams had a positive effect on group outcomes. Other earlier research, however, has shown that affective heterogeneity can also be beneficial for team creativity (see, Jackson, 1992).

Collective efficacy. Collective efficacy can be viewed as a group's shared belief in its own collective ability to organise and execute courses of action to produce given levels of attainment (Bandura, 1997); a sense of collective competence of group members in allocating, coordinating, and integrating resources in a successful concerted response to specific task demands (Zaccaro *et al.*, 1995). Paskevich *et al.* (1999) suggested that a well-developed structure and interactive and coordinated task processes are necessary conditions for shared efficacy beliefs to develop. Work-group efficacy studies reported a positive relationship between collective efficacy and work team effectiveness (e.g., DeShon *et al.*, 2004; Edmondson, 1999). Team efficacy is also highlighted as an emergent state that forms part of a broader process of team motivation and learning. Indeed, Bell *et al.* (2012) conducted a literature review and identified team learning, not as an outcome, but as multilevel (individual and team), dynamic and emergent process that influences team performance and effectiveness. There is also evidence which indicates that contextual factors such as the team task and culture are likely to affect the association of collective efficacy with team effectiveness (e.g., Gibson, 1999; Gully *et al.*, 2002). Kozlowski and Klein (2000) also argued that the team processes of shared mental models, team learning, cohesion, or collective efficacy are all integrative processes that bring team members together; they are processes of convergence that produce synergy and enhance team effectiveness.

Notwithstanding that, workgroups are also characterised by *divergence and conflict*.

Sheremata (2000) pointed out that groups are characterised by both centrifugal forces which tend to push the group apart, and centripetal forces which tend to pull it back together. On

divergent processes, Lau and Murnighan (1998), for example, drew from the literature on small groups, group composition, organisational demography, and group task to show that demographic differences can split a group along faultlines into competing and divisive subgroups. Defining faultlines as combinations of correlated dimensions of differences which produce a basis for differentiation between subgroups within a group, they make a number of propositions about faultlines formation and their effects on the group. They argued that conflicting subgroups are more likely to form when the demographic characteristics within a group that are related to the group's task form a faultline; that the strength of the faultline is likely to heighten subgroup's salience and lead to shorter sensemaking processes; and that once formed, subgroups are more likely to persist. They added that groups that have not subdivided on the basis of demographic faultlines will find that the salience of faultlines will decrease as group members' common task experiences and mutual understandings accumulate. It is also argued that convergent and divergent processes can operate simultaneously within a group, affecting the nature of emergent collective constructs (see Kozlowski & Klein, 2000).

Conflict. Conflict in workgroups, Kozlowski and Bell (2013) observed, is a manifestation of the processes underlying faultlines, divergence, and centrifugal forces; and work teams provide an interpersonal context in which conflict is likely to occur. Conflicts within workgroups become dysfunctional if tension within the group prevents members from thinking clearly or making sound decisions (Zander, 1994). However, conflicts, particularly, task-related conflicts, may be useful if they alert members to better alternative points of view and stimulate creativity in problem-solving and decision-making (Zander, 1994). The consequences of conflict depend on how the team manages, controls and resolves the problem (Jehn, 1995). Montoya-Weiss *et al.* (2001) evaluated the moderating role of a temporal coordination mechanism and process structure, on the association of conflict management behaviour with

virtual team performance. They conducted an experiment with 175 university students from the U.S. and Japan organised into 35 five-person teams. They found that positive interventions to manage conflict, such as collaboration and competition, positively impact team performance, and that temporal coordination has significantly moderated these effects. Similarly, Dionne *et al.* (2004) argued that constructive team conflict management actions are more likely to benefit team performance.

The literature identifies two main approaches of conflict management strategies: pre-emptive conflict management designed to prevent team conflict before it occurs, and reactive conflict management, working through disagreements among team members (Marks *et al.*, 2001). The literature has primarily focused on reactive conflict management strategies, such as, identification of conflict, problem solving, and compromising. Much less research has been conducted on pre-emptive conflict management (e.g., establishing norms for cooperative rather than competitive conflict resolution, using team charters to specify how team members can handle difficult situations (Smolek *et al.*, 1999), and instituting team rules concerning the nature and timing of conflict (Marks *et al.*, 2001). As can be seen in the section on intra-group conflicts in this chapter, research has shed light on several important aspects of intra-group conflict and how to develop better conflict management in teams. For example, Jehn (1995) reported that for groups performing routine tasks, both task conflict and relationship conflict were harmful for team performance, and for non-routine tasks, only relationship conflict was detrimental (see also, Amason, 1996; Simons & Peterson, 2000). In contrast, in a survey of 326 employees (production teams) and 230 employees (management teams) of a large household goods moving company in Australia, Jehn and Chatman (2000) found that group conflict compositions with higher levels of task-related conflict compared to relationship and process conflict led to increased team performance and satisfaction. De Dreu and Weingart's (2003)

meta-analysis of 30 studies from 1994 to 2001, on the other hand, presented findings which show that both task and relationship conflicts negatively affect team member satisfaction and team performance. The result of their analysis also reported that the negative relationship between conflict and team performance was stronger for complex tasks, concurring with the view that conflict interferes with team information processing capacity. Generally, however, the literature suggests that conflict is detrimental to team effectiveness, but may, under specific conditions, have positive consequences (see, for example, De Dreu & Weingart, 2003). The researcher in this study aims to shed light on the subject of conflict within work teams with much more detailed explanations, treatment, and assessment in later sections, as this subject is at the heart of this thesis.

Communication. The literature discusses communication within workgroups in the context of coordination and cooperation, where communication is seen as a means for enabling the more primary processes of coordination and cooperation (Kozlowski & Bell, 2003). *Coordination* refers to activities required for managing the interdependencies of the team workflow; this entails integrating disparate actions together, along with temporal pacing (Argote & McGrath, 1993). It is also seen as vital to group effectiveness in situations where a successful outcome for the entire group is the end result of integrating contributions by all group members, and where successful contributions by one team member are temporally paced with contributions of another member (i.e., the contributions by one member are contingent on correct and timely contributions by another member) (Kozlowski & Bell, 2003). Studies show that team coordination associates with team performance, for example, in a flight simulation task assigned to two teams of 100 undergraduate volunteers in the USA, Stout *et al.* (1994) examined the effects of coordination on team performance on a flight simulation task. Using

multiple regression analysis, they found that coordination ratings positively predicted mission performance of the team when individual task proficiency was held constant.

Associated with team coordination is the concept of *cooperation*, defined as the conscious contribution of individual efforts to complete an interdependent task (Wagner, 1995). The literature suggests that cooperation is generally associated with team effectiveness, for example, Wagner (1995) reported that individualists are less inclined, and collectivists more inclined, to behave cooperatively; and Seers *et al.* (1995) found that departments with greater team-member exchange had significantly higher efficiency. Furthermore, Pinto and Pinto (1990) studied the relationship of formal and informal project team communication (with the level of cross-functional cooperation actually achieved) within a hospital R&D project team by surveying a total of 262 team members from 72 hospital project teams in the USA. They reported that cross-functional cooperation positively predicted both task and psychosocial outcomes, such that teams high in cooperation had more reasons for communicating and relied more heavily on informal modes of communication than did low cooperation teams. Similarly, Smith *et al.* (1994) found that cooperation in top management teams was positively related to return on investment and sales growth, and that communication frequency was negatively related to the effectiveness of these teams and suggested that greater communication frequency may indicate high levels of conflict. Research thus indicates that communication is an important function that aids task work and teamwork (Glickman *et al.*, 1987), where task work communication involves exchanging task-related information and developing team solutions to problems, and teamwork communication establishes patterns of interaction and enhances their quality. Research also suggests that differences in communication patterns are associated with differences in team performance (see also, Ancona & Caldwell, 1992; Bui *et al.*, 2019).

Marks *et al.*'s (2001) team *behavioural process taxonomy* viewed task episodes as unfolding over time as sequences of transition and action across a series of ongoing phases. They clustered processes that are relevant for *transition* (i.e., mission analysis, goal specification, strategy formulation and planning), *action* (i.e., monitoring goal progress, systems monitoring, team monitoring and back-up behaviour, coordination), and relevant *interpersonal relations* (i.e., conflict management, motivating and building confidence, affective management). This taxonomy, they argued, helps target *what, when, and why* particular team behavioural processes are likely to be most relevant and beneficial for team performance (Kozlowski & Bell, 2013).

The above discussion shows that communication is closely associated with team effectiveness, as research suggests that consensus and team problem-solving practices significantly increased communication openness and improves team performance. Breen *et al.* (2005) indicated that team problem-solving practices strongly pointed to open communication behaviour (see also Bui *et al.*, 2019). These practices showed: a significant increase in supervisors' use of inquiry, suggesting that team members perceived more opportunity to express their suggestions and personal opinions; a significant increase in subordinates' feedback receptiveness, indicating that team members were listening more to new ideas from team members as well as listening more to supervisors' suggestions; and a significant increase in supervisors' feedback responsiveness, suggesting that team members perceived that supervisors acted and followed-up on their criticism and suggestions by transforming their input into actionable knowledge (Breen *et al.*, 2005).

Past research suggests that task commitment is an established critical factor in the success of self-directed work teams (Douglas *et al.*, 2006). It further indicates that employees' task commitment was more likely if team leaders used soft tactics communication, such as

consultation, inspirational appeals, and rational persuasion, and refrained from using pressure (Yukl *et al.*, 1996). These findings were also supported by Tepper *et al.* (1998), which suggested that a manager's use of rational and soft tactics communicates respect for subordinates' ability to understand managerial objectives, recognition of subordinates' technical task knowledge, and a desire to strengthen relational ties. Yukl *et al.* (1996) also showed that as team members' ratings on the communication scale increased, participation in team decision-making, an essential part of team development, also increased.

Studies further indicate that increased listening; openness to suggestions; and prompt, relevant feedback are communication-based indicators of effective team functioning (Douglas *et al.*, 2006). Research also shows that open and easy communication within a team is critical for goal completion and accomplishment of team activities (Fedor *et al.*, 2003; Zander, 1994). Swezey and Salas (1992) viewed communication, alongside cohesion, as a primary category of teamwork process principles which may help distinguish between effective and ineffective teams. Similarly, Champion *et al.* (1996) found that communication, as a process characteristic of the team, is strongly related to team effectiveness criteria. There is thus ample empirical and theoretical evidence which suggests that open team communication is associated with positive team performance and effectiveness (see, Bui *et al.*, 2019; Dionne *et al.*, 2004).

2.3.2.3 Intra-group Conflicts

Intra-group conflicts are viewed as the degree to which team members have real or perceived incompatible goals or interests (De Wit *et al.*, 2012; Korsgaard *et al.*, 2008). Past research on intragroup conflict in teams was predominantly occupied with understanding how different types of conflicts may independently influence team outcomes. The literature recognises four conflict types: task, relationship, process, and status conflicts, with the majority of research focusing on task and relationship conflicts (e.g., Jehn, 1995; Pelled, 1996). Generally,

disagreements relating to task content are referred to as task conflicts; interpersonal tensions, likes and dislikes as relationship conflicts; disagreements over task accomplishment, completion, work arrangements, and roles and responsibilities as process conflicts; and tension regarding members' relative positions in the group's social hierarchy as status conflicts (Bendersky & Hays, 2012; De Wit *et al.*, 2012; Jehn, 1995, 1997).

Task Conflict. Task conflict is an awareness of differences in ideas, viewpoints and opinions about the group tasks and disagreement about the content and outcomes of the tasks being performed among group members (Amason, 1996). It refers to task-related disagreements which, as well as having negative effects, may encourage the exchange of ideas and improve decision quality (Jehn & Mannix, 2001). Amongst the other types of intragroup conflicts, task conflict has been the most widely investigated and its functional or dysfunctional role for group functioning is intensely debated (De Wit *et al.*, 2012). It is suggested that task conflicts may improve team performance, as the discussions and exchanges of information and ideas during task disagreements can enhance member understanding of the task, and lead to higher quality and more creative team outcomes (Amason, 1996; Choi & Sy, 2010; Jehn, 1994, 1995). On the other hand, task conflicts may also escalate and become emotional, distracting members from the task and consuming considerable time and effort to resolve (Jehn *et al.*, 2013). The findings of De Dreu and Weingart's (2003) meta-analysis supported the view that task and all other types of conflicts are harmful for team outcomes. However, since De Dreu and Weingart's (2003) meta-analysis, other studies on task conflict emerged which have displayed a much more complex picture of the effects of intragroup conflicts. For example, De Wit *et al.*'s (2012) extensive meta-analysis of 116 empirical studies ($n = 8,880$ groups) of different sizes and contexts reported that task conflict, on its own, displayed no significant positive or negative effects on team performance, and that its effects were driven by contextual factors, particularly,

on the degree of its co-occurrence with relationship conflicts. In contrast, other researchers found a significant positive effect of task conflict on group performance and individual member's satisfaction (DeChurch *et al.*, 2013). In an attempt to distinguish conflict states (e.g., task conflict and relationship conflict) from conflict processes (how teams interact regarding their differences) and assess the effects of each on team effectiveness, DeChurch *et al.* (2013) conducted a meta-analysis of 45 independent studies (3,218 teams). Their findings suggest that conflict states and processes are distinct and important predictors of team performance and affective outcomes; that particular conflict processes are beneficial, and others are harmful to teams. These authors argue that as well as conflict states, team conflict processes contribute as a source of team members' perceived incompatibilities. As studies do not offer consistent results regarding the effect of task conflict on team outcomes, and rather than continuing to examine main effect relationship, DeChurch *et al.* (2013) and others called for research which considers factors that may moderate or mediate the relationship between task conflict and team outcomes.

Relationship Conflict. Relationship conflict is an awareness of interpersonal incompatibilities and disagreement about interpersonal issues among group members, including affective components such as feeling tension, friction, annoyance, frustration, and irritation (Amason, 1996; Jehn & Mannix 2001). Relationship conflict describes personalised disagreements that divert attention away from the task and invariably harm team performance and cohesion (De Wit *et al.*, 2012; De Dreu & Weingart, 2003; Simons & Peterson, 2000).

Process Conflict. Process conflict is defined as an awareness of disagreement among group members about aspects of how task accomplishment will proceed; it relates to issues about administrative logistics, such as resource delegation, tasks distribution, responsibilities of duty,

and so on (Jehn, 1997; Jehn & Bendersky, 2003; Jehn *et al.*, 1999). De Wit *et al.* (2012) pointed out that process conflict explains more variance in team outcomes than any other conflict type and is the most negative form of conflict for team performance. Greer *et al.* (2008) concurred with this finding as, in a longitudinal three-rounds negotiation simulation study of 28 MBA student teams of a private university in the USA; they reported that the effects of process conflicts lasted longer, and when unresolved contributed to all other types of conflict. The strong negative effects of process conflicts are attributed to a number of reasons; research shows that process conflict is the only type of conflict to significantly correlate with negative effects in teams as they are interwoven with the negative emotions of feelings of injustice and inequity (Chen & Ayoko, 2012; Kerwin & Doherty, 2012). Furthermore, as process conflicts are often about the delegation of responsibilities and valued resources, they are also interwoven with power and resource control (Greer *et al.*, 2008). More importantly, process conflicts are not usually transparent, as the visible and verbalised issue is often not the real issue (Greer *et al.*, 2008). All studies in De Wit *et al.* (2012) meta-analysis reported that process conflict had a negative effect on group outcomes. Among these studies, Behfar *et al.* (2011) who conducted a 3-stage empirical study to develop a process conflict scale, test the scale, then use it to test its effects on group effectiveness. They recruited three samples of MBA students from a USA business school (n= 256, 252 & 283), using open ended questions and two questionnaires for data collection; and analysed the data using concept mapping, PCA and regression techniques. They showed that process conflicts about both logistics and contribution were harmful for group coordination, group performance, and members' satisfaction. Other studies reported that process conflict was associated with decreased group viability (Jehn *et al.*, 2008); lower group productivity (Jehn *et al.*, 1997); lower group creativity and innovation (Kurtzberg & Mueller, 2005); lower quality group climate in terms of trust, respect and cohesion (Jehn *et al.*, 2008); and lower decision quality (Passos & Caetano, 2005). Although most findings of the effect of

process conflicts on team outcomes were negative; a small number of studies reported positive contextual effects; for example, in the early phases of group life (e.g., Jehn & Mannix, 2001; Martinez-Moreno *et al.*, 2009) and in promoting effective role assignment (Jehn, 1997).

Status Conflict. Bendersky and Hays (2012) refer to status conflict as disputes over the relative status positions in a team's social hierarchy. The perceived comparable benefits of high status in terms of influence, access to information and resource, and work recognition, logically suggest that team relative hierarchy positions are open to challenge by individual team members (Bendersky & Hays, 2012; Greer & Van Kleef, 2010; Porath *et al.*, 2008). The findings of the emerging research on the effects of status conflict on team outcomes, unlike the other conflict types, have reported highly consistent negative effects. For example, status conflict negatively impacted team performance (Bendersky & Hays, 2012; Chun & Choi, 2014); power conflicts undermined conflict resolution in organisational teams (Greer & Van Kleef, 2010); and dominance competition heightened team emotionality (Tiedens & Fragale, 2003).

Contextual Variables Associated with Intra-group Conflicts

The contextual variables that are generally accepted by the academic community to be associated with intra-group conflict are broadly classified into two groups: *antecedent variables* and *moderator variables*; these are briefly discussed below.

Antecedent variables. These variables may cause intra-group conflict include *group diversity, team composition (e.g., group size, power and status, demographic faultlines), team atmosphere, behavioural processes, organisational context, and characteristics of team members.*

The literature shows that *diversity* within workgroups gives rise to conflict, and that there are positive associations of: cognitive diversity with task conflict (Jehn, 1997; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Mooney *et al.*, 2007; Pelled *et al.*, 1999), national diversity with task and relationship conflicts (Ayub & Jehn, 2010, 2014), and cultural diversity with task, relationship and process conflicts (Vodosek, 2007). Jehn (1997) studied group conflicts by collecting qualitative data over a 20 months' period, using on-site observations and repeated interviews with six work groups from a household goods-moving organisation. Her findings indicate that process conflict is harmful for group performance; relationship conflict is detrimental to both performance and satisfaction; and task conflict's effects on performance depend on other contextual variables. In particular, she found that emotionality reduces effectiveness, resolution potential and acceptability norms increase effectiveness, and importance amplifies conflict's other effects. She thus concluded that groups with norms that accept task conflict but not relationship conflict are most effective.

Mooney *et al.* (2007) meta-analysed 44 studies using moderated and mediated regression analysis attempting to explain the multi-dimensionality of conflict in diverse work groups and its contradictory effects on group decision-making. They provided empirical evidence to show that task conflict can contribute to relationship conflict and that behavioural integration can moderate this tendency. They pointed out that work teams can benefit from encouraging task conflict but, by doing so, they may inadvertently provoke relationship conflict with all its associated costs. However, they acknowledged that there is little research offering explanation and guidance as to why these two conflicts co-occur or how to avoid their co-occurrence.

Investigating the relationship between national diversity and conflict types (relationship and task conflict), Ayub and Jehn (2010) used a sample of 131 employees in nationally diverse workgroups. They examined group members' nationalistic attitudes regarding outgroup derogation (nationalistic derogation) and ingroup preference (national ingroup preference). They reported a moderating effect of nationalistic derogation on the relationship between national diversity and both task and relationship conflict, such that national diversity was more likely to lead to both task conflict and relationship conflict when members had negative attitudes based on nationality toward the outgroup members. They further found that the effect of national in-group preference was less significant in the relationship between diversity and conflict. Furthermore, Ayub and Jehn's (2014) cross-cultural comparative study reported that when national diversity was conceptualised as variety (categorical difference in number of nationalities) rather than separation (differences in attitudes and beliefs, i.e., social distance and national stereotypes), both relationship and process conflicts decreased.

Furthermore, viewing Cultural diversity as group members' dissimilarity in horizontal and vertical individualism and collectivism, Vodosek (2007) investigated the extent to which intragroup conflict mediates the relationship between cultural diversity and group outcomes. He conducted a questionnaire survey of 76 science research groups in the USA and used mediated regression technique to analyse the data. He found that cultural diversity was positively related to relationship, process, and task conflicts, all three types of conflict were negatively associated with outcomes of satisfaction with the group and perceived performance of the group, and that the three conflict types mediated the relationship between cultural diversity and group outcomes.

Research also explored the role of other forms of diversity in provoking relationship conflicts. In particular, Mohammed and Angell (2004) explored the differential impact of

diversity (gender, ethnicity), time urgency and extraversion diversity and two moderating variables (team orientation and team process) on relationship conflict over time. They tracked 45 student project teams from a US university in a longitudinal design. Their results revealed that the relationship between diversity and relationship conflict is moderated by team orientation and team process. Specifically, they found that team orientation minimised the negative effects of gender diversity on relationship conflict, that team processes weakened the damaging effects of time urgency diversity on relationship conflict, and that relationship conflict resulted in lower perceived performance by team members. They further showed that gender diversity predicted relationship conflict in the early stages of team formation and when team orientation was low. Other studies reported that sex, age and value diversity positively associated with relationship and process conflict (Jehn *et al.*, 1997; Jehn *et al.*, 1999). Yet, in contrast, Pelled *et al.* (1999) found that age diversity decreased relationship conflict, but race and tenure diversity increased it.

Aspects of *team composition*, such as *group size*, has been positively related to task and relationship conflicts (Mooney *et al.*, 2007). Other research on team composition found that where both the team and its members had high levels of power in the organisation and high levels of power motivation, such teams experienced more relationship and process conflicts than low power teams (e.g., Buchholtz *et al.*, 2005). Furthermore, Greer (2014) posited that status conflicts are most likely to arise when members are motivated to protect or obtain positions of *power and status*. Chun and Choi (2014) found that need for power was positively associated with status conflict in teams. Research on top management teams also indicates that having high power individuals can generate status conflicts as they are motivated to protect their positions; this is particularly so when power differences are subtle, and the combination of motivation (high-power holders) and opportunity (a hierarchy for advancement) exist (Ronay *et al.*, 2012; Greer & Van Kleef, 2010). Fast *et al.* (2012) argued that status differences

can lead to greater interpersonal friction than power differences alone and that power without status is particularly damaging.

Research on the aggregate effects of team member composition, such as demographic faultlines, displaying clearly demarcated subgroups, also show that faultlines were generally positively related to relationship conflict (e.g., Li & Hambrick, 2005; Thatcher & Patel, 2011), although some studies reported negative association (e.g., Choi & Sy, 2010; Lau & Murnighan, 2005; Thatcher *et al.*, 2003). *Demographic faultlines* are also found to positively relate to the occurrence of task conflict in teams (e.g., Choi & Sy, 2010; Li & Hambrick, 2005; Thatcher & Patel, 2011). Thatcher and Patel (2011) conducted a meta-analysis of 39 studies with a sample size of 24,388 participants in 4,366 teams, focusing on antecedents and consequences of demographic faultlines. They found that sex and racial diversity increased demographic faultline strength more than did diversity on the attributes of functional and educational background, age, and tenure. They also reported that demographic faultline strength increased task and relationship conflicts and decreased team cohesion, satisfaction, and performance; that there was a stronger decrease in team performance than in team satisfaction; and that the strength of these relationships increased in a laboratory study as compared to a field study.

Furthermore, *team atmosphere* was reported to trigger task conflict; for example, lack of distributive justice (Spell *et al.*, 2011), and team goal uncertainty (Mooney *et al.*, 2007). On the other hand, group atmosphere of trust, respect and cohesion, and group identification were associated with lower levels of task, relationship, and process conflicts (Jehn & Mannix, 2001; Mooney *et al.*, 2007).

Team *behavioural processes* are also seen to impact relationship conflict. For example, early poor feedback about performance in teams increased the likelihood of relationship conflict, particularly in teams lacking trust, and in top management teams (Amason & Mooney, 1999; Peterson & Behfar, 2003). On the other hand, intragroup competition increased relationship conflict (Jehn & Mannix, 2001), while time urgency and effective team interactions decreased it (Mohammed & Angell, 2004). Furthermore, shared identity, shared context, and spontaneous communication reduced relationship conflicts (Hinds & Mortensen, 2005; Hobman *et al.*, 2002).

Organisational context may also influence task conflicts, for example customer orientation positively related to the likely occurrence of task conflict and negatively related to process conflict (Matsuo, 2006), and technology project teams experienced more task conflicts and positive team performance and less relationship conflict than service project teams (Chen, 2006).

Characteristics of individual team members may also cause task conflict. For example, team members were more likely to have task conflicts if they had a high need for achievement (Chun & Choi, 2014), had differences in their level of extraversion (Bono *et al.*, 2002), and had a mean level of trait negative affect (Barsade *et al.*, 2000). Moreover, as there is a close link between relationship conflicts and emotionality, it is expected that groups with high trait negative affect are more likely to have relationship conflicts (Barsade *et al.*, 2000), and that teams with high emotion recognition and low mean levels of agreeableness and extraversion are more likely to experience relationship conflicts (Bechtoldt *et al.*, 2013). Other studies on personality found that differences in neuroticism in the team, and high mean levels of extraversion and conscientiousness were more likely to predict relationship conflicts (Bono *et*

al., 2002). Relationship conflict is similarly more likely when members have a lower need for affiliation (Chun & Choi, 2014).

Moderators. Research identified an increasing number of variables that may moderate the effects of conflict on group outcomes; these include *conflict management strategies; co-occurrence of task conflict with relationship conflict; team composition, team behaviours and team atmosphere; open communication; and task type.*

Conflict management strategies. Views on conflict management strategy and its effects on team outcomes differ. In a longitudinal study of 260 (53 teams) undergraduate students at a large University in the USA, using hierarchical regression analysis, Tekleab *et al.* (2009) found that conflict management has a positive effect on team cohesion and moderates the relationship between relationship conflict and team cohesion and between task conflict and team cohesion. They argued that task conflicts are most beneficial for team performance if they are allowed to play out instead of trying to engage in high levels of conflict management; this, they added, results in improved group cohesion and outcomes. De Dreu and Van Vianen (2001) conducted a field study of 27 teams from different clients of a recruitment company in Holland, using two questionnaire surveys (team members and supervisors); they also reported that collaborating and contending responses to relationship conflict negatively relate to team functioning (i.e., voice, compliance, helping behaviour) and overall team effectiveness. They argued that avoidance conflict management was the best way to manage relationship conflicts. Jehn (1995) further reported that teams following conflict-avoidance management, reduced the negative effects of relationship conflict on group satisfaction and member liking. Griffith *et al.* (2014) supported this view; they suggested that employing the emotion regulation strategy of distraction reduces the negative effects of relationship conflicts.

Other research contrastingly suggests that task conflicts are more positive for group outcomes when they are actively managed and members engage in agreeable behaviours (DeChurch & Marks, 2001), while collaborating or contending during relationship conflicts deflected teams from effective task completion (De Dreu & Van Vianen, 2001). Moreover, Auh *et al.* (2014) surveyed 466 salesperson and 86 team leaders of a multi-divisional consumer goods company in Turkey using regression mediated moderation analysis. They found that teams using a collaborative conflict management approach reduced the negative effects of relationship conflicts, as these conflicts were less likely to impair information processing in the team. Tekleab *et al.* (2009) also found that relationship conflicts were less harmful when teams were more effective at conflict resolution, as the conflict management process improved team cohesion. Conflict resolution efficacy was also found to reduce the long-lasting negative effects of process conflict on group trust, respect, cohesion and group viability (Jehn *et al.*, 2008; Greer *et al.*, 2008).

Co-occurrence of intra-group conflict types. Understanding the effects of intra-group conflicts on group effectiveness has been problematic, as although there is a consensus among researchers that relationship conflict harms group outcomes and interferes with task performance, the association of task conflict with group outcome remains rather complex (see, Amason & Schweiger, 1994; Jehn, 1994, 1995; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Kurtzberg, 2000; Lovelace *et al.*, 2001; Pelled *et al.*, 1999; Simons & Peterson, 2000). Moreover, and as discussed earlier in this chapter and later in section 2.4.2, task conflicts invariably give rise to relationship conflicts, particularly when task conflicts occur in teams with, for example; low trust (Kerwin & Doherty, 2012; Kozusznik *et al.*, 2020; Peterson & Behfar, 2003; Simons & Peterson, 2000; Tidd *et al.*, 2004), high performance orientation (Huang, 2010), negative diversity climates (Xie & Luean, 2014), competitive conflict

management behaviours (DeChurch *et al.*, 2007), and where members have high emotion recognition and low agreeableness and/or extraversion (Van den Berg *et al.*, 2014). Relationship conflicts are also more likely to occur during task conflicts over low importance issues (Rispen, 2012), high emotionality (Yang & Mossholder, 2004) and problems with low resolution potential (Greer *et al.*, 2008). Research also shows that process conflicts have predicted relationship conflicts, particularly, when process conflicts were emotional and heated (Greer *et al.*, 2008; Martinez-Moreno *et al.*, 2012; Van den Berg *et al.*, 2014).

Along with the studies that have reported high positive correlations between task and relationship conflicts, the researcher, in this thesis, argues that crucial to our understanding of the association between diversity, intragroup conflicts and group outcome are the interrelationships between conflict types. As such, attempts to stimulate task conflict may lead to undesirable relationship conflicts (De Dreu & Weingart, 2003; Jehn *et al.*, 1997; Tekleab *et al.*, 2009). This realisation encouraged a new line of research to emerge attempting to address the implications of the co-occurrence of task and relationship conflicts for team performance and conflict management (e.g., Bendersky *et al.*, 2014; De Dreu & Weingart, 2003; Greer *et al.*, 2008; Hamilton *et al.*, 2014; Jehn & Chatman, 2000; Simons & Peterson, 2000; Speakman & Ryals, 2010). Despite these emerging studies, the potential role of the co-occurrence of task and relationship conflicts in explaining the relationship between diversity and group outcome remains inadequately investigated.

The consensus over the potential positive effect of task conflict and the detrimental effect of relationship conflict on team performance, and the reported high probability of their co-occurrence, prompted researchers to look for moderators that help prevent task conflicts from turning into relationship conflicts (see, De Wit *et al.*, 2012; Greer *et al.*, 2008; Huang, 2010;

Lee & Cunningham, 2019; Mooney *et al.*, 2007; Valls *et al.*, 2016). Schaeffner *et al.* (2014) conducted a questionnaire survey of 88 development teams (373 individuals) in 60 German firms from different industrial and service sectors. They identified and proposed goal interdependence variables of collective team identification and team member alignment as moderators of the association between task and relationship conflicts. The result of their study showed that strong identification of members with their team can help prevent task conflicts escalating into relationship conflicts; that the effect of collective team identification on the association between task and relationship conflicts is dependent on the level of task conflict, such that the co-occurrence of the two conflict types disappeared in teams that exhibited medium as opposed to high or low levels of task conflict and at the same time showed high collective team identification; and that team member alignment has no effect on the association between task and relationship conflicts regardless of the level of task conflict.

Furthermore, De Wit *et al.*'s (2012) meta-analysis indicated that the degree to which relationship conflicts co-occurred with task conflicts was a principal moderator of the relationship between task conflict and team performance and satisfaction. They showed that task conflict had the potential to be more positive for team performance if it did not escalate and becomes personal. Also, using mixed research methods approach, Bendersky and Hays (2012) investigated the relationship between status conflict and group performance by studying 44 teams from an organisation in the USA. They found that task conflicts were more likely to benefit team performance if it did not occur with status conflicts. They argued that when task conflict co-occurred with status conflict, discussions about task issues escalated and became personalised, because of the high personal stakes involved. They, however, added that task conflicts had the potential to improve team

functioning and performance when members' status and reputation concerns are separated from their task discussions.

Team composition, team behaviours, and team atmosphere. Studies show that aspects of teams, such as: team composition, team behaviours, and team atmosphere may help in identifying when task conflicts may escalate and become personal conflicts. In their examination of the interaction of task conflict and emotion regulation on the emergence of relationship conflict, Cursçu *et al.* (2012) conducted a field study (case study, report and questionnaire) of 417 undergraduate students (43 ad-hoc and 44 permanent groups), at a university in the Netherland. They analysed the data employing regression and 2-way and 3-way interaction; they found that task conflicts are less likely to be personalised if team members are effective at controlling emotion and are able to employ problem-focused coping strategies. Similarly, Bradley *et al.* (2013) studied the relationships between task conflict, team personality composition and performance, surveying 561 (117 teams) undergraduate students at a university in the USA. They used moderated hierarchical regression and simple slopes analysis and found that task conflicts were more likely to be beneficial for team performance when members had a high average level of emotional stability and openness. It is also argued that high emotionality associated with relationship conflicts negatively affected group climate and viability, while at low negative emotionality these conflicts no longer harmed the group (Jehn *et al.*, 2008). Recruiting 223 students (53 diverse groups) from a US business school in a role play and simulation experiment, Jehn *et al.* (2008) examined the relationships between conflict types on group outcomes. They identified emotions, norms, resolution efficacy, and importance in decision making as moderators and the emergent states of trust, respect, and cohesiveness as mediators.

Research further shows that low self-esteem increases the harmful effects of relationship conflict on individual performance and increased absenteeism (e.g., Duffy *et al.*, 2000). Furthermore, Greer and Jehn (2007) suggested that process conflict harms team outcomes because of its effects on team emotionality; the latter, they argued, is triggered when members have low levels of voice, perceive one another to be obstructing their goals, and see themselves as polarised subgroups rather than a team. These authors further added that subgroups within teams can exacerbate the negative effects of process conflicts.

Research on the moderating effects of team atmosphere in the association between task conflict and group outcomes showed that task conflicts are less likely to become emotional when team interests in the task conflict are high, as for example, when the issue is of high importance (Rispen, 2012) or when trust among team members is high (Choi & Cho, 2011; Simons & Peterson, 2001). Also, several studies suggest that task conflicts were found to be beneficial when groups have norms that encourage *open communication* and positive social interactions (De Clercq *et al.*, 2009; Jehn, 1995; Jehn *et al.*, 2008). De Clercq *et al.* (2009) further suggested that team atmosphere can moderate the harmful effects of relationship conflicts; for example, they found that high levels of social interactions helped teams to reduce the negative effects of relationship conflicts. Bradley *et al.* (2013) argued that when participative safety and psychological safety were high, task conflicts were more likely to benefit team performance and promote team creativity. In these cases, they argued that members were more likely to focus on the group task rather than individual emotions, decreasing the likelihood of task conflicts turning into relationship conflicts, and reaping the team performance benefits of task conflict. Work by Loch *et al.* (2000) on status conflict demonstrated that status obtained via political manoeuvring harmed team performance, while status perceived as meritocratic served as an incentive.

Task type. Research indicates that task conflicts were more positive for team performance and creative thinking on non-routine, rather than decision-making and routine tasks (e.g., Jehn, 1995; Puck & Pregonig, 2014).

2.3.2.4 Conclusion

It is argued above that task conflicts, as distinct from other conflict types, are likely to benefit team outcomes (De Wit *et al.*, 2012), although the circumstances where task conflicts can fulfil this potential are very tight (De Dreu, 2008). Effective management of task conflict is critical in achieving its potential benefits, particularly, as task conflicts were shown to be most positive when they are less personal and less emotional, and when teams have open, psychologically safe norms of communication (e.g., Bradley *et al.*, 2013; Choi & Cho, 2011; Curseu *et al.*, 2012; Jehn *et al.*, 2008). Finding the exact situations and conditions where task conflict may benefit team outcomes is important, hence the focus on moderators and mediators. In contrast, relationship conflicts consistently exhibited a stable negative effect on team outcomes, allowing research to focus on mitigating or preventing relationship conflicts. Thus, some studies showed that avoidance maybe a useful strategy for managing relationship conflicts, and reducing emotionality helps mitigate the negative effects of relationship conflict on team outcomes (Jehn *et al.*, 2008; De Dreu & Van Vianen, 2001). As such, relationship conflict research has focused more on the antecedents than the moderators in an attempt to prevent relationship conflict from occurring, particularly, on diverse teams and faultlines as they are viewed as principal causes of relationship conflicts (Jehn *et al.*, 2008; Thatcher & Patel, 2011). Value disagreements and leadership contests run much of their course through process conflicts, rather than in open discussions of difficult issues. Process conflicts are thus conflicts in disguise, as the expressed content of process conflicts often does not reflect the real, underlying issues. Therefore, managing such highly loaded conflicts to unpack and resolve the

real underlying issue, is considered to be critical. Moreover, conflicts over status are likely to be highly personal as status is about fundamental individual motivations for esteem, standing, and belonging within a group (Anderson *et al.*, 2001). Research shows that overt claims to status are often avoided; instead, status conflicts may be played more indirectly, for instance, through conflicts over roles or the control of valued resources, fuelling process conflicts (Anderson *et al.*, 2006). As such, research has shown that there is a high correlation between relationship and status conflicts (Bendersky & Hays, 2012), and like relationship conflicts, they are best prevented.

2.4 Investigating relationships and developing hypotheses

In this section, the researcher discusses the association of diversity (cognitive and demographic) with group effectiveness (performance, hypothesis H1 and viability, hypothesis H2), association of diversity with the co-occurrence of task and relationship conflicts (hypothesis H3), association of the co-occurrence of task and relationship conflict with group effectiveness (hypothesis H4), mediated association between workgroup diversity and group effectiveness via the co-occurrence of task and relationship conflict (hypothesis H5), moderating influence of transformational leadership on the relationship between diversity and co-occurrence of task and relationship conflict (hypothesis H6), and the moderating influence of transformational leadership on the mediated relationship between diversity and group effectiveness via the co-occurrence of task and relationship conflicts (hypothesis H7).

2.4.1 Associating Diversity with Group Effectiveness (Performance and Viability)

Meta-analyses and other studies, across a wide range of contexts and methodologies, examining main effect relationships between diversity and group performance outcomes have reported mixed results, as their cumulative findings have been inconsistent (e.g., Ayoko &

Konrad, 2012; Bell *et al.*, 2011; Harrison & Klein, 2007; Homan, 2019; Horwitz & Horwitz, 2007; Jackson *et al.*, 2003; Leung *et al.*, 2008; Mannix & Neale, 2005; Shin & Zhou, 2007; Van der Vegt & Bunderson, 2005; Van Knippenberg *et al.*, 2004; Webber & Donahue, 2001). Workgroup diversity has been invariably reported to be positively related, negatively related, or unrelated to group effectiveness (e.g., Cox *et al.*, 1991; Gebert *et al.*, 2006; Gruenfeld *et al.*, 1996; Jackson *et al.*, 2003; Jehn *et al.*, 1999; Joshi & Roh, 2009). Alongside this, research has documented a negative association of group diversity with social integration variables, such as member satisfaction and group cohesion (Jackson, 1996; Milliken & Martins, 1996; Schoenecker *et al.*, 1997). Reviews of workgroup diversity studies also indicate that diversity effects on group performance and member satisfaction are likely to be dictated by the types of diversity considered (e.g., Homan, 2019; Jackson *et al.*, 2003; Pelled *et al.*, 1999; Webber & Donahue, 2001).

As the information processing perspective focuses on task performance, and the social categorisation perspective on relational aspects, it is suggested that diversity is likely to benefit group performance while at the same time harm interpersonal relations and attitudes toward the group. Despite the appeal of these perspectives, the association of workgroup diversity with group outcomes remains ambiguous. The mixed findings brought about by the apparent incoherent and oversimplified treatment of the inherently complex relationships between group diversity, group processes and group outcomes suggest that a more coherently problematised approach may help to reconcile these disparate findings and produce some optimal, moderate level of diversity that balances the ease of communication, and low relational conflict and ability of homogeneous groups with the task-based conflict and creativity of heterogeneous groups. As the title indicates, this thesis focuses on these research inadequacies with the aim of filling some of the recognised gaps. Thus, despite the expansive body of literature on the

subject, academics agree that the association between diversity and group performance remains unclear (e.g., Bell *et al.*, 2011; Homan, 2019; Horwitz & Horwitz, 2007; McGrath *et al.*, 1995; Webber & Donahue, 2001). As such, and although being based on rigorous psychological theorisation of group behaviour, this literature which is permeated by inconsistent results seems to offer limited directions to researchers and practitioners. The inconsistent results, it is argued, have not adequately considered the potential influence of moderating or mediating variables (e.g., Bowers *et al.*, 2000; Jackson, *et al.*, 2003; Pelled *et al.*, 1999; Van Knippenberg *et al.*, 2004; Van Knippenberg & Schippers, 2007; Webber & Donahue, 2001; Williams & O'Reilly, 1998). Accordingly, there were calls amongst scholars in the field to relinquish research on main effects diversity on group performance in favour of exploring moderator and/or mediator influences which ameliorate or exacerbate the association between diversity and group performance (e.g., Gevers *et al.*, 2016; Lovelace *et al.*, 2001; Mohammed & Angell, 2004; Randel, 2002; Valls *et al.*, 2016). For example, Van Knippenberg and Schippers' (2007) selective review of the literature on workgroup diversity, between 1997 and 2005, led them to call for more complex studies with a change of focus from potential main effects diversity towards identifying and investigating contextual variables that may moderate the effects of diversity. These authors argued that the focus on moderators is important as it identifies the conditions under which diversity may have positive or negative effects, and also because it reveals the processes underlying these effects, including assessing the much-overlooked influence and direction of variables that mediate the association between diversity and group outcomes. Consequently, the attention of diversity researchers was directed toward the input-process-output (I-P-O) model which already had a strong influence on explaining team performance and viability (Hackman, 1987; McGrath, 1984). Furthermore, it is argued, that viewing workgroups as complex adaptive systems suggests that many of the mediating factors are not processes, but rather emergent cognitive or affective states with cyclical feedback (see

Ilgén *et al.*, 2005); pointing to non-linear relationships (e.g., De Dreu & Weingart, 2003; Earley & Gibson, 2002; Mannix & Neale, 2005; Marks *et al.*, 2001; Simons & Peterson, 2000; Taggar, 2002; Williams & O'Reilly, 1998). Findings from recent meta-analyses and empirical studies focusing on mediating and moderating variables also suggest that curvilinear relationships appear to be responsible for the mixed outcomes of linear analyses (e.g., Ali *et al.*, 2014; Chi *et al.*, 2009; Earley & Mosakowski, 2000; Gibson & Vermeulen, 2003; Gonzalez & Denisi, 2009; Richard *et al.*, 2007; Thatcher *et al.*, 2003; Van der Vegt *et al.*, 2005).

Past research on work-group diversity is also found wanting in other ways, as most studies on diversity had focused on the effects of different dimensions of diversity either in isolation or in additive models. However, research on social categorisations and cross-categorisation suggests that there are interactive relationships between the different dimensions of diversity (Brewer, 1995; Crisp *et al.*, 2002; Oakes *et al.*, 1994). The inconsistent findings thus increased focus, not just on moderator/mediator variables, but also on diversity faultlines. Surprisingly, however, not enough attention has been paid to the possibility and the effects of inter-correlations between the various dimensions of diversity and the effect of faultlines on group outcomes. Lau and Murnighan's (1998) study was perhaps the first to report that the stronger the faultline, the more likely that group functioning, and performance are negatively affected by sub-categorisation processes.

2.4.1.1 Cognitive diversity's association with group performance and viability

Jehn *et al.* (1999) conducted a multi-method study of 485 employees (92 workgroups) from a major household goods moving firm in the USA, using descriptive statistics, correlations, and regression analysis. They reported that informational (cognitive) diversity has positive association with group performance, mediated by task conflict; and that this relationship is moderated by value and social category diversity, task complexity, and task interdependence.

Similarly, Joshi and Roh (2009) conducted a meta-analysis of 8,757 teams in 39 studies in organisational settings between 1992 and 2009. They examined the sensitivity of the relationship between team diversity and performance to contextual variables. Their findings showed that functional diversity had a more substantial positive effect on performance than other diversity types of task-oriented diversity (e.g., education and tenure) which had very small effects on team performance. These findings, they argued, suggest that diversity is not a significant factor for team performance. However, they also found that after accounting for moderating variables at multiple levels, diversity's effects doubled or tripled in size. Also, Horwitz and Horwitz (2007) meta-analysed the literature on team diversity (peer reviewed articles published between 1985 and 2006), examining 35 articles (78 correlations). They included studies that measured outcomes at team level, as well as those that aggregated data at the individual level to the team level. Using correlation, random effect models, and post hoc analyses, they reported that task-related (cognitive) diversity positively impacted team performance. Liu *et al.* (2020) used secondary data from a leading online medical consultation platform in China (Good Doctor); they also reported that diversity in terms of online reputation and professional knowledge positively affect team performance.

Moreover, in a meta-analysis of 31 studies (1980 - Nov 2009), Bell *et al.* (2011) found that functional background variety diversity had a small positive relationship with general team performance, team creativity and innovation; and that this relationship was strongest for design and product development teams. They also reported that educational background variety diversity was related to team creativity and innovation and to team performance for top management teams; and that team organisational tenure was related to team efficiency performance. Gebert *et al.* (2006) also conducted a review of the literature on functional diversity and its association with team innovative performance. Their analysis showed that contrary to expectations, functional diversity had positive as well as negative or non-

significant relationships with innovation. They attributed these contrasting findings to influences from un-accounted for moderating and mediating variables. Accordingly, they developed a model relating functional diversity to team innovation via the mediation of task conflict, relationship conflict and status conflict, among others. They also pointed to the influence of moderators, such as group social identification and regards for personal identity that are likely to improve predictions of the mediated effects of diversity on team innovations. They further suggested that their process model enables researchers to identify what mediators and in the presence of what moderators, functional diversity enhances or impedes synergistic communication among team members and team innovations. Indeed, recent studies have reported a curvilinear association between cognitive diversity and group performance, mainly moderated and/or mediated by a variety of contextual variables (e.g., Chi *et al.*, 2009; Tekleab *et al.*, 2016; Van der Vegt & Bunderson, 2005). For example, in a longitudinal study, Tekleab *et al.* (2016) analysed data collected from 45 teams of business students from a university in the USA working on a semester-long simulation. They reported a nonlinear relationship between cognitive (functional) diversity and cross-functional team performance through team cohesion and team learning (see also, Gibson & Vermeulen, 2003). Their longitudinal analysis showed that team behavioural integration moderated the non-linear relationship between cognitive diversity and team cohesion, and that team learning mediated the relationship between team cohesion and team performance. Furthermore, concerned with past inconsistent results between tenure diversity and team innovation, Chi *et al.* (2009) conducted a survey, collecting data from a sample of 67 R&D teams (321 engineers) from 35 Taiwanese high technology organisations, and performed hierarchical regression analysis. Their results showed that a curvilinear inverted U-shape relationship existed between organisational tenure diversity and team innovation, where initially, diversity was positively associated with innovative performance, reaching most positive at moderate

levels of diversity, beyond which it displayed negative association. They further argued that by implementing team-oriented HR practices that nurture team identification and functioning and increase members' motivation, skills and abilities, organisations can decrease diversity's harmful effects and retain diversity's benefits of creative and innovative performance. (see also; Hobman *et al.*, 2004; Jehn & Bezrukova, 2004; Mathieu *et al.*, 2008; Park *et al.*, 2018).

Similarly, in multidisciplinary teams, Van der Vegt and Bunderson (2005) conducted a questionnaire survey collecting data from 57 multidisciplinary R&D teams (58 supervisor questionnaires and 225 team member questionnaires) working within a "Global 1000" (*BusinessWeek*, 2003) company in the oil and gas industry in the Netherlands. They used informant sampling approach which relies on a limited selective sample of, what they considered as, the most knowledgeable people. They also collected personal data on employee demographics, team size, and other data from HRD. They analysed the data using CFA and hierarchical multiple regression, examining expertise diversity's relationship with team learning and team performance with different levels of collective team identification. They reported that in teams with low collective identification, expertise diversity was negatively related to team learning and performance; and that those relationships were positive when team identification was high. Their results also displayed non-linear relationships between expertise diversity and both team learning and performance, and that team learning partially mediated the linear and non-linear relationships between diversity and performance. Specifically, Van der Vegt and Bunderson (2005) found that cognitive (expert) diversity displayed an inverted U-shape pattern such that it was positively associated with group learning and performance in groups with high shared identification, allowing group members to use their specialisation differences to learn from and influence each other. They further found that as diversity increased, an optimal level was reached beyond which the different expert perspectives gave rise to information overload and increased the complexity

of group problem solving endeavour, impeding the integration of diverse areas of expertise (see also Ancona & Caldwell, 1992; Milliken & Martins, 1996). Moreover, they reported that the association of cognitive diversity with group learning and performance in groups with low shared identification displayed an upright U-shape form, where the relationship was initially negative, as increasing diversity among group members tended to increase social categorisation and in-group biasing. However, they found that beyond some moderate level of diversity, the tendency to categorise and stereotype other members decreased with decreasing basis for subgroup formation, categorisation, and social identity. Beyond this moderate level of diversity, there were positive associations with group learning and performance, as long as, very high levels of diversity were not reached, and information overload not set in.

Furthermore, Schippers *et al.* (2003) studied a sample of 406 respondents (54 work teams) from 13 different organisations in the Netherland, examining the extent to which team composition affected team process and consequently team outcomes in terms of performance, satisfaction, and commitment. They found little or no main effect; instead, they reported that the association of diversity with group performance, commitment and satisfaction was mediated by group reflexivity and moderated by outcome-interdependence and group longevity. They reported that the interaction of high outcome-interdependent groups that were more diverse displayed more commitment to the group than less diverse groups with low outcome-interdependence; that for low outcome-interdependent groups satisfaction and commitment decreased with increasing diversity; and that highly outcome-interdependent groups with low levels of diversity that were high on group longevity were most satisfied and committed than other groups. Thus, mediated by reflexivity and moderated by outcome-interdependence and group longevity, they showed that satisfaction and commitment were highest in relatively homogeneous groups with high outcome-interdependence and high group

longevity. Schippers *et al.*'s (2003) findings thus corroborated previous research which suggested that less diverse groups are more satisfied and committed than highly diverse groups.

Studies investigating the effects of cognitive diversity on teams' viability and satisfaction, overall, suggest that diversity is negatively related to team viability, although there are some contrasting findings. For example, studying the effects of team inputs and processes on members' perceptions of team viability and satisfaction in new ventures, Foo *et al.* (2006) examined 51 spin-offs (150 participants) from a business plan competition organised by a university in Singapore (in 2000 and 2002), using an email survey. They found that diversity in educational backgrounds was positively related to perceived team viability but not to satisfaction. The latter, they attributed to the similarity-attraction effect, where individuals with similar backgrounds, sharing common life experiences and values, find interaction with one another easier, positively reinforcing, and more desirable (Williams & O'Reilly, 1998). Hence, they argued that the sense of satisfaction resulting from task achievement in a diverse group might simultaneously be neutralised by the lower level of interpersonal attraction. They further reported that intra-team processes of social integration and open communication were positively related to both perceived team viability and member satisfaction. Milliken and Martins' (1996) review while reporting a positive association between cognitive diversity and decision-making quality, nevertheless offered evidence to show that cognitive diversity, such as, group tenure was associated with lower social integration, satisfaction, and higher turnover. However, the review also showed that the negative association of cognitive diversity with affective outcomes decreases with the length of time that the group stays together. Furthermore, Mello and Delise (2015) found that the negative effects of cognitive diversity on cohesion were moderated by conflict management, such that diversity harmed cohesion when conflict management was low but had no effect when conflict management was high. They also found

that cohesion mediated the relationship between the interaction of cognitive diversity and conflict management on team viability but not task performance. Güver and Motschnig (2017) qualitatively and systematically analysed 122 laboratory and field studies, and 17 review studies between 1959 and 2016. They reported that although there are no commonly accepted effects of diversity on performance, diversity tends to have a negative impact on cohesion, communication, and integration, and is likely to increase conflict and turnover. On the other hand, diversity, up to a certain limit, tends to improve decision-making and problem-solving processes through higher creativity and innovation potential. Furthermore, Garrison *et al.* (2010) empirically tested the effect of perceptions of diversity on trust, cohesion, and individual performance in globally distributed teams, whose environment is replete in demographic and cognitive diversity. Their findings showed that the extent of diversity within a team negatively affected team cohesion; however, this effect may be reduced if an environment of trust is encouraged, and team cohesion develops.

2.4.1.2 Demographic diversity's association with group performance and viability

Bell *et al.* (2011) found that race and gender variety diversity had small negative relationships with team performance. Jehn *et al.* (1999), on the other hand, reported that social category (demographic) diversity positively affects group member morale (satisfaction, commitment, and intent to remain), and that relationship conflict mediated the negative association of value diversity with satisfaction, intent to remain, and commitment to the group. Furthermore, Joshi and Roh's (2009) meta-analysis revealed that the direct effect of diversity on performance is zero; and that demographic diversity on gender, race/ethnicity, and age, had very small significant negative effects on team performance. The meta-analysis also revealed that industry and occupational moderators, which have received little attention in past research, explained a significant variance in demographic diversity's effects. However, Horwitz and Horwitz's

(2007) meta-analysis showed that demographic diversity was not significantly related to team performance, and that diversity had no discernible effect on social integration (member satisfaction and cohesion).

An increasing number of authors reported an inverted U-shape association between the various types of demographic diversity and group performance, mainly moderated by contextual variables (e.g., Ali *et al.*, 2011; Chen *et al.*, 2017; Dahlin *et al.*, 2005; Earley & Mosakowski, 2000; Frink *et al.*, 2003; Gevers *et al.*, 2016; Gibson & Vermeulen, 2003; Gonzalez & Denisi, 2009; Haas, 2010; Hoogendoorn & Van Praag, 2012; Richard *et al.*, 2004; Richard *et al.*, 2007; Richard & Shelor, 2002; Schwab *et al.*, 2016; Van der Vegt & Bunderson, 2005).

Richard and Shelor (2002) found that top management team's age diversity, moderated by context, displayed a curvilinear relationship with group sales performance such that diversity was positively related to sales growth at low and medium levels of diversity and negatively related to sales growth at high levels (see also Richard *et al.*, 2004). Furthermore, Gonzalez and Denisi (2009) analysed the impact of demographic diversity on individual attachment and team performance in a sample of 26 teams of a regional restaurant chain, USA, using cross-level regression. They found that diversity climate moderates the impact of demographic diversity on firm productivity and return on profit. They reported that, moderated by diversity climate, the association between gender diversity and group performance showed an inverted U-shape form, and that productivity was always higher under a supportive diversity climate. Their results further suggest that moderate levels of demographic heterogeneity resulted in the highest financial performance when diversity climate was supportive, and lowest when diversity climate was adverse. They argued that under adverse diversity climate conditions, moderate levels of heterogeneity are likely to be damaging, while relative homogeneity or very high heterogeneity may buffer adverse diversity climate effects.

Also, in a study of 288 employees of large, listed organisations from nine industries in Australia using hierarchical multiple regression, Ali *et al.* (2011) examined the effects of board age and gender diversity on team performance. They found that gender diversity had a positive linear relationship with productivity, and age diversity had negative linear and nonlinear relationships with return on assets. They reported that as gender diversity increased from low to moderate levels, there was a positive relationship of diversity with performance; however, as diversity moved from a moderate degree to parity, the effect diminished (see also, Frink *et al.*, 2003). In a subsequent study by Ali *et al.* (2014), which used archival data from 288 large organisations listed on the Australian Securities Exchange, with a one-year time lag between diversity (age and gender) and performance (employee productivity and return on assets). The study reaffirmed the positive association of board members' gender diversity with employee productivity but showed a negative linear and inverted U-shape curvilinear relationship between board age diversity return on assets performance.

Furthermore, in a longitudinal study, Schwab *et al.* (2016) used the Portuguese Ministry of Work's archival data from 243 financial firms that conducted business in Portugal from 1985 to 2000 to examine the relationship between managerial gender diversity and firm performance. They used regression analysis for linear and non-linear effect and reported that as gender diversity in management teams increased from zero to token levels, team performance declined. However, as diversity increased beyond token levels of gender representation, performance improved; and as diversity approached parity, its positive effects on performance diminished. Their findings showed that the association of gender diversity with performance was non-linear with two inflection points, displaying first a U-shape then an inverted U-shape pattern. Drawing on social identity theory and tokenism research, they explained that at low

levels of gender diversity, dysfunctional social dynamics were likely to dominate, inhibiting the potential positive effects of diversity on team performance. As diversity increased, they posited, the negative effects diminished and the positive effects of divergent thinking on managerial decisions were likely to dominate. They further argued that as diversity increased further and approached parity, social identity theory, power and faultlines suggest that the benefits of divergent thinking eroded with decreased communication between gender-based in-groups and out-groups (see also: Chrobot-Mason *et al.*, 2009; Dwyer *et al.*, 2003).

Moreover, Phillips *et al.* (2004) examined the impact of congruence between social and knowledge ties on decision making performance in diverse groups by conducting two experiments involving 104 (34 groups) and 172 (43 groups) of MBA Students at a university in the USA, using a case study and questionnaires. They analysed the responses using simple statistics, correlation and ANOVA, and found that a faultline involving a single dissimilar member resulted in better decision-making performance than a single-member dissimilarity and informational differences cross-cutting each other. They also reported that cross-categorisation results in better group processes than a group with a faultline dividing the group equally (see also Homan & Van Knippenberg, 2003). Similarly, Lau and Murnighan (2005) conducted an experimental field-study on 438 (246F and 192M) business undergraduates of different nationalities at a Canadian university to investigate the effects of faultlines within demographically diverse (ethnicity and gender) workgroups using hierarchical regression analysis. They showed that faultlines explained more variance in perceptions of team learning, psychological safety, satisfaction, and group performance than single heterogeneity attributes. They further reported that cross-subgroup work communications were effective for groups with weak faultlines but not for groups with strong faultlines. Also, building on Williams and O'Reilly's (1998) systematic analysis of 80 studies covering 40 years of diversity research, Van Knippenberg and Schippers' (2007) selective

review of the literature reported that the effects of faultlines and cross-categorisation are not straightforward nor easily operationalised; that these effects might be contingent on other variables and might partly explain the possibility that faultlines have a curvilinear relationship with group outcomes.

Earley and Mosakowski (2000) undertook an exploratory qualitative field study involving five teams of middle managers in a multi-national organisation in Bangkok, Thailand, followed by two experiments with students from 34 countries studying at a European Business School; 92 (4-member teams) student managers and 176 (teams of six to eight members) MBA students. They reported complex group processes where initially group demographic (nationality) heterogeneity seemed to have a damaging effect on group performance and group viability. However, they showed that with time, the effect of heterogeneity on group performance became curvilinear, displaying an inverted U-shape relationship, where highly heterogeneous groups appeared to form ways to interact and communicate effectively, creating a common identity, enhancing group viability. They further found that, in the long run, homogeneous and highly heterogeneous teams outperformed teams with moderate to strong nationality faultlines, and that their members were more satisfied. Jehn *et al.* (1999) showed that demographic diversity positively influenced member morale. Sawyer *et al.* (2006) also compared informationally diverse decision-making groups that were ethnically homogeneous (all Caucasian) with groups that had an ethnic minority member present who was either in the informational minority (i.e., a faultline) or in the informational majority (i.e., crosscutting informational and ethnic diversity). In three-person groups (videoed), they tested group diversity composition of racial and job-function diversity and pre-discussion decision effects on group decision accuracy. Their findings showed that crosscut diversity structure, where racial and job-function subgroup boundaries are crossed (weakened faultlines), enhanced information sharing and improved decision-making. They also reported that groups where

members made pre-discussion choices arrived at incorrect decisions consistent with majority members' pre-discussion preferences, based on a biased subset of information; that crosscut groups where members did not make pre-discussion choices outperformed homogeneous and faultline groups; and that there were no differences between faultline and homogeneous groups. Furthermore, Gibson and Vermeulen (2003) conducted a survey of 724 members (156 teams) in five pharmaceutical and medical products firms in the USA, Latin America, Southeast Asia and Western Europe. They reported that the association of demographic heterogeneity with team learning behaviour displayed a curvilinear U-shape pattern, such that both homogeneous and highly heterogeneous teams exhibited higher levels of team learning behaviour than moderately heterogeneous teams. They further found that the relationship between subgroup strength and team learning behaviour was an inverted U-shape pattern, such that moderate subgroups were associated with high learning behaviour while weak or very strong subgroups demonstrated low levels of learning behaviour. They added that teams displaying a moderate level of subgroup strength engaged most in learning behaviour; and that both very homogeneous and very heterogeneous teams were more inclined to engage in learning behaviour, but only if controlled for the concurrent effect of subgroup strength.

Using quadratic regression, Chen *et al.* (2017) examined the effects of faultlines on team performance in data obtained from a survey involving 61 workgroups (61 team leaders and 327 team members) from various industries in China. They reported that the association of demographic faultlines with group performance displayed an inverted U-shape pattern, and that this relationship was stronger in groups with a weaker psychological safety climate. They argued that under adverse diversity climate conditions, moderate levels of heterogeneity are likely to be damaging as they would lead to sub-culture creation, fragmentation, and other

intergroup problems, while relative homogeneity or very high heterogeneity may buffer adverse diversity climate effects.

Furthermore, Van der Vegt and Bunderson (2005) found that, moderated by collective team identification, composite demographic (age, gender, and nationality) diversity displayed an inverted U-shape curvilinear association with group learning behaviour and performance. Explaining the non-monotonic, non-linear relationship between ethnic diversity and team performance, Hoogendoorn and Van Praag (2012) argued that low to moderate level of diversity had little effect on team performance until at least half of the team was ethnically diverse, then more diversity had a positive impact on performance (see also Dahlin *et al.*, 2005). They pointed out that heterogeneous teams benefit from a more diverse pool of relevant knowledge facilitating mutual learning. Richard *et al.*'s (2007) longitudinal research also showed a curvilinear relationship between ethnic diversity and financial performance, which was stronger in service compared to manufacturing industries and in more stable than volatile environments.

Moreover, in their review of the group diversity literature, Milliken and Martins (1996) found that demographic diversity has negative effects on affective factors such as identification with the group and satisfaction, and that these negative effects were greater for diversity on race and gender than for diversity on age. They further reported that diversity on ethnicity and nationality may affect the cognitive outcomes in potentially positive ways. Furthermore, Harrison *et al.* (2002) studied the effects of perceived surface-level (demographic) diversity and deep-level (personality, values, and attitudes) diversity on team social integration (team viability) by conducting a questionnaire survey of 144 student project teams in a four-wave design at three time periods over four months, at a US university. In this experiment, individual responses were aggregated to the group level, and hierarchical and mediated regression

analyses were used to test hypotheses. Amongst other findings, they reported that perceptions of both surface and deep-level diversity were negatively related to team social integration, and that early perceptions of both demographic and psychological differences among team members had important negative consequences for how well a diverse group gets along. Over time, they argued, as team members learn more about each other, surface-level diversity became less important and deep-level diversity more important in determining team social integration.

2.4.1.3 Conclusion and relationships

The exposition of the literature thus revealed that cognitive diversity has to a greater or lesser degree positive associations with group performance and innovation (Bell *et al.*, 2011; Gebert *et al.*, 2006; Horwitz & Horwitz, 2007; Jehn *et al.*, 1999; Joshi & Roh, 2009). The literature also shows that this relationship is significantly increased by interaction with moderating variables, such as: demographic diversity, task complexity, task interdependence, team-oriented HR practices, group social identification and regards for personal identity (Chi *et al.*, 2009; Gebert *et al.*, 2006; Hobman *et al.*, 2004; Jehn & Bezrukova, 2004; Jehn *et al.*, 1999; Mathieu *et al.*, 2008). Cognitive diversity was also found to have negative or non-significant associations with team performance. This contrasting finding is attributed to influences from un-accounted for mediating variables such as task conflict, relationship conflict and status conflict, team learning, team cohesion, among others (Gebert *et al.*, 2006; Jehn *et al.*, 1999; Tekleab *et al.*, 2016; Van der Vegt & Bunderson, 2005).

Recent studies that incorporated the influence of moderated and/or mediated variables have reported a curvilinear association between cognitive diversity and group performance (e.g., Chi *et al.*, 2009; Gibson & Vermeulen, 2003; Hobman *et al.*, 2004; Jehn & Bezrukova, 2004; Mathieu *et al.*, 2008; Tekleab *et al.*, 2016; Van der Vegt & Bunderson, 2005).

Studies have also generally showed that demographic diversity displayed, to a greater or lesser extent, negative association with team performance (e.g., Ali *et al.*, 2014; Bell *et al.*, 2011; Frink *et al.*, 2003; Joshi & Roh, 2009; Lau & Murnighan, 1998), with some studies showing no significant relationship between demographic diversity and team performance (e.g., Horwitz & Horwitz, 2007), and some other studies showing a positive relationship (e.g., Ali *et al.*, 2011). An increasing number of authors reported a curvilinear association between the various types of demographic diversity and group performance moderated by contextual industry and occupational variables, such as: supportive diversity climate, psychological safety climate, diversity faultlines, and collective team identification (e.g., Ali *et al.*, 2011, 2014; Chen *et al.*, 2017; Chrobot-Mason *et al.*, 2009; Dahlin *et al.*, 2005; Dwyer *et al.*, 2003; Frink *et al.*, 2003; Gibson & Vermeulen, 2003; Gonzalez & Denisi, 2009; Haas, 2010; Hoogendoorn & Van Praag, 2012; Joshi & Roh, 2009; Richard *et al.*, 2004, 2007; Richard & Shelor, 2002; Schwab *et al.*, 2016; Van der Vegt & Bunderson, 2005).

The studies cited above thus showed more complex relationships between cognitive and demographic diversity and group performance than typically described in main workgroup diversity research; that these relationships are mediated and/or moderated by many contextual variables and that they generally display a U-shape curvilinear relationship. These studies provide sufficient evidence to propose hypothesis H1:

H1: Workgroup diversity will have a curvilinear U-shaped effect on group performance.

H1-a: Cognitive diversity will have a curvilinear U-shaped effect on group performance.

H1-b: Demographic diversity will have a curvilinear U-shaped effect on group performance.

Furthermore, research strongly indicates that cognitive diversity was associated with lower social integration, lower cohesion, lower member morale, lower satisfaction, and higher turnover (Garrison *et al.*, 2010; Harrison *et al.*, 2002; Milliken & Martins, 1996), and that this negative association decreases with time and environment of trust.

Demographic diversity was also found to have negative effects on group cohesion, identification and commitment to the group and member satisfaction (Earley & Mosakowski, 2000; Harrison *et al.*, 2002; Jehn *et al.*, 1999; Milliken & Martins, 1996). Some studies, however, showed that demographic diversity had no discernible effect on member satisfaction and cohesion (Horwitz and Horwitz, 2007), and positive effects on members morale (Jehn *et al.*, 1999). The negative association of demographic diversity with group cohesion, psychological safety and member satisfaction was also found to be moderated by faultlines, group outcome-interdependence, and others (Ancona & Caldwell, 1992; Harrison *et al.*, 2002; Lau & Murnighan, 1998, 2005; O'Reilly *et al.*, 1989; Rico *et al.*, 2007; Schippers *et al.*, 2003; Van Knippenberg *et al.*, 2004).

Thus, most of the cited studies show that both cognitive diversity and demographic diversity had negative associations with group viability (commitment and member satisfaction). These studies provide sufficient evidence to propose the hypothesis H2:

H2: Workgroup diversity will have a negative linear effect on the group viability.

H2-a: Cognitive diversity will have a negative linear effect on group viability.

H2-b: Demographic diversity will have a negative linear effect on group viability.

2.4.2 Associating diversity with the co-occurrence of task and relationship conflicts

Studies on the association of diversity with intra-group conflicts have also been inconsistent, invariably reporting that diversity decreases task and relationship conflicts (e.g., Eisenhardt *et al.*, 1997; Pelled, Eisenhardt & Xin 1999), increases task and relationship conflicts (e.g., Jehn *et al.*, 1999; Williams & O'Reilly, 1998), or has no effect on task or relationship conflicts (e.g., O'Reilly *et al.*, 1997). Generally, however, research shows that work-group diversity association with task and relationship conflicts is mainly negative (Ayoko *et al.*, 2002; Chatman & Flynn, 2001; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Olson *et al.*, 2007; Pelled, 1996). Ayoko and Konrad (2012) conducted a questionnaire survey studying a sample of 585 people (89 workgroups) from eight public service organisations in Australia, and used hierarchical regression, mediation, moderation, and moderated mediation techniques to test their hypotheses. Their findings showed that ethnic diversity increased task conflict but was unrelated to relationship conflict, and that both task and relationship conflicts were negatively associated with group performance and members' morale and satisfaction.

Furthermore, Pelled *et al.* (1999) tested a model of the relationships between diversity, intra-group conflict, and performance in a questionnaire survey of a sample of 317 employees (45 cross-functional teams) from electronics divisions of three major USA corporations. They analysed the data using SURE hypothesis testing, and their findings also presented a complex picture of the link between group diversity and group conflict. They found that demographic diversity shaped intra-group conflict, and conflict in turn shaped group performance, that cognitive diversity drove task conflict, but multiple types of diversity drove relationship conflict. They further found that demographic (race and tenure) diversity was positively associated with relationship conflict, while age diversity was negatively associated with such conflict, and that task routineness and group longevity moderated these relationships. Their

findings also showed that task conflict had favourable effects on group task performance while relationship conflict had harmful effects. They concluded that diversity can both increase and decrease conflict, and that the combination of diversity types and contextual moderators influenced the strength and shape of the relationship between a particular diversity type and conflict, and ultimately, group performance and viability. Pelled *et al.*'s (1999) complex findings again suggest that the association of diversity with group conflict and group performance is likely to exhibit non-linear patterns. However, research specifically investigating non-linear relationships between diversity and group conflicts is still in its infancy.

These mixed results also encouraged researchers to focus more on exploring moderator and/or mediator influences (e.g., Gevers *et al.*, 2016; Jacobson, 2019; Lovelace *et al.*, 2001; Mohammed and Angell, 2004; Randel, 2002). Studies also emerged showing that demographic faultlines increased relationship conflict as they gave rise to subgroups, increasing the salience of in-group/out-group memberships, out-group tension and loss of cohesion, and inter-subgroup competition (Lau & Murnighan, 1998, 2005; Li & Hambrick, 2005; Thatcher *et al.*, 2003). Inconsistent findings increased the focus not only on moderator/mediator and faultline effects, and non-linear relationship, but also on the observed high positive correlations between task and relationship conflicts, although research on the latter is still in its infancy.

In a quasi-field study, Thatcher *et al.*'s (2003) investigated the effects of diversity faultlines on the conflict experience, performance, and morale of 79 workgroups. Unlike other studies, they used composite diversity faultlines, incorporating multiple demographic characteristics of group members simultaneously rather than assessing just one characteristic at a time. While the study's linear results showed that faultlines were negatively related to all

types of conflict and positively related to morale and performance, supplemental analyses indicated curvilinear relationships between faultlines and relationship conflict, process conflict, group morale, and group performance. Groups with either very diverse members (virtually no faultlines) or split into two fairly homogeneous subgroups (strong faultlines) had higher levels of conflict and lower levels of morale and performance than groups with medium faultlines. These results suggest a more complex relationship between diversity and group conflicts and outcomes than typically described in diversity research. Similarly, the result of a study by Li and Hambrick (2005) of 535 local and expatriate managers from 71 joint venture firms in China showed that large demographic faultlines between factions within a group engendered task conflict, emotional (relational) conflict, and behavioural disintegration, which ultimately led to poor performance.

It is argued that information processing and misattribution are principal causes for the co-occurrence of task and relationship conflict, pointing to team members' inability to rationally separate task disagreements from personal incompatibilities (Jehn & Mannix, 2001). Task conflict may thus turn into relationship conflict due to limited information processing ability or cognitive functioning, or misinterpreting task conflict as personal attack (Jehn & Bendersky, 2003; Simons & Peterson, 2000). Research has shown that if task disagreements are not resolved, they often turn into relationship conflict, forcing group members to spend more time and energy focusing on emotional issues rather than on the task; thus, hindering team processes and damaging group effectiveness (De Dreu & Weingart, 2003; Huang, 2010; Simons & Peterson, 2000). Task conflict has been shown to be less likely to co-occur with relationship conflict in teams with high intragroup trust (Kerwin & Doherty, 2012; Peterson & Behfar, 2003; Simons & Peterson, 2000; Tidd *et al.*, 2004); where individual conflict episodes can be easily resolved (Greer *et al.*, 2008), with collaborative as opposed to competitive management style (DeChurch *et al.*, 2007); where there is low level of process conflict (Martinez-Moreno

et al., 2012); with higher learning and lower team performance orientation (Huang, 2010); with processes of supportive interaction, and behavioural and emotional integration (e.g., DeChurch *et al.*, 2007; Gamero *et al.*, 2008; Mooney *et al.*, 2007; Yang & Mossholder, 2004); with moderate demographic faultlines (Lau & Murnighan, 2005; Xie & Luan, 2014); and with high rather than low levels of collective team identification (Schaeffner *et al.*, 2014).

The literature thus provides overwhelming evidence to show that task and relationship conflicts are highly correlated, where their co-occurrence is almost inevitable in workgroup functioning. However, and although research is prevalent on the effects of group diversity on task conflict and relationship conflict in isolation of each other, there is very little research on the effect of diversity on the co-occurrence of task and relationship conflicts (see: Lau & Murnighan, 2005; Marineau *et al.*, 2018; Xie & Luan, 2014). Furthermore, as research indicates that the effect of diversity on task conflict and relationship conflict is more likely to be non-linear as it is mediated and/or moderated by contextual variables, it is expected that the association of diversity with the co-occurrence of task and relationship conflicts will also display a curvilinear inverted U-shape pattern; hence, the following proposition:

H3: Workgroup diversity will have a curvilinear inverted U-shaped effect on the co-occurrence of task and relationship conflicts.

H3a: Workgroup cognitive diversity will have a curvilinear inverted U-shaped effect on the co-occurrence of task and relationship conflicts.

H3b: Workgroup demographic diversity will have a curvilinear inverted U-shaped effect on the co-occurrence of task and relationship conflicts.

2.4.3 Associating the co-occurrence of task and relationship conflicts with group effectiveness

Studies increasingly suggest that because of high inter-correlations between task and relationship conflicts, the effect of one type of conflict on group effectiveness is contingent on the effects of the other type and on the level of their co-occurrence (e.g., Behfar *et al.*, 2016; Bendersky *et al.*, 2014; De Dreu & Weingart, 2003; De Wit *et al.*, 2011, 2012; Greer & Dannals, 2017; Greer *et al.*, 2008; Hamilton *et al.*, 2014; Marineau *et al.* 2018; Meier *et al.*, 2013; Simons & Peterson, 2000; Tekleab *et al.*, 2009). Surprisingly, however, there is stark absence of studies on the impact of the co-occurrence of task and relationship conflicts on group performance and viability.

A number of studies reported that task conflict's impact on group performance and group member satisfaction was less negative, or even positive, when the co-occurrence of task and relationship conflicts was weak, and more negative when this co-occurrence was strong (e.g., De Dreu & Weingart, 2003; De Wit *et al.*, 2011; Marineau *et al.* 2018). Task conflict is reported to affect group outcomes more positively when it does not co-occur with relationship conflict (e.g., Gamero *et al.*, 2008; Mooney *et al.*, 2007). This, it is argued, because task conflict on its own is less likely to be emotional, less likely to escalate, and more likely to be positive for group performance (Greer *et al.*, 2008; Peterson & Behfar, 2003; Shaw *et al.*, 2011; Simons & Peterson, 2000; Yang & Mossholder, 2004). It is further argued that the co-occurrence of task and relationship conflicts undermines the positive effects of task conflict by giving way to the onset of interpersonal hostilities that characterise relationship conflict (Jehn, 1995; Jehn & Bendersky, 2003; Marineau *et al.* 2018; Mooney *et al.*, 2007; Simons & Peterson, 2000; Yang & Mossholder, 2004). For example, Marineau *et al.* (2018) examined the extent to which both relationship and task conflicts are related to employee decisions regarding from whom to seek advice at work. They analysed data gathered from 75 employees in a medium-sized life

sciences firm in the US Midwest. Their findings showed that although employees were less likely to communicate and seek advice from someone with whom they experienced relationship conflict, they were more likely to do so with those whom they experienced task conflict. Furthermore, in examining the interrelationships between conflict types on group outcomes, Jehn *et al.* (2008) reported that task, relationship and process conflicts decreased positive emergent states in groups, and this led to a decrease in group viability; that this effect was alleviated by resolution efficacy regarding process conflict but could be impaired by negative emotion associated with relationship conflict; and that norms that encouraged task conflict also increased positive emergent states within groups, which marginally and positively influenced group performance. Shaw *et al.* (2011) conducted two studies based on survey questionnaires administered to work teams and their supervisors (287 employees in 87 teams) from seven different organisations in Taiwan, and 582 employees (127 teams) from 14 various organisations in Indonesia, using hierarchical regression testing of hypotheses on three levels (individual, team and organisation). They reported that task conflict had a negative linear effect on team performance when co-occurring with high relationship conflict, and curvilinear, inverted U-shape relationship with performance when relationship conflict was low.

Similarly, drawing on the information processing perspective, O'Neill *et al.* (2018) found that groups with high task conflicts and low relationship conflicts tend to have more positive interactions and achieve more effective group outcomes, and that as the co-occurrence of task and relationship conflicts increases, workgroups become increasingly dysfunctional. This, it is argued, is because information processing groups have limited cognitive resources that can be supplied by each team member, which if directed toward managing relationship conflicts will reduce the group's capacity for productive task conflict exchanges (Shaw *et al.*, 2011). Other studies also show that task conflict is likely to produce more expansive evaluation of

assumptions and thinking, better learning, and more effective decisions and innovative solutions if relationship conflict is held at a low level (Farh *et al.*, 2010; Jehn & Chatman, 2000; Jehn & Mannix, 2001; Marineau *et al.* 2018; Tjosvold, 2008 a, 2008b; To *et al.*, 2017). De Wit *et al.*'s (2012) results also showed that the co-occurrence of task and relationship conflicts moderated the association between task conflict and group performance. Moreover, De Wit *et al.* (2013) reported that the level to which relationship conflict is present determines whether a task conflict is positively or negatively related to group decision making (see also, Behfar & Thompson, 2007; De Dreu, 2008; Jehn & Bendersky, 2003). They found that the level of perceived or actual relationship conflict during task conflict increased group members' rigidity in holding onto sub-optimal initial preferences during decision making and thus led to poor decisions; and that the effect of relationship conflict on decision making was mediated by biased use of information. They further argued that the harmful effects of the co-occurrence of task and relationship conflicts on information processing was manifested in group members' reduced motivation to process information systematically, and their perception of the task conflict as a threat. They pointed out that when task conflict co-occurs with relationship conflict, group members are less likely to shift from their initial viewpoint to a more appropriate decision alternative or adopt another member's viewpoint. Bruk-Lee *et al.*'s (2013) study also suggests that task conflict's negative relationship with group members' well-being and satisfaction may be due to its co-occurrence with relationship conflict. Furthermore, To *et al.*'s (2017) review explored the relationship between positive and negative affective states and creativity at individual and group levels of analysis. It suggested that the detrimental effects of affective diversity may be explained in terms of a similarity-attraction perspective, where people prefer to work with others who share similar attributes with themselves; and that team members' affective dissimilarity may consequently result in a sense of interpersonal strain or stress between team members and undermine group functioning.

Various authors thus attribute inconsistencies in the task conflict-team performance research to the presence or absence of co-occurring relationship conflict impacting the appropriate management of task conflict and team performance. As task conflict may have positive effects on group performance and relationship conflict predominantly negative effects, the co-occurrence of task and relationship conflicts is more likely to display an inverted U-shape curvilinear relationship with group performance. De Wit *et al.* (2011) specifically called for research to be undertaken to identify the tipping point in group performance resulting from the co-occurrence of task and relationship conflicts, and to identify factors that may help workgroups to separate task conflict from relationship conflict in order to improve group performance. Furthermore, as the literature shows that both task and relationship conflicts have negative effects on member satisfaction and group viability, it can be argued that their co-occurrence also have negative effects on group viability and members' satisfaction. The literature also indicates that task conflict, on its own, is likely to have a positive effect on group performance, particularly, if the task is non-routine or of a complex nature, and where there is high trust and psychological safety within the group. Relationship conflict, on the other hand, is shown to be almost always harmful for group performance. As such, the positive effect of task conflict will be undermined by the extent to which it co-occurs with relationship conflict, turning less positive when the co-occurrence is weak, to increasingly more negative when the co-occurrence becomes stronger. The effect of the co-occurrence of task and relationship conflicts on group performance is, therefore, expected to be negative and likely to be linear. The following hypothesis may thus be proposed:

Hypothesis 4: The co-occurrence of task and relationship conflict will have a negative linear effect on group effectiveness (group performance and viability).

2.4.4 Mediated association between workgroup diversity and group effectiveness via the co-occurrence of task and relationship conflicts

As pointed out above, an increasing number of emerging studies acknowledge that diversity is likely to give rise to task conflicts and subsequently the co-occurrence of task and relationship conflicts (e.g., Ayub & Jehn, 2010, 2014; Jehn *et al.*, 1997, 1999; Mooney *et al.*, 2007; Pelled *et al.*, 1999; Vodosek, 2007). Alongside this, a new line of research is emerging attempting to address the implications of the co-occurrence of task and relationship conflicts for team performance and conflict management (see, Bendersky *et al.*, 2014; De Dreu & Weingart, 2003; Greer *et al.*, 2008; Hamilton *et al.*, 2014; Jackson *et al.*, 2003; Jehn & Chatman, 2000; Simons & Peterson, 2000; Speakman & Ryals, 2010). For example, Jackson *et al.*'s (2003) review of the literature (1997–2002) on diversity types and their effects found that diversity influenced affective reactions and teams' social processes (e.g., intragroup conflicts), and the latter in turn provided the explanation for the effects of diversity on team performance. They also reported that the effects of diversity on team performance, cohesion, members' satisfaction, and commitment were either non-significant, mixed, or positive, depending on which dimension of diversity was examined.

Moreover, Gebert *et al.*'s (2006) theoretical model shows that functional diversity is associated with team innovation via the mediation of task conflict, relationship conflict and status conflict, and that the influence of group social identification, regards for personal identity, and other moderators, are likely to improve this mediated relationship. The researcher has argued and proposed in section 2.4.2 that diversity (cognitive and demographic) is likely to have a curvilinear inverted U-shape association with the co-occurrence of task and relationship conflict (H3a and H3b). He has further argued and proposed that the co-occurrence of task and relationship conflict is likely to have a negative linear effect on group performance and viability (H4). These arguments suggest that the co-

occurrence of task and relationship conflicts is likely to mediate the curvilinear relationship between diversity and group performance and mediate a negative linear relationship between diversity and group viability, hence hypothesis H5.

H5: The co-occurrence of task and relationship conflicts will mediate the relationship between workgroup diversity and group effectiveness (group performance & group viability).

H5-a: The co-occurrence of task and relationship conflict will mediate the curvilinear (i.e., U-shaped) relationship between workgroup diversity and group performance.

H5-b: The co-occurrence of task and relationship conflict will mediate the linear relationship between workgroup diversity and group viability.

2.4.5 The moderating influence of transformational leadership in the association of diversity with the co-occurrence of task and relationship conflicts

The literature on group leadership points to the importance of transformational leadership in enhancing the positive impact of diversity on workgroup effectiveness (see: Avolio & Yammarino, 2002; Nishii & Mayer, 2009). Drawing on leader-member exchange, social categorisation, and expectation states perspectives, and using a questionnaire survey of a sample of 4500 employees from supermarket departments (N=384) in the USA, Nishii and Mayer (2009) examined the moderating role of leader-member exchange at the group level on the association between demographic (age, race and gender) and tenure diversity and group turnover. They reported a significant positive relationship between diversity and group turnover, which becomes weaker when leader-member exchange is high or when group differentiation on leader-member exchange is high. They argued that their findings highlight the important role leaders play in influencing the relationship between diversity and turnover through the patterns of inclusion that they create in their teams.

A number of studies point to the effectiveness of transformational leadership and high levels of leader-team member communications on group processes (e.g., Ayoko & Callan, 2010; Ayoko *et al.*, 2008; Kearney & Gebert, 2009; Marlow *et al.*, 2018; Nishii & Mayer, 2009; Stewart & Johnson, 2009). These studies reported that leaders with high levels of inspiration and communication of vision are likely to mitigate the relationship between diversity and conflict, enhance learning in diverse teams, and limit the likelihood of task conflict escalating into relationship conflict (e.g., Ayoko & Callan, 2010; Ayoko *et al.*, 2008, Ayoko *et al.*, 2012; Gibson & Vermeulen, 2003). This field, however, remains under-researched with inadequate empirical studies investigating the moderating role of transformational leadership in the context of group diversity and performance (e.g., Kearney & Gebert, 2009; Shin & Zhou, 2007).

Transformational leader's concern with the development of collective identity and group values that individual members internalise into their own self-concept, is expected to reduce conflict within the team (see Lim & Ployhart, 2004). As conflict within workgroups is inescapable (see De Dreu, 2008; Jehn & Bendersky, 2003; Jehn & Mannix, 2001; Tjosvold, 2008a), the significance of transformational leadership for group cohesion and effectiveness is likely to be high. Studies also show that members whose team goals are cooperative deal with occurring conflicts openly and constructively (Tjosvold, 2008a, 2008b; Zhang *et al.*, 2011), preventing task related conflicts from escalating into relationship conflicts. It is argued that by instilling in-group identity and orienting group members to common group goals, transformational leadership helps the team to develop group values and norms that support obliging and cooperative rather than competitive ways of dealing with occurring conflicts (Zhang *et al.*, 2011).

Empirical evidence also shows that transformational leadership has positive relationship with constructive styles of conflict management and negative relation with non-constructive styles

(e.g., Hendel *et al.*, 2005; Saeed *et al.*, 2014). Driven by cooperative goals and heightened team identification, cultivated by transformational leadership, team members are said to perceive conflict as a mutual problem that needs common consideration and solution that benefit all (Alper *et al.*, 2000; Chen *et al.*, 2005; Tyler & Blader, 2003). In encountering disagreements, these group norms, it is argued, would motivate team members to exercise flexibility by moving away from their original rigid position to consider and incorporate opposing views, more reliable information, and new ideas (Tjosvold, 2008a). Zhang *et al.* (2011) examined transformational leadership effects on team coordination and performance through conflict management. They collected data through survey questionnaires from 711 members of 144 unit management teams and their 144 team directors, as well as 17 supervisors of a large state-owned enterprise in China's telecommunication industry; and analysed the data using ANOVA and LISREL. Their results showed that transformational leadership was positively related to cooperative conflict management and negatively related to competitive conflict management; and that such a cooperative approach resulted in more effective team coordination and subsequently team performance.

Research also shows that transformational leadership moderates the relationship between demographic diversity, relationship conflict and group performance by engendering positive emotions and optimism to motivate and inspire the team to develop positive approaches to group tasks (Ashkanasy & Tse, 2000; McColl-Kennedy & Anderson, 2002). Furthermore, by conveying an inspiring vision, espousing collective goals, and stimulating identification and feeling of pride in being part of the team, transformational leadership decreases the likelihood of relationship conflict within a socially categorised group (Ashkanasy & Tse, 2000; Avolio, 1999; Bass *et al.*, 2003; Dionne *et al.*, 2004; Wang *et al.*, 2005). Research also indicates that by articulating an inspiring vision, transformational leaders enhance group members' perception of intragroup similarity, decreasing the effects of cognitive biases and demographic

stereotypes (Sethi *et al.*, 2001). Furthermore, placing heightened priority on co-operation and interdependence through commitment to the vision leads to team members focusing on the group, increasing cohesion and decreasing the likelihood of intragroup conflict (Henry *et al.*, 1999).

Ayoko and Konrad (2012) reported that transformational leadership behaviour reduced the negative effects of task and relationship conflicts to zero, and that leadership partially moderated the indirect effect of diversity on group outcomes occurring through the mediator of conflict. It is clear from the above that transformational leadership is more likely to moderate the effects of both cognitive diversity and demographic diversity on task conflict and relationship conflict. Furthermore, as reported above, there is high inter-correlations between these two types of conflicts where the occurrence of one type is contingent on the occurrence of the other type. This suggests that transformational leadership is likely to moderate the association of diversity with the co-occurrence of task and relationship conflict. However, no research has been undertaken to investigate this moderation effect, hence the following proposition:

H6. Transformational leadership moderates a curvilinear relationship between Workgroup diversity and the co-occurrence of task and relationship conflict: There is an inverted U-shaped relationship when transformational leadership is low and a negative linear effect when transformational leadership is high.

H6a: Transformational leadership moderates a curvilinear relationship between Cognitive diversity and the co-occurrence of task and relationship conflict: There is an inverted U-shaped relationship when transformational leadership is low and a negative linear effect when transformational leadership is high.

H6b: Transformational leadership moderates a curvilinear relationship between Demographic diversity and the co-occurrence of task and relationship conflict: There is an inverted U-shaped relationship when transformational leadership is low and a negative linear effect when transformational leadership is high.

2.4.6 The moderating influence of transformational leadership in diversity's association with group effectiveness mediated by co-occurrence of task and relationship conflicts

Pieterse *et al.* (2010) conducted a field study, administering questionnaires to 231 employees of a government agency in the Netherlands. Using regression analysis, they found that transformational leadership positively influenced member innovative behaviour when moderated by high member psychological empowerment (i.e., ability to proactively influence their work role and environment). Moreover, Cole *et al.* (2011) explored the relationship between transformational leadership behaviour and team performance moderated by variability among team members' leadership behaviour and mediated by team empowerment. using data from 460 members (108 work teams) in a multinational field setting in Germany and USA. Employing ordinary least squares regression analyses and bootstrapped estimates, they reported that the joint effects of transformational leadership behaviour and consensus about transformational leadership had an indirect effect on team performance through team empowerment.

It was discussed above that the negative effects of diversity result from subgroup categorisation and intergroup bias (Van Knippenberg *et al.*, 2004). These effects are manifested in team members experiencing conflicts, distrust, and damaging relationships (Lau & Murnighan, 1998). Central to transformational leadership behaviour, the literature suggests, are emphasis on a common goal and inspiring vision, intellectual stimulation, and empowerment of team

members, and setting high performance standards (Avolio *et al.*, 1999). This behaviour, arguably, helps transcend differences by stimulating the discussion of divergent viewpoints and ideas and promoting the positive effects of diversity (Kearney & Gebert, 2009; Kunze & Bruch, 2010; Shin & Zhou, 2007). Kearney and Gebert's (2009) examined transformational leadership as a moderator of the relationship of age, nationality, and educational background diversity with team outcomes using a sample of 62 R&D teams in a multinational pharmaceutical company in Germany. They reported that when levels of transformational leadership were high, demographic (nationality) and cognitive (educational) diversity were positively related to team performance; these relationships were non-significant when transformational leadership was low. They further found that age diversity was not related to team performance when transformational leadership was high, and negatively related to team performance when transformational leadership was low. Their model showed positive moderating effects of transformational leadership on the relationship between diversity and the mediators of elaboration of task-relevant information and collective team identification, which in turn positively related to team performance. They thus suggested that transformational leadership can enhance the benefits entailed by both demographic and cognitive diversity.

While Kearney and Gebert (2009) considered transformational leadership as a moderator of the diversity-process relationship, Ayoko and Konrad (2012) looked into leadership as a moderator of the process-outcome relationship. They considered the mediating group process of task and relationship conflicts and showed that in demographically (ethno-centric) diverse group, transformational leadership reduced the negative effects of task and relationship conflicts on group performance and morale to zero. They also reported a partial support for their theoretical model predicting that transformational leadership moderated the indirect effect of diversity on group outcomes through the mediator of task and relationship conflicts.

Similarly, Shin and Zhou (2007) used a sample of 288 members (75 R&D teams) from 44 Korean companies of various sizes in the electronic technology industries. They reported that the interaction between transformational leadership and educational specialisation (cognitive) heterogeneity affected team creativity in such a way that when transformational leadership was high, teams with greater educational specialisation heterogeneity exhibited greater team creativity. They also found that teams' creative efficacy mediated this moderated relationship. Kunze and Bruch (2010) further showed that demographic (age) diversity faultlines harmed perceived productive energy when the leader was low on transformational leadership behaviour.

Furthermore, as discussed earlier in this review, workgroup demographic diversity may decrease effective communication, group cohesiveness and psychological attachment; it may also increase task and relationship conflicts, and turnover, as well as having negative influence on effectiveness. It was also pointed out that the positive relationship between group cognitive diversity and creative group outcome is rather complex, as it requires sharing and integrating a wide range of information and perspectives, effective cooperation, and group members' mutual intellectual stimulation to develop new and better ideas (Shin & Zhou, 2007). Creative group outcomes require minimising the harmful effects of diversity on team interactions and processes while keeping its benefit; the latter, it is argued, is gained by integrating group processes and competencies (West, 2002). Studies suggest that the role of transformational leadership is significant for cognitively diverse group, as members need to learn how to interact, share and develop cognitive, emotional, and instrumental resources to enable them to use their diverse educational and functional background to enhance group effectiveness (e.g., Kearney & Gebert, 2009; Keller, 2006; Mumford *et al.*, 2002; West, 2002).

Research further suggests that transformational leadership improves team outputs as it enhances team identification and motivation by increasing the intrinsic value of team goal

accomplishment and collective outcomes (Bass, 1985; Bass & Avolio, 1990; Shamir *et al.*, 1993). Strong identification with the team, it is argued, facilitates the sharing of members' skills, knowledge, and constructive discussion of ideas with the other members and contributes to team's success. Furthermore, because of increased level of trust and psychological safety which allows for interpersonal risk taking, individual members are encouraged to share their ideas among other team members (Edmondson, 1999; Milliken *et al.*, 2003). Cognitively diverse group members may, for instance, prefer to carry out group tasks in different ways, creating the conditions for task conflict, which is likely to escalate to relationship conflict causing negative interactions and damaging team creative performance (Jehn *et al.*, 1997; Janssen *et al.*, 2004). Detrimental social categorisation may also ensue from cognitive diversity, undermining sharing and elaborating creative ideas (Van Knippenberg *et al.*, 2004). Moreover, Somech (2006) conducted a field survey on a sample of 1,292 members of 140 primary care teams and their 140 practice managers in Israel, focusing on the effect of leadership on a functionally heterogeneous team's process and outcomes. She reported that in high functionally heterogeneous teams, participative leadership style was positively associated with team reflection, which in turn fostered team innovation.

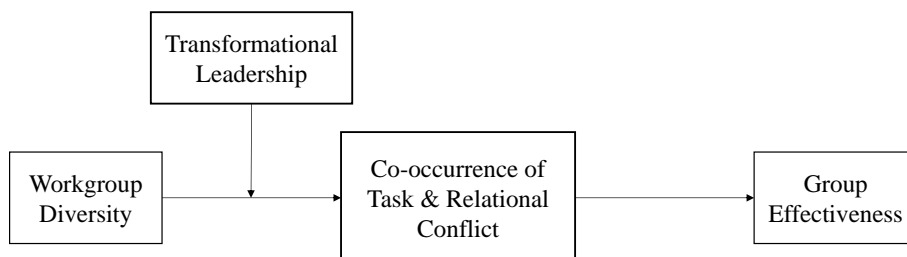
The above argument suggests that transformational leadership is likely to moderate the conflict mediated relationship between work-group diversity and group effectiveness. As such, and following from hypothesis H6, the following proposition can be made:

H7: Transformational leadership moderates the negative and indirect effect of workgroup diversity on group effectiveness through co-occurrence of task and relationship conflict.

2.4.7 Conclusion: conceptual model

In this chapter, the researcher has analysed and synthesised the literature on diverse workgroup functioning and developed a theoretical model hypothesising that the co-occurrence of task and relationship conflict will mediate the association of workgroup diversity and group effectiveness. Furthermore, the model shows that diversity displays a U-shape curvilinear pattern with performance, and linear relationship with group viability; that the association of diversity and co-occurrence of task and relationship conflict will display an inverted U-shape curvilinear pattern, and that the association of co-occurrence of task and relationship conflict with group effectiveness will show a negative linear pattern. Importantly, the model also shows that transformational leadership will moderate the direct and mediated relationships of the model. Understanding diverse workgroup functioning and developing and empirically testing the theoretical the model's hypothesised relationships form the research problem of this study. The model is shown in figure 2.1 together with the proposed relationships.

Figure 2.1 A theoretical model proposing an association between workgroup diversity and group effectiveness Mediated by the co-occurrence of task and relationship conflict and moderated by transformational leadership



H1: Workgroup diversity (*H1a*: cognitive diversity; *H1b*: demographic diversity) will have a curvilinear U-shaped effect on group performance.

H2: Workgroup diversity (*H2a*: cognitive diversity; *H2b*: demographic diversity) will have a negative linear effect on group viability.

H3: Workgroup diversity (*H3a*: cognitive diversity; *H3b*: demographic diversity) will have a curvilinear inverted U-shaped effect on CTRC.

H4: CTRC will have a negative linear effect on group effectiveness (group performance and viability).

H5: CTRC will mediate the relationship between workgroup diversity and group effectiveness (*H5a*: group performance [curvilinear/U-shaped]; *H5b*: group viability [linear]).

H6. TFL moderates a curvilinear relationship between workgroup diversity (*H6a*: cognitive diversity; *H6b*: demographic diversity) and CTRC: there is an inverted U-shaped relationship when TFL is low and a negative linear effect when TFL is high.

H7: TFL moderates the negative and indirect effect of workgroup diversity on group effectiveness through CTRC.

Analysis of the literature on workgroup diversity, intra-group conflicts and group effectiveness reported inconsistent results and linear and curvilinear relationships. Meta-analyses, as well as experimental and empirical field studies across contexts and methods attributed this inconsistency to the influence of moderators and/or mediators that are specific to the study context. Studies also attributed the mixed results to researchers treating diversity types in isolation rather than in interaction with other types, and in treating the effect of conflict types rather than considering the effect of the co-occurrence of these types in workgroup functioning. The cited research was predominantly undertaken in the USA, Europe, and South East Asia,

with noticeable absence of studies from the Gulf region where the current study is situated. As inconsistencies in the results of past studies were in great parts attributed to contextual moderator variables, it is more likely that the current study's findings would also be influenced and limited by moderators that are unique to the place and setting that were not considered in the model.

Chapter 3

Methodology

This chapter discusses the methodological design which was adopted in this research. It starts with a brief focused discussion on the nature of knowledge (section 3.1); it briefly delves into the philosophy of knowledge, identifying the ontological, epistemological, axiological, and methodological underpinning of various paradigms regarding what constitutes knowledge, how to access knowledge and approaches for communicating it. This section is then divided into sub-sections, discussing in greater details the various paradigms. Positivism is discussed in sub-section 3.1.1, post-positivism in 3.1.2, constructivism/interpretivism in 3.1.3, and pragmatism in sub-section 3.1.4. This study's concurrent mixed methods research design is discussed in section 3.2. The qualitative research method is presented in sub-section 3.2.2 along with its sampling and data collection procedure (3.2.2.1), thematic analysis (3.2.2.2), and validity and reliability (3.2.2.3), as well as ethical considerations associated with qualitative research (3.2.2.4). The concurrent quantitative research method (sub-section 3.2.3) is presented, discussing its sampling procedure (3.2.3.1), factor analysis (3.2.3.2), sample size (3.2.3.3), the measure scales (3.2.3.4), their validity and reliability (3.2.3.5), and testing the research hypotheses (3.2.3.6). Section 3.3 covers a discussion on ethical issues which need to be considered in this research, followed by the chapter's conclusion (section 3.4).

3.1 The nature of scientific knowledge

A systematic knowledge about any social phenomenon is underpinned by a set of beliefs and interrelated assumptions regarding its ontology, epistemology, axiology, and methodology. Ontology is a philosophical term, defined as the science or study of being: the nature of reality, and whether this reality is an objective one that really exists, or a subjective one created in the

mind (see, Blaikie, 1993; Hatch & Cunliffe, 2006). Ontology deals with what entities exist and how they can be related, put together or sub-divided into categories of similar and different characteristics (Gill & Johnson, 2010). Ontology is also viewed as an analytic philosophy which can aid in determining whether a particular classification of being is fundamental, and to what extent the items in that classification can be said to exist (Gill & Johnson, 2010). Pointing to the existence of being, Hatch and Cunliffe (2006) highlighted the complexity which studying social phenomena, such as culture or power, can introduce and whether such phenomena really exist or if they are merely an illusion. Ontological assumptions are thus concerned with what constitutes reality, the form and nature of reality, and what can be known about that reality (Gill & Johnson, 2010). Accordingly, researchers need to take a position regarding their perceptions of how things really are and how they really work. Hatch and Cunliffe (2006) expanded their discussion about how reality is determined; whether it exists independently or through people's experience of it; the former belongs to the realm of objectivism and the latter to the realm of subjectivism, as will be elaborated later in this section and in subsequent sections. The dominant view amongst researchers is that there is only one true reality which can be captured, identified, quantified and measured; such a view of reality has come to be known as naive realism, and its proponents as positivists (see Ponterotto, 2005). Other researchers, in contrast, hold the view that there are a number of realities which are constructed subjectively, influenced by the individual's own experience and the social context of these realities; these researchers have come to be known as interpretivists or constructionists (Ponterotto, 2005).

Closely related to the concept of ontology is the notion of epistemology. While ontology's pre-occupation is with what constitutes reality, epistemology's concern is the methods of inquiry into the nature of reality (Easterby-Smith, *et al.*, 2008), and what constitutes knowledge, its sources, and the limits of this knowledge (Eriksson & Kovalainen, 2008). Epistemology is thus

about the nature and forms of knowledge; how knowledge can be created, acquired and communicated (Denzin & Lincoln, 2003; Guba & Lincoln, 1994; Ponterotto, 2002), and the relationship between the would-be knower and what can be known (Cohen *et al.*, 2007). The inter-dependent relationship between epistemology and ontology, and how they inform each other, is highlighted by Hatch and Cunliffe (2006); they argued that as the ontological view of reality can be either objective or subjective, so can the epistemological view of the way of obtaining knowledge about reality.

Furthermore, the issues of objectivity and subjectivity in research highlight the role and values of the researcher in the research process; a term known as axiology, and the importance of understanding the researcher's axiological position. A researcher's ontological position or assumption consequently influences the epistemological choices which the researcher has to make. Eriksson and Kovalainen (2008) pointed out that an objective epistemology presumes the existence of a world that is external and theory neutral, while subjective epistemology suggests that access to the external world can only exist through our own observations and interpretations. As such, it is contended that the data collected from social phenomena that exist independently from the researcher is less biased and more objective, and that such data can only be authoritative if it is presented in a statistical form (Saunders *et al.*, 2007). This contention has been challenged by an increasing number of researchers who view social research as involving a number of choices where the researcher's values and preferences are bound to influence the research process; pointing to the difficulty with achieving objectivity (Blaikie, 1993; Ponterotto, 2005). Thus, epistemologically, the positivist position is one of dualism, where the researcher and the research participant and topic are assumed to be independent of each other; and it is one of objectivism where, adopting rigorous procedures, the research participant and the research topic can be examined by the researcher without bias or prejudice (Ponterotto, 2005). The interpretivist/ constructionist epistemological view, on the

other hand, is subjective emphasising the social construction of reality, and necessity of the interaction between the researcher and the participant to capture and describe the participant's lived experience (Ponterotto, 2005). Accordingly, the researcher's ontological and the related epistemological and axiological position define the methodological approach of the research (Blaikie, 2000; Creswell, 1998; Denzin & Lincoln, 2011; Saunders *et al.*, 2007).

The methodological approach, or methodology, is the strategy, process and procedures of the research (Creswell, 1998; Denzin & Lincoln, 2011); it is a plan of action which determines the choice and use of particular methods (Crotty, 1998). Not very differently, Somekh and Lewin (2005) view methodology as methods or rules by which a particular piece of research is undertaken and the principles, theories and values that underpin the approach to this research. Thus, methodology deals with the why, what, from where, when, and how data is collected and analysed (Guba & Lincoln, 1994). As such, methodology is viewed as the overall approach to research linked to a theoretical framework, while method refers to systematic modes, techniques and procedures and tools used for collection and analysis of data (Crotty, 1998; Somekh & Lewin, 2005).

The set of interrelated ontological, epistemological, axiological, and methodological assumptions that provide a philosophical and conceptual framework for the organised study of a phenomenon is known as the research 'paradigm' (Denzin & Lincoln, 2011). A research paradigm is an interpretive framework, a basic set of beliefs that guides action (Denzin & Lincoln, 2011; Lincoln & Guba, 2000). The paradigm's philosophical assumptions about the research guide the researcher in the selection of tools, instruments, participants, and methods used in the study (Denzin & Lincoln, 2011).

The research paradigm thus sets the context for the study; as such, the philosophical position taken by a researcher is always open to challenge. This is because the philosophical position adopted in accessing knowledge is underpinned by the researcher's assumptions about the

nature of truth, how neutral is the representation of this truth, and whether the social phenomenon the researcher is investigating exists independently (Mesel, 2013). Researchers thus need to familiarise themselves with the discussion surrounding ontological and epistemological stances so that they can adopt approaches compatible with the objectives and nature of their inquiry and to minimise and make visible their prejudices (Blaikie, 2007; James & Vinnicombe, 2002). Furthermore, it is argued that as every paradigm is based upon its own ontological and epistemological assumptions, and since all assumptions are conjectures, the philosophical underpinnings of each paradigm can never be empirically proven (Blaikie, 2007). It follows that the different ontological and epistemological positions held by different researchers often lead to different research approaches towards the same phenomenon (Grix, 2004).

As pointed out above, two opposing paradigms guide social science research: positivism and interpretivism. In the following sub-sections, the researcher discusses the premises underpinning these philosophical approaches and their implications for research methodology.

3.1.1 The positivist paradigm

The positivist paradigm has its origin in the Enlightenment, which brought about the notions of the centrality of the individual and the world as objectively knowable (see Gergen, 2001; Hansen, 2004). As a philosophical school, positivism is rooted in Mill's 19th Century system of logic, whose basic assumptions are summarised by Lincoln and Guba (1985) thus: the social and natural sciences have the same goals of discovering laws that can lead to explanation and prediction; concepts should be defined by empirical categories; nature exists as a true, identifiable reality whose laws can be derived from data; and large samples are necessary to suppress idiosyncrasies in data and reveal general causes or the ultimate laws of nature. Positivist research is thus nomothetic, focusing on uncovering general patterns of behaviour

that have a normative base, and whose primary goal is prediction and explanation of phenomena. The positivist paradigm or positivism, also known as the scientific method, is a form of philosophical realism which closely adheres to the hypothetico–deductive method of the natural science (Cacioppo *et al.*, 2004; McGrath & Johnson, 2003). This has been the dominant force and ‘received view’ in science for more than 150 years (Guba & Lincoln, 1994). It involves the systematic observation and description of the phenomena within a model or theoretical framework (Cacioppo *et al.*, 2004). Positivism focuses on verifying *a priori* hypotheses with the primary goal of obtaining an explanation that would ultimately lead to the prediction and control of phenomena (Guba & Lincoln, 1994; McGrath & Johnson, 2003). Ontologically, positivists contend that there is one true reality that be captured, identified and measured; a position known as naïve realism. Epistemologically, positivists emphasise: a) dualism, where the researcher and the research participant and topic are assumed to be independent of one another; b) objectivism, by following rigorous, standard procedures, the participant and topic can be studied by the researcher objectively, free of bias; c) the researcher can study the research participants without influencing them or being influenced by them; and d) replicated findings are considered “true” and enhance theory verification evidence. The axiological position of positivists and post-positivists is that there is no place for values in the research process; the researcher should remain emotionally detached from the investigative inquiry. One’s values, hopes, expectations, and feelings have no place in scientific inquiry. This is ensured by using standardised, systematic investigative methods, eliminating, or strictly controlling any influence the researcher might have on the participants or on the research process. Thus, methodologically, positivists and post-positivists attempt to simulate strict scientific methods and procedures, carefully controlling or manipulating variables, ensuring that the researcher’s emotional or expectant stance do not influence the problem under study. The goal of this position is to uncover and explain relationships among variables that will

eventually lead to universal laws to enable prediction and control of phenomena. Positivists thus attempt to embrace the natural science methods, relying on true experiments or quasi-experimental methods, such as surveys.

3.1.2 The post-positivist paradigm

The post-positivists ontological position is similar to that of the positivists in that they also accept a true reality, but they believe it can only be captured and measured imperfectly, a position known as critical realism (Lincoln & Guba, 2000). This, they argue, is because human intellectual processes are too flawed to capture the intractable phenomena of life, and as such, it is not possible to fully capture a “true” reality. Furthermore, while positivists stress “theory verification”, post-positivists stress instead “theory falsification” (Lincoln & Guba, 2000). Following from Popper (1972), they add that while one can never verify a specific proposition with complete confidence, one can completely falsify it with one single contrasting incidence. Epistemologically, post-positivists advocate a modified dualism/objectivism, acknowledging that the researcher may have some influence on the phenomenon being researched, but objectivity and researcher–subject independence remain important guidelines for the research process. Although post-positivists differ with positivists on some important premises, they, nevertheless, share much in common (Lincoln & Guba, 2000; Ponterotto, 2002). Both perspectives: seek explanations that lead to prediction and control of phenomena; emphasise cause–effect relationships of phenomena that can be studied, identified, and generalised; subscribe to an objective, detached researcher role; and both serve as the primary conduit for quantitative research.

3.1.3 The constructivist/interpretivist paradigm

Constructivism originates in Kant's (1781/1966) ideas, where human perception was seen to derive not only from the senses but also from the mental processes that organise the incoming sense impressions, and that human claims about nature cannot be independent from the mental processes of the knowing subject (Hamilton, 1994). Kant's ideas provide a central tenet of constructivist thinking: that an objective reality cannot be separated from the person who is experiencing, processing, and labelling the reality (Sciarra, 1999), and that reality is constructed by the actor (e.g. research participant). Ponterotto (2005) draws attention to this ontological distinction, which he argues is critical in understanding the basic difference between positivism/post-positivism and its mainly quantitative method approaches, and constructivism and its mainly qualitative method approaches. The ideas of Dilthey (1894/1977) had also influenced the development of constructionism; he rejected the reductionist and objective emphasis, arguing that the goal of the natural science is scientific explanation, whereas the goal of human science is to understand the meaning of social phenomena (Schwandt, 1994, 2000). Dilthey believed that lived experiences occur within a historical social reality, and that these lived experiences may be outside the immediate awareness of the individual but could be brought to consciousness. Underpinned by Dilthey's ideas, constructivists emphasise that their goal is to understand the lived experiences from the point of view of those who live it (Schwandt, 1994, 2000), and that the way of arriving at this understanding is through qualitative research methods (Herman, 1997).

Constructivists/interpretivists thus reject the positivists' naive realism of a single objective true external reality; instead, they adhere to a relativist ontological position that assumes multiple, accessible, and equally valid realities (Schwandt, 1994). They hold that reality is constructed in the mind of the individual, rather than observed as an externally singular entity (Hansen, 2004). Reality, according to the constructivist position, is thus subjective and influenced by

contextual factors, such as: the individual's experience and perceptions, the social environment, and the interaction between the individual and the researcher (Ponterotto, 2005). Constructivists thus advocate a transactional and subjectivist epistemological stance that maintains that reality is socially constructed and, therefore, interaction between researcher and participant is central to capturing and describing the "lived experience" of the participant. The constructivist position adopts a hermeneutic approach, seeing meaning as being something hidden and this must be revealed through deep reflection (see Schwandt, 2000; Sciarra, 1999), brought about by a dialogue between the researcher and participants. A central aspect of constructivism is the interaction between the investigator and the object of investigation, allowing deeper meaning to be uncovered. Through interactive dialogue and the resulting interpretation, the researcher and the participants jointly construct a new reality. Thus, the axiological position of constructivists is that the researcher's values and lived experience cannot be divorced from the research process. Accordingly, the researcher should acknowledge, describe, and "bracket" his or her values, but not eliminate them. Given their stance on the centrality of intense researcher-participant interaction and on the need to be immersed over longer periods of time in the participants' world, constructivists more often embrace naturalistic methodological designs (Lincoln & Guba, 1985) in which the researcher is ensconced in the community and day-to-day life of the research participants. In marked contrast to the positivist nomothetic research, interpretivist research is idiographic and emic, as it focuses on the deep understanding of the individual as being a unique, complex entity. As such, naturalistic inquiry leads to qualitative research methods such as in-depth face-to-face interviewing and participant observation.

3.1.4 Pragmatism in research

Pragmatism, also referred to as realism emerged out of the dissatisfaction with the over-determinism of positivism and the total relativism of interpretivism (Saunders *et al.*, 2007). Drawing on aspects from both paradigms, pragmatist researchers free themselves from being committed to any one philosophical school or view of reality. They reject the notion that social inquiry is able to access the truth about the real world solely by a single scientific method (Creswell, 2009; Mertens, 2005). Pragmatism subscribes to the view that although real structures can exist independent of human consciousness, knowledge about these structures is socially constructed; that human knowledge of reality is the outcome of social conditioning (Saunders *et al.*, 2007). So, while acknowledging that reality may exist outside observation or science, pragmatists are, at the same time, concerned with what kinds of things exist and about how they behave (Blaikie, 1993). They shift the focus from explanation and prediction to understanding, by holding the view that empirical observations are mere tendencies driven by local contexts, and that both 'scientific' methods, as well as language and discourse are necessary for the study of social objects (Blaikie, 1993). Pragmatists view observable events as one of stratified reality, where the surface appearance of events is shaped by underlying structures and mechanisms, and where the observable reality is only a partial picture (Hatch & Cunliffe, 2006). Researchers from the incompatibility thesis emphasise that quantitative and qualitative research paradigms and methodologies cannot and should not be mixed (see, Howe, 1988), while other researchers adopt an approach incorporating both methods in their research projects (see Morgan, 2007). Furthermore, the continuing debate over the relative merits of qualitative and quantitative methods is seen as one of status and politics, as well as, divisive and counterproductive for the advancement of the social science (Hughes *et al.*, 2006; Onwuegbuzie & Leech, 2005). Accordingly, Onwuegbuzie and Leech (2005) called upon researchers to make use of both quantitative and qualitative research in a pragmatic way.

Pragmatism can be said to form the underlying philosophical paradigm for mixed-methods research approach (Tashakkori & Teddlie, 2003; Somekh & Lewin, 2005). Pragmatic researchers focus on the 'what' and 'how' of the research problem and apply all approaches which enable them to understand the problem (Creswell, 2009). Having the research problem at the centre of their attention, pragmatist researchers choose data collection and analysis methods that are most likely to provide insights into the problem, so disregarding philosophical loyalty to any particular research paradigm (Brewer & Hunter, 1989; Creswell, 2009; Miller, 2006; Tashakkori & Teddlie, 2003). Pragmatists thus avoid the contention surrounding truth and reality, accept the existence of singular and multiple realities that can be empirically investigated and are disposed to solving problems associated with these realities (Creswell, 2009; Rorty, 1999). Pragmatism frees the researcher from constraints imposed by the forced choice dichotomy between positivism and constructivism, and from a particular research method or technique (Creswell, 2009; Robson, 1993). The pragmatist's view relates to an experiential world with layers of the 'stable and the precarious', of 'completeness, order, recurrences which make possible prediction and control, and singularities, ambiguities, uncertain possibilities, processes going on to consequences as yet indeterminate' (Dewey, 1925, in Feilzer, 2010, p. 8). It is contended that positivism and subjectivism derive from the same paradigm family, both seek to find 'the truth', whether it is objective or relative truth of multiple realities, and that both paradigms attempt to produce knowledge that best corresponds to, or represents reality (Rorty, 1999). In contrast, the pragmatist's view of knowledge is anti-representational, as they argue that research should not endeavour to represent reality, rather it should be useful, where utility is determined through reflexive research practice (Morgan, 2007; Rorty, 1999). Thus, any inquiry should consider the questions of 'what it is for', 'who it is for' and 'how the researcher's values influence the research', so that the inquiry becomes more than an attempt to mirror reality (Feilzer, 2010). It is argued that these epistemological

concerns require a mixed methodological approach to observe or measure the different layers of the investigated phenomenon (Tashakkori & Creswell, 2007). This would also suggest that the findings of most empirical mixed methods studies are presented independently through juxtapositioning of data derived from different methods; thus, remaining unable to transcend the forced dichotomy of quantitative and qualitative methods (Bryman, 2007).

3.2 The study's methodological design: Mixed methods research

3.2.1 Introduction

A mixed methods approach involves gathering both numeric information and textual information (Creswell, 2009). By using a variety of methods, complementing each other, this approach, it is argued, was key to the improvement of social science research (Creswell, 2009; Gorard, 2004). It is further maintained that a mixed methods research requires a greater level of skill, does not waste potentially useful information, and creates researchers who are more able to make appropriate criticisms of different types of research with greater impacts (Gorard, 2004).

This study is anchored in the pragmatic tradition; as such, the adopted methodology is one of mixed methods research. The rationale for choosing mixed research design rests in the researcher's decision to understand the phenomenon of diverse team functioning in three private higher education universities in the Gulf region and triangulate this understanding with the results of testing the theoretical relationships which were identified in his analysis of the literature. Understanding and developing insightful knowledge about a phenomenon requires interpretive research using qualitative methods, and testing the theoretical relationships which the phenomenon encompasses requires the use of quantitative methods. The specific relationships which the researcher intended to study are the association of diversity within the academic community of these universities with intra-group conflicts and team performance and

viability, as well as the role of transformational leadership in moderating these relationships (see fig. 2.1).

Creswell *et al.* (2003) classified mixed methods designs into sequential and concurrent types. While in a *sequential design*, either the qualitative or quantitative data are collected in the first stage, and the other data type is collected in a second stage, in a *concurrent design*, the collection of both types of data are collected at the same time. Creswell *et al.* (2003) further classified each of these two categories into three specific designs based on the level of emphasis given to the qualitative and quantitative data, the process used to analyse and integrate the data, and whether the theoretical basis underlying the study methodology is intended to bring about social change.

Furthermore, Creswell *et al.* (2003) identified three concurrent mixed methods designs, namely: (a) concurrent triangulation, (b) concurrent nested, and (c) concurrent transformative designs. In these designs, the quantitative and qualitative data are collected during the same stage. Creswell *et al.* (2003) pointed out that the purpose of a concurrent triangulation design is to use both qualitative and quantitative data to more accurately define relationships among variables of interest. In a concurrent nested design, they added, both qualitative and quantitative data are collected during the same stage, although one form of data is given more weight than the other; while a concurrent transformative design is theoretically driven to initiate social change and may be used to support a particular perspective.

Both sequential and concurrent mixed research methodology were appropriate for this research. However, the convenience of having the opportunity of asking potential respondents while administering the questionnaire if they would also agree to be interviewed, suggested a concurrent mixed research. Accordingly, the researcher adopted a concurrent triangulation mixed research design (see section 3.2.2), as he equally used both qualitative

and quantitative data and triangulated their findings to sufficiently understand, test and describe the relationships among the constructs of his model. In the next section, the researcher describes the qualitative research method used in this mixed research design.

3.2.2 Qualitative research method

The research objective of the qualitative part of this study is to develop a field understanding of the relationships between diversity, conflict, and group effectiveness (performance and viability) in the chosen higher education context and exploring the influence of transformational leadership on these relationships.

3.2.2.1 Sampling and data collection procedure

The decision concerning how many participants are required has been a big concern for qualitative researchers who use qualitative research. The researcher was looking for variations in the investigated relationships in diverse workgroup functioning. He therefore needed to continue interviewing participants until he reached theoretical saturation (Strauss & Glaser, 1967). The sample was purposive as the researcher intentionally selected participants who were department heads (team leaders) and faculty (team members) and were able to elucidate the phenomenon of diverse group functioning in the chosen academic setting. The sample was also opportunistic, using people from the target population available at the time and willing to take part (Teddlie & Yu, 2007).

Although the intention was to interview participants from the population of all the three universities, the researcher was only able to personally interview participants from UBT, Saudi Arabia; the potential consequences of this limitation are discussed below. The researcher obtained approval to undertake this research from the University's Ethics Committee (Appendix 2. Ethics Committee Approvals). A semi-structured, informal interview setting was

adopted to facilitate informational questions (Charmaz, 2000), using an interview guide (Appendix 3. Interview guide). The questions were derived from the analysis of the literature and guided by the theoretical model (fig. 2.1). He recruited his interview participants while administering the questionnaires; every respondent who agreed to fill the questionnaire was invited to be interviewed. Interviews were conducted, and the researcher kept interviewing until he obtained almost all the variations in the investigated relationships, where he stopped interviewing as he felt he reached theoretical saturation (Strauss & Glaser, 1967). Subsequently, 20 team leaders and team members from UBT were interviewed. The sample was fairly balanced as there were nine team leaders (five females and 4 males) and 11 team members (four females and 7 males). This is shown in table 3.1.

Table 3.1 Composition of interviewed sample of participants

University	Number of interviewed team leaders (TL)	Number of interviewed team members (TM)	Total number interviewed
UBT, Saudi Arabia	9 (Mx4 & Fx5)	11 (Mx7 & Fx4)	20

The researcher argues that conducting qualitative research at UBT only did not significantly detract from the findings of this qualitative research as all the three universities were very similar, being small, private, sharing similar ethos, collaborating with each other, operating in similar cultural contexts, and whose academic faculty are similarly diverse. Additionally, as one of the aims of this qualitative part of the study was to gain fuller understanding of the investigated relationships, the researcher feels that the data which he obtained from the participants at UBT enabled him to achieve theoretical saturation, and that more data from the other two universities, examining the same relationships, because of their contexts, would at the minimum have shown less variations and at the maximum, theoretical saturation.

These 20 interviews were conducted in November/December 2020 at the participants' offices but when cultural circumstances did not allow this setting, for example interviewing some female participants, they were conducted in a quiet corner of the university campus in the public view. Interviews typically lasted 40-45 minutes. The researcher negotiated access to UBT campus by seeking and obtaining permission from the University's president to conduct both the interviews and to administer the questionnaires. Rapport with the participants was easily established as participation was voluntary; the setting was informal; interviews, semi-structured; and participants were aware beforehand of the purpose of the interview, having signed the consent form. Furthermore, being familiar with the culture of the place, the researcher went to each interview with two cups of Costa coffee in his hands; that, he found, put interviewees at ease and established immediate rapport with them. Also, at the beginning of each interview, the researcher again explained the purpose of the interview, thanked the participants for agreeing to be interviewed and acknowledged the central importance of their participation for completing his PhD research. Informed consent was achieved which included agreement to record the interviews and publish the data and findings anonymously (Appendix 4. Interview consent statement). A total of 14 hours of interviews were recorded and all the 20 interviews transcribed (Appendix 5. Interview transcripts); both the recording and transcription of these interviews were shown to the supervisors. Following Lincoln and Guba's (1985) and Patton's (1990) advice, the participants were given the opportunity to examine and comment on the interview data and, later, the derived themes. This data was analysed using thematic analysis, as the researcher felt it is the most appropriate method of analysis; this is explained in the next subsection.

3.2.2.2 Thematic analysis: technique, rationale, and process

Thematic analysis, as a qualitative analytical technique, seeks a detailed understanding of textual narrative through interpretations to reveal the meanings embedded in social phenomena (Joffe, 2012). Thematic analysis finds its roots in the tradition of content analysis and shares many of its principles and procedures. Content analysis is a quantitative method which involves coding a textual narrative to develop codes (categories) and then counting the number of instances in which these categories are used in the text. The appeal of content analysis lies in offering a model for systematic analysis of data. However, the results of content analysis are viewed as “trite” (Silverman, 2000) as they rely exclusively on the frequency of occurrence of the categories it generates. Its other shortcoming is the removal of codes from their context, stripping the data of its meaning. These shortcomings gave rise to the notion of thematic analysis, going beyond observable material to more implicit themes and thematic structures (Joffe, 2012). Using thematic analysis, the researcher can identify and analyse themes or specific patterns of meaning in a set of data which explains a studied phenomenon (Braun & Clarke, 2006). It entails identifying a set of manifest themes that may point to a more latent level of meaning which can be arrived at by interpretation (Joffe & Yardley, 2004). Themes can be deduced from the literature or induced from raw data. Thematic analysis is used to elucidate the specific nature of a given group’s conceptualisation of the phenomenon under study. It is commonly used with social constructionist theory (see Joffe *et al.*, 2011; Lupton, 1999), which, as discussed earlier in this chapter, assumes that knowledge about people’s engagement with a particular issue is socially constructed. This view focuses on the content of people’s thoughts and feelings regarding the issue under study without reference to the ‘reality’ of the issue. For example, in this study, regarding conceptualisations of the behaviour of a demographically different person, the concern is not with the accuracy of the representation, rather the issue is with the meanings people attach to this difference and the consequences of

such meanings. Thus, thematic analysis of a range of data can give insights into how a particular representation develops. Text, images, and interviews can be thematically analysed to examine how the process of communication circulates and transforms representations. In contrast to cognitive approaches, social construction takes into account the symbolic meanings that people attach to issues, and thematic analysis can provide an understanding of these symbolic meanings (Lupton, 1999). These meanings cannot be accessed by surveys, as the latter only extracts the consciously available cognitions that do not necessarily play a major role in driving behaviour (Joffe & Yardley, 2004). By asking explicit questions, as in surveys, the researcher can only access reason-based explanations, attitudes, and beliefs, while the symbolic, emotional and experiential material that drives cognition and behaviour remains hidden (Joffe, 2012).

Qualitative research generally requires the researcher to approach the data with preconceived themes or categories derived from theory. It also requires the researcher to be theoretically sensitive (Strauss & Glaser, 1967), having knowledge of previous findings in the field under study before approaching the raw data, to ensure that findings are not replicated. At the same time, the researcher must remain attentive to the emergence of new findings that contrast with previous knowledge as these have the potential to add to the area being investigated. The researcher in this study felt that he is sufficiently theoretically sensitive, as he approached the data with specialist knowledge of categories embedded in the literature on diverse work-group functioning, intra-group conflicts and team leadership. Nevertheless, he remained receptive to any new themes that might have emerged from the data and new findings that contrasted with previous knowledge. He used deductive/inductive and latent/manifest extraction of meaningful themes and feels confident that he produced a rigorous analysis which has the potential to further develop our knowledge in the field (Joffe, 2012).

In this thematic analysis, the collected was coded into initial codes, and these into themes and the latter into main themes (see Ryan & Bernard, 2003; Bakir & Bakir, 2006a, 2006b; Braun & Clarke, 2006). By following the “constant comparison” method (Strauss & Glaser, 1967) using line-by-line analysis, focus and understanding were obtained of what the unit of data was about and how similar or different it was from other statements. The researcher acknowledges that theme identification does not produce a unique solution, as there are many ways of coding data (Dey, 1993). Nevertheless, he attempted to maximise clarity and agreement to increase the validity of the identified themes (Denzin & Lincoln, 2011; Lincoln & Guba, 1985). He explained the techniques used, making theme identification explicit and clear so that the reader can follow the analysis and conclusions (Ryan & Bernard, 2003). The reliability and validity of the emerged themes were further ensured by showing these themes to his supervisors and they agreed that the themes were valid (Lincoln & Guba, 2000; Patton, 1990). The researcher is also confident that he has identified appropriate themes as he had used techniques of coding accepted in the research community (Ryan & Bernard, 2003).

The aim of coding in this thesis was to reveal pertinent themes that may aid in understanding the association of diversity with intragroup conflicts and team effectiveness, and the influence of transformational leadership on this association. Having read and reread the entire set of interview data, a tool was created to classify, understand, and examine the data. This tool is the coding frame (Appendix 6. The coding frame), devised to guide the thematic analysis. It contains the full set of codes that was derived from the interview data. It was developed on the basis of both inductive codes grounded in the content of the data, and more theoretically driven codes inspired by past research in the area. The coding frame format is shown in Table 3.2.

Table 3.2. Format of the coding frame (The coding frame is shown in appendix 6)

Column 1	Column 2	Column 3	Column 4	Column 5
Participant/Question	Data extract	Initial code	Theme	Main theme
TL01/Q1
...
TM010/Q3

(Adapted from: Alshaibani, 2015; Clarke, Burns, and Burgoyne, 2005)

Interviewees were assigned a reference, where team leaders were referred to as TL1, TL2, TL3, ... and team members as TM010, TM011, TM012, ... (1st column). Raw data extracts obtained from these respondents is shown in the 2nd column, initial codes in the 3rd column, themes that emerged in 4th column and the main them which is likely to relate to a theoretical concept in the 5th column. The context of raw data is important, as the data units or statements were made discussing aspects of the functioning of diverse groups. Also, the statements contained other meanings too. So, for example, the statement ‘diverse group’ may also be coded ‘demographically diverse group’, ‘cognitively diverse group’, ‘diverse on nationality group’, and so on. As multiple codes can be assigned to the same excerpt in a thematic analysis, Joffe (2012) pointed out that devising this frame is challenging and takes time as there are no standardised categories to draw on; she has further advised researchers to design a coding frame that is useful to, and addresses their research question. Furthermore, as this study is about revealing the meanings embedded in the data, the researcher felt that it would be best if theme extraction and relationship development were undertaken manually without recourse to software packages which generally tend to quantify qualitative data into clusters, removing it from its context, and then ascribe terms to these clusters.

3.2.2.3 Validity/Credibility and reliability/dependability

Any research inquiry must demonstrate its validity, its truth value, and reliability or dependability and applicability or generalisability (Guba & Lincoln, 1994). Qualitative

researchers refer to these research criteria respectively as credibility/authenticity, dependability, and transferability. As the researcher was not looking to transfer the findings of this exploratory study to other contexts and settings, he will, below, only discuss the credibility and dependability his thematic analysis.

Credibility. The credibility of a qualitative study is increased if sample richness is sought, as a rich sample is necessary for the development of saturated themes and subsequent theoretical explanation (Strauss & Glaser, 1967). The researcher adopted ‘theoretical sampling’ in this study, collecting data and simultaneously producing an initial analysis before going to the next identified subject to collect more data. By continuing with this process, he felt that richness and saturation were obtained. Furthermore, the researcher relied on his theoretical sensitivity and knowledge of the context of the study to obtain rich data to enable him to form categories, identifying incongruences, and minimising or maximising differences in order to reach rich themes that link to theory (Strauss, 1987). It is argued that the credibility of qualitative research concerns the understanding of the emerging descriptive or interpretive narratives (Maxwell, 1992). Aspects such as: apparency, verisimilitude (truth), authenticity, plausibility and adequacy are seen as important in assessing the credibility of narratives emerging from interpretive studies (Connelly & Clandinin, 1990). In this study, the researcher asked his supervisors whether the research findings (themes) were plausible and made sense and obtained their agreement. He also showed the transcripts of the interviews and the emerged themes to the relevant participants, who also agreed that the themes were adequate and authentic. He further ascertained the themes’ credibility by presenting at internal university colloquia and discussing the findings with interested colleagues. Moreover, the researcher was satisfied that the setting of the interviews was not contrived by his presence or actions as, being Saudi, he is

native to the place and is part of the culture. He thus feels that he has given an authentic and transparent account of what he was investigating (Miles & Huberman, 1994).

Credibility in qualitative research also depends on the type of data collection approach. In interviewing, credibility is increased if the researcher remains alert to limitations on access; knowledge of the subjects and rapport; reactive effects in the setting; biases and distortions from selective perceptions and interpretations; the dangers of going native; and idiosyncrasies (Miles & Huberman, 1994). The researcher, being part of the culture of the place, was alert to reactive effects in the interview setting; for example, he knew that being a male in that culture requires that he meets the female interviewee, not in a closed place, like her office, but in public space, such as, the university reception area or one of its cafeterias. To do otherwise might be interpreted as having other inappropriate purposes. He was also aware that some interview questions might not produce genuine responses, as participants might give “socially desirable” answers, while other participants might feel vulnerable as their genuine responses might negatively affect their position. For example, the interview questions on leadership conflict management and leadership behaviour, where some responding team leaders might feel that they need to give a socially desirable answer rather than one that describes their actual behaviour, while some team members might consider giving an answer which would portray their team leader in a negative light might affect their job prospects. To allay such team members’ concerns, the researcher made it explicit at the recruitment stage and at the beginning of each interview that the information given by the respondent will remain confidential and will only be used anonymously for the purpose of this research. Moreover, the researcher endeavoured to decrease the social desirability effects in respondents’ answers by comparing different answers from the same respondent, and where possible, by triangulating with the answers of the respondent’s team leader or team member.

Additionally, collection of data from one source, in this case leaders and team members from UBT only, might potentially decrease the credibility of the research by introducing the problem of distortion from a single data source and researcher's biases (Miles & Hubberman, 1994). This concern was alleviated by the researcher's endeavour to achieve theoretical saturation, as explained above in the section 3.2.2.1 on sampling and data collection.

Dependability. Miles and Huberman (1994) argued that the issue of reliability (i.e., consistency and equivalence in the study) is more of a problem in qualitative research than in quantitative research. Underlying reliability is the process of the study; whether it is consistent, and whether it is reasonably stable over time and across researchers and methods (Miles and Huberman, 1994). These authors further argued that as the field setting of qualitative research is influenced by extraneous variables, these study process issues need to be recognised so that the research can be repeatable. However, they added, that this is problematic because of the absence of systematic and standardised research techniques in the unstructured process of qualitative research. As such, they pointed out that reliability is not so easily assessed, because of the subjective nature of the research, which requires the researcher in each setting to adapt to the participants. Furthermore, as structured measurement instruments, such as, interview schedules are not obtainable, human observations and measurements are context driven and are usually made by the researcher alone. The issue of reliability is not confined to data collection and its instrument; it also extends to the analytical procedures. Generally, the constant comparison method is used to analyse qualitative data; this method is a non-standardised process driven by the ability and theoretical sensitivity of the researcher. This has prompted Guba and Lincoln (2005) to use the term 'dependability' instead of reliability in evaluating qualitative research. They argued that a research study can be considered as dependable if its process is auditable; they thus use the term 'auditability' as the criterion for rigour in judging the consistency of data

and findings. A research study is therefore auditable if one can follow the decision trail used by the researcher in relation to the theoretical, methodological, and analytical choices and processes made in the study, and reach comparable conclusions using the researcher's data and context. The researcher is confident that this thematic study is dependable and fully auditable, as he ensured that all the phases of the process are clearly displayed and can be followed by other researchers. He particularly: a) described how he familiarised himself with data; personally interviewing, transcribing, reading, and re-reading the data, and noting down initial ideas; b) generating initial codes by coding relevant information in the data in a systematic fashion across the entire data set, collating data relevant to each code (see appendix 6. The coding frame), c) searching for and generating themes by collating initial codes into potential themes and gathering all data relevant to each potential theme (see chapter 4. Qualitative data: analysis and discussion); d) checking that the themes work in relation to the coded data extracts and the entire data set by generating thematic maps of the analysis (thematic maps can be seen in every section of the analysis, chapter 4); e) persisting with ongoing analysis to refine each theme within an overall analytical narrative; and; f) producing a synthesis of the analytical narrative by relating back to the data, the analysis, the research question and, more importantly, to the literature; thus, highlighting the value of this qualitative study, its relation to the theoretical model, its triangulation potential with the results of the quantitative analysis, and its potential contribution (see chapter 4 and chapter 6).

Furthermore, the dependability of the coding frame of this study was ascertained by three colleagues who coded the data independently of each other. More than 25% of the data, as opposed to a recommended percentage of 10% - 20% (Joffe, 2012), was coded by these colleagues, who found sufficient correspondence between the data and the derived codes to ensure dependability. The researcher has thus increased the transparency of his thematic analysis procedure so that if it is used by other researchers, it would consistently produce

similar codes of the same data. The researcher feels confident that he had used systematic and rigorous procedures in the thematic analysis of this study which allow the research process to be audited, ensuring the dependability of the study.

The credibility and dependability of this study also lie in the fact that the bulk of the data has been examined and described, rather than simply selecting examples of text segments that support the argument the researcher wanted to make. The researcher also offered a balanced view of the data and its meaning within a particular context instead of being preoccupied with the frequency of codes abstracted from their context. The production of knowledge about diverse group functioning was thus undertaken systematically (Greenhalgh & Taylor, 1997), focusing on the research problem, and adopting a method of study which was appropriate (Silverman, 2000), providing a transparent trail to show how the data was selected and collected, from whom it was obtained, and how it was analysed. The researcher is confident that he has presented a robust study which will expand current thinking and has a potential contribution for advancing knowledge of diverse work-group functioning (see, Silverman, 2000; Yardley, 2000).

3.2.2.4 Ethical considerations

All kinds of research, it can be argued, raise ethical issues although this is not always acknowledged by positivist researchers (Batchelor & Briggs, 1994). Researchers must apply ethical principles to prevent violations of the human rights of those participating in their research study (Punch, 2005). Although ethical problems are present in all kinds of research, nevertheless, the issue of ethics is more prominently highlighted in qualitative research than quantitative research. This, Patton (1990) observed, is because qualitative research is about exploring, examining, and describing people and their natural environment. As such, he added, relationships of power between the researcher and the participant are prevalent throughout the

research process, which requires the researcher to take into consideration, the research principles, as well as the well-being of their informants.

The purpose of this study was to understand and explain diverse work-group functioning, particularly, the association of diversity with intra-group conflicts and group effectiveness through interviews and questionnaires. The researcher obtained the approval of the University Ethics Committee to undertake this research; he also presented his interview guide to his supervisors and to the Research Unit, and they agreed that the questions were appropriate. As demonstrated in the preceding section on credibility and dependability, the researcher observed the principles of confidentiality, informed consent, and privacy (Punch, 2005). Aware that qualitative research also requires confirmability through documenting the activities included in the research, he left an audit trail for other researchers to follow (Creswell & Miller, 2000). He also observed the informed consent principle by informing participants about the study and allowing them to decide freely whether to participate in the study, and to withdraw at any time (Kvale, 1996; Morse & Field, 1998). The researcher did not stop at seeking the participants' consent at the recruitment and sign-up stage, rather, he observed the principle of 'continuous consent' as he again asked participants if they were still happy to continue participating and to have the interview recorded at the beginning and at the end of each interview. He also informed them that they can withdraw at any stage of the research and that the information they provided would be discarded. Furthermore, he applied the principle of beneficence by being aware of potential harmful consequences of revealing the participants' identities; he ensured anonymity to protect participants' identities and extended this to publications by informing participants of how the results of the research will be published and seeking their approval (Denzin & Lincoln, 2011).

3.2.3 Quantitative research method

In this part of the study, the researcher explains the sampling procedure and scale factorability, and presents the measure scales. Six measurement scales were used, namely: cognitive diversity, demographic diversity, co-occurrence of task and relationship conflicts, group performance, group viability and transformational leadership. A further scale, task interdependence scale, was also used and the rationale for its use was explained. The development of these scales involved the use of factor analysis (SPSS version 23); the latter is briefly introduced first before discussing the measure scales themselves. The researcher then presents the procedure for testing the proposed hypotheses regarding the association between diversity (cognitive and demographic), co-occurrence of task and relationship conflicts and group effectiveness (performance and viability), as well as the moderating influence of transformational leadership in this association.

3.2.3.1 Sample size and sampling procedure

The sample size was determined by using Hair *et al.* (2006) recommended a minimum sample size for Structural Equation Modelling (SEM) of five observations for each parameter/item. In this research, the largest scale was the transformational leadership scale (TFL), consisting of 20 items; and the actual number of respondents was 354 ($> 20 \times 5=100$). All other scales had a smaller number of items than TFL, and the actual number of respondents was 354. These samples exceed the theoretical minimum sample size for SEM analysis.

The researcher collected field data from the three private universities in Middle East to test his theoretical model. The sample from Saudi Arabia consisted of 24 departments and 106 faculty members, the sample from Iraq consisted of 18 departments and 195 faculty members, and that from Bahrain included 14 departments and 53 faculty members (examples of the completed questionnaires are shown in Appendix 8, and all the returned questionnaires were shown to the

supervisors and are available for inspection). The samples were combined for the analysis, as respondents in the three samples are working in the same sector (private education), and the cultural values, customs, and traditions of these three countries are very close. Participation was voluntary. The questionnaires were administered by the researcher at UBT and by assigned researchers in Iraq and Bahrain. The completed questionnaires were returned to the researcher (UBT) / assigned researchers (Iraq and Bahrain) or placed in a box at the reception desk of each university; the latter were collected by the researcher at UBT or the two assigned researchers at the other two universities, where they were photocopied and emailed to the researcher. The questionnaire included measures of cognitive diversity, relationship conflict, task conflict, transformational leadership, group performance, group viability, and a number of demographic and control variables (see appendix 7). A total of 445 questionnaires were distributed and 354 completed questionnaires were returned; a response rate of 79.5 %. (a sample of the completed questionnaire is shown in appendix 8). The final sample of this study consisted of 354 faculty members distributed across 56 departments. The average number of faculty members in each department is 6.3. The number of responses in each department was 3 or higher. Data was collected from three sources: Faculty members provided the data on all the variables except group performance, which was rated by the colleges' deans. All the data was entered in SPSS (version 23). The sample of faculty members included 160 women and 194 men with an average age of 39.8 years ($SD = 9.8$) and an average organisational tenure of 4.3 years ($SD = 3.03$). 160 faculty members (45.2 percent) had a Masters degree and 184 (52 percent) held PhD degrees.

The analytical procedure which the researcher adopted and used is displayed in appendix 9, individual raw data in appendix 11, aggregated group data in appendix 11, and SPSS using this data in appendix 12.

3.2.3.2 Factor analysis

The purpose of factor analysis is to reduce a large set of variables to a smaller set of factors, by searching for groups among the inter-correlated set of variables, and commonly used in the development and evaluation of test scales. So, factor analysis is used to reduce a large number of individual scale items to a smaller number of coherent sub-scales or reducing a large number of related variables to a manageable number before using them in other analyses, such as, multiple regression or multivariate analysis of variance. The literature differentiates between two main factor analyses: exploratory factor analysis and confirmatory factor analysis. Exploratory factor analysis is used early in the analysis to explore relationships within a set of variables, and confirmatory factor analysis is used later in the analysis to test and confirm hypotheses about the underlying structure of the set of variables.

Exploratory, or principal component analysis (PCA), is similar to factor analysis; again, a technique designed to produce a smaller number of linear combinations from the original variables in a way that accounts for most of the variability in the pattern of correlations. It is argued that principal component analysis is psychometrically sound, mathematically simple and does not have the ‘factor indeterminacy’ problems of the factor analysis (Stevens, 1996). Researchers are advised to use principal component analysis if the purpose of their research is simply to obtain an empirical summary of the data set (Tabachnick & Fidell, 2007). In this study, the researcher used principal component analysis for the various scales.

Confirmatory factor analysis (CFA) was adopted using AMOS to estimate the adequacy of the measurement model for each of the scales, using the goodness of fit statistics of: Chi-square, Root Mean Square Error of Approximation (RMSEA), Standardised Root Mean Square Residual (SRMR), Goodness-of-fit Index (GFI), and Comparative Fit Index (CFI). The

purpose of this testing procedure is to determine the goodness of fit between the hypothesised model and the sample data. These goodness of fit statistics are described briefly below.

Chi-square. The Chi square statistic measures the closeness of fit between the unrestricted sample covariance and the restricted covariance matrix. Thus, a non-significant Chi-square difference between the hypothesised model and the sample data suggests that the hypothesised model fits the sample data. Researchers, however, are advised not to depend only on this goodness of fit indicator as it is very sensitive to the sample size. They are also advised that to overcome this problem, the value of Chi-square should be divided by the degree of freedom, and where the result is small (<5), the goodness of fit of the model is obtained. (see Joreskog & Sorbom, 1993).

Root Mean Square Error of Approximation. The RMSEA indicator shows the error of approximation in the population; it indicates how well the sample data fits the population covariance matrix. An RMSEA value of less than 0.05 indicates a good fit, while values from 0.05 to 0.08 indicate a reasonable fit.

Standardised Root Mean Square Residual. The SRMR is the average value across all standardised residuals; it represents the average discrepancy between the sample observed and the hypothesised correlation matrix. It has values ranging from 0 to 1. SRMR values of less than 0.05 indicate a good fit.

Goodness-of-fit Index. The GFI measures the relative amount of variance and covariance in the sample that is jointly explained by the sample. This index has values from 0 to 1.00, where values close to 1.00 are indicative of a good fit.

Comparative Fit Index. The CFI is a measure of complete covariation in the data, where a CFI value greater than 0.9 ($CFI > 0.9$) indicates an acceptable fit.

3.2.3.3 The measure scales

As originally developed in Western contexts, the scales of this study needed to be translated into the Arabic version. To ensure translation quality, the scales were translated from English to Arabic, and back to English, following the back translation procedure recommended by Brislin (1980).

Cognitive diversity. Following past research (e.g., Shin *et al.*, 2012; Wang *et al.*, 2016), this study used Van der Vegt & Janssen's (2003) five-item scale to measure cognitive diversity (see table 3.3 and appendix 2). These items asked participants to indicate the extent to which their group members are different in their thinking styles, in their perspective, and in their knowledge and skills. Each item was scored on a five-point Likert scale ranging from 1 (a very small extent) to 5 (a very large extent). The individual's level responses of this variable were aggregated to group level. Individual level's Cronbach was 0.95 (see Chapter 5, table 5. 22).

Table 3.3 Perceived (cognitive) diversity questionnaire

PD factor	Questionnaire item
PD1	The members of our department differ in their ways of thinking.
PD2	The members of our department differ in their knowledge.
PD3	The members of our department differ in how they see the world.
PD4	The members of our department differ their beliefs about what is right or wrong.
PD5	The members of our department differ in their skills.

The abbreviation "PD" stands for perceived (cognitive) diversity; and PD1 to PD5 indicate perceived diversity items 1 to 5.

Demographic diversity. Demographic diversity was measured along three dimensions: age, gender, and tenure. These dimensions included two types, one for numeric demographic data

(age and tenure) and another for categorical demographic data (gender). Unfortunately, the researcher was not allowed access to other demographic variables such as education, nationality, or race for each individual faculty member but did have access to averaged data. Following past researchers, the coefficient of variation (standard deviation divided by the mean) was used to measure numeric variables (age diversity and tenure diversity). With respect to the categorical variable (gender), the entropy-based index (Teachman, 1980) was used. This index is calculated using the formula:

$$-\sum P_i (\ln P_i)$$

Where P_i is the fraction of group members falling into category i . A higher index score indicates greater group diversity among team members along the gender dimension. Similar to Jehn *et al.* (1999), Polzer *et al.* (2002), and Van der Vegt & Janssen (2003), this study averaged the age, gender, and tenure diversity scores to produce one demographic group diversity measure.

Co-occurrence of task and relationship conflict (CTRC). The co-occurrence of task and relationship conflict, which refers to the one-to-one correlation between member's relationship conflict and member's task conflict (see figure 3.1), was measured by calculating the coefficient of the bivariate correlation (r) between team member-reported relationship and task conflict within each group. Eight items developed by Jehn (1995) were used to measure task and relationship conflicts (see tables 3.4 and 3.5, and appendix 2). Each of the task conflict and relationship conflict subscales includes four items (see tables below). These two subscales were responded to by using a five-point Likert scale (1= none, 5= a lot). Cronbach's alpha reliability for the relationship conflict was 0.93 and for task conflict was 0.89 (see Chapter 5, table 5. 22).

Table 3.4 Task conflict (TC) questionnaire

TC factor	Questionnaire item
tas1	How often do people in your work unit disagree about opinions regarding the work being done?
tas2	How frequently are there conflicts about ideas in your work unit?
tas3	How much conflict about the work you do is there in your work unit?
tas4	To what extent are there differences of opinion in your work unit?

The abbreviation “tas” stands for task conflict, and tas1 to tas4 indicate task conflict items 1 to 4.

Table 3.5 Relationship conflict (RC) questionnaire

RC factor	Questionnaire item
rel1	How much friction is there among members in your work unit?
rel2	How much are personality conflicts evident in your work unit?
rel3	How much tension is there among members in your work unit?
rel4	How much emotional conflict is there among members in your work unit?

The abbreviation “rel” stands for relationship conflict; and rel1 to rel4 indicate relationship conflict items 1 to 4.

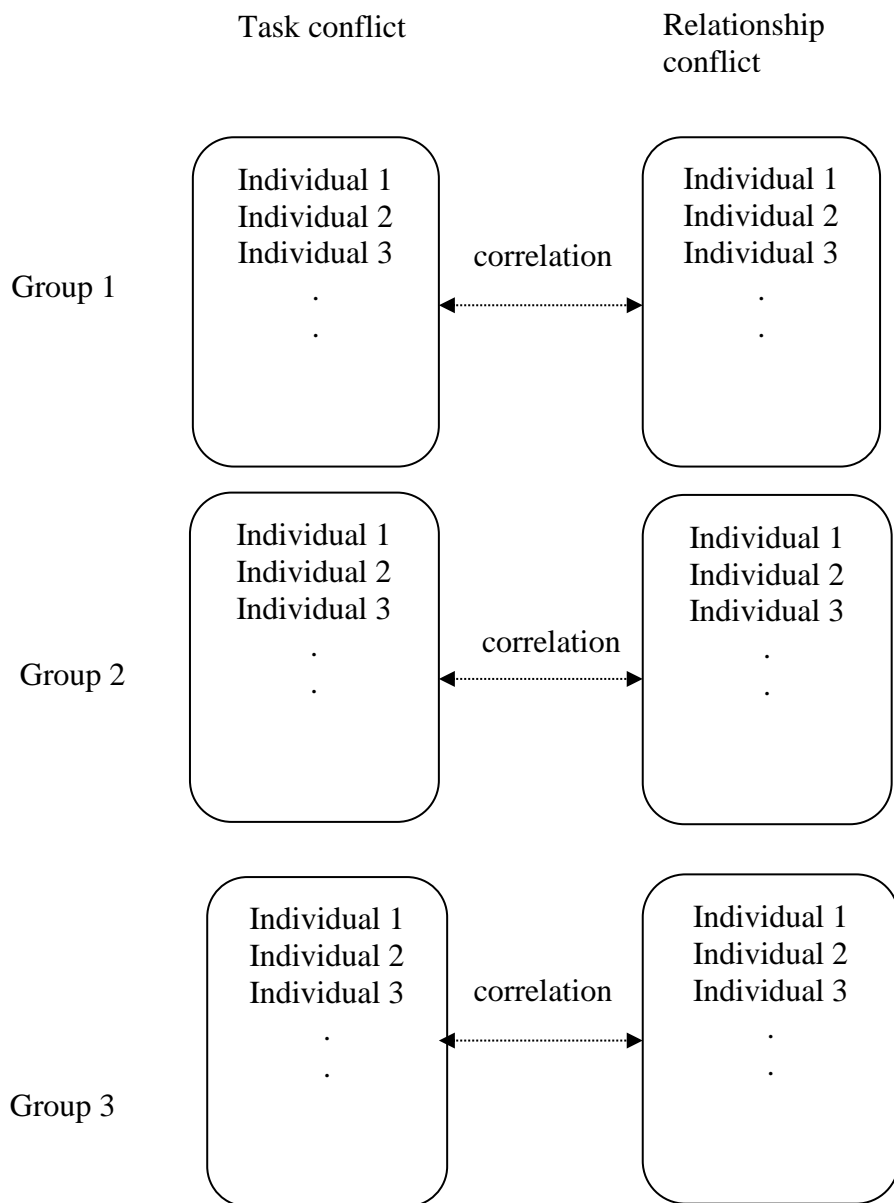


Figure 3.1 Co-occurrence between task and relationship conflicts

Transformational leadership (TFL). The Multifactor Leadership Questionnaire (MLQ 5X-Short; Bass & Avolio, 1993) was used for measuring transformational leadership. MLQ includes five sub-dimensions (idealised influence (attributes), idealised influence (behaviour), intellectual stimulation, inspirational motivation, and individual consideration), with each sub-dimension having four items (see table 3.6 and appendix 2). Each item was scored on a five-point Likert scale ranging from 1 (not at all) to 4 (frequently, if not always). Similar to other researchers (e.g., Bass *et al.*, 2003; Shin & Zhou, 2007; Kearney & Gebert, 2009; Shin *et al.*, 2012), the five sub-dimensions of transformational leadership were combined into a single composite. The individual responses were aggregated to compute group-level transformational leadership. Individual level's Cronbach's alpha for this scale was 0.96 (see Chapter 5, table 5.22).

Table 3.6 Transformational Leadership (TFL) questionnaire

Group-focused TFL Behaviours:

Our group leader...	
Ide1	Talks about his/her most important values and beliefs when working with the group as a whole.
Ide2	Specifies the importance of having a strong sense of purpose in working with the group as a whole.
Ide3	Considers the moral and ethical consequences of decisions when working with the group as a whole.
Ide4	Emphasizes the importance of having a collective sense of mission when working in the group as a whole.
Ide5	Instils pride in others for being associated with him/her when working with the group as a whole.
Ide6	Goes beyond self-interest for the good of the group with working with the group as a whole.
Ide7	Acts in ways that builds my respect when working with the group as a whole.
Ide8	Displays a sense of power and confidences of decisions when working with the group as a whole.
Ins 1	Talks optimistically about the future when working with the group as a whole.
Ins2	Talks enthusiastically about what needs to be accounted when working with the group as a whole.

Ins3	Articulates a compelling vision of the future when working with the group as a whole.
Ins4	Expresses confidence that goals will be achieved when working with the group as a whole.

The abbreviations “TFL”, “Ide” and “Ins” stand for transformational leadership, idealised influence and inspirational motivation respectively; Ide1 to ide8 stand for idealised influence items 1 to 8, and Ins1 to Ins4 for inspirational motivation items 1 to 4.

Individual-focused TFL Behaviours:

My group leader...	
Int 1	Challenges me to re-examines critical assumptions to question whether they are appropriate.
Int2	Seeks differing perspectives when solving problems.
Int3	Gets me to look at problems from many different.
Int4	Suggests new ways of looking at how to complete assignments.
Ind 1	Spends time teaching and coaching.
Ind2	Treats me as an individual rather than just as a member of a group.
Ind3	Considers me as having different needs, abilities, and aspirations from others.
Ind4	Helps me to develop my strengths.

The abbreviations “Int” and “Ind” stand for intellectual stimulation and individualised consideration respectively; Int1 to Int4 stand for intellectual stimulation items 1 to 4, and Ind1 to Ind4 for individualised consideration items 1 to 4.

Group performance. To avoid potential bias, the researcher did not rely on the evaluation of direct supervisors (department heads) to assess the performance but asked the deans of colleges to assess the performance of each department. Following Oh *et al.* (2004), this study used Sparrowe *et al.* (2001) scale to measure group performance (see table 3.7 and appendix 2). Each item was scored on a five-point Likert scale ranging from 1 (very poor) to 5 (excellent). Cronbach’s alpha for this scale was 0.88 (see Chapter 5, table 5. 22).

Table 3.7 Group performance questionnaire

Compared to the average of other departments in your college, how would you rate this department's performance on each of the following items?"

per1	The quality of work
per2	The quantity of work
per3	The department's initiative
per4	The department's cooperation with other departments
per5	The department's ability to complete work on time
per6	The department's ability to respond quickly to problems
per7	The overall performance of department

The abbreviation “per” stands for group performance; and per1 to per7 for group performance items 1 to 7.

Group viability. Faculty academic staff were asked to assess group viability by using the 5-item scale developed by Tekleab *et al.* (2009) (see table 3.8 and appendix 2). Participants indicated their responses on a 5-point rating scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alpha for group viability was 0.96 (see Chapter 5, table 5. 22).

Table 3.8 Group viability questionnaire

To what extent do you agree with the following statements?

via 1	This department should not have continued to function as a department.
via 2	This department was not capable of working together as a unit.
via 3	This department probably should never work together in the future.
via 4	If I had the chance, I would have switched department.
via 5	I would be happy to work with the department members on other projects in the future.

The abbreviation “via” stands for group viability; and via1 to via5 for group viability items 1 to 5.

Control variables. Two variables that were found to have potentially influenced group outcomes were controlled for. The first variable was group size, which was measured as the number of persons in a group (Hirst *et al.*, 2009). The second variable was task interdependence (Wang *et al.*, 2016), which was measured with five items adapted from Van der Vegt and Janssen (2003) (see table 3.9 and appendix 2), using a five-point scale from 1 (strongly disagree) to 5 (strongly agree); Cronbach’s alpha = 0.91 (see Chapter 5, table 5. 22).

Table 3.9 Task interdependence questionnaire

To what extent do you agree with the following statements?

Interdep 1	I need information and advice from my colleagues to perform my job well
interdep 2	I have a one-person job; it is not necessary for me to coordinate or cooperate with others
interdep 3	I need to collaborate with my colleagues to perform my job well.
interdep 4	My colleagues need information and advice from me to perform their jobs well.
interdep 5	I regularly have to communicate with colleagues about work-related issues

The abbreviation “interdep” stands for task interdependence, and interdep1 to interdep5 for task interdependence items 1 to 5.

3.2.3.5 Validity and reliability of the scales

The choice and development of a data collection instrument or questionnaire encompasses both qualitative and quantitative assessments. Peter and Churchill (1986) considered the qualitative assessment as an important step in identifying the psychometric characteristics of the research measuring scales, such as validity and reliability tests.

Validity of a scale is the extent to which a study produces accurate results (internal validity) and produces results that are widely applicable (external validity); that its measurement scales

measure what they are supposed to measure and not something else (Hair *et al.*, 2006). Face validity and content validity help in the process of choosing, developing, and testing a measure. Commonly, testing these two forms of validity is performed by presenting the initial frame of the measure to a group of experts for their agreement. The researcher presented these measures to his supervisors, to the Faculty Ethical Committee, and to three colleagues from the study destinations. He obtained their agreement over the clarity of the statements, the structure of the questions, contents of the measures, and the correctness of the translation. The quantitative structure of these measures was then undertaken by empirically establishing the measures' validity and reliability (Hinkin, 1995).

Reliability refers to the repeatability of a result with the same measurement (Aneshensel, 2002). It is measured through internal consistency, defined as the degree to which the items that make up a scale measure the same underlying attributes. A commonly used statistic to measure internal consistency is Cronbach's coefficient alpha (Pallant, 2007). Although, there are different levels of reliability depending on the purpose of the scale, nevertheless, Hair *et al.* (2006) recommended a minimum Cronbach value of 0.75.

3.2.3.6 Testing of hypotheses

A correlation matrix was produced to help test hypotheses, and to ensure that there is no multi co-linearity between the dimensions of the independent variable. Seven hypotheses were tested in this study. The first hypothesis is H1, which proposed that Workgroup diversity (H1a: cognitive diversity; H1b: demographic diversity) has a curvilinear U-shaped effect on group performance. The second hypothesis, H2, proposing that Workgroup diversity (H2a: cognitive diversity; H2b: demographic diversity) has a negative linear effect on group viability. Hypothesis, H3, proposed that Workgroup diversity (H3a: cognitive diversity; H3b:

demographic diversity) has a curvilinear inverted U-shaped effect on the co-occurrence of task and relationship conflict. Hypothesis H4 proposed that the co-occurrence of task and relationship conflict has a negative linear effect on group effectiveness (group performance and viability). Hypothesis H5 proposed that the co-occurrence of task and relationship conflict mediates the relationship between workgroup diversity and group effectiveness; it has a curvilinear/U-shaped relationship with group performance (H5a), and a linear relationship with group viability (H5b). Hypothesis H6 proposed that transformational leadership (TFL) moderates a curvilinear relationship between workgroup diversity (H6a: cognitive diversity; H6b: demographic diversity) and the co-occurrence of task and relationship conflicts, such that there is an inverted U-shape relationship when transformational leadership is low and a negative linear effect when it is high. Hypothesis H7 proposed that transformational leadership moderates the negative and indirect effect of workgroup diversity on group effectiveness through the mediation of the co-occurrence of task and relationship conflict. To test this, the product terms were introduced between TFL and cognitive diversity and between TFL and cognitive diversity-squared into the analysis (M3). To test interaction effects, this needed to include both independent variable, moderator variable, and their interaction (product) term. It is recommended that the independent variable and moderator are centred before calculation of the product term to reduce multi-collinearity (Aiken & West, 1991).

The hierarchical multi regression analysis technique of SPSS version 23 was used to test these seven hypotheses, taking into consideration the control variables of group size and task interdependence. The direct relationships were tested in the normal way; the indirect relationship was tested by using mediator variable analysis, as proposed by Baron and Kenney (1986). Preliminary analyses were also conducted to ensure that the assumptions of normality, linearity, multi-collinearity and homoscedasticity were not violated.

Mediator analysis:

Most studies in social science and particularly in management use Baron and Kenny's (1986) mediator technique for testing and identifying the direct and indirect relationships. In this thesis, Baron and Kenny's (1986) technique was adopted to test the importance of the co-occurrence of task and relationship conflict mediator in the proposed model; a series of regression equations was used to determine the strength of the direct and indirect relationships. The statistical significance of the indirect relationship was then tested using the Z-value method (Sobel, 1982), consisting of four principal steps. Below, the mediation and Sobel tests are explained with the aid of a path diagram.

Baron and Kenny's 4-step mediator analysis:

Step 1: conducting a simple regression analysis with the independent variable (IV) predicting the dependent variable (DV) to test for path c.

Step 2: conducting a simple regression analysis with the independent variable (IV) predicting the mediator (M) to test for path a.

Step 3: conducting a simple regression analysis with the mediator (M) predicting the dependent variable (DV) to test for path b.

Step 4: conducting a multiple regression analysis with the independent variable (IV) and the mediator (M) predicting the dependent variable (DV) to test path c'.

As shown above, path c is simple regression analysis with IV predicting DV, and path c' is multiple regression analysis with IV and M predicting DV.

One way of checking the amount of mediation is to examine step 4:

- If IV is not significant when M is controlled, the finding supports full mediation.

- If IV is still significant (both IV and M significantly predict DV), the finding supports partial mediation.

This technique was followed to test if the co-occurrence of task and relationship conflict (M) mediates the relationship between workgroup diversity (cognitive diversity and demographic diversity) (IV) and group effectiveness (group performance and group viability) (DV), as explained below and shown in figure 3.2.

Step 1. Testing whether workgroup diversity is a statistically significant predictor of group effectiveness (controlling for group size and task interdependence) - path c.

Step 2: Testing whether workgroup diversity is a statistically significant predictor of the co-occurrence of task and relationship conflict controlling for group size and task interdependence)-path a.

Step 3. Testing whether the co-occurrence of task and relationship conflict is a statistically significant predictor of group effectiveness – path b.

Mediation ended when any of the above paths was not statistically significant, and the conclusion was one of no mediation or that the hypothesis could not be tested due to insufficient correlation among variables. Beta values in all paths a, b and c above must be statistically significant to proceed to test the mediational hypothesis in step 4 below.

Step 4: Conducting multiple regression analysis to test whether workgroup diversity (IV) and the co-occurrence of task and relationship conflict (M) predict group effectiveness (DV) - path c'.

Any change in path c was observed. If $c' = 0$, perfect mediation was assumed. If c' did not equal to zero, a partial mediation test was conducted to see if the change from c to c' was significant to claim partial mediation. In this case, the Sobel test (Preacher & Hayes, 2004) was used. This mediated relationship is represented in figure 3.2.

Testing for partial mediation using Sobel test:

The formulae for the tests provided here were drawn from MacKinnon *et al.* (1995). In the Sobel's test equations (see below), the path coefficients (i.e., the raw Beta weights from the regression analyses) were entered as paths a and b, as well as the standard errors for each path, s_a and s_b (provided by the statistical software).

$$z\text{-value} = a*b/\sqrt{(b^2*s_a^2 + a^2*s_b^2)}$$

Standard error of ab: $s_{ab} = \sqrt{(b^2*s_a^2 + a^2*s_b^2)}$

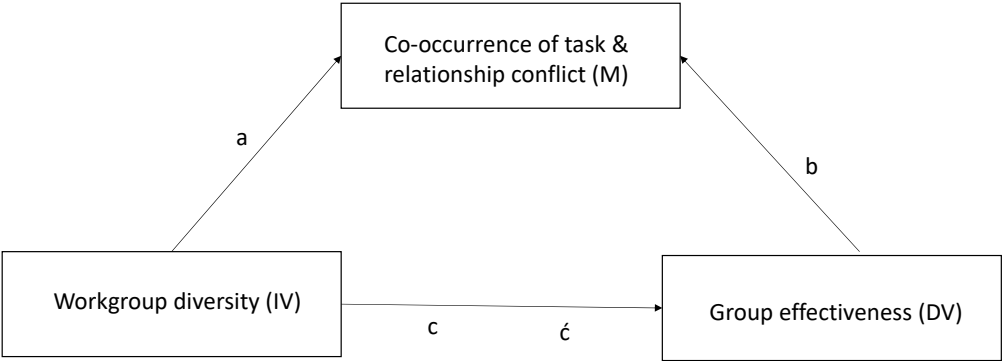
Paths a and b are explained as follows:

- 'a' is the coefficient resulting from the IV predicting M (controlling for group size and task interdependence).
- 'b' is the coefficient resulting from M predicting DV.

The Sobel test performs a statistical test to see if the indirect path from the IV to the DV is statistically significantly different from zero. This is the same idea as the test providing support for partial mediation.

The test statistic throws the z value, standard error and the statistical significance (p -value). If $p < 0.05$, the statistical conclusion was that partial mediation was obtained. In this study, it was hypothesised that the relationship between workgroup diversity (IV) and group effectiveness (DV) is mediated by the co-occurrence of task and relationship conflict (M) (hypothesis H5). This hypothesis was tested after having statistically controlled for group size and task interdependence.

Figure 3.2 Mediator analysis: Path diagramme
(Controlling for group size and task interdependence)



Chapter 4

Qualitative Data: Analysis and Discussion

In this chapter, the researcher analyses the data obtained from the interviews using thematic analysis, with the aim of developing some themes that might throw light on diverse team functioning in the context studied. The data and extracted themes are then discussed in relation to theoretical concepts, constructs and relationships that were identified in the literature review chapter as being relevant to team functioning.

4.1 Coding the data: Generating themes

The researcher applied the mechanism of thematic analysis commonly adopted in the literature (e.g., Braun & Clarke, 2006; Joffe, 2012; Braun *et al.*, 2019). He had recorded the interviews with the participants' agreement; the audio recordings of all the interviews are made available to his supervisors with the assurance that they remain confidential and the participants anonymous, and that they are returned to the researcher to keep and eventually destroy.

The researcher played and replayed the audio recording of the interviews, familiarising himself with the data, while at the same time transcribing the data. By reading and re-reading the transcribed data and noting down initial ideas, he had generated initial codes by systematically collating data relevant to each code; collating codes into potential themes, gathering all initial codes relevant to each theme, then collating the potential themes into overarching main themes. The generated themes were then reviewed, checking the themes in relation to the coded extracts and the entire data set, generating “thematic maps” of the analysis. The whole process is illustrated using data extracts from the first interview with team leader TL01; data extracts are shown indented, in smaller font. Initial codes in *italic*, themes in *italic* and main themes in ***italic***.

4.1.1. Associating diversity with team performance, members’ commitment, and satisfaction with the team (TL01)

Describing the different levels of knowledge, competences, and experiences among his team members, TL01 stated:

[Difference] in knowledge and competence between group members is] relatively high and consistent, very relatively high and consistent. ... The competency is quite enriching, the complementarity, they [group members] help each other; we see the knowledge, the knowledge process is very much in place and efficient. ... We have a good level of education, ...PhDs, ... Masters ... university degrees ..., ...diploma, and it adds up to the whole performance of the department.

The coding frame for extracting themes from this data is shown in Table 4.1a.

Table 4.1a. Coding frame: Cognitive diversity’ and its effect on team performance – TL01 (Extract from Appendix 6)

TL/Q	Data extract	Initial code	Theme	Main theme
TL01 Q1	[Difference] in knowledge and competence between group members is] relatively high and consistent... The competency is quite enriching, the complementarity, they [group members] help each other; we see the knowledge difference, the different knowledge process is very much in place and lead to efficient performance.	Difference in knowledge and competence is relatively high Competency is enriching and complementary, group members help each other, performance is efficient	Group differs on knowledge and competence Differences in knowledge/competence lead to team integration and efficient performance	Group is diverse on knowledge and competence Diversity on competency and knowledge enhances group performance
TL01 Q4	... We have a good level of education, ...PhDs, ... Masters ... university degrees ..., ...diploma, and it adds up to the whole performance of the department.	Varied level of education adds up to the whole performance	Differences in knowledge/ education, and gender benefit group performance	Diversity on knowledge/ education benefits group performance

This data extract is initially coded as: differences in knowledge and competence are ‘relatively high’, ‘enriching’, ‘complementary’, helps ‘performance to be efficient and meet targets’, encourage members to ‘engage in discussions/debates, helping each other’, and create a ‘welcoming’ environment, where members are able to ‘train and help each other’.

The potential themes that emerge from these initial codes are: ‘*group differs on knowledge and competence*’, and ‘*differences in knowledge/competence lead to efficient performance*’.

These themes suggest that team leader TL01 perceives that differences on knowledge, competence and experience among his team members enhance team performance, hence, the main theme: ‘*diversity on competency and knowledge/education enhances group performance*’

Similarly, describing the demographic composition of his team and its effect on team performance, TL01 stated:

It [age difference] is consistent to a certain extent. ... Consistent, I might be the oldest, ... The average age is around 30. There few who are from different nationalities, ...we’ve got ... three to four nationalities representatives in our department... It [department] is mixed, diversified in gender, its 50-50. ..., but in terms of diversity, it is very encouraging, it is very positive, and I think it is enriching.
 ... We also have gender diversity, so there is a balance between male and female positions... So, we do have, let’s say, space for open discussions and debates and give and take. ... and it adds up to the whole performance of the department.

The coding frame for extracting themes from this data segment is shown in Table 4.1b.

Table 4.1b. Coding frame: Demographic diversity’ and its effect on team performance – TL01 (Extract from Appendix 6)

TL/Q	Data extract	Initial code	Theme	Main theme
TL01 Q2	... The average age is around 30. ...we’ve got three nationalities, three to four nationalities representatives in our department... It [department] is mixed, diversified in gender, its 50-50. ... but in terms of diversity, it is very encouraging, it is very positive, and I think it is enriching.	Average age is around 30 Three to four nationalities Group is diverse on gender, its 50-50. Diversity is positive & enriching	Group differs slightly on age Group is diverse on nationality Group is diverse on gender Diversity on gender and age has a positive and enhancing effect	Group has low diversity on age Group is diverse on nationality and gender Diversity on nationality and gender enhances group performance
TL01 Q4	... We also have gender diversity, so there is a balance between male and female positions...	There is a balance between males and females,	Differences in gender benefit group performance	Diversity on gender, benefits group performance

	So, we do have, let's say, space for open discussions and debates and give and take. ... and it adds up to the whole performance of the department.	Space for open discussions and debates ... it adds up to the whole performance		
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These initial codes are extracted from this data: *'Average age is 30'*, *'three to four nationalities in the group'*, *'gender is 50-50'*, *'diversity is positive and enriching'*, *'a balance between males and females'*, *'space for discussions and debates'*, *'it adds up to the whole performance'* and *'demographic differences are positive and enriching'*.

These codes were then abstracted to the themes of: *'group differs slightly on age but is diverse on nationality and gender'* and that *'demographic diversity has a positive effect'*.

The main theme that encompasses these themes is: *'demographic diversity on nationality and gender enhances group performance'*.

Expanding on the effect of diversity on team viability, that is; members' commitment to the team and their satisfaction being in the team, TL01 stated:

...spirit of the team is very high; difference, it's complementary, very encouraging. Each one helps the other, and I think thanks to the gender diversity, culture diversity, to the acceptance of the co-existence at large. So, ...there is ...positive spirit ... There is the welcome, ...the integration, ...the training, so it runs smooth. [differences contribute to] more commitment, which is added value, diversity is an added value. I think it [difference] does [increase individual satisfaction] because we can have good insights, good brainstorming, good inputs, and we value it.

The coding frame for this data extract is shown in Table 4.1c.

Table 4.1c. Coding frame: Diversity's effect on members' commitment and satisfaction with team – TL01 (Extract from Appendix 6)

TL/Q	Data extract	Initial code	Theme	Main theme
TL01 Q5	...spirit of the team is very high; difference, it's complementary, very encouraging. Each one helps the other, and I think thanks to the gender diversity, culture diversity, to the acceptance of the	Very high team spirit: differences are complementary. There is welcome, helping each other, integration and training	High team spirit, complementarity & welcoming environment enhance integration	Diversity on knowledge/competence, nationality and gender enhances integration

	co-existence at large. So, ...there is ...positive spirit ... [differences contribute to] more commitment, which is added value, diversity is an added value. I think it [difference] does [increase individual satisfaction] because we can have good insights, good brainstorming, good inputs, and we value it.	More commitment Added value increased individual satisfaction good insights, good inputs	Differences increase commitment and individual satisfaction with team	Diversity enhances commitment and satisfaction with team
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From this data segment a number of initial codes were extracted: ‘*very high team spirit*’, ‘*differences are complementary*’, ‘*there is welcome, integration and training*’, ‘*differences contribute to more commitment and increased individual satisfaction*’ and ‘*differences allow good insights, good inputs*’.

These themes culminate in the main themes of: ‘*high team spirit, complementarity and welcoming environment enhance integration*’, ‘*diversity on knowledge/competence, nationality and gender enhances integration*’ and ‘*diversity increases commitment and satisfaction with team*’.

These themes in turn result in the main themes of: ‘*diversity on knowledge/competence, nationality and gender enhances integration*’ and ‘*diversity increases commitment and satisfaction with team*’.

As part of the theme extraction process, theme maps were also constructed displaying how initial codes were integrated into potential themes and how the latter incorporated within main themes (see Braun and Wilkinson, 2003). The theme maps which display the relationship between diversity and team performance and viability, using data obtained from team leader TL01, are shown in figures 4.1a and 4.1b. The figures show that four main themes have emerged from the data, namely: **‘Diversity on knowledge and competency enhances group performance’**, **‘Diversity on knowledge/competence enhances team**

integration (commitment and satisfaction)', 'Diversity on nationality and gender enhances group performance' and 'Diversity on nationality and gender enhances commitment and satisfaction'.

Fig 4.1a Cognitive diversity's relation to team performance, members' commitment to team, and individual member's satisfaction with team (TL01)

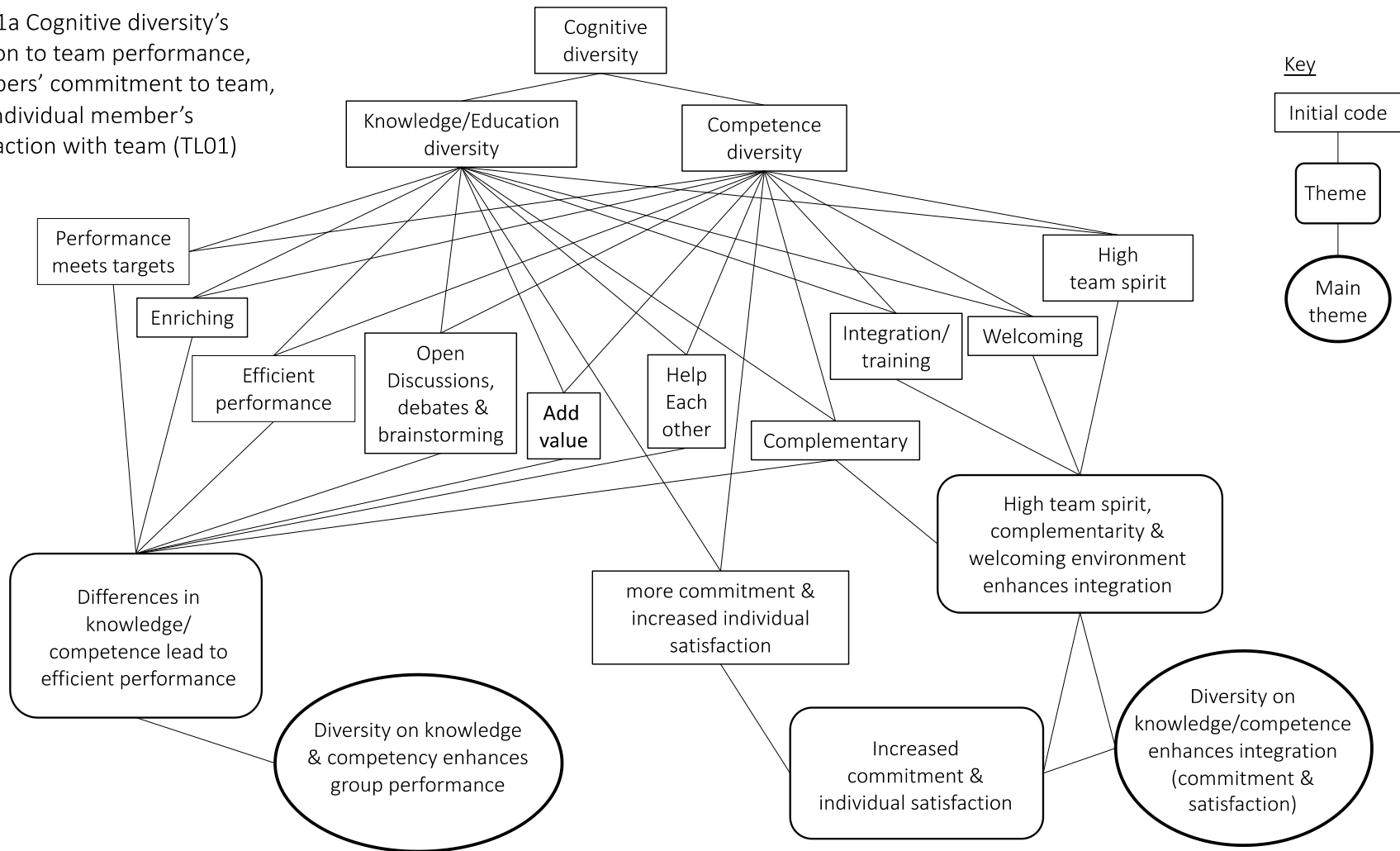
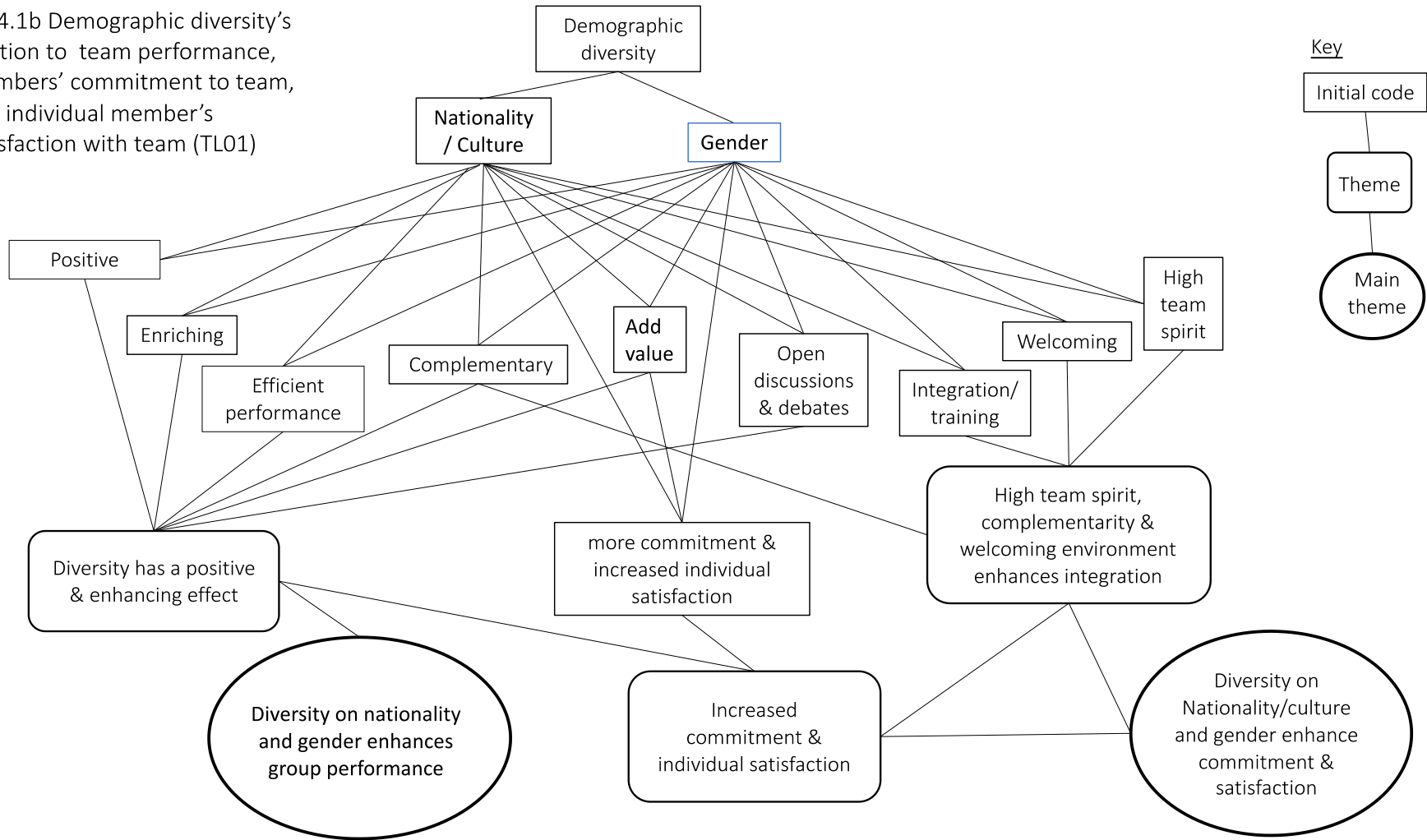


Fig 4.1b Demographic diversity's relation to team performance, members' commitment to team, and individual member's satisfaction with team (TL01)



4.1.2. Associating diversity with task conflict (TL01)

Responding to the question on the effect of cognitive and demographic differences between team members on the occurrence of task conflicts (TC) and relationship conflicts (RC), team leader TL01 had this to say:

... [differences in age relate to task disagreement] because there are those who are full of excitement, and they want to move fast... to take over so fast ... Gender wise? Not necessarily... I didn't feel in terms of task conflict issues, but age wise, yes. Education, ... what level of education a person may be at, certainly affects disagreement over tasks, and that effect is enriching and is positive ...

Table 4.2 displays the coding frame for these relationships.

Table 4.2 Coding frame: Diversity' effects on task conflict – TL01 (Extract from Appendix 6)

TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q6	... yes, [differences in age relate to task disagreement] because there are those [young members] who are full of excitement, and they want to move fast... and they want to take over so fast ... and they are not giving themselves time to observe and to integrate and develop. ... Gender wise? Not necessarily... I didn't feel in terms of task conflict issues, but age wise, yes! Education, ... what level of education a person may be at, certainly affects disagreement over task ...	Differences in age may relate negatively to task disagreement. Gender may not relate to task conflict Education affects disagreement over task.	Age differences relate to task disagreement Gender difference does not relate to task disagreement Educational differences relate to task disagreement	Age diversity relates to task conflict Gender differences does not relate to task conflict Education diversity relates to task conflict

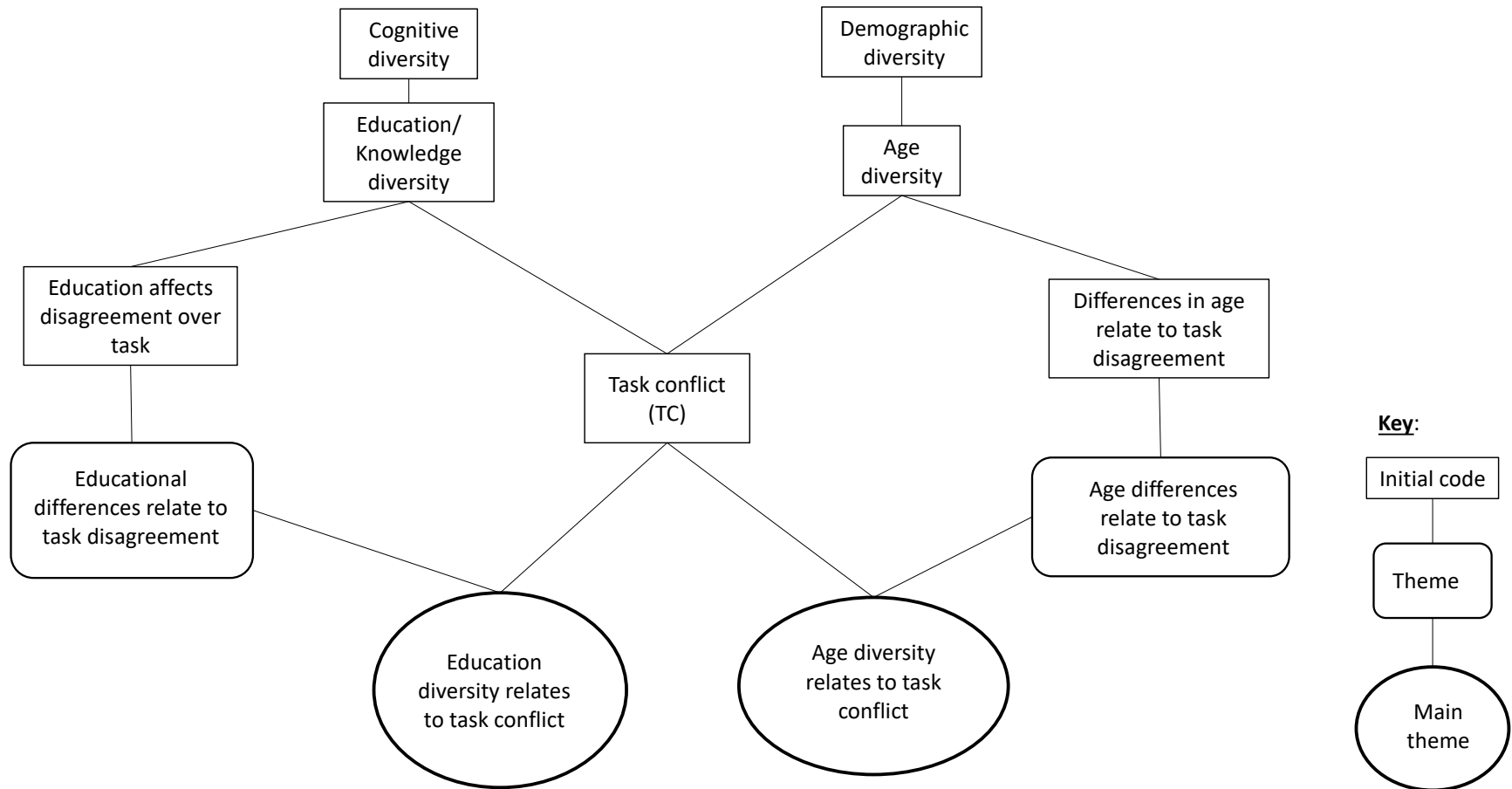
The initial codes derived from this data include: '*age differences relate to task disagreement*', '*Gender may not relate to task conflict*', '*education affects disagreement over task*'.

These initial codes result in the themes of: '*Age differences relate to task disagreement*', '*gender difference does not relate to task disagreement*', and '*educational differences relate to task disagreement*'.

The emerging main themes from these themes are: '*age difference relates to task conflict*' and '*education diversity relates to task conflict*'.

Figure 4.2 displays the theme map drawn from this coding frame.

Fig 4.2 Diversity's association with task conflict (TL01)



4.1.3. Task and relationship conflicts' (CTRC) association with team performance, members' commitment, and satisfaction with the team (TL01)

Describing the effects of task conflict on team performance, TL01 states:

... level of education a person may be at, certainly affects disagreement over task, and that effect is enriching and is positive as this task disagreement results in better quality of work outcome and new ideas.

Table 4.3a shows the coding frame for this data.

Table 4.3a Coding frame: TC effect on team performance – TL01 (Extract from Appendix 6).

TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q6	... task disagreement results in better quality of work outcome and new ideas.	Task disagreement is positive for outcome quality.	Task disagreement enhances quality of team performance	Task conflict relates positively to team performance

The initial code derived from this data is '*Task disagreement is positive for outcome quality*'; the extracted theme is '*Task disagreement enhances quality of team performance*', and this is consumed by the main theme '*Task conflict relates positively to team performance*'.

On the association of task conflict with relationship conflict (CTRC), TL01 had this to say:

...It is very difficult to disassociate work from personal aspects when it comes to disagreements, because they build on each other.
 ... it expands.... meaning your disagreement at work will reflect on personal and interpersonal relation ... Task disagreement expands into personal tension.
 In many cases, they [task disagreement and relationship tension] are correlated. ...
 Oh, it [task disagreement with personal tension] is very counter-productive, it's negative, it's discouraging, it is unfortunately time wasting, it is time consuming, it is mind consuming, it is unfortunately inappropriate. There has to be an end. It affects our business, it effects our students, it effects our mood... No one will be in the mood to work, because it grows from the work environment. He or she [team members] is overwhelmed, in a personal conflict.

Table 4.3b shows the coding frame for this data.

Table 4.3b Coding frame: CTRC's effects on team performance – TL01 (Extract from Appendix 6).

TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q6	...It is very difficult to disassociate work from personal aspects when it comes to disagreements, because they build on each other. ... it expands.... meaning your disagreement at work will reflect on personal and interpersonal relation ... Task disagreement expands into personal tension	Difficult to disassociate work from personal disagreements Task disagreement expands into personal tension	Work and personal disagreements are associated	Task conflict co-occurs with relationship conflict (CTRC)
TL01 Q7	In many cases, they [task disagreement and relationship tension] are correlated.	Task disagreement and relationship tension are correlated.	Task disagreement and personal tension are correlated	Task conflict co-occurs with personal conflict (CTRC)
TL01 Q10	Oh, it [task disagreement with personal tension] is very counter-productive, it's negative, it's discouraging, it is unfortunately time wasting, it is time consuming, it is mind consuming, it is unfortunately inappropriate. There has to be an end. It affects our business, it affects our students, it affects our mood... No one will be in the mood to work, because it grows from the work environment. He or she is overwhelmed in a personal conflict. ...	TC with RC is very counter-productive, negative, discouraging, time wasting, time consuming, mind consuming. It affects business, students, mood, overwhelming.	CTRC is counter-productive	CTRC negatively relates to team performance

Initial coding of this data gave rise to the themes of: '*Difficult to disassociate work from personal disagreements*', '*Task disagreement expands into personal tension*', '*Task disagreement and relationship tension are correlated*', '*TC with RC is very counter-productive*', '*negative*', '*discouraging*', '*time wasting and time consuming*', '*mind consuming*', '*it affects business, students, mood*' and '*overwhelming*'.

The theme that represents these initial codes is: '*Work and personal disagreements are associated*', '*CTRC is counter-productive*', and the main themes are: '***Task conflict co-occurs with relationship conflict (CTRC)***', '***CTRC relates negatively to team performance***'.

On the effect of task conflict with relationship conflict on members’ commitment and satisfaction with being in the team, TL01 added:

[Task disagreements and personal tension] affect members commitment and satisfaction] highly, ... because he [team member] will not produce. He is overwhelmed, preoccupied with a personal conflict as a priority for him, rather than the task and the work itself. So, work becomes secondary, and he cannot focus. ... [TC with RC] very highly negatively affect commitment and satisfaction] because they are associated, and he/she is not doing their work, simply because he or she isn’t comfortable.

Table 4.3c shows the coding frame for this data.

Table 4.3c Coding frame: CTRC’s effects on members’ commitment and satisfaction with the team – TL01 (Extract from Appendix 6).

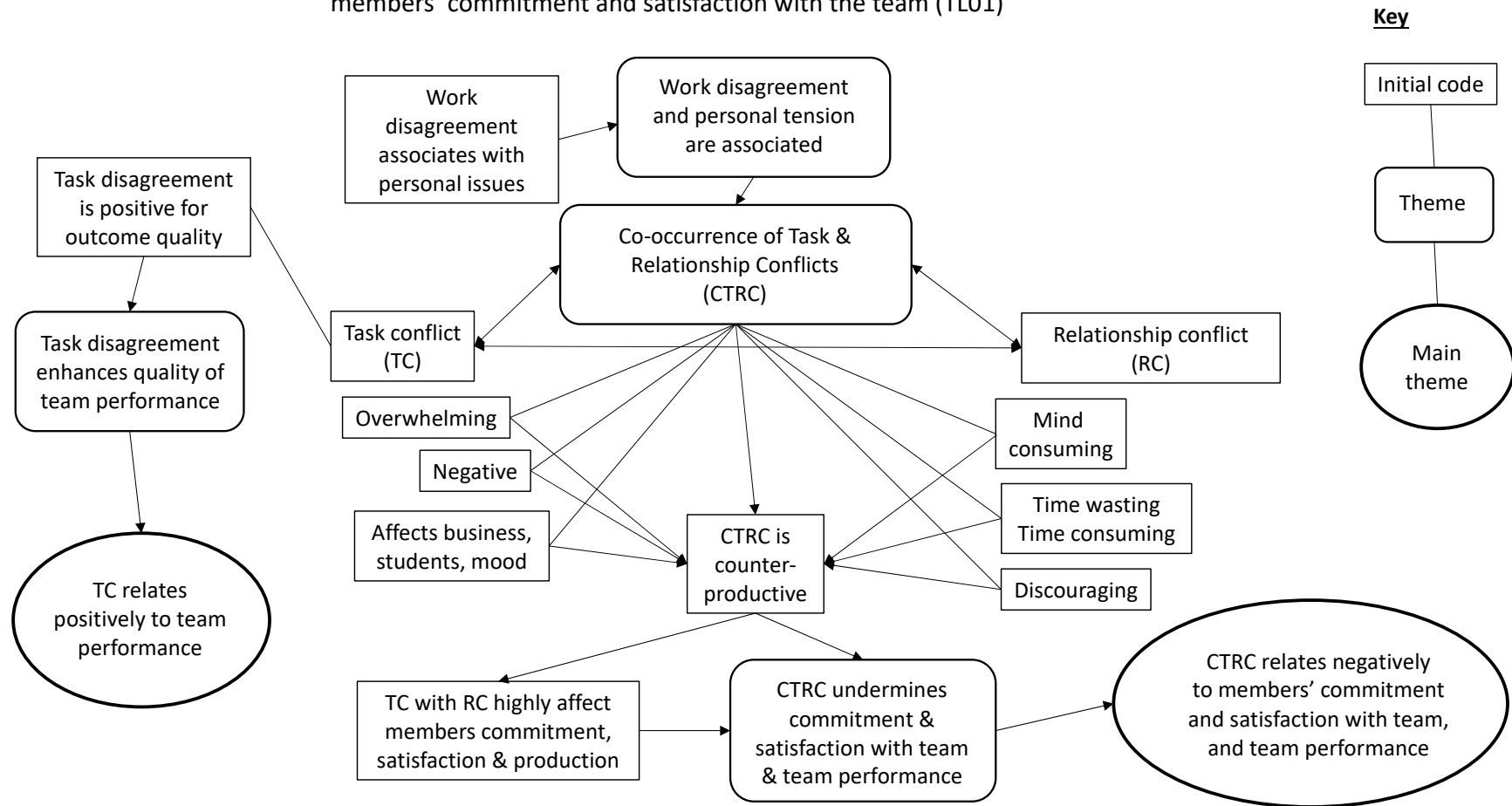
TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q11	[task disagreements and personal tension affect members commitment and satisfaction] highly, ... because he [team member] will not produce. He is overwhelmed, preoccupied with a personal conflict as a priority for him, rather than the task and the work itself. So, work becomes secondary, and he cannot focus....	TC with RC highly negatively affect members commitment, satisfaction and productivity.	CTRC undermines commitment satisfaction with team, and performance	CTRC relates negatively to members’ commitment and satisfaction with team, and team performance
	[TC with RC] very highly negatively affect commitment and satisfaction because they are associated, and he/she is not doing their work, simply because he or she isn’t comfortable.	TC with RC highly negatively affects commitment and satisfaction	TC with RC highly negatively affects commitment and satisfaction	CTRC relates negatively to commitment and satisfaction

The initial code extracted from this data is: ‘*TC with RC highly negatively affect members commitment, satisfaction and productivity*’.

This code gave rise to the theme: ‘*CTRC undermines commitment, satisfaction, and performance*’, and. The main themes which embody this theme is: ‘*CTRC relates negatively to members’ commitment, satisfaction, and team performance*’.

Fig 4.3. displays the theme map of the association of task conflict with team performance, and the association of CTRC with team performance, members' commitment, and satisfaction with team.

Fig 4.3. The association of task conflict, relationship conflict and CTRC with team performance, members' commitment and satisfaction with the team (TL01)



4.1.4a. Team leader's conflict management behaviour (TL01)

Describing his behaviour where diversity among his team members causes disagreement over work tasks and the latter escalates into personal tension, TL01 stated:

It is how we try to minimise it.... try to squeeze it and ... keep work within the work scope, so, it doesn't expand and becomes part of the larger picture.
And that is how we avoid clans and groups, and let's say ...bands. ...

At work we try to disassociate the personal from the task or from the work and from the conflict itself; we try to limit it to comprehend it.

We try to keep communicating; the most important aspect in the sense of resolving the disagreement and tension.

We have zero percent of work problems because of communication. We try to sit down and discuss and resolve. I think through communication lots of issues are resolved. ...

A work task conflict, I encourage and leave it for members to resolve, and if it is not resolved by the two people involved, that is when the leader has to step in ...

The leader resolves the problems from a different perspective, as a mediator as a conflict resolution person.

The leader, ... should ... build a healthy environment, but not to leave conflict running without interfering, otherwise it will expand to other members then it will become even more complicated.

In terms of work disagreement turning to personal tensions, I need to resolve it, but I try not interfering with personal aspects beyond the work scope. ... let's try to contain this within the work environment, within the house itself, so it doesn't expand and become of a larger picture beyond the work.

These data segments were coded, and its coding frame is shown in Table 4.4

Table 4.4a Team leader's conflict management behaviour – TL01 (Extract from Appendix 6).

TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q7	<p>It is how we try to minimise it.... try to squeeze it and ... keep work within the work scope, so, it doesn't expand and becomes part of the larger picture. And that is how we avoid clans and groups, and let's say ...bands. ...</p> <p>At work we try to disassociate the personal from the task or from the work and from the conflict itself; we try to limit it to comprehend it.</p>	<p><i>Leader's behaviour:</i> Minimising co-conflict Squeezing it Keeping it within work Preventing it from expanding Avoiding clans, bands (sub-groups) Dissociating the personal from the task Limiting it Trying to comprehend it</p>	<p>Establishing positive feelings and minimising feelings of anger</p> <p>Depersonalising problem</p>	TfL conflict management behaviour (relates negatively to CTRC)
TL01 Q8	We try to keep communicating; the most important aspect in the sense	Communicating until disagreement	Communicating, developing quality	TfL conflict management behaviour

	<p>of resolving the disagreement and tension. We have zero percent of work problems because of communication. We try to sit down and discuss and resolve. I think through communication lots of issues are resolved. This is the role of the leader, [not to] ... leave problems unresolved, because that would only add fuel to the fire.</p> <p>A work task conflict, I encourage and leave it for members to resolve, and if it is not resolved by the two people involved, that is when the leader has to step in, and the leader doesn't step in to take a position. The leader resolves the problems from a different perspective, as a mediator as a conflict resolution person. The leader, ... should ... build a healthy environment, but not to leave conflict running without interfering, otherwise it will expand to other members then it will become even more complicated.</p>	<p>and tension are resolved.</p> <p>Sitting down and discuss and resolve</p> <p>Encouraging TC Inviting participation in resolving conflict Stepping in</p> <p>Offering a different perspective Mediating Building a healthy environment</p> <p>Intervening, preventing conflict from expanding</p>	<p>leader-member exchange</p> <p>Compromising and cooperating</p> <p>Communicating, developing a quality leader-member exchange</p> <p>Compromising</p> <p>Developing a supportive climate</p> <p>Minimising feelings of anger</p>	<p>TfL conflict management behaviour (relates negatively to CTRC)</p>
TL01 Q9	<p>In terms of work disagreement turning to personal tensions, I need to resolve it, but I try not interfering with personal aspects beyond the work scope. ... let's try to contain this within the work environment, ..., so it doesn't expand ... beyond the work.</p>	<p>Intervening to resolve TC with RC Separating task from personal</p> <p>Containing personal conflict within work</p>	<p>Depersonalising problem</p> <p>Depersonalising problem</p>	<p>TfL conflict management behaviour (relates negatively to CTRC)</p>

This data is initially coded as: *'Minimising co-conflict'*, *'squeezing it'*, *'keeping it within work'*, *'preventing it from expanding'*, *'avoiding clans, bands [sub-groups]'*, *'dissociating personal from the task'*, *'limiting it, trying to comprehend it'*, *'communicating until disagreement and tension are resolved'*, *'sitting down and discuss and resolve'*, *'encouraging and leaving task conflict for members to resolve'*, *'stepping in'*, *'offering a different perspective'*, *'mediating'*, *'building a healthy environment'*, *'intervening'* and *'preventing*

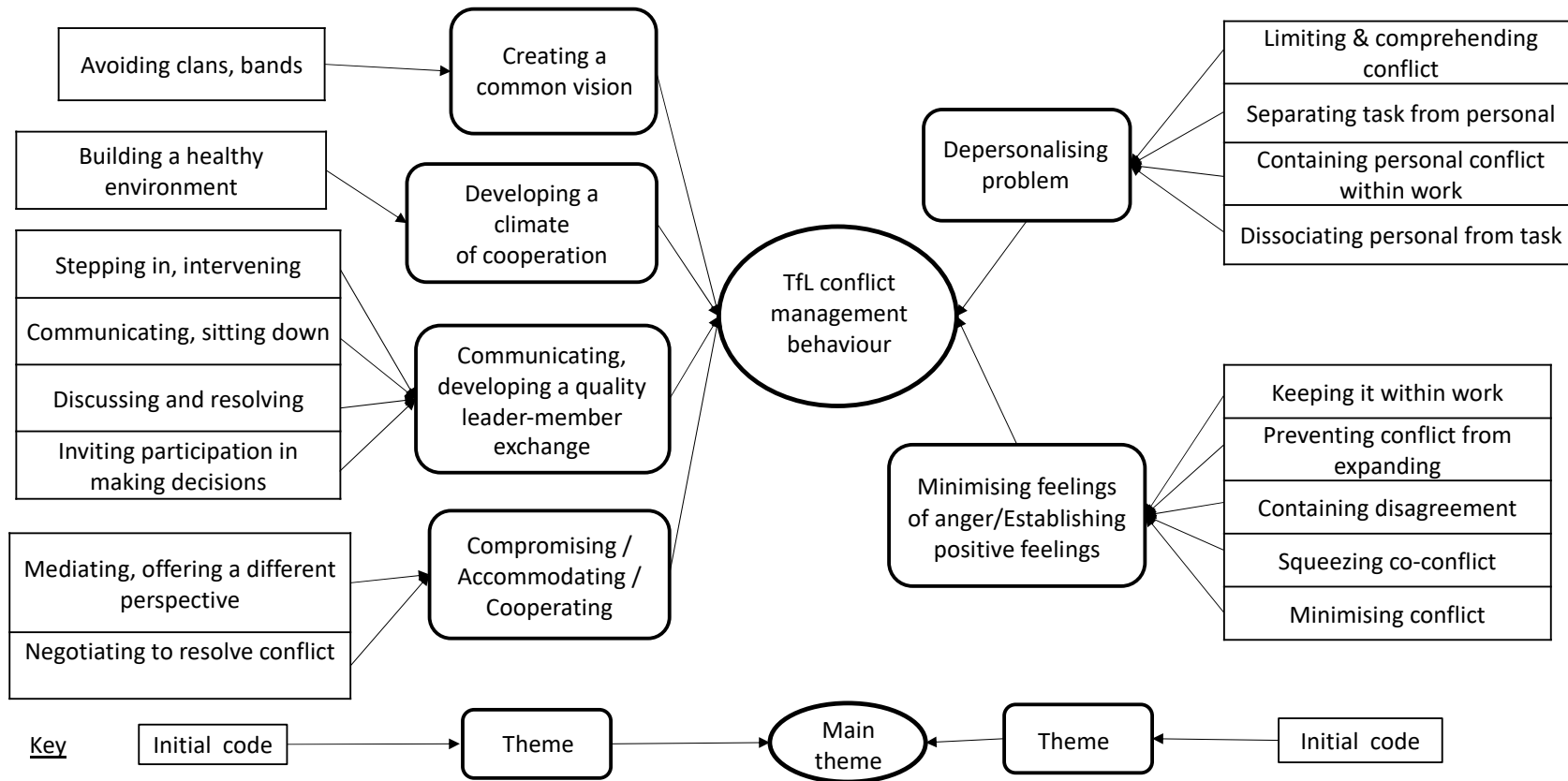
conflict from expanding, *separating task from personal*, and *containing personal tension within work*.

These initial codes integrate around the themes of: *Establishing positive feelings and minimising feelings of anger*, *creating a common vision*, *depersonalising problem*, *communicating*, *developing quality leader-member exchange*, *compromising and cooperating* and *developing a supportive climate*.

These themes integrate around ***TfL conflict management behaviour*** as the main theme; such a behaviour seems to decrease personal tension by confining the problem to the work tasks.

The integration of the initial codes of the data from team leader TL01 into themes is shown in figure 4.4a. An examination of the figure displays, for example, that the theme *depersonalising problem* absorbs the initial codes of *limiting and comprehending conflict*, *separating task from personal*, *containing personal tension within work* and *dissociating the personal from the task*. The reader is directed to the figure for the other initial codes and subsumption into specific themes, and the latter into the main theme.

Fig. 4.4a. Coding for team leader's conflict management behaviour (TL01)



4.1.4b. Team leader’s attributes and leadership behaviour (TL01)

Team leader TL01 elaborated further on his leadership attributes and behaviours, in these words:

[Task disagreements and personal tension affect members commitment and satisfaction] highly, ...
 So, work becomes secondary, and he [team member] cannot focus, and that is why so many times, I ask him ... to ... take a break or just “get out of the mood you are in and come back...” I give him time to reflect on it and try to start differently.
 ... and he/she is not doing their work, simply because he or she isn’t comfortable. Once you give that comfort, they’ll deliver, no comfort no delivery. Because you are preoccupied with a lot of things.
 [I will] First of all, ease the tension.
 Second, communicating, try mediating between them, try to speak with each one individually. Assuring them that we are all for the work and, of course, things can be resolved.
 Downsizing the level of conflict as much as we can because it does have an impact on our business, university, on the industry, on our students; and assure them that there is a leader who can step in to help, try to get things better....

I think communication is key to this. You need to communicate to the staff. They need to be associated, they need to be informed as much as possible and as much as it concerns them. As long as, it’s based on their concerns, they will be engaged to certain extent.
 Once they feel engaged, they’ll be part of the project, target, part of the process, they will excel.
 ...when we have a partnership or a new agreement, I’ll engage my staff from the beginning, from day 1, so they don’t only feel the excitement, they also feel the anticipation of the outcome, and they feel part of this success. ... and they excel in delivering. ... and they reap the fruit accordingly. ... Once they are engaged as much as they could they become in part associated and they speak proudly of it.
 I will tell my team the following: I bear full responsibility because I am your leader, so that is very important because we highlight, we try to praise, and celebrate, recognise when it comes to performance and achievement; and when we are not happy with our performance, we sit down and discuss seriously, so we can look to overcome it the next day. So, it’s that perfect balance between praising, rewarding, recognition, and of course, accountability and responsibility. ...

Table 4.4b shows the coding frame for these data extracts.

Table 4.4b Coding frame: Team leader’s general attributes and behaviour – TL01 (Extract from Appendix 6).

TL01 Qs	Data extract	Initial code	Theme	Main theme
TL01 Q11	... So, work becomes secondary, and he [team member] cannot focus, and that is why so many times, I ask him ... to ... take a break or just “get out of the			

	<p>mood you are in and come back..." I give him time to reflect on it and try to start differently. ... and he/she is not doing their work, simply because he or she isn't comfortable. Once you give that comfort, they'll deliver, no comfort no delivery. Because you are preoccupied with a lot of things.</p> <p>... try mediating between them, try to speak with each one individually.</p> <p>Assuring them that we are all for the work and, of course, things can be resolved.</p> <p>... and assure them that there is a leader who can step in to help, try to get things better....</p>	<p>Giving a break, space and time to reflect and make a new start</p> <p>Offering comfort</p> <p>Mediating Speaking with each one individually Prioritising work Assuring problem will be solved</p> <p>Showing leadership, stepping in</p> <p>Helping and having things done</p>	<p>Empathising with the needs of individuals</p> <p>Showing genuine compassion</p> <p>Compromising/cooperating Making inter-personal connections</p> <p>Showing commitment to goals Creating trust and confidence in members</p> <p>Aiding members to succeed</p>	<p>TfL – IC behaviour</p> <p>TfL-IC behaviour</p> <p>TfL-IC behaviour</p> <p>TfL-II behaviour TfL-II behaviour</p> <p>TfL- IM behaviour</p>
TL01 Q12	<p>... Once they feel engaged, they'll be part of the project, target, part of the process, they will excel. ...when we have a partnership or a new agreement, I'll engage my staff from the beginning, from day 1, so they don't only feel the excitement, they also feel the anticipation of the outcome, and they feel part of this success. ... and they excel in delivering. ... and they reap the fruit accordingly. ... Once they are engaged as much as they could they become in part associated and they speak proudly of it.</p>	<p>Engaged members will be excited, feel proud, part of the success and will excel</p> <p>Engaged members become associated and speak proudly of it.</p>	<p>Inspiring them to improve their outcomes</p> <p>Fostering a strong sense of pride</p>	<p>TfL-IM behaviour is positively related to team performance</p> <p>TfL-IM behaviour (positively related to team performance)</p>
TL01 Q14	<p>I will tell my team the following: I bear full responsibility because I am your leader, so that is very important because we highlight, we try to praise, and celebrate, recognise when it comes to performance and</p>	<p>Taking responsibility for decisions Praising Recognising and</p>	<p>Leading by example</p> <p>Encouraging ongoing professional development and personal growth of members</p>	<p>TfL-II behaviour</p> <p>TfL-IC behaviour is positively related to</p>

	achievement; and when we are not happy with our performance, we sit down and discuss seriously, so we can look to overcome it the next day. So, it's that perfect balance between praising, rewarding, recognition, and of course, accountability and responsibility. ...	celebrating members' achievement Discussing and learning from failures Rewarding and sanctioning	Aiding employees to do better	members' performance TfL-IM behaviour TaL behaviour
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Coding this data resulted in the initial codes of: *'Giving a break, space and time to reflect and make a new start'*, *'offering comfort'*, *'mediating'*, *'speaking with each one individually'*, *'prioritising work'*, *'assuring problem will be solved'*, *'showing leadership, stepping in'*, *'helping and having things done'*, *'engaging members makes them excited, proud, part of the success and will excel'*, *'engaging members makes them associated and speak proudly of it'*, *'taking responsibility for decisions'*, *'praising'*, *'recognising and celebrating members' achievement'*, *'discussing and learning from failures'* and *'rewarding and sanctioning'*.

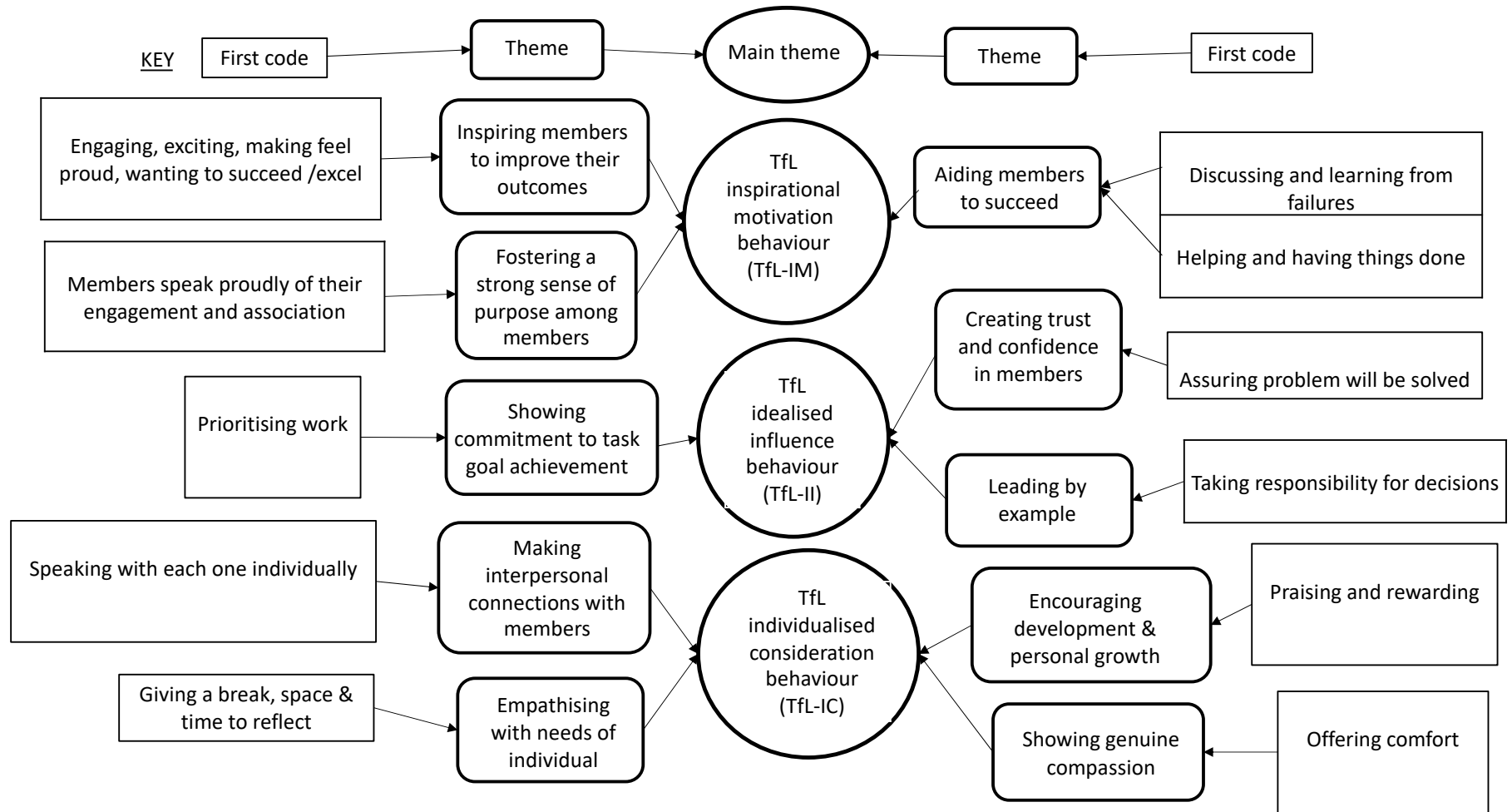
The initial codes were then integrated around these themes: *'Empathising with the needs of individuals'*, *'showing genuine compassion'*, *'making inter-personal connections'*, *'showing commitment to goals'*, *'creating trust and confidence in members'*, *'aiding members to succeed'*, *'inspiring them to improve their outcomes'*, *'fostering a strong sense of pride'*, *'leading by example'*, *'encouraging ongoing development and personal growth of members'*, and *'aiding members to do better'*.

The derived themes were then integrated into these main themes: ***'Transformational leadership - individualised consideration (TfL-IC) behaviour'***, ***'Transformational leadership - idealised influence (TfL-II) behaviour'***, ***'Transformational leadership – inspirational motivation (TfL-IM) behaviour'*** and ***'Transactional leadership (TaL) behaviour'***.

The theme map of TL01's perception of his leadership behaviour is shown in figure 4.4b, displaying the integration of the initial codes of the data into themes and the latter into the

four dimensions of Transformational leadership behaviour (TfL-IC, TfL-IM, TfL-II and TfL-IS). Examination of the figure shows, for example, that the initial codes of ‘discussing and learning from failures’ and ‘helping and having things done’ were subsumed by the theme ‘aiding members to succeed’, and that this theme is subsumed by the main theme ‘TfL inspirational motivation behaviour (TfL-IM).

Fig. 4.4b Coding for team leader's attributes and behaviour (TL01)



The findings from the thematic analysis of data obtained from team leader, TL01 thus show that the team is cognitively diverse on competency, knowledge and education, and that this diversity enhances group performance, team integration and increases members' commitment to the team and their satisfaction with being part of the team. The team is also found to be demographically diverse on nationality and gender and that this diversity is again seen to enhance group performance, team integration and members' commitment to, and satisfaction with the team.

Moreover, team diversity on education and age appears to relate positively to task conflict, and that task conflict invariably co-occurs with relationship conflict (CTRC), where the co-occurrence of task with relationship conflicts is seen to harm team performance, members' commitment and their satisfaction with the team.

The analysis also shows that the team leader manages conflict predominantly by attempting to: establish positive feelings and minimise feelings of anger; create a common vision; depersonalise problems; communicate, developing quality leader-member exchange, compromise and cooperate, and develop a supportive climate. He thus appears to display a transformational conflict management behaviour. Furthermore, analysis of the data shows that this leader's leadership behaviour is, on the whole, empathising with the needs of individual team members; striving to make inter-personal connections with them; showing commitment to team goals; endeavouring to create trust and confidence in team members, inspiring them to improve their outcomes and encouraging their ongoing development and personal growth; and working to foster a strong sense of pride, leading by example. The leader thus seems to predominantly display transformational leadership (TfL) behaviour, showing some individualised consideration (IC), idealised influence (II) and inspirational motivation (IM) characteristics.

4.2 Emerged themes: All the participants' perceptions

In this section, the themes that were derived from the data obtained from all the participants are presented. These themes were collated from the coding frame shown in appendix 4.xxx).

Team leader TL02 (F). TL02 leads a team that is cognitively diverse on knowledge, education, and competence, and demographically diverse on age, nationality and culture; she feels that her team's performance is good. She also suggests that diversity on knowledge, education and competence relates positively to team performance, members' commitment, and satisfaction with the team; that nationality and culture have no effect on performance but negatively affect members' commitment and satisfaction, and that age diversity relates negatively to team performance, commitment and satisfaction. She also notes that diversity on personality relates to CTTC, diversity on knowledge causes relationship conflict, and that diversity on nationality and culture causes task conflict. Also, task conflict positively and negatively affects team performance and negatively affects members' commitment and satisfaction. Furthermore, the analysis suggests that this team leader sees relationship conflict (RC) as having negative association with members' commitment and satisfaction with team and team performance. She further witnessed the escalation of task conflict into relationship conflict, and that CTTC harms team performance, members' commitment to, and satisfaction with the team.

This team leader's conflict management behaviour seems to have strong TFL characteristics. This is manifested in high personal contribution in resolving conflict through quality leader-member exchange, developing a climate of cooperation, incorporating members' views and inviting participation and collaboration, depersonalising conflict, minimising feelings of anger and establishing positive feelings, fostering a strong sense of purpose among team members, promoting a common vision and showing strong commitment to goals, and

compromising and cooperating. This team leader additionally shows that her TfL conflict management behaviour decreases the negative effect of CTFC and positively relates to team performance and member's satisfaction with the team

The leader also displays some characteristics of transformational leadership, inspirational motivation (TfL-IM) behaviour as she attempts to aid her team members' understanding and help them to succeed; her TfL-IM behaviour seems to enhance team task achievement. The leader further exhibits an idealised influence (TfL-II) behaviour through showing strong commitment to team goals and task achievement, and exhibit individualised consideration (TfL-IC) behaviour by treating members as unique individuals and making interpersonal connections, empathising with individual member's needs and encouraging ongoing members' development and personal growth. She also displays intellectual stimulation (TfL-IS) behaviour through empowering employees to disagree with leadership.

Team leader TL03 (M). The third team led by TL03 is highly diverse on experience, competence/skills and knowledge; this diversity is seen to relate positively to team performance. The team is also diverse on nationality/ culture, gender, and age; its performance is considered as satisfactory. Diversity, particularly, on nationality and culture has positive and negative effects on team performance; gender diversity largely has a positive effect on performance. Diversity also relates positively to innovative team performance. Diversity on age is positively related to task conflict. Furthermore, cultural diversity causes task conflict (TC), and gender diversity negatively relates to TC, while the combination of age, knowledge, and experience diversity, have mixed effects on TC.

Although TC relates positively to team performance; however, its co-occurrence with relationship conflict (RC) as CTRC harms team performance, members' commitment, and satisfaction with being in the team.

The leader's transformational conflict management behaviour of dissociating task from personal issues, depersonalising problems, accommodating, and compromising relates positively to team performance and negatively to CTRC.

The leader also exhibits TfL-IC behaviour as he appears to treat his team members as unique individuals, making interpersonal connections with them and showing genuine compassion. He also displays TfL-IM behaviour as he inspires members to improve their outcomes, and TfL-II behaviour by showing strong commitment to goals.

Team leader TL04 (M). The team of leader TL04 has low diversity on knowledge/education and competence, low diversity on age and culture, high diversity on nationality and homogeneous on gender. Group performance is good but has not exceeded its set objectives. Diversity on nationality does not appear to relate to team performance but may negatively relate to members' commitment and satisfaction with team. Diversity on age and gender relates negatively to members' commitment to the team and satisfaction with the team. Diversity is seen to relate positively to sub-group formation, and sub-groups relate positively to CTRC.

The team leader's behaviour shows TfL-IC characteristics, as he appears to discuss and empathise with the needs of individual members of his team, and make interpersonal connections with them. He also displays TfL-IS behaviour by encouraging members' creativity and incorporating their ideas and proposals, and TfL-IM behaviour by inspiring members to improve their outcomes and fostering a strong sense of purpose among them. This, together with his TfL-II behaviour of fostering a strong sense of

purpose and promoting a broad inclusive vision to members, showing strong commitment to goals, creating trust and confidence in employees, leading by example and providing a positive environment seem to enhance team innovative performance and increase members' commitment to the team.

Diversity on nationality/culture does not relate to TC, and unresolved TC often escalates to RC (CTRC)

The team leader's TfL conflict management behaviour is also displayed through establishing positive feelings and minimising feelings of anger, developing a high-quality leader-member exchange, compromising, accommodating with high contribution from leader, depersonalising problems, creating a common vision, and incorporating the needs of employees. This conflict management behaviour is seen to decrease the negative effects of CTRC on team performance, members' commitment, and satisfaction with the team.

Team leader TL05 (F). Leader TL05's team has low diversity on knowledge and competence and high diversity on nationality and culture. She describes her team performance as good and sees diversity on background culture to have a positive effect on member's commitment, team performance and learning, and that diversity on knowledge and competence also relates positively to team learning and performance.

In her team, diversity on nationality and culture does not relate to TC, and TC may co-occur with RC. Also, TC is seen as normal and healthy, positively affecting team performance, while CTRC as negative and harming to team performance.

The leader exhibits TfL conflict management behaviour as she strives to develop a climate of cooperation, accommodation and compromise, communicates and develops quality leader-member exchange to contain conflicts. She also shows a TfL-II behaviour by creating an environment of trust, as well as displaying a contingent conflict management approach to

solve task with relationship conflicts. The leader also displays TfL-IC behaviour by making interpersonal connections with her members, reducing conflict and limiting the harmful effect of CTRC.

Team leader TL06 (F). TL06 leads a diverse team on knowledge, experience, age, and nationality. She describes the performance of her team as good. In her team, diversity on nationality relates to group performance, while diversity on knowledge and age has no effect on performance. Also, diversity, as a whole, does not appear to relate to members' commitment to the team or their satisfaction with the team.

Furthermore, diversity on knowledge/competence and nationality/culture is seen to relate positively to TC.

TC may co-occur with RC, although the team leader feels that such an occurrence does not usually happen in her team. Nevertheless, the co-occurrence of TC with RC (CTRC) relates negatively to team performance and members' commitment to the team.

The team leader exhibits some TfL conflict management behaviour, as she engages in establishing positive feelings and minimising feelings of anger, developing a climate of cooperation and compromise, and incorporating the needs of individual members.

She also displays elements of TfL-IM behaviour, in aiding members to succeed, TfL-IC behaviour in encouraging members' professional development and personal growth, and TfL-II behaviour in showing strong commitment to goals.

Team leader TL07 (F). TL07 leads a team that is diverse on knowledge, competence, and experience, and on age, gender, nationality, and cultural background. The team performance is seen to meet objectives. Diversity on knowledge, competence, age, gender, nationality, and culture are positive for team performance. Diversity on age and gender is positively related to

members' commitment and satisfaction working in the team, while diversity on nationality/culture is not related to members' commitment and satisfaction with the team. Diversity positively relates to TC, and TC does not necessarily co-occur with RC. However, the co-occurrence of TC with RC (CTRC) relates negatively to team performance, creativity, and innovation. It also relates negatively to achievement of team goals and to members' commitment and satisfaction with the team.

The team leader displays TfL conflict management behaviour, accommodating members' opinions, depersonalising conflicts, and developing a climate of cooperation and communicating.

She also exhibits TfL-IC behaviour, making interpersonal connection with members and empathising with their needs. She also displays TfL-II behaviour, showing commitment to goals and promoting a broad, inclusive vision. By aiding members to succeed, the team leader also displays TfL-IM behaviour.

The leader's TfL conflict management behaviour and TfL-IC, IM and II behaviour appears to relate negatively to CTRC and positively to team performance, members' commitment, and satisfaction with team.

Team leader TL08 (F). TL08 leads a diversity team on education/knowledge, skills, and experience. Her team is also diverse on age and gender and has low diversity on nationality/culture. Diversity on knowledge/skills, age and gender may negatively affect performance. However, diversity on knowledge/experience also relate positively to team innovation and creativity. Diversity may also positively or negatively relate to members commitment and satisfaction with team, particularly, diversity on knowledge/competence relates negatively to members' satisfaction with team.

Diversity on knowledge, competence, gender, and age relates positively to task and relationship conflicts.

TC positively and negatively relates to performance and members' satisfaction.

TC co-occurs with RC, and CTTC relates negatively to team performance, members' commitment, and satisfaction with the team.

The leader exhibits TFL conflict management behaviour by accommodating and compromising, developing a climate of cooperation, and developing a high-quality leader-member exchange. She also displays conflict avoidance management behaviour by overloading members with tasks, decreasing their free time and minimising task and members' interactions.

She also displays TFL-IC behaviour by making interpersonal connections with members and encouraging personal growth of members; TFL-IM behaviour by linking individual members and organisational goals; and TFL-II behaviour by showing commitment to goals.

Team leader TL09 (M). Leader TL09 leads a homogeneous team on knowledge but diverse on experience, age, gender, nationality, and culture. His team performance is seen as satisfactory. Diversity in his team does not relate to team performance.

Also, diversity does not relate to TC. There are no task conflict and no personal tension within the team.

The team leader adopts transactional (TaL) management behaviour by applying the rules.

Team member TM010 (M). TM010 is member of a highly diversified team on knowledge, competence, education, and experience; the team is also highly diversified on age, gender, nationality/culture, personality, and values and beliefs. He perceives diversity, in general, as relating positively to team performance, particularly, diversity on knowledge, experience and

background. Diversity also relates positively to commitment, satisfaction, and creative team performance

TC relates positively to creative performance, RC relates negatively to team performance and integration, and TC co-occurs with RC (CTRC). CTRC relates negatively to team performance, productivity and members' commitment and satisfaction with the team.

The leader, as perceived by this team member, displays TfL-IC behaviour by making interpersonal connections with members. He also exhibits TfL-II behaviour by creating trust and confidence in members, and TfL-IS behaviour by encouraging members' creativity, and empowering employees to disagree with his leadership.

The leader's TfL conflict management behaviour is manifested by his efforts at developing a high-quality leader-member exchange, promoting positive feeling, minimising feelings of anger, and using accumulated knowledge, experience, and collaborative behaviour to solve conflicts.

The leader also adopts a contingent leadership behaviour driven by the situation and context. The TfL and contingent conflict management behaviour of the leader appears to decrease the negative effects of CTRC.

Team member TM011 (F). TM011 works in a team which is diverse on gender, age, experience, nationality, professional/ academic experience, education, and background. The performance of the team is described as good.

Gender diversity is seen by this member to negatively relate to team performance.

She also sees diversity on gender, experience, competence, and age as positively related to TC. In her team, TC co-occurs with RC (CTRC), and CTRC relates negatively to team performance, members' commitment, and satisfaction with the team.

Her team leader exhibits some Tfl-IC behaviour by empathising with the needs of individual members. Much of the time, however, the leader is seen to display an un-empathetic and uncaring autocratic leadership behaviour, where members feel they are unable to raise their concerns. The autocratic leadership behaviour seems to undermine team performance, and members' commitment and satisfaction with the team. This behaviour is exacerbated by the leader's conflict avoidance management behaviour.

Team member TM012 (F). TM012 is member of a team which is diverse on knowledge, experience, nationality, and age, but has low diversity on gender.

She sees diversity on knowledge and experience as positively relating to team creative performance, diversity on age and personality relates to team performance, and gender diversity may relate positively to team performance. Diversity on nationality and culture relates positively and negatively to team performance.

Diversity on culture negatively relates to members' commitment and satisfaction with the team.

She feels that team performance is in parts below target; work is technologically outdated.

Diversity on age, gender, nationality, culture, and experience relates positively to task conflict. Nationality diversity relates positively to RC.

CTRC relates negatively to team performance and members' commitment and satisfaction with team.

Team leader's behaviour is seen as transactional, autocratic and unempathetic. Autocratic leadership behaviour is seen to negatively relate to team performance.

Team member TM013 (M). TM013 works in a homogeneous group in terms of knowledge, competence, experience, age, and gender, but diverse on nationality.

Diversity on nationality relates positively or negatively to team performance and members' commitment and satisfaction with the team.

TC is seen to occur with RC, and CTRC relates negatively to members' commitment to the team.

His team leader is seen to display Tfl-II and Trans L behaviour as he engages in leader-member exchange to reach best decision and shows a strong commitment to target performance.

Team member TM014 (F). The team of TM014 is highly diverse on knowledge, competence, culture, and nationality, and diverse on age but homogeneous on gender.

Diversity on age, knowledge and experience together relates to group performance, members' commitment to the team and their satisfaction with the team.

TC is seen to co-occur with RC.

This team member's perception of the behaviour of her team leader is one of Tfl-II behaviour, as the leader shows a strong commitment to team goals and creates trust and confidence in her members; of Tfl-IC behaviour as the leader encourages ongoing professional development and personal growth of members, makes interpersonal connections with team members; and of Tfl-IM behaviour for fostering a strong sense of purpose among members, explaining where the team and organisation is going, and inspiring members to improve their outcomes.

The team leader is also perceived to exhibit a Tfl conflict management behaviour by communicating, developing a high-quality leader-member exchange, developing a climate of cooperation, creating a common vision, and incorporating members' needs.

The leader also displays authoritative, non-participative leadership behaviour in managing conflict, which is seen to relate negatively to members' commitment and satisfaction with team.

Team member TM015 (F). The group of TM015 is diverse on experience and age, and homogeneous on gender and nationality/culture. She does not generally see a relationship between diversity and team performance. However, she feels that culture and background diversity may relate to team performance, and that diversity on experiences and cultural background affects members' commitment and satisfaction with the team.

In her team, CT may co-occur with RC, and CTRC relates negatively to team performance and members' commitment and satisfaction with the team.

The team leader exhibits some TfL conflict management behaviour by developing a high-quality leader-member exchange. At the same time, she is also seen to display conflict avoidance management behaviour.

Team member TM016 (M). TM016 is member of a diverse team on knowledge, experience, age, gender culture and nationality.

He feels that diversity on knowledge, expertise, experience, culture relates positively to team performance and learning. Diversity may also relate to members commitment and satisfaction with the team.

He also perceives diversity on knowledge, experience, age, gender, and nationality does not normally relate to TC, and that TC does not usually co-occur with RC. However, when CT occurs with RC (CTRC), its effect is harmful for team performance and members' commitment and satisfaction.

The team leader is seen to display TfL-IC behaviour by empathising with the needs of individual members. He also exhibits Tfl conflict management behaviour by communicating, developing quality leader-member exchange, compromising, and accommodating.

Team member TM017 (M). TM017 works in a diverse team on knowledge, experience, age, gender, and nationality; the team has low diversity on culture.

He feels that diversity on knowledge, experience/competence, age, gender, and nationality/culture enhances team learning and performance, that diversity on knowledge and experience may create TC, and that TC does not escalate or co-occur with RC.

His team leader's conflict behaviour has some elements of Tfl conflict management behaviour as the leader engages in communicating, developing quality leader-member exchange.

The leader also exhibits Tfl-II behaviour by creating trust and confidence in members, and Tfl-IM behaviour by fostering a strong sense of purpose among his team.

Team member TM018 (M). TM018 is member of a team diverse on nationality, knowledge and experience, and has low diversity on age. Diversity among team members relates negatively to members' commitment to the team and satisfaction with the team.

In his team, diversity on knowledge, experience, age and nationality relates to TC, TC co-occurs with RC, and CTTC negatively relates to team performance and members' commitment to the team.

His team leader displays Tfl conflict management behaviour for communicating, developing a high-quality leader-member exchange, compromising, and depersonalising conflict. The leader also exhibits Tfl-IM behaviour by fostering a strong sense of purpose.

Team member TM019 (M). TM019 works in a team with low diversity on education, knowledge, experience, and age, but highly diverse on nationality and homogeneous on gender. He considers the performance of his team as usually above average, particularly, when the objectives are clear.

He feels that diversity on education, knowledge, age and nationality has low relationship to team performance and members' commitment, and favouritism by the leader based on members' differences may affect their commitment.

Personality differences and Task type relate to team performance and members' commitment to the team, diversity on knowledge/qualification may affect TC; TC normally but not necessarily co-occurs with RC, and CTTC negatively relates to performance and members' commitment to the team.

The leader's conflict behaviour is described as TFL conflict management behaviour for communicating and developing a high-quality leader-member exchange, linking individual members and organisational goals, developing a climate of cooperation, and depersonalising conflict. The leader also exhibits TFL-II behaviour by showing strong commitment to goals.

Team member TM020 (M). TM020 is member of homogenous team on knowledge, competence, gender, and nationality; the team is however, diverse on age and culture. He sees the overall team performance as good, and diversity on age as relating to team performance. He also feels that diversity on age and culture relates to commitment and satisfaction with team, and that CT affects team performance.

His team leader displays TFL-IM and II behaviour, as well as TaL behaviour, as he appears to foster a strong sense of purpose among members and shows strong commitment to goals.

4.3. Findings and discussion

In this section, I discuss the relationships that have emerged from the data obtained from all the participants alongside examples from the data that gave rise to them in relation to the literature. Throughout this section, themes are discussed alongside the data from which they have emerged and supported by the literature. Data from the interviews are shown in “*italics*”, between quotation for short quotes, and shown indented with smaller fonts for long quotes.

4.3.1 Exploring the association of diversity with team performance and viability

The association of the investigated types of diversity with team performance and members’ commitment and satisfaction with their teams are tabulated in tables 4.5a and 4.5b and, for further clarity, shown pictorially in figure 4.5.

The literature suggests that group diversity exerts positive as well as negative effects on group performance, group cohesion and members’ satisfaction with the team (e.g., Ilgen *et al.*, 2005; Jackson *et al.*, 2003; Kerr & Tindale, 2004; Williams & O’Reilly, 1998; and others). Prevalent in the participants’ data are themes that concur with these studies as they suggest that various types of cognitive and demographic diversity are associated with group performance, members’ commitment to the team and their satisfaction with the team. However, the strength and effects, whether enhancing or harmful, differ among respondents. Another theme has also emerged in a minority of data which suggests that diversity, in general, is not associated with team performance or members’ commitment and satisfaction.

4.3.1.1 Diversity's association with team performance

In relation to the association of diversity with team performance, numerous meta-analyses and other studies suggest that cognitive diversity is more likely to be positively associated with group performance than demographic diversity (e.g., Horwitz & Horwitz, 2007; Jehn *et al.*, 1999; Joshi & Roh, 2009; Liu *et al.* 2020; Nijstad & Paulus, 2003; Peters & Karren, 2009; Van Knippenberg & Schippers, 2007). The themes that were drawn from most participants of this study concur with the findings of these studies. As was shown in section 4.1, the themes derived from data provided by team leader TL01, whose team is diverse on education, knowledge, competence, nationality, and gender, suggest strong positive relationships all round: “*diversity, it is very encouraging, it is very positive, ... it is enriching. ... [differences] contribute to more commitment, ... diversity is an added value.*” (TL01)

Similarly, team leader TL08, who heads a diverse team on education/knowledge, skills, and experience, and on age and gender, found that these differences are positively associated with her team's performance: “*The people who had better knowledge and better experience and more, let's say, mature competencies, they were really able to, let's say, push the others, the team or the group in the right direction and to guide them.*” (TL08) Also, team leader TL02 viewed the differences in knowledge among her team members as very beneficial for enhancing team performance and achieving the team's goals; she relayed:

Yes, knowledge differences, ... I have PhD holders and Masters holders. So, the PhD holder obviously has more knowledge ... she is enhancing the group performance ... as a team. Okay, so she has more experience, she has more information to provide us in terms of reaching our goals ... that is not saying that the Masters holders are not doing well, but they are benefiting from the knowledge of this specific lady, who has a different level of knowledge. (TL02)

A team member TM014 expressed similar views; she responded:

Yes, I believe that age and experience together are very important for group performance, as you have more knowledge which is reflected on more experience; this definitely has an impact on group performance. So, the group become wiser, more learning, sharing of knowledge, *sharing of experience, passing the experience.* (TM014)

Furthermore, there is evidence in the data, that a combination of diversity types explains its positive effect on performance. For example, team member TM012 suggested that knowledge and experience differences are interlinked and combined, positively affect team performance:

“The knowledge background, the only thing effective is the experience, also I think that the more you teach the course the more you have the knowledge about it, and you can expand more, this is one thing that will help the performance of the whole team.” (TM012)

Joshi and Roh (2009) showed that functional diversity (knowledge, skills, and experience) had a more substantial positive effect on performance than other diversity types of task-oriented diversity (e.g., education and tenure) which had very small effects on team performance (see also Horwitz & Horwitz, 2007; Liu *et al.*, 2020).

Team leader TL03, whose team is highly diverse on experience, competence, skills, knowledge, nationality/culture, age, and gender, also suggested that experience and competence diversity within his team enhance task performance:

This is because of their [team members'] experience ... and there is a huge difference of competencies because they are of different professional experience... And that reflects on their behaviour and reflects on the way they carry themselves at work. ... [a] positive thing, because differences in my opinion, create different possibilities, it is for people to learn new things. To advance in this professional and personal life, to expand in the way of serving, thinking. Meaning, it creates ... a diverse environment, is a very positive thing. (TL03)

Not very differently, respondent TL07, who leads a group which is diverse on knowledge, competency, age, gender, nationality, and culture, echoed similar sentiments:

I think it is positive, diversity is very important for the work force. So, in our departments since we are from different cultures, different backgrounds and majors, I feel like we can share our perspectives. And that help us to execute our processes in a certain way that help us to reach our goals and deliver for our students. I feel we are performing well, yeah. (TL07)

Cognitive diversity and team performance. The literature further indicates that task knowledge diversity is positively associated with team creative performance as it enables cross-fertilisation of ideas and helps develop innovative solutions (e.g., Argote & Ingram, 2000; Austin, 2003; Beckman & Haunschild, 2002; Burt, 2002; Chi *et al.*, 2009; Ferrier, 2001; Jackson *et al.*, 2003;

Jehn & Bezrukova, 2004; Mathieu *et al.*, 2008; Park *et al.*, 2018; Reagans & Zuckerman, 2001; Tyran & Gibson, 2008; Van der Vegt & Bunderson, 2005; Van Knippenberg & Schippers, 2007; Van Knippenberg *et al.*, 2004; Webber & Donahue, 2001; Williams & O'Reilly, 1998). In contrast, homogeneous groups, sharing of similar knowledge, experiences, and perspectives, are unlikely to have the potential for learning and problem-solving and may not be able to come up with creative ideas and solutions (see, e.g., De Dreu & West, 2001; Jackson *et al.*, 2003; Jehn *et al.*, 1999).

More evidence which concurs with this literature is visible in the responses of the participants of this study. For example, team leaders TL08 and TL03 observed that differences in knowledge and experience, not only enhance team performance but also, motivate members to come up with creative and innovative ideas:

The people who had better knowledge and better experience and more ... mature competencies ... were really able to ... push the others, ... in the right direction and to guide them. ...the team was just having a fresh member and he didn't have long experience, but he was very proactive and motivated. ... he was always trying to bring new ideas. And one of those ideas ...was really creative and I supported it and I even had given him the leadership of that project. (TL08)

So, I think we build this culture to respect the right of differences; so, we think it is very positive and we are comfortable about this, and this really affects the performance of this department. ... Our operations require creativity, thinking outside the box. If we continue doing what we have been doing for years and years, we are not going to compete in the market. So, we need to think outside the box, to do something different. (TL03)

Team member TM010 expressed more vividly the view that diversity in all its forms, enhances team performance, increases team creativity and in contrast with much of the literature, members' commitment, and satisfaction with the team:

I see the differences as an advantage for us, as an opportunity for us to be creative and to reach to the higher levels of performance, I would be very committed; we have high satisfaction rate. I come to work early because I am motivated, I am engaged, because I believe that we all complement each other and we all add value to the department, with the differences that we have. (TM010)

Similarly, respondents TM012, a member of a diverse team on knowledge and experience, and on age, nationality, and culture, observed that diversity on knowledge and culture positively relate to creative performance: “When there are differences you can find completely different points of view about a subject.” (TM012). This respondent has also offered some contrasting findings, as she reported that differences in age and experience have an enhancing, as well as impeding effects both on team performance, creativity, and viability (members’ commitment and satisfaction):

About the age, I do not know if it is good or not, I really love to work with the old people than with the younger ones. ...because of the experience, because I can learn so much and they are more humble frankly, and they do not stick to their opinion. The young ones they are more arrogant, ...proud of what they know, so they act like that. ... in term of age we can say ... that the senior members usually read the words exactly and they do exactly what is asked for in the task, because of their experience. But the less experienced, they just want to be creative and want to show their own personal thoughts and perspectives (TM012)

Participants TM017, a member of a very diverse group expressed a similar view: “*For sure it adds to the performance of the group because as you know in groups, we learn from each other, so if we have ... diversity that means we will learn and gain knowledge.*” (TM017), so did team leader

TL08:

And one of those ideas ...was really creative and I supported it and I even had given him the leadership of that project. In parallel, I had in the team another, a more competent person who had better experience, and he didn’t like that idea. And he was trying to destroy that person, saying that “this is not a good idea. You should not waste your time doing that idea.” And the first person was really disappointed. (TL08)

These responses are in accord with the information processing perspective which suggests that cognitive diversity enhances group performance, as cognitively heterogeneous groups are able to solve complex problems and develop innovative solutions by drawing on cross-fertilised task-related knowledge and experiences of diverse group members (e.g., Chi *et al.*, 2009; Jackson *et al.*, 2003; Peters & Karren, 2009; Van der Vegt & Bunderson, 2005; Van Knippenberg & Schippers, 2007).

Other respondents indicated that diversity on knowledge has no effect on team performance, for example, participant TL09 offered an emphatic: “*No [there is no effect of team member differences] on group performance.*”^(TL09). Also, team leader TL06, who leads a diverse team on knowledge, experience, age and nationality; stated: “*Based on group performance, I don’t think it [diversity on knowledge/experience and age] will have a major effect..., as long as it’s a group performance.*”^(TL06). Team member TM015 held a similar view: “*I do not think these differences have any effect because we are working as a team most of the time frankly speaking. ... So, the above mentioned [differences in experience and age] are not interfering with team performance.*”^(TM015); so, did team member TM019: “*... the level of academic qualification, age and nationality, they do not have huge effect.*”^(TM19) These findings are supported by Schippers *et al.*’s (2003) study which found little or no main effect; instead, they reported that the association of diversity with group performance, commitment and satisfaction was mediated by group reflexivity and moderated by outcome-interdependence and group longevity; and by Bell *et al.*’s (2011) meta-analysis which reported that functional background diversity had a small positive relationship with general team performance and innovation.

While acknowledging the association of cognitive diversity with team performance, team leader TL03 was equivocal about its direction, indicating that such an effect might be positive or negative:

In my department there is a huge difference in terms of knowledge between individuals. This is because of their experience ... and there is a huge difference of competencies because they are of different professional experience... And that reflects on their behaviour and reflects on the way they carry themselves at work, and eventually I have to deal with these challenges within the department. It [diversity] does [have], positive [effect] and negative as well.
(TL03)

These findings are supported by Gebert *et al.*'s (2006) review of the literature on functional diversity and its association with team innovative performance which showed that functional diversity had positive as well as negative or non-significant relationships with innovation.

Demographic diversity and team performance. In relation to the association of demographic diversity with team performance, the themes that emerged from the respondents' data, again showed mixed results.

I think it is positive, diversity is very important for the work force. So, in our departments since we are from different cultures, different backgrounds and majors, I feel like we can share our perspectives. And that help us to execute our processes in a certain way that help us to reach our goals and deliver for our students. (TL07)

Data from Team member TM020, on the other hand, threw up the theme that diversity on age has a weak association with team performance, members' commitment, and satisfaction with the team: "*I think it [diversity on age and cultural background] affects, but it is a minor effect.*" (TM020) TM019 further suggests that age, nationality and education, all have very weak effects on team performance: "*as it concerns the level of academic qualification, age and nationality, they do not have huge effect. Levels of performance and commitment ... depend on the nature of the person ... and the nature of the task, more than the qualification, age, nationality, and so on.*" (TM019)

Relating to the effect of gender diversity, again the participants' data showed mixed results, thus: "*Gender, it enhances performance. It is not negative in whatsoever way; ... gender is positive, in my opinion, because I can see that different genders when they work together, they perform better.*" (TL03)

Team member TM012' response indicated positive and negative effects:

The second thing ... female and male, girls want to do the work faster. ... In my department I am the only girl here, so I do not see any discrimination from any type, but they are humble in

dealing with me and are very polite sometimes. If they want to say something, they do not say it because they do not want to hurt me because I am the only girl with them. (TM012)

Moreover, team member TM011 suggested that gender, experience, competence, and age diversity negatively and positively relate to team performance:

So, when the HoD is a female, she tries to put maximum load on the females to make sure that the work will be done. ... when it comes to the assignments asked of the males, let's say, the rule is 80/20; we give them 20 and we are not sure if they will do it... ...as I have told you because if its gender, we do give tasks to the females rather than to the males to make sure the task will finish quicker; to younger more than older; if something is very technical, we will give it to someone who is more competent and with higher experience. (TM011)

Bell *et al.* (2011) found that race and gender diversity had small negative relationships with team performance, while Joshi and Roh's (2009) meta-analysis showed that the direct effect of diversity on performance is zero; and that diversity on gender, race/ethnicity, and age, had very small significant negative effects on team performance. Furthermore, Schwab *et al.* (2016) reported that as gender diversity increased from zero level, team performance declined, but as gender diversity increased further, performance improved, then with further increases in diversity, performance diminished.

Looking at age and nationality diversity's effect on performance, team leader, TL02 stated that nationality diversity might not have a significant effect while age diversity relates negatively to team performance:

"In terms of nationality also I don't feel that the nationalities are affecting the group performance. But maybe the age does because as you know older people work differently from young adults, so older people's performance is definitely affecting the group performance as a whole." (TL02)

Richard and Shelor (2002) and Richard *et al.* (2004) found that the interaction between top management team's age diversity and context displayed a curvilinear relationship. Furthermore, Ali *et al.* (2011) found board gender diversity had a positive linear relationship with Productivity, and age diversity had negative linear and nonlinear relationships with return on assets. Ali *et al.* (2014) re-affirmed the positive association of board members' gender

diversity with employee productivity but showed a negative linear and curvilinear relationship between board age diversity and return on assets performance.

Team leader TL03 further reported that diversity on nationality and culture has positive and negative effects on performance

Yeah, I will just say that diversity and differences in cultures, I mean it teaches many of the groups within the departments stuff about the things they don't know, about others cultures, motivates them to perform in a better way. ... In other situations, where I say, it is negative because any conflict over work (TL03)

Lau and Murnighan (2005) found that ethnicity and gender diversity faultlines is more associated with team learning, satisfaction, and group performance than single heterogeneity attributes. Van Knippenberg and Schippers' (2007) review of the literature suggests that the effects of faultlines and cross-categorisation are not straightforward, and that faultlines have a curvilinear relationship with group outcomes.

Differences on nationality were seen by team leader TL06 to create faultlines and sub-groups which undermine group performance: "*I said before, there would be a sub-division [non-Saudis/Saudis] where they would have 30 percent to 40 percent over-performing.*" (TL06); and team member TM013 concurred with this view: "*Yes, it has a lot of effects.*" (TM013)

On the other hand, team leaders TL04 and TL02 felt that diversity on nationality does not affect team performance: "*I believe the differences they have externally whether their culture or their nationality or even gender, which it doesn't apply in our case, wouldn't affect their performance.*" (TL04); "*In terms of nationality also I don't feel that the nationalities are affecting the group performance.*" (TL02) The literature attributes the mixed effect of diversity on team performance to the effect of unaccounted for moderating variables (e.g., Gevers, Rispens & Li, 2016; Gonzalez & Denisi, 2009; Lovelace *et al.*, 2001; Mohammed & Angell, 2004; Randel, 2002; Valls *et al.*, 2016).

4.3.1.2 Diversity's association with members' commitment and satisfaction with the team

The literature on diversity suggests that while diversity might have positive effects on group performance, it can also undermine effective group communications and cohesion; negatively affecting team viability (i.e., members' commitment and satisfaction) (e.g., Brewer & Brown, 1998; Güver & Motschnig, 2017; Mello & Delise, 2015; Milliken & Martins, 1996; O'Reilly *et al.*, 1997; Schippers *et al.*, 2003; Van Knippenberg *et al.*, 2004; Williams & O'Reilly, 1998). Team leader TL04 observed that low diversity or homogeneity on age and gender enhances commitment to, and satisfaction with the team: "*You know having a team which is not so diverse would be high in synergy. ... Definitely satisfied.*"^(TL04) Concurring with this view, Bowers *et al.*'s (2000) meta-analysis found that groups that are homogeneous with respect to ability, personality or gender achieve higher levels of performance than groups that are heterogeneous on these attributes. Team member TM012 reported a similar experience: "*I think if you work with people from the culture related to you or the group is homogenous you find that this group of people work smoothly together.*"^(TM012) This view finds support from Schippers *et al.*'s (2003) findings which suggest that less diverse groups are more satisfied and committed than highly diverse groups, and also from Wiersema and Bantel (1992) who reported that homogeneous groups were more cohesive and more productive than heterogeneous groups as their similar attributes result in more efficient group processes and better performance.

There are, however, contrasting exceptions in the literature reporting a positive association of diversity with team viability (e.g., Foo *et al.*, 2006). Team members TM010 and team leader TL02, whose teams are highly diverse, explicitly concurred with this literature as they viewed

differences within their teams as enhancing for members' commitment to the team and satisfaction with being in the team:

I see the differences [on knowledge, competence, education / experience, age, gender, nationality/ culture] as an advantage for us, as an opportunity for us to be creative and to reach to the higher levels of performance, I would be very committed; we have high satisfaction rate. I come to work early because I am motivated, I am engaged, because I believe that we all complement each other and we all add value to the department, with the differences that we have.

So, if we reach out to each member with this perception and this value, we will have high commitment and high satisfaction rates of each team member. (TM010)

...in terms of members' commitment to work as a team... having these differences, I believe ... it depends on what kind of differences. like in terms of the knowledge and competency differences; they are enhancing the work commitment of the team, but also, enhancing ... member's satisfaction within the team. (TL02)

Some respondents, for example TL08, TM015 and TM014, whose teams are very diverse, felt that diversity may positively or negatively affect members' commitment and satisfaction with the team; they reported:

... sometimes we ... exceed the objectives but for sure, they [team members] went through many challenges. It was not easy especially when having a diversified group of people working together. ... diversity either will build a strong relationship between the team members, or it will destroy this relationship. ... I can say ...sometimes it was not that good relationship. (TL08)

Of course, there are different experiences and backgrounds that affect the commitment and satisfaction, in a positive or negative way. (TM015)

Definitely [diversity] affects members' commitment and satisfaction with team], we are as I said, in my department, we are highly diverse, coming from different backgrounds, but when we are together, ...we are working as a team... (TM14)

While team member TM019 saw a very weak association between diversity and team viability: "*Levels of performance and commitment get down to the nature of the task. ... more than the qualification, age, nationality, and so on.*" (TM019), and team leader TL06 saw no association between diversity on knowledge, age, and nationality with team commitment; she stated: "*Okay, So, let's start with the members committed to work, yes, I don't think that there are any effects from these differences, because they are already committed and remember that the younger age wants to prove themselves.*" (TL06). This view is supported by

Horwitz and Horwitz's (2007) meta-analysis which reported no discernible effect of team diversity on team integration (members' commitments and satisfaction with the team).

Participants also offered mixed responses with regards to the effect of nationality/culture diversity on team viability, for example, team member TM013 observed that differences in nationality and culture in his team positively or negatively affect members' commitment and satisfaction with team: *"In some cases, yes, it [members' commitment and satisfaction] increases, and, in some cases, it decreases."* (TM013), while team leader TL05 felt the effect was positive: *"Okay, I think it is... healthy to be in an environment where a variety of people coming from different background; it is beneficial to the group. It has been beneficial to them, and different cultures. ... So, I think it has a positive effect. So, individual member's commitment to work has increased."* (TL05) Team leader TL02, on the other hand reported only a negative effect: *"But I believe, like, the nationality is affecting negatively because sometimes people don't know how to deal at work with people from different nationality and culture."* TL02.

The themes that were extracted in sections 4.3.1.1 and 4.3.21.2 show that diversity within workgroups is perceived by some respondents to: enhance group performance, increase motivation, benefit group learning, increase team cohesion and members' satisfaction, and create supportive team relationships. Diversity is also perceived by other respondents to harm group communication, performance, and viability. On the other hand, some respondents also reported that homogeneity benefits team performance, enhances communication between team members, and increases team cohesion. Other respondents perceived homogeneity to undermine group cohesion, and harm innovative performance and the development of creative ideas. Analysis of the data suggests that the effects of diversity on team communication, and

team performance and viability, as perceived and articulated by the interviewed participants are ambiguous, both in extent and direction. There were also responses which suggest that there are no associations between diversity and team performance, members' commitments, and satisfaction. These findings thus indicate that the effects of diversity on team performance and viability are ambiguous, both in extent and direction. These mixed findings are tabulated in table 4.5a and 4.5b, and pictorially shown in figure 4.5; they cover all the possible variations in the investigated relationships, pointing to the theoretical saturation of the data (Strauss & Glaser, 1967). The inconsistent findings of this study are also supported by a large number of empirical studies and meta-analyses (e.g., Ali *et al.*, 2014; Bell *et al.*, 2011; Bowers *et al.*, 2000; Chen *et al.*, 2017; Chi *et al.*, 2009; Earley & Mosakowski, 2000; Gevers *et al.*, 2016; Harrison & Klein, 2007; Horwitz & Horwitz, 2007; Jackson, *et al.*, 2003; Mohammed & Angell, 2004; Pelled *et al.*, 1999; Valls *et al.*, 2016; Van der Vegt & Bunderson, 2005; Van Knippenberg *et al.*, 2004; Van Knippenberg & Schippers, 2007; Williams & O'Reilly, 1998). This inconsistency in the findings also indicates mediator/moderator influences and non-linear relationships (e.g., De Dreu & Weingart, 2003; Mannix & Neale, 2005; Simons & Peterson, 2000; Taggar, 2002).

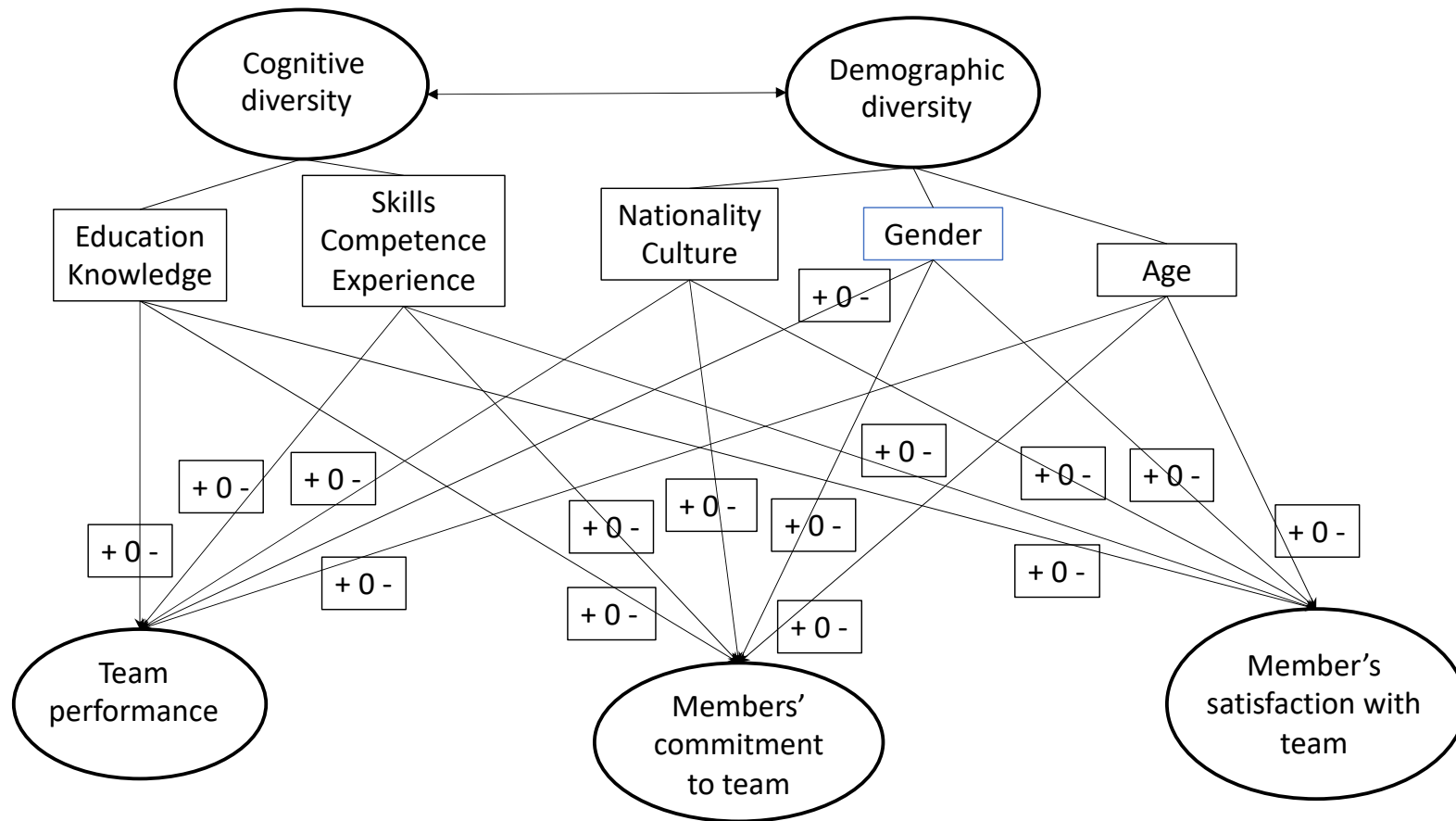
Table 4.5a Effects of diversity on team performance

Participant	Cognitive Diversity		Demographic Diversity		
	Education/ Knowledge	Experience/ Competence	Age	Gender	Nationality/ Culture
TL01 (M)	Positive	Positive		Positive	Positive
TL02 (F)	Positive	Positive	Negative		No effect
TL03 (M)	Positive	Positive		Positive	Positive/Negative
TL04 (M)					No effect
TL05 (F)	Positive	Positive			Positive
TL06 (F)					Positive/Negative
TL07 (F)	Positive	Positive	Positive	Positive	Positive
TL08 (F)	Positive / Negative	Negative	Negative	Negative	
TL09 (M)	-	No effect	No effect	No effect	No effect
TM010 (M)	Positive	Positive	Positive	Positive	Positive
TM011 (F)				Negative	
TM012 (F)	Positive	Positive	Positive/Negative	Positive	Positive/Negative
TM013 (M)					Positive/Negative
TM014 (F)	Positive / Negative	Positive / Negative	Positive/Negative		Positive/Negative
TM015 (F)	No effect	No effect	No effect		Positive/Negative
TM016 (M)	Positive	Positive			
TM017 (M)	Positive	Positive	Positive	Positive	Positive
TM018 (M)					
TM019 (M)	Positive / Negative	Positive / Negative	Positive/Negative		Positive/Negative
TM020(M)			Positive/Negative		Positive/Negative

Table 4.5b Effects of diversity on members' commitment and satisfaction with team

Participant	Cognitive Diversity		Demographic Diversity		
	Education/ Knowledge	Experience/ Competence	Age	Gender	Nationality/ Culture
TL01 (M)	Positive	Positive		Positive	Positive
TL02 (F)	Positive	Positive	Negative		Negative
TL03 (M)					
TL04 (M)			Negative	Negative	Negative
TL05 (F)					Positive
TL06 (F)	No effect	No effect	No effect	No effect	No effect
TL07 (F)			Positive	Positive	No effect
TL08 (F)	Negative	Positive / Negative	Positive/Negative	Positive / Negative	
TL09 (M)		No effect	No effect	No effect	No effect
TM010 (M)	Positive	Positive	Positive	Positive	Positive
TM011 (F)					
TM012 (F)					Negative
TM013 (M)					Positive/Negative
TM014 (F)	Positive / Negative	Positive / Negative	Positive/Negative		Positive/Negative
TM015 (F)		Positive / Negative			Positive/Negative
TM016 (M)	Positive / Negative	Positive / Negative	Positive/Negative	Positive/Negative	Positive/Negative
TM017 (M)					
TM018 (M)	Negative	Negative	Negative		
TM019 (M)	Positive / Negative	Positive / Negative	Positive/Negative		Positive/Negative
TM020(M)			Positive/Negative		Positive/Negative

Fig. 4.5 Diversity's relationship to team performance, members' commitment and satisfaction with team



4.3.2 Diversity's association with intragroup conflict and its effect on team performance and viability

Research shows that work-group diversity is associated with task and relationship conflicts, and that this association is generally seen as negative, particularly that of relationship conflict (Ayoko *et al.*, 2002; Chatman & Flynn, 2001; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Pelled, 1996; Olson *et al.*, 2007). However, empirical studies, particularly regarding task conflict, produced inconsistent results, reporting positive and negative effects, or no effect (e.g., Pelled *et al.*, 1999; Jehn *et al.*, 1999; O'Reilly *et al.*, 1997; Williams & O'Reilly, 1998). These mixed findings are also reflected in the data and emerged themes of the participants in this study. For example, differences in members' education, according to team leader TL01, relate to task conflict, and their effect is positive for team performance, while the relationship of age diversity to task conflict is seen to have negative effect for team performance. This team leader did not experience any noticeable relationship between gender diversity and task conflict, and consequently no effect on team performance. On the whole, he viewed task conflict as positive for team performance as it '*results in better quality of work outcome and new ideas*' (TL01). Team member TM010 also viewed differences in work tasks as healthy as they enhance team creativity:

Different perspectives, but they are all around the task itself, which I think is healthy. This is the healthy part of the conflict because we encourage the differences, when it comes to opinions, we don't want everybody agreeing on the same point; if we all agree, we will end up doing the same thing over and over again. For the task conflict, we should encourage different opinions. ... So, the task conflict and the disagreement around the task conflict, I think is very healthy in the department; to be creative. (TM010)

Team leaders TL08 observed that diversity on knowledge, experience, competence, gender, and age increases task disagreement and team conflict: "*But many times, we had to try to solve the conflict that was occurring between the team members because of these differences.*" (TL08)

Team leader TL06 held similar views: *“I think they [differences] would ... would increase task conflict. Definitely, especially when there is a different background, different knowledge, different experience, this is where there is high disagreement in task.”* (TL06)

Team leader TL03, on the other hand, viewed the combination of differences in age, knowledge and experience had mixed effects on task conflict:

...for me age sometimes; most of the time related to knowledge and experience..., of course, most of the time. Some of the elderly faculty members have way more experiences and knowledge than the younger ones. Therefore, you can see how it affects disagreement over task, ... So, I would say experience and age have big impact on resolving task problems before it becomes a personal conflict that causes delays. (TL03)

Respondents again differed in their views on the association of nationality and culture with task conflict. Team member TM012 and team leaders TL03 and TL02 indicated that these differences cause task conflict and that the effect is negative for team performance and members' commitment and satisfaction:

I think there is [a relationship between nationality diversity and task conflict] because first of all they understand each other differently, not all of them get it straight to the point what exactly we mean by this option. ... To talk with you frankly, people here in Saudi Arabia take everything personally. (TM012)

In other situations, where I say, it [culture] is negative because any conflict over work, in my opinion, if it is not dealt with immediately, it will create personal problems, and those problems pile up eventually then they will create a bigger problem. (TL03)

They ... misunderstand each other sometimes; and this creates personal conflicts that affect negatively on the satisfaction of the team member and the commitment to the team. (TL02)

Studies also suggest that diversity undermines effective communications and cohesion within the group, increases the likelihood of members' dissatisfaction and their failure to identify with the group, harms group performance, members' commitment and satisfaction with the team and results in dysfunctional conflicts (Milliken & Martins, 1996; O'Reilly *et al.*, 1997; Van Knippenberg *et al.*, 2004).

Team leaders TL05, TL04 and TL09, on the other hand, saw no association between these differences and task conflict: *“Honestly, it's totally irrelevant.”* (TL05); *“Usually, the*

differences that you have just mentioned, they do not feed much into disagreements over work tasks.” (TL04), and *“There is no relationship [between diversity and task conflict].”* (TL09)

Furthermore, regarding gender diversity, team leader TL03 thought that it negatively relates to task performance if task conflict becomes relationship conflict: *“[Does gender difference have a negative relationship with work task?] When there are personal conflicts between them? Yes, big time.”* (TL03) Team member TM011 also indicated that gender diversity causes task conflict: *“at a certain point, the conflict was high, especially between males and females, yeah. ... It was always between the two genders. Always the females believe the males do nothing and the females always do everything.”* (TM011)

Regarding the effect of task conflict and relationship conflicts on team outcome, research suggests that the co-occurrence of task and relationship conflicts undermine the positive effects of task conflict by giving way to the onset of interpersonal hostilities that characterise relationship conflict (De Wit *et al.*, 2012; Jehn, 1995; Jehn & Bendersky, 2003; Mooney *et al.*, 2007; Simons & Peterson, 2000; Yang & Mossholder, 2004). Respondents seem to echo these studies, as for instance, team leader TL03 affirmed that relationship conflict is negatively related to team performance, commitment and satisfaction: *“The negative personal relations would certainly affect negatively, sometimes it delays the work. People who have conflict, they intentionally avoid working with each other. Therefore, any work with deadlines; they have to submit at a certain deadline, would be eventually postponed.”* (TL03) and TL08 saw the onset of task conflict as positively and negatively affecting team performance and satisfaction:

Sometimes, it [conflict] is negative and sometimes it is positive. ... Sometimes, I think maybe the selection of the team or the assignment of the tasks for team members was not performed appropriately. And this might cause this problem. And People were dissatisfied because maybe this was not the right task that should not be assigned to them. (TL08)

Team leader TL08 added: *“I think it [task conflict] is good sometimes, to know that we are different. We have different views.”* (TL08); the positive effect of task conflict is also seen in the responses from team leaders TL05: *“So, there is conflict always, but it is work-related always; such conflict is healthy, in my opinion.”* (TL05); and TL02 *“Work disagreement is good.”* (TL02)

Regarding the relationship between task and relationship conflicts, most participants experienced an unmistakable association between these conflicts within their teams, where, often than not, task conflict escalates to relationship conflict. For example, TL01 felt that association of task conflict with relationship conflict is inevitable: *“It is very difficult to disassociate work from personal aspects when it comes to disagreements, because they build on each other. ... In many cases, they are correlated.”* (TL01) He further added that prolonged task conflict becomes relationship conflict, and their co-occurrence is damaging: *“This is the role of the leader, [not to] ... leave problems unresolved, because that would only add fuel to the fire. ... Oh, it [CTRC] is very counter-productive, it is negative, ... it is time consuming; it is mind consuming. ... There has to be an end. It affects our business, ... it affects our mood. ... very highly negatively affect commitment and satisfaction.”* (TL01) Other participants concurred with this view:

Definitely, yes. I will give you an example. ...it does in some cases turn to personal tension if there is disagreement. Of course, let's say, work disagreement between senior instructors, senior teachers and novice teachers; this is when the tension becomes high. Novice teachers ... think that the experienced teacher offering help, that obviously means you are not fit to do your job; so, this is where they take it personal. (TL06)

There is no doubt that disagreements over work tasks might become personal tension between individuals (TL04)

... any conflict over work, in my opinion, if it is not dealt with immediately, it will create personal problems, and those problems pile up eventually then they will create a bigger problem. (TL03)

Yeah, it happened actually, that it [task conflict] became personal issues. I had a case actually. (TL08)

I think in most of the cases if there is personal tension there is definitely a drift of the groups, they develop tension between them they do not do the task they want to deliver in the right way, and they lose the spirit to ... deliver or work as a team. They will be disoriented. They do not want to finish the task you gave them, and they will ask for more description about the task and “why you ask us to do this, I think this is already done, I already solved this issue”. ... I think they just do not want to do the work; they do not have the courage or passion to finish this. (TM012)

Highly effective (TC with RC), it's negative to the maximum, as I told you we will not do the job. ... not do it with passion. (TM011)

There is a strong link and very strong relation between the personal conflict and task conflict with the team performance, of course. ... if I experience conflict, whether task conflict or personal conflict there is still a level that I can handle the situation and if I reached to a specific level that I cannot handle the situation anymore, and I cannot manage the situation anymore, my performance will be affected, my productivity will be affected, and my commitment will be affected. ... we had this personal with task conflict with ... two team members. Their productivity level was lower ... than the rest of the team ... They were coming late, no commitment, no performance, no engaging, no motivation, just everything was just low because they were just experiencing this negative feeling, dealing with conflict. ... In personal conflicts, the level of performance, the level of satisfaction, the level of engagement decreases. dramatically ... CTRC harms team performance and undermines members' commitment and satisfaction with team. ... It is very hard, when you have a team experiencing high conflict, whatever the type of conflict is, whether personal conflict or task conflict. It is very hard to have team members committed and performing and satisfied. ... The personal conflict that happened, is the worst in my department; I remember that. It was when we started having task conflicts, and the task conflicts just continued, and it wasn't solved at an early stage, which ended up being a personal conflict. ... one team member; ... wanting ... attention. So, she had to disagree with everything we had to do, always she had different ideas, different thinking. At the beginning we took this as positive; we took this as an advantage to go with the flow and understand what she has in mind, maybe she had something different; so, let's give it a try, let's understand what she is trying to explain. So, it started it out with the task conflict as she had different ways of doing the work, we appreciated, we listened, we gave it a try but because this task conflict wasn't solved at this stage, it became a personal conflict, this is when 'I disagree with you because I do not like you as a person'; not disagreement around the task, and this is the worst case. (TM010)

The harmful effects of CTRC were also reported by Team members TM014, TM013 and TM012, and team leader TL06 expressed similar views:

I have seen different situations where disagreements or personal tensions started to evolve within a meeting where we are distributing tasks... (TM014)

... you start to explain, to give your opinion but sometimes they will ignore your opinion. ...and that may create conflict, if they do not listen to my opinion then I will just by-pass the point and I will not again open the same discussion to avoid the task disagreement becoming personal. ... Yes, sure it [task disagreement] will be taken as personal. It will affect member's commitment to the team. (TM013)

Okay, it [conflict] starts as a task issue, these tasks are supposed to be done by two members; each one thinks it should be done his way, so when they sit to talk to each other they do not listen to each other, they cannot merge their ideas to come up with a solution to this issue,

each one just wants to prove his point. So, it was a task issue, but it became a personal issue...., so when I want to prove my opinion, I do not want to listen to what other people are saying, or what actually is going on, so it turns into a personal conflict. And when it becomes personal conflict, it will never go back to normal. (TM012)

It definitely affects, of course. Together? I don't think that is a good thing. Definitely it has a negative effect, if it is from both sides, meaning you don't want to work with someone with whom you have tension and personal issues. ... I think it will have an effect; I think actually it will have. Commitment to the team, yes, I think it will have effects on the individual's commitment to the whole team. (TL06)

These field observations are supported by the literature, as researchers acknowledge that understanding the association between diversity, intragroup conflicts and group outcome essentially requires an understanding of the interrelationships between conflict types (e.g., De Wit *et al.*, 2011; Greer & Dannals, 2017). Furthermore, the high possibility of task conflict co-occurring with relationship conflict is widely accepted by academics in the field, and the negative effects of their co-occurrence on team performance, cohesion and members' satisfaction are well documented (e.g., Behfar *et al.*, 2016; Dreu & Weingart, 2003; de Wit *et al.*, 2012; Jehn *et al.*, 1997; Tekleab *et al.*, 2009).

The literature further suggests that task conflicts invariably give rise to relationship conflicts in diverse teams, particularly where there is low trust, high performance pressure, negative climate, competitive conflict management practices, particular personality traits, and over low importance issues, high emotionality and problems with low resolution potential (DeChurch *et al.*, 2007; Greer *et al.*, 2008; Huang, 2010; Kerwin & Doherty, 2012; Kozusznik *et al.*, 2020; Peterson & Behfar, 2003; Rispens, 2012; Simons & Peterson, 2000; Tidd *et al.*, 2004; Van den Berg *et al.*, 2014; Xie & Luean, 2014; Yang & Mossholder, 2004).

Team leader TL05, however, indicated that task conflict may escalate to personal conflict, but such an association is not investable: “*Okay, I would say, sometimes.... not most of the time... It's not like something common; but it did happen like once or twice.*” (TL05)

Moreover, the co-occurrence of task and relationship conflict may result in the formation of conflicting sub-groups that harm team performance and integration; team leader TL04, who leads a diverse team on nationality, observed:

It [CTRC] definitely affects team members performance ... negatively ... the impact of disagreement over work tasks and personal tension would definitely create a negative culture, and definitely would break and polarise the environment ... going back to diversity that we spoke about right at the beginning, it will polarise the department and it will have teachers make parties, and parties would eventually clash. ... Now if not defused, if not fixed, without doubt the disagreement with the personal tensions we have would affect the faculty's or the teachers' commitment and their satisfaction. And whenever their commitment is low, and the satisfaction is low, their performance is low. So, this would be the perfect recipe for an utter devastation for the department whatever the department does. (TL04)

Lau and Murnighan (1998) argued that conflicting subgroups are more likely to form when the demographic characteristics within a group that are related to the group's task may form a strong faultline which is likely to heighten subgroup's salience and lead to shorter sensemaking processes, and that once formed, subgroups are more likely to persist.

Alongside the negative effects of CTRC on performance and members' commitment and *satisfaction*, CTRC is also seen to harm team creativity and innovation (Greer & Dannals, 2017; To *et al.*, 2017). Some participants concurred with this literature, for example, team leader TL07 observed:

It [CTRC] will highly affect teams' performance. ... in a negative way because, personally, I won't be satisfied with the whole situation; this will affect my ability to be productive, to be innovative, to be creative. So, I feel everyone else would feel the same. If disagreement occurs and people take it seriously and personally, they will not be productive and innovative. We have to solve this before we go a step further otherwise, we are not going to reach any common goal ... Yeah, I mean Negative. If I have a disagreement with someone over work and they didn't take my perspective into consideration, then I wouldn't speak to that person the next time. I wouldn't share my opinion the next time. (TL07)

One or two participants suggested that task conflict is not likely to escalate to become relational conflict: *"There hasn't been a task conflict actually that was taken personally, ... It never happened actually. We are trying to be, what I love about UBT, is a community actually. So, everything we get involved in, tasks we've been given doesn't turn to be a*

personal issue. They usually take it professionally.” (TL07). Team leader TL04 held the same view:

However, if it does take that path, whereby individual task differences that we’ve just mentioned become personal tensions, then what we have to do is to resolve, we have to make sure whatever the dispute we have between two teacher or two faculty members, doesn’t develop, doesn’t grow into the level whereby we cannot fix it, or whereby the situation is irreversible. (TL04)

The themes that were extracted in this section from all the participants in relation to how do they view the association of diversity with intra-group conflicts (task conflict, relationship conflict and CTTC) and through these conflicts with team performance and members’ commitment and satisfaction with their teams are shown in figure 4.6a and figure 4.6b. An examination of figure 4.6a shows that the effect of cognitive and demographic diversity on task conflict was seen as mixed, where some respondent viewed it as positive, others as negative, and yet others felt there was no relationship. Furthermore, the effect of cognitive (education/knowledge) on relationship conflict was seen as negative, and that the effect of demographic (nationality/culture) diversity on relationship conflict as mixed. Moreover, the findings indicate that demographic diversity results in poor communications and misunderstandings and work conflicts; diversity is associated with task and relationship conflicts; nationality and gender (female) faultlines cause task conflicts and relationship conflicts and harms group performance; high diversity (nationality, age, gender, experience) increases the co-occurrence of task and relationship conflicts and harms team effectiveness; homogeneity (age, gender, culture, nationality and experience) decreases intra-group conflicts and enhances group performance.

Examining figure 4.6b shows that some participants of this study reported that the effect of task conflict on team performance and members’ commitment and satisfaction was positive while other participants reported a negative relationship. Furthermore, participants felt that unresolved task conflicts transform into relationship conflicts; task disagreements cause friction and personal conflicts which then undermine the team’s performance; co-occurrence

of task and relationship conflicts adversely affects work and relationships, and consequently group cohesion, member's satisfaction, and group performance. The findings suggest that diversity, both cognitive and demographic, causes task conflicts which are likely to transform into relationship conflict, while homogeneity decreases conflicts. So, the extracted themes indicate that diversity causes conflicts; that these conflicts are mostly task related but may escalate to relationship conflicts, particularly, if they remain unsolved, undermining team performance and cohesion. These observations are supported by the literature, as researchers acknowledge that understanding the association between diversity, intragroup conflicts and group outcome crucially requires an understanding of the interrelationships between conflict types (e.g., De Wit *et al.*, 2011; Greer & Dannals, 2017). Furthermore, the high possibility of task conflict co-occurring with relationship conflict is well documented in the literature, and the negative effects of this co-occurrence on team performance, cohesion and members' satisfaction, are also widely reported (e.g., Behfar *et al.*, 2016; Dreu & Weingart 2003; de Wit *et al.*, 2012; Jehn *et al.*, 1997; Tekleab *et al.*, 2009).

Figure 4.6a Association of diversity with task conflict, relationship conflict and CTRC

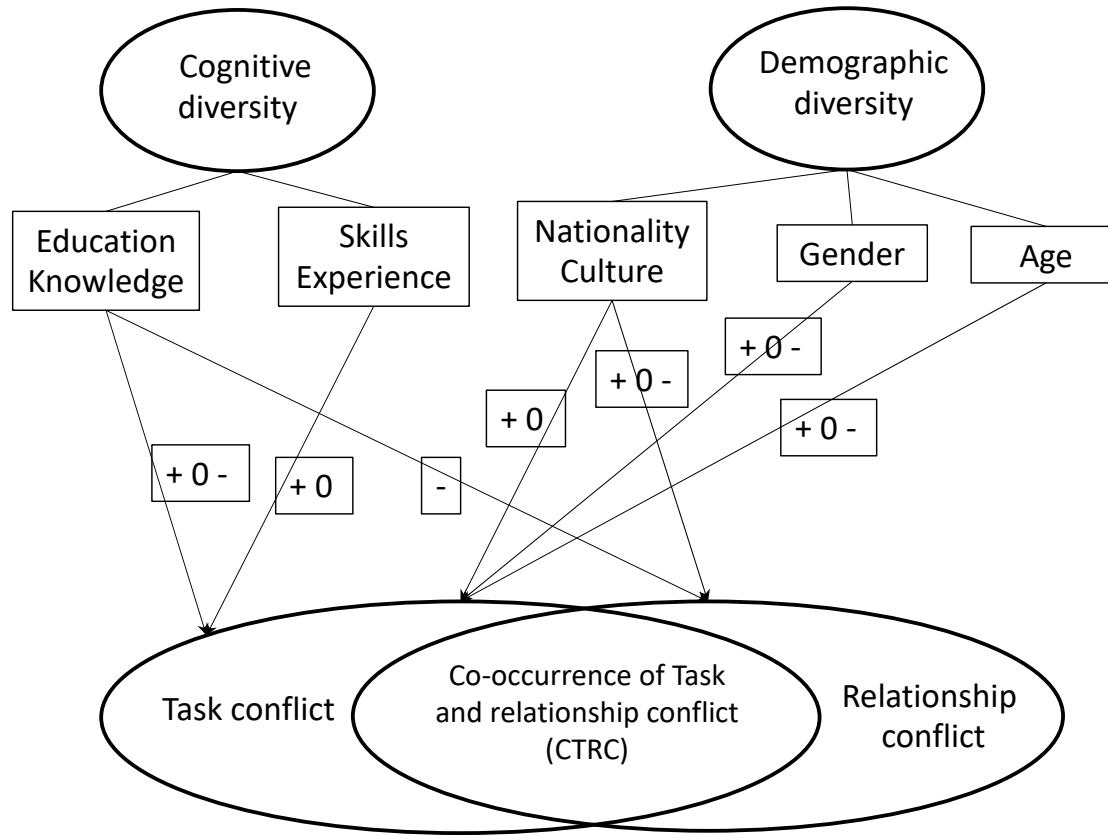
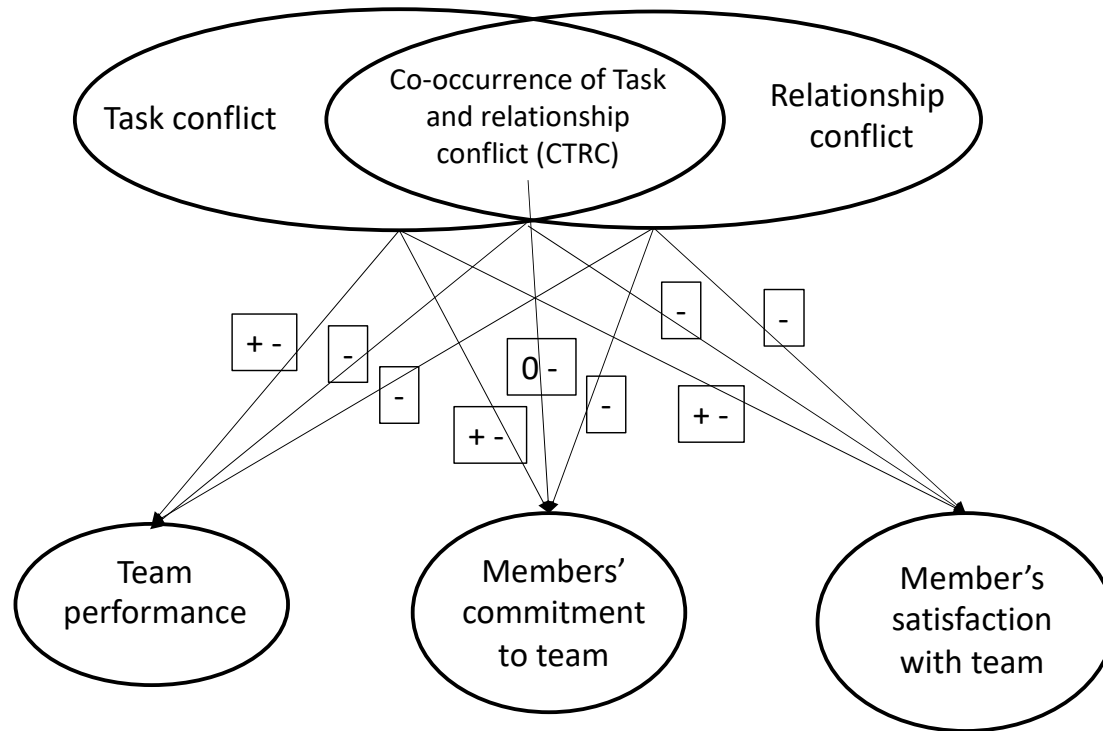


Figure 4.6b Association of Task conflict, relationship conflict, CTRC with team performance, members' commitment and individual member's satisfaction with team



4.3.3 Leadership conflict management behaviour

The literature suggests that team members' reactions to conflict and its outcomes are influenced by the team leaders' vision and inspirational motivation which encourage team members to appraise more positively any negative events and obstacles that occur. (Ayoko & Callan, 2010; Bass, 1985; Kotlyar & Karakowsky, 2007). In contrast, a conflict avoidance leadership behaviour is associated with a range of negative consequences among team members, including increased role stress, interpersonal conflicts, emotional exhaustion, reduced job satisfaction, and health problems, and might result in the escalation of conflict between members (Baillien *et al.*, 2017; Bass, 1990; Parrott & Giancola, 2007; Skogstad *et al.*, 2017; Williams, 2007).

All the participants of this study considered the co-occurrence of task conflict with relationship conflict (CTRC) as damaging to team performance and members' commitment and satisfaction with the team. The way the participant team leaders deal with CTRC is, on the whole, perceived by themselves and by most team members as reflecting transformational leadership's conflict management behaviour. The themes that have emerged to describe the leaders' conflict management behaviours are elaborated below in relation to the data and the literature.

Depersonalising the problem, containing conflict. Responses from a number of the participating team leaders suggest that they resorted to separate task issues from personal feelings in an attempt to descale the conflict. By doing so, they were displaying transformational leadership conflict management behaviour (see, for example, Lim & Ployhart, 2004; Tjosvold, 2008b). Team leader TL01 relayed: “*we try to disassociate the personal from the task or from the work and from the conflict itself; we try to limit it to comprehend it.*”^(TL01). Other team leaders, for example, TL07, TL02 and TL04 suggested that

they similarly attempt to dissociate task from personal disagreements: *“If disagreement happens and people are taking it personally, we have to act professionally ... So, we have to go back, in terms of professionalism, to avoid the personal feeling, the personal effect for everyone.”* (TL07); *“I would definitely interfere ... and try to make the focus on the work task and shift ... the focus, first of all, from the disagreement to the overall work task ... and make sure that the task is the focus of our department and not the disagreement between the team members.”* (TL02); and *“They have ...to restrict it to work elements, and not to let it grow to that personal individual level, where people end up insulting each other or talking personally about each other. ... clarify to the conflicting parties ... that the conflict is work-related, it isn't personal, so it doesn't need to develop into becoming personal.”* (TL04)

Team leaders TL05 and TL01 described their conflict management behaviour as one of containing conflict and preventing it from spreading: *“So, yeah, I will try to nip it in the bud, like from the start before it escalates.”* (TL05), and *“we try to minimise it ... try to squeeze it and ... keep work within the work ... so, it doesn't expand.”* (TL01)

Establishing positive feelings and minimising feelings of anger. This theme has featured in the transformational leadership literature (e.g., Lim & Ployhart, 2004; Tjosvold, 2008b), and is seen in team leaders' responses as they described their conflict management behaviour. For example, team leader TL02 stated: *“So, I tried to resolve that conflict and I interfered as a leader... and tried to sooth... make them... work together.”* (TL02). Similarly, team leader TL06 relayed: *“so that kind of make it less tense, of course there will be less tension in the room. So, that is one of the things I would probably give the novice teacher, ... she can choose.”* (TL06). Also, team leader TL04 emphasises the importance of cooling an intense conflict-ridden situation *“... if it's high ... whereby something ... should be done, ... the first thing to do is to unplug, possibly order a good meal, take the teachers out. ... make sure that tensions*

are diffused instantly. ... I would ... have those in dispute over, ...have ... them engage in a friendly discussion, ... break the ice before going to the work element." (TL04) Team members agreed with team leaders view of their own conflict management behaviour, for example, team member TM010 responded: *"The leader was observing this and was trying his best not to inflate the issue and give it a bigger scope; he was doing the opposite, trying to downsize the problem as much as he could, to put it together"* (TM010)

Creating and communicating a common vision, incorporating members' needs. In

resolving conflict team leaders seem to resort to communicate a collective vision that incorporate members views and needs. This behaviour is likely to limit the potential of task conflict escalating into relationship conflict (e.g., Ayoko & Callan, 2010; Ayoko *et al.*, 2008, Ayoko *et al.*, 2012; Gibson & Vermeulen, 2003; Zhang *et al.*, 2011). Team leader TL08 communicates to her team members the importance of working as a team to succeed in achieving the team's common goal: *"I tried to send an email that as a rule for the group, we should work together. ... And I tried to build the whole time, we succeed as a team; we don't succeed as individuals. So, ... I tried always to tell them that we should work really as a team not to compete with each other."* (TL08) Team leader TL07 expressed similar views: *"...the community is very friendly. They accept what we share together, they accept my opinion, I accept theirs. So, we listen to each other; so, there isn't any inclination to reach to a disagreement with anyone. ... I am a team member and if one of the team members cannot progress that will affect the whole team."* (TL07) In minimising conflict, while emphasising common team goals, team leader TL06 also appeared to cater for her members' needs: *"one of the things that I try to do is to ask the novice teacher to choose who would coach her, to choose which senior teacher or instructor with more experience would she allow to enter her classroom, enter her territory, observe her."* (TL06)

Communicating a clear common vision incorporating members' views and explaining why the team is doing this, what are the benefits; appeared to enthuse team member TM014, as she felt empowered being part of the journey: *"Having ... a team goal, where we are heading, it is not an individual success, it is a team success, and this has to be highlighted. ... I feel empowered, I feel I am part of the journey, I feel I am part of where we are heading as a university. ... It is very important to tell the faculty where we are heading why we are doing this, what is the benefit of this, how is it going to add to the work."* (TM014)

Communicating, developing quality leader-member exchange. The literature stresses the importance of high-quality communication and exchanges between leaders and team members where leaders use their ability to deal with the opinions and rights of others with the purpose of seeking solutions to conflict that benefit all team members (e.g, Alper *et al.*, 2000; Avolio & Yammarino, 2002; Ayoko & Callan, 2010; Ayoko *et al.*, 2008; Chen *et al.*, 2005; Kearney & Gebert, 2009; Nishii & Mayer, 2009; Stewart & Johnson, 2009; Tjosvold, 2008a; Tjosvold *et al.*, 2006). Participants appeared to have placed big importance on quality communication and exchanges between team leaders and members in resolving team conflicts, as seen in the data extracts from team leaders TL01, TL04, TL08 and team member TM012: *"We try to keep communicating; the most important aspect in the sense of resolving the disagreement and tension. ... step in ... [not] to take a position. [but to] ... resolve the problems from a different perspective."* (TL01); *"listen to whatever ideas they have got, and to reach a settlement. ... so, the teachers should fully understand that I would listen to both of them, and I would try to make both of them listen to each other."* (TL04); *"I started to discuss the project in front of the whole team, and then ask the team members, "Which task are you interested to work in, or to be in charge of?" I ask them what they like, what they want to do. But I give my input based on their competence and based also on their background."* (TL08);

and “*she [team leader] would communicate a lot, communication.*” (TM014); and “*The Dean [not the HoD]... will sit down with the member and talk to him and make the task more clear for him. So, the conflict will go away a little bit*” (TM012)

Accommodating, compromising collaborating, and developing a supportive climate. Studies indicate that prioritising collaboration, compromise, and accommodation of other members’ ideas, helps develop a supportive climate, increases team cohesion and decreases the likelihood of conflict (e.g., Ayoko & Callan, 2010; Ayoko *et al.*, 2008, Ayoko *et al.*, 2012; Gibson & Vermeulen, 2003; Henry *et al.*, 1999; Tjosvold, 2008a, 2008b; Zhang *et al.*, 2011). These transformational leadership conflict management behaviours are echoed mainly by the study’s team leaders. For example, team leader TL01 saw his role as: “*... as a mediator, as a conflict resolution person. ... build a healthy environment.*” (TL01) Team leader TL08 concurred with this view: “*We would have them both ...and try to discuss why it is a good idea and why from the other’s perspective it is not a good idea, and why or why not working on it, and then we ended up with this conclusion: That we should work on it.*” (TL08) Similarly, with team leader TL07 “*Then, I have to listen to all opinions, all perspectives and then we are back together...*” (TL07) Team leader TL04 solves conflicts through concession: “*if a certain disagreement can be solved by a concession from my side toward my team members, I would do it. I will go for a concession and this would subsequently pass a message for the teachers; ... if we are to achieve success together as a team then concessions should be made from both parties.*” (TL04) Team leader TL03 also mediates to solve problems: “*For example, I bring them both and talk to them and try to mediate and try to make the problem disappear.*” (TL03), so does team leader TL05: “*I would try to bring the different points closer together. I would have a personal meeting with the individuals and then I will try to explain the situation*

from their points of view. So, if needed ... I will bring them all together; so, it works perfectly." (TL05)

Although the data from the interviewed participants resulted in themes that overwhelmingly showed transformational conflict management behaviour, a small portion of the data also displayed themes which indicated some transactional leadership, contingent, or conflict avoidance behaviours.

Avoiding conflict. This conflict management approach was detected in the data from team members TM011 who stated:

Before, she [the team leader] would do it [the task] herself. ... But now she will try to approach someone else on a personal basis: "Huda, can you serve me, Sara can you please do this, Ibrahim do this, and we will do it"... and close that chapter. ... Very diplomatic! In this sense she is very diplomatic, meaning; she tries to smile and then she tries to rearrange the tasks.... maybe she will approach someone on a personal level to help her because she knows if there no one who will do it, she will be the one to do it. ... I think she will avoid it [conflict] from the beginning... she is not going to allow the task to transform, to become personal. She will ask the right person, and if not done, she will go to another person to overcome the situation. (TM011)

Team leader TL08 seems to overload her members with additional tasks to minimise their interaction and consequently to minimise problems: "*The way I was trying to solve it actually was by assigning more tasks because I found that ...when they have free time, they start to have more conflict. So, I try to make them work on more projects, and not necessary ...together. So, I try to minimise the interaction between them by assigning them with more tasks to fill their time so that the conflict will be minimum.*" (TL08)

Contingent leadership behaviour, using accumulated knowledge. Team member TM010 indicated that he observed this approach to resolving conflicts:

It really depends on the issue and the situation. ...I know he is a wise leader. He knows how and where to play with his approaches of his leadership and styles. It really depends on the people he manages, and I could see that the way he leads us, and leads me and other male members, and the different ways he deals with other team members. Because our personalities

are different, so, he would know the exact doors to lock, he would like to ask about something from me, from you or from her? So, when it comes to this point, he knows exactly what to do. He is doing a great job at this, trying, as much as he could, to observe the problem and put it together and not to give it more space. (TM010)

Team leader TL05 also stated that she usually adopts a contingent approach to resolving conflicts: “*So, it depends on the incident, and it depends on the event that it happened within, like ... I need to know what the situation is. ... I don't have one approach that I deal with all conflicts, ... I have to find my way through, ... sometimes I'm directive, and sometimes I accommodate and sometimes, like it depends; like I need to know more details.*” (TL05)

Applying the rules (Transactional leadership behaviour-TaL). Team leader TL09 has very clearly articulated his conflict management behaviour as one of applying the rules: “*We have university job descriptions, and we have evaluation for each member. and I apply all the policies and procedures.*” (TL09)

The data and their themes indicate that team leaders were mainly seen to adopt a constructive conflict management behaviour of co-operation and compromise which minimised the harmful effects conflicts. Such a behaviour, participants felt enhanced team performance and integration, and decreased the potential for task conflict escalating into a relational one. The transformational conflict management behaviours that were displayed include: Minimising feelings of anger/establishing positive feelings; depersonalising problem; communicating, developing a quality leader-member exchange; compromising and accommodating; developing a climate of cooperation; and creating a common vision, showing commitment to goals and incorporating individual member's needs. Furthermore, although this perception was expressed by both team leaders and team members, unsurprisingly, they were more prevalent in the data obtained from team leaders than from team members. Data from one or two team members also gave rise to themes that pointed to conflict avoidance management on the part of their

leaders, displaying the behaviours of: minimising task and members' interactions, overloading members with tasks, and avoiding conflict. These themes are shown in table 4.6, and their coding frames are displayed in figures 4.7a - 4.7g.

Table 4.6 Leaders' conflict management behaviours

Theme	Main theme
Minimising feelings of anger/Establishing positive feelings	Transformational leader (TfL) conflict management behaviour
Depersonalising problem	Transformational leader (TfL) conflict management behaviour
Communicating, developing a quality leader-member exchange	Transformational leader (TfL) conflict management behaviour
Compromising and accommodating	Transformational leader (TfL) conflict management behaviour
Developing a climate of cooperation	Transformational leader (TfL) conflict management behaviour
Creating a common vision, showing commitment to goals and incorporating individual member's needs	Transformational leader (TfL) conflict management behaviour
Minimising task and members' interactions	Conflict avoidance management behaviour
Overloading members with tasks	Conflict avoidance management behaviour
Avoiding conflict	Conflict avoidance management behaviour

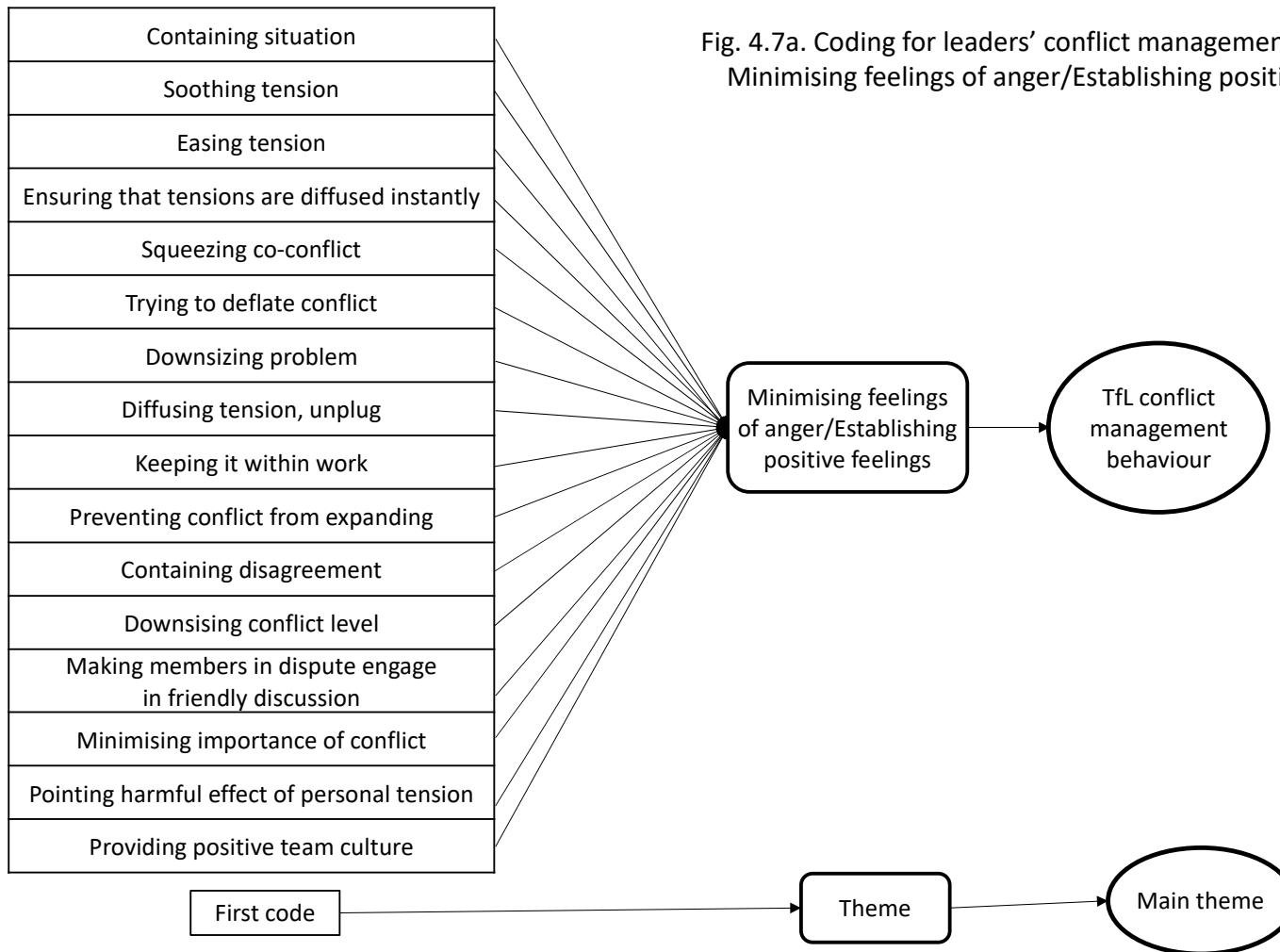
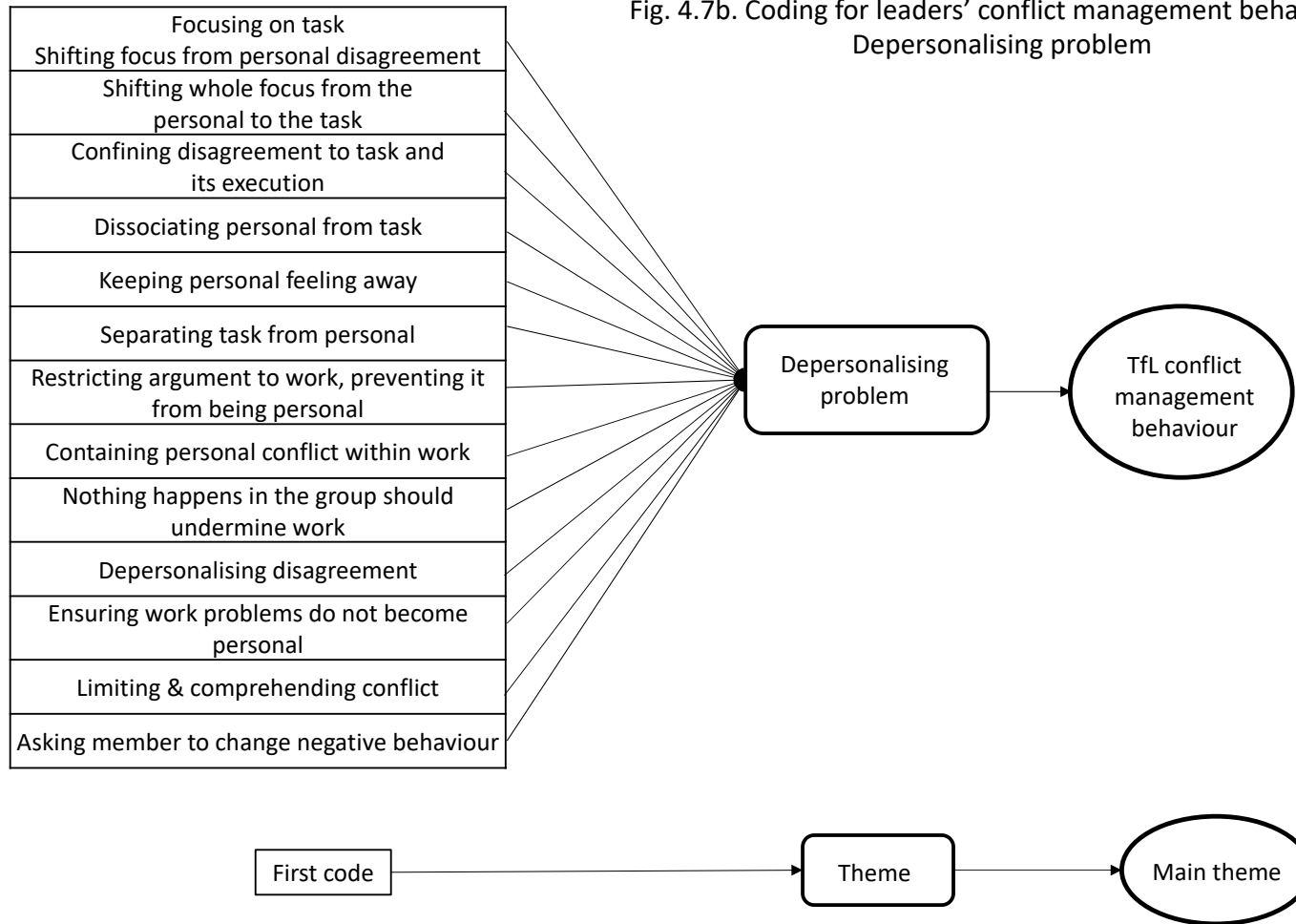


Fig. 4.7a. Coding for leaders' conflict management behaviour:
Minimising feelings of anger/Establishing positive feelings

Fig. 4.7b. Coding for leaders' conflict management behaviour:
Depersonalising problem



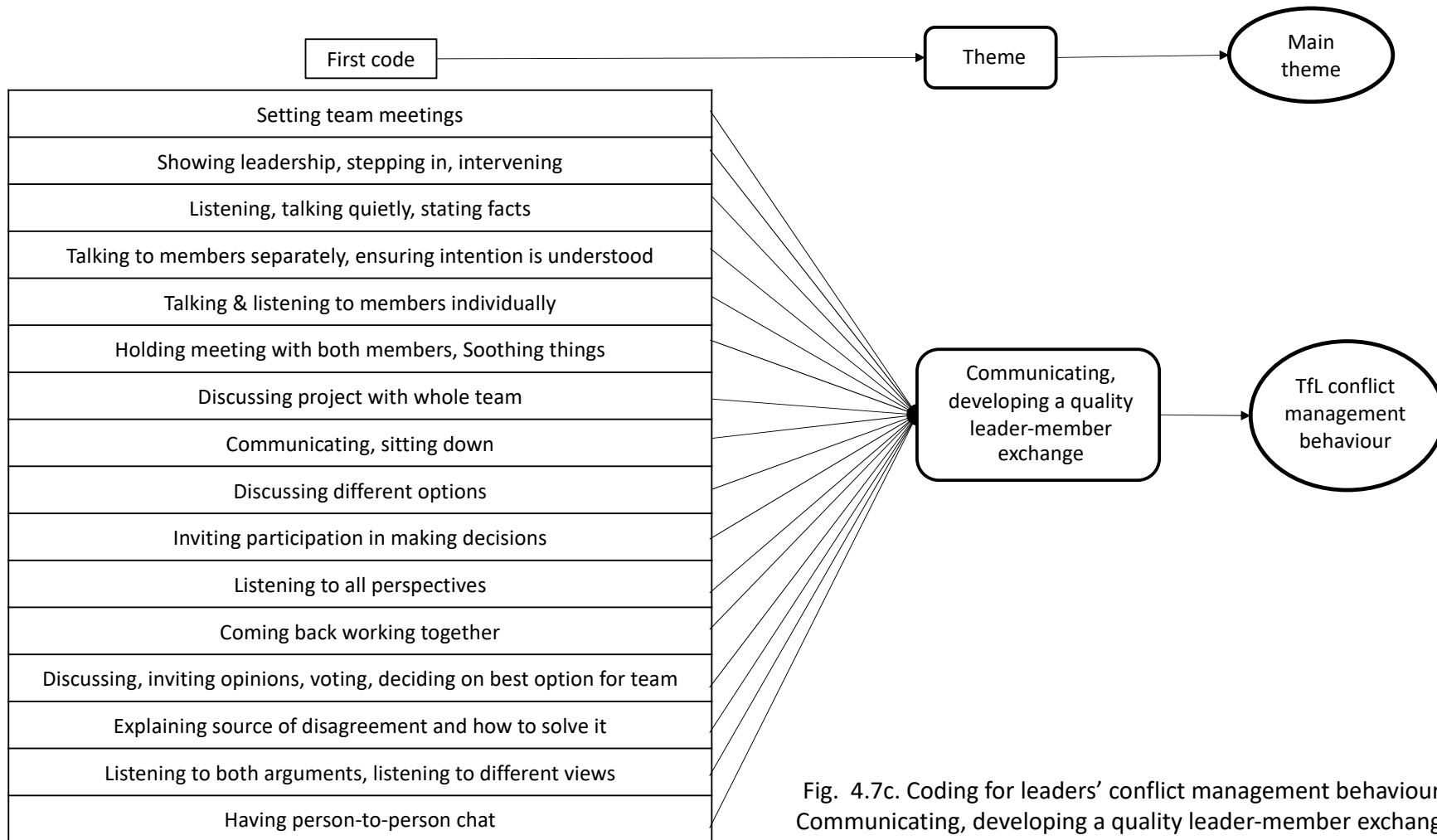


Fig. 4.7c. Coding for leaders' conflict management behaviour: Communicating, developing a quality leader-member exchange

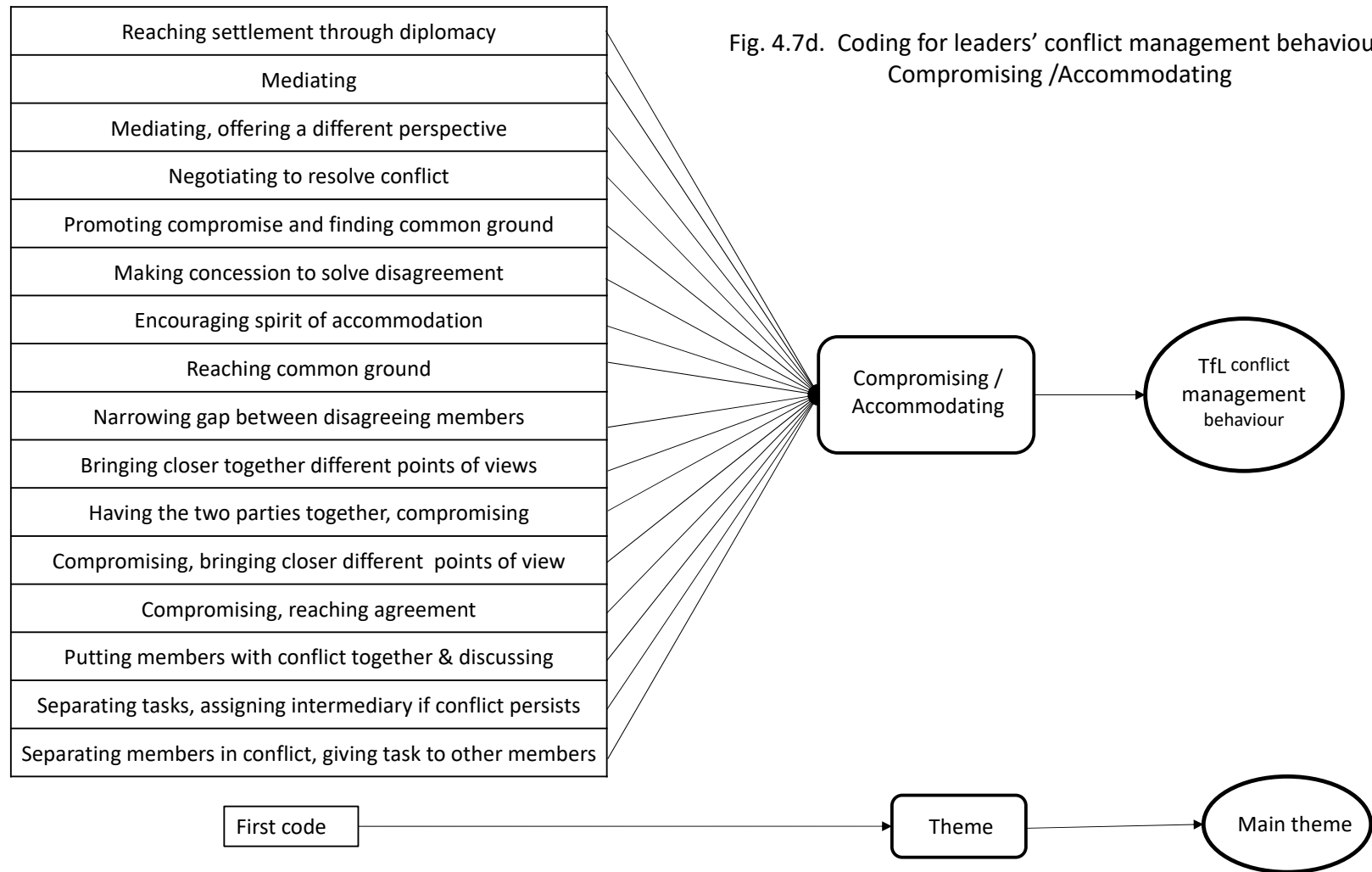


Fig. 4.7d. Coding for leaders' conflict management behaviour: Compromising /Accommodating

Fig. 4.7e. Coding for leaders' conflict management behaviour:
Developing a climate of co-operation

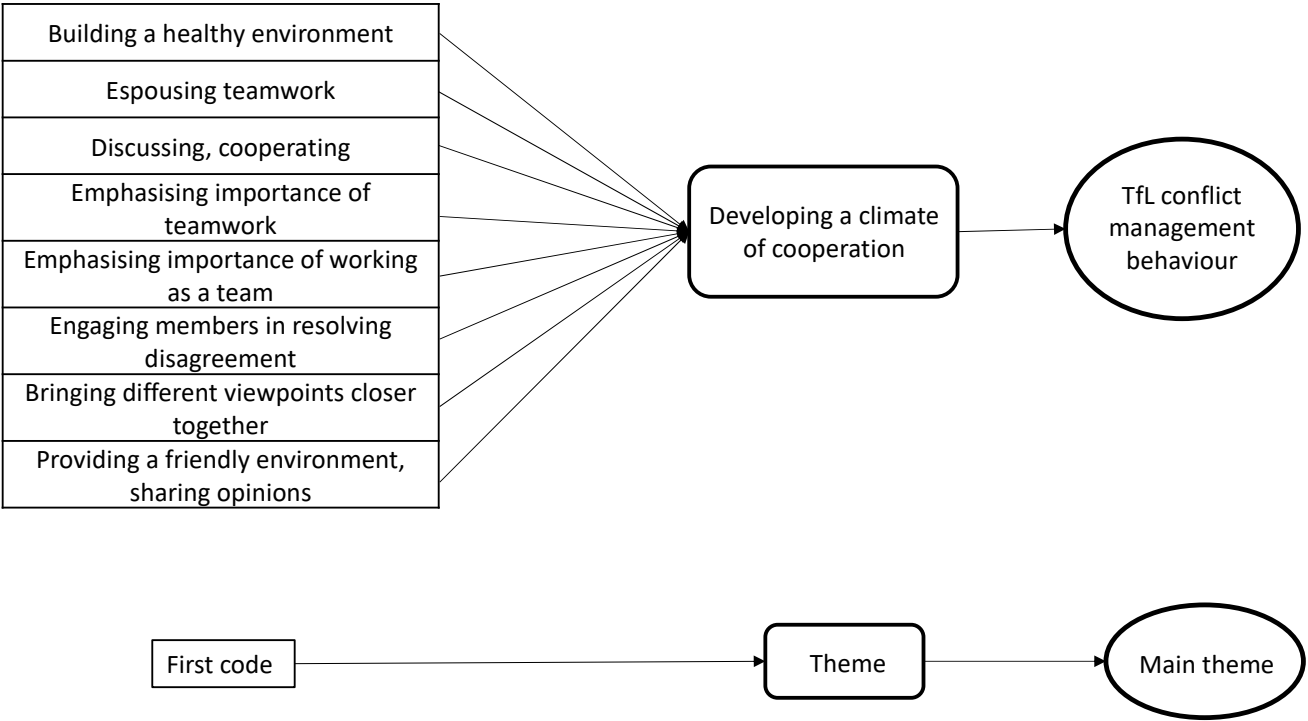
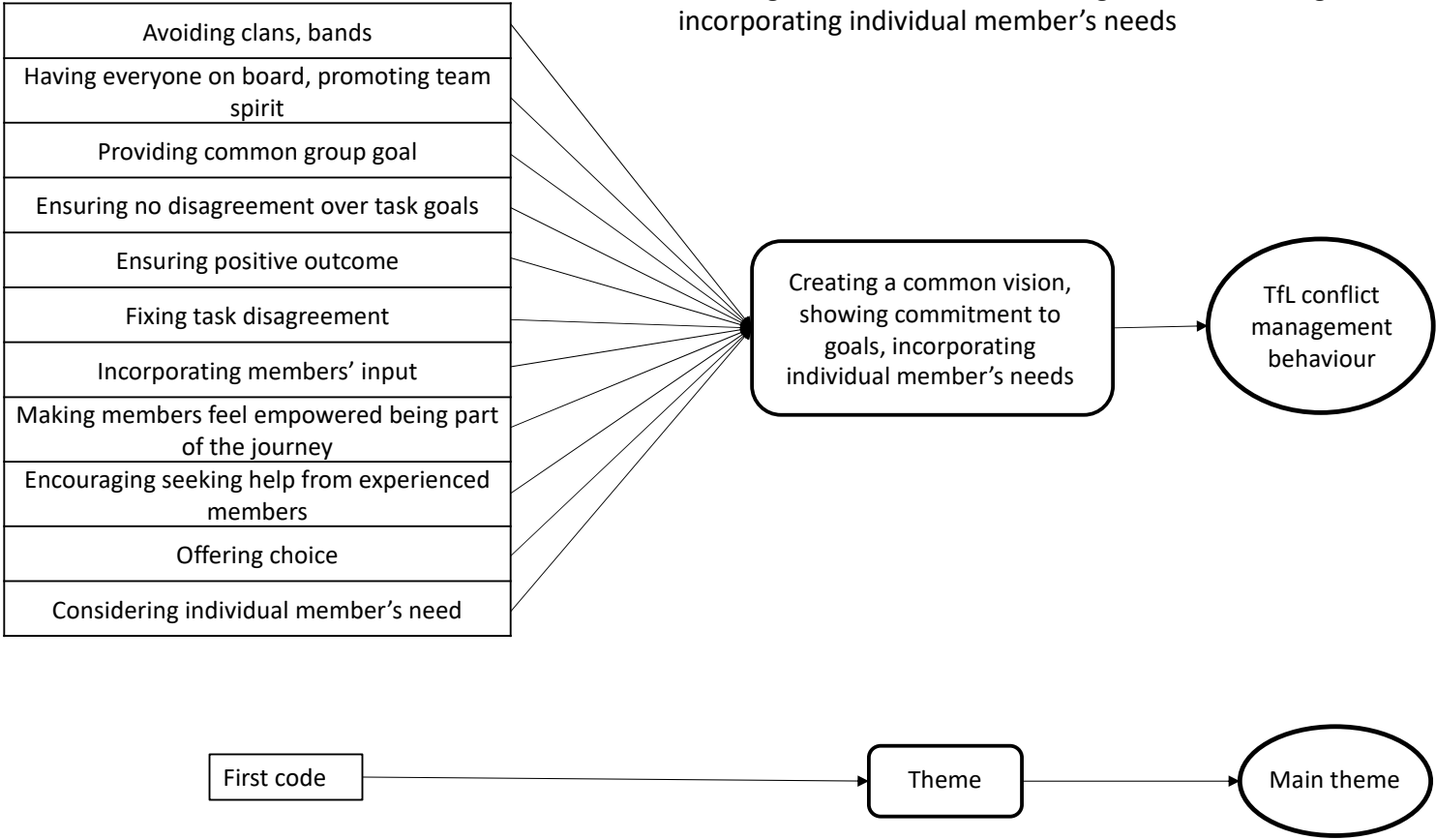


Fig. 4.7f. Coding for leaders' conflict management behaviour:
Creating a common vision, showing commitment to goals,
incorporating individual member's needs



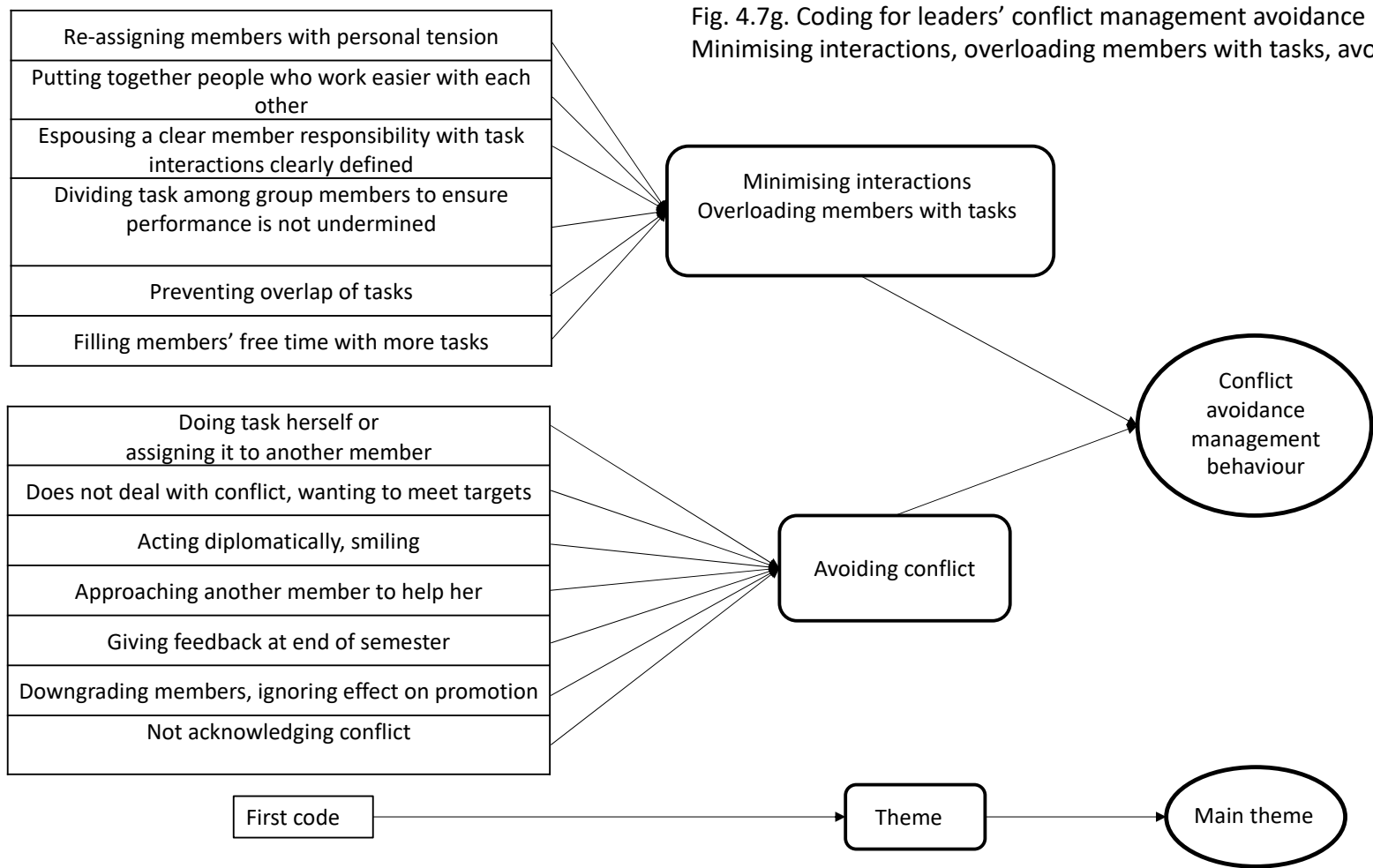


Fig. 4.7g. Coding for leaders' conflict management avoidance behaviour: Minimising interactions, overloading members with tasks, avoiding conflict

4.3.4 Team leader's leadership attributes and behaviours

Following the same theme extraction procedure, the perceptions of the participants of team leaders' attributes and behaviours are coded, and the initial codes were subsumed by appropriate themes, which were, in turn, subsumed by main themes; this is elaborated below.

Inspirational motivation (TfL-IM) theme: Aiding members to succeed. The literature shows that leaders who are inclined to aid their team members to succeed and perform beyond their expectations exhibit transformational leadership inspirational motivation (TfL-IM) behaviour (e.g., Wang *et al.*, 2011; Yammarino *et al.*, 2005; Zhang *et al.*, 2011). The responses from team leaders TL06 and TL07 suggest that their leadership behaviour may be described as inspiring and motivating: “*and kind of leading them from behind, giving them advice; where if she tries to just pick out her friends, I would kind of advise her to go for a change to learn different techniques, to learn different styles and see different backgrounds.*” (TL06); and “*we've been doing in the university, incentives, ...not in terms of money, but ... helping others on some difficult tasks.*” (TL07)

Inspirational motivation (TfL-IM) theme: Linking individual members with team tasks and organisational goals. Transformational leaders' inspirational motivation behaviour, the literature suggests, is exhibited through developing and communicating a shared vision and promoting confidence in the achievement and execution of team goals and tasks (Bass & Avolio, 1994; Seibert *et al.*, 2011). Inspirational motivation behaviour is also displayed through increasing members' confidence in the intrinsic value of their performance (e.g., Borman & Motowidlo, 1993; Wang *et al.*, 2011; Yammarino *et al.*, 2005; Zhang *et al.*, 2011).

Team leader TL08's response shows that she displayed this behaviour: *"I try always to discuss, to see what the alternatives are. I discuss with the team, let's say, discuss the tasks, the goals; if they are not happy with the task that is assigned to them, we can re-allocate, you know, re-assign the tasks to the right people to achieve ... the goals."* (TL08)

Inspirational motivation (TfL-IM) theme: Explaining where the team and organisation are going. Inspirational motivational leaders are said to communicate a shared vision, promoting confidence in the execution of tasks and achievement of goals, reassuring their teams that they can overcome obstacles, talking optimistically about the future (Bass & Avolio, 1994) Wang *et al.*, 2011; Yammarino *et al.*, 2005; Zhang *et al.*, 2011). Team member TM014 described the behaviour of her team leader in these vivid words: *"she would communicate a lot, communication. ... she would create this culture of involvement where everyone is involved, and again communication is very important, explaining why we are doing this. Having a group or a team goal, where we are heading, it is not an individual success, it is a team success, and this has to be highlighted."* (TM014) Inspired and motivated team member behaviour, she enthusiastically continued: *"... explaining, communicating, why we are doing this, the benefit of what we are doing, ok; the importance of what we are doing. She explains the why, the why is very important, why we are doing what we are doing as a group, as a team. ... The destination and the journey that is going to take us to this destination which is very important."* (TM014)

Inspirational motivation (TfL-IM) theme: Inspiring members to improve their outcomes, fostering a strong sense of pride. It is argued that transformational leaders are able to infuse high levels of motivation and confidence in their teams which potentially lead to improved performance (Seibert *et al.*, 2011; Borman & Motowidlo, 1993; Wang *et al.*, 2011;

Yammarino *et al.*, 2005; Zhang *et al.*, 2011). Furthermore, such transformational leadership instils pride in members for being associated with the leader, induces them to go beyond self-interest for the good of the group, demonstrates and infuses in the team the belief that identification with the team enhances their social identity (Van Knippenberg & Hogg, 2003). The response of team leader TL04 suggests that he inspires his team members by acknowledging, appreciating, and highlighting their success:

We always try to highlight what success stories... Once shared, it boosts feeling of commitment, feeling of appreciation because the team members need to feel that they are being appreciated by their team leader ... So, we all must try to boost morale, boost commitment; have teachers join together... the whole culture is positive, and all the teachers are been pulled into that vortex of positivity; focused on the outcome, focused on commitment. (TL04)

Team leader TL01 involves his team members right at the start of new projects; engaging them, making them feel part of the project, proud and excited in anticipation of its success:

... when we have a partnership or a new agreement, I'll engage my staff from the beginning, from day 1, so they don't only feel the excitement, they also feel the anticipation of the outcome, and they feel part of this success. ... and they excel in delivering. ... Once they are engaged ... they become in part associated and they speak proudly of it. (TL01)

Indicating her team leader's motivating behaviour, team member TM014 valued the acknowledgement and appreciation of members' work and achievement shown by her team leader:

... the way she communicates with faculty or with me personally is extremely building or consolidating the idea that we are one team, we are in this together... empowering team members is very important, showcasing their work or showcasing what they are doing is very important as well. ... recognising, appreciating something that is very important. (TM014)

Idealised influence (TfL-II) theme: Promoting a broad, inclusive vision. When team leader TL07 asserted, "*we have to, we are working together for common objectives.*"^(TL07), she was exhibiting transformational leadership's idealised influence as she was acting in accordance with the vision.

Idealised influence (TfL-II theme): Showing commitment to goals, creating trust and confidence.

Team member TM014 appreciated and valued her team leader's trust in her; suggesting that this team leader was exhibiting idealised influence leadership behaviour:

Building trust is very important, the person I am talking about she [HoD] always makes me feel that I am trustworthy, number one; she trusts my work, she does not doubt anything, she is not that kind of person who doubt what I am doing or doubt the work I am doing. ^(TM014)

Team member TM010, similarly, suggested that his team leader creates trust and confidence in his team members: “[The leader] gave us the chance to share what we have in mind. ... As a team member I get the chance to speak my mind. ... I feel free to go and speak with him and to share what I have in mind.” ^(TM010)

Team leader TL01 showed commitment to team goals, thereby displaying idealised influence behaviour: ‘Assuring them that we are all for the work and, of course, things can be resolved.’ ^(TL01)

Also, team leader TL08 exhibited such a behaviour as he tried to contain conflict in order to meet to team's objectives: “sometimes, if I find there is a lot of conflict, I try to minimise first of all the interaction between those two members in terms of tasks. Because we need to focus on the performance, meeting the objectives” ^(TL08);

so did team leader TL07: “I am a team member and if one of the team members cannot progress that will affect the whole team because we share common goals.”

^(TL07) Team leader TL05 idealised influence behaviour is reflected in creating a welcoming environment that engender trust: “So, again I think once you have a good environment and a good culture where everyone feels welcome, valued and trusted, so, they trust me like I do trust them.” ^(TL05)

Seeking members' feedback and incorporating their views and ideas show the idealised influence behaviour of team leader TL04's behaviour: “But still we have to listen, and I have to make it clear by showing examples that the kind of feedback that they have given me did materialise into something they saw.” ^(TL04)

Idealised influence (TfL-II) theme: Leading by example. By bearing the full responsibility, team leader TL01 exhibited leading by example idealised influence behaviour: *“I will tell my team the following: I bear full responsibility because I am your leader.”* (TL01)

Likewise, team leader TL04 leads by example by acting in the way he would expect his members to act: *“You know it is about leading by example, as a leader I should basically be there and act the way I want my team members to act. ... I should not expect anything but the same from them to me.”* (TL04)

Intellectual stimulation (TfL-IS) theme: Empowering members to disagree with leadership.

Team member TM010 attested to his leader’s display of the idealised influence behaviour of empowering team members to disagree with his view: *“He always gives us the chance to speak and to express what we have in mind even if we have disagreement or differences in our thinking.”* (TM010)

Intellectual stimulation (TfL-IS) theme: Encouraging members’ creativity. Intellectual stimulation works on the cognitive capacity of team members, challenging their held assumptions and seeking differing perspectives in solving problems, suggesting new ways of examining how to complete tasks and encouraging team members to question past ideas (Bass and Avolio, 1994). Listening to and implementing team members’ creative ideas was observed by team member TM010 suggest that his team leader encourages members’ creative ideas and thereby exhibiting idealised influence: *“The head of the department has an idea of how to run the online classes, and sometimes it happens that I come up with a different idea and he’d listen; so, just be a good listener helps a lot to reach out.”* (TM010) Team leader TL08 also suggested that he displays such a behaviour by espousing members’ creative ideas: *“one of those ideas ...was really creative and I supported it and I even had given him the*

leadership of that project.” (TL08) A similar leadership behaviour was displayed by team leader TL04:

For example, if a group of teachers, or a teacher would come to my office and say, “I believe that the way you are assessing students isn’t quite perfect, or it has a bit of faults and you have to review it”. I would say, “please propose something that you believe is better than our current procedure and we would act upon it. (TL04)

Individualised consideration (TfL-IC) theme: Showing genuine compassion, empathising with the needs of individual members. Transformational leadership’s individualised consideration behaviour is exhibited through attending to the needs of individual team members which engenders trust and a feeling of satisfaction (Bass and Avolio, 1994; Podsakoff *et al.*, 1990). Team leaders felt and were also acknowledged by their team members that they empathised with the needs and problems of the individual members of their team. For example, team member TM011 stated: “... *if the HoD knows I have something serious at home, she will try to give me less admin work compared to someone who is free. But not because of personal relationship, actually it is personal to make sure that the quality of output is good.*” (TM011) Team leader TL01 indicated that he makes his team member comfortable by easing the tension in the work environment; he thereby shows empathy and compassion for individual team members: “*Once you give that comfort, they’ll deliver, no comfort no delivery.*” (TL01) Team leader TL03 also suggested that he listens to, and cares about each individual team member’s problems, that he shows his team members that he cares about them. He further observed that they get motivated and as a result the tension eases: “... *if you open the door and listen to the problems and try to solve them and try to listen to the other party’s problem and try to solve it. The first thing, it will show that you care about them individually. It will motivate them to fix the conflict with the other member.*” (TL03)

Individualised consideration (TfL-IC) theme: Making interpersonal connections.

Individualised consideration leadership behaviour is exhibited through spending time in teaching and coaching, helping others to develop their strengths and listening attentively to others' concerns (Bass and Avolio, 1994). This theme of making interpersonal connection is manifested in the response of team leader TL01 as he *“try to speak with each one individually”* (TL01) Similarly, team member TM014 felt that her team leader endeavour to build trust through interpersonal connections; she stated: *“but she tries to build trust through personal relations or personal connections. She would not hesitate to send private messages...”* (TM014) Team member TM010 experienced the same behaviour from his team leader: *“So, as I said he was opening the doors and he is actually still opening the doors to listen to different ideas when it comes to doing the work and the operations and the tasks and projects.”* (TM010) Moreover, team leader TL08 makes interpersonal connection with her team members through having an open-door policy: *“If you have anything that you are in need of, all you have to do is just knock on the door and we will be sitting next to each other, you don't need to send an email to that person.”* (TL08) Team leader TL05 relies on informal feedback obtained through daily roaming about and talking to her team members; she observed that this made them comfortable:

I do dedicate ten to 15 minutes of my time every day. I have to go roam around and I have to talk, like if you want to know what is going on; it has to be informal. Most of my information and feedback is from an informal setting, because it is when people get comfortable, they don't feel like, you know, informal settings are different. (TL05)

Again, team leader TL04 makes interpersonal connections through relating to them socially:

So, what we try to do is always have this open communication ... between employees. ... You know and simply speak about other things; speak about something which has no relation whatsoever to the tensions, to individual disagreements. ... So, I would say totally unplug, have this group think about something totally different. And engage them in something whereby they can see that they kind of relate to each other... (TL04)

Individualised consideration (TfL-IC) theme: Encouraging ongoing development and personal growth of members. Individualised consideration behaviour provides a supportive

climate and new learning opportunities for team members and increases members' commitment to the team (e.g., Avolio & Bass, 2004; Bass *et al.*, 2003; Parr *et al.*, 2013).

Team leaders were also seen to encourage their team members' personal and professional development, as team member TM014 attested: "*I have benefited from the leader of the organisation ... I remember the first time I met him. he said: "please make sure that you always learn, to continuously evolve as a person, to continuously develop as a person."*

^(TM014) Team leader TL08 encourages her team members to work with more experienced and knowledgeable colleagues: "*Sometimes, some of team members want to learn, so, I used to tell them, 'Okay, you can work with that person to learn from them, but you still have to do your own task.'*" ^(TL08), and team leader TL06 advise her members to seek change to learn different knowledge and techniques from colleagues with different backgrounds: "*I would kind of advise her to go for a change to learn different techniques, to learn different styles and see different backgrounds.*" ^(TL06)

Autocratic and unempathetic leadership behaviour. The literature on leadership characterises autocratic leadership as the centralisation of decision-making and directive power in a single dominant leader with a clearly defined intrateam hierarchy (e.g., Bass & Bass, 2008). Autocratic leadership's centralisation of power had also been reproached for its demoralising and consequent negative effects on the team climate and team performance (e.g., De Cremer, 2006; De Luque *et al.*, 2008; Edmondson, 2003; Van Vugt *et al.*, 2004). Power centralisation, it is argued, may activate team members' feelings of being undervalued, increase perceptions of inequity, and hinder team climate and team performance (e.g., Anderson & Brown, 2010; Bass & Bass, 2008).

One or two team members have experienced autocratic leadership behaviour and felt that it negatively affected team performance. Team member TM012 observed her team leader

behaving in an autocratic manner, where he takes decisions without consulting his team members and shows impatience; she attributed that to his youth and lack of patience and experience. This leadership behaviour, TM012 indicated, has engendered members' dissatisfaction with being in the team and undermined their commitment to it:

... the head of department I think because he is younger than the rest of us, he always takes the things impatiently, without patience without even listening carefully to what you are saying. He does not consider any conflict as a conflict; he just wants to do things his own way. So, this is what I always suffer from. No one listens carefully to what I am saying. ... We are at the same level so don't treat us like you know more than us. I think if he is great in dealing with ... people, he will succeed, even if he is not as knowledgeable. (TM012)

Team member TM011 felt overworked, undervalued, and overwhelmed with, what she perceived as, increasing demands placed on her and her colleagues. She felt that team members are not consulted and cannot air their views, and as a result, they appear to be an unhappy group. Their leader's behaviour had affected their performance and might have hindered their commitment and satisfaction with being in the team. TM011 explained:

We have a new system this semester for the third time in a row, a new thing; first Moodle, then Teams, and now Black Board; come on, four different software. It is less than a year, come on, I am young, what about the rest of the older people. So, this we can't raise, we cannot say it, but we are not happy about it, you know. ... she evaluates; she doesn't give the best evaluation after work. She waits until the end of the semester or the end of the academic year, and her evaluation of performance, I noticed, is the lowest compared to all other departments, ... I think this is her response. She downgrades us. And she knows that this may affect our promotional progress, I don't know. ... as I told you, we are trying our best, but still, we are not the happiest team.' (TM011)

The leadership themes that have emerged again exhibit a predominance of transformational leadership attributes and behaviours, with the exception of one or two team members who felt that their team leader showed some autocratic leadership behaviour. It is argued that higher education team leadership behaviour is more likely to be transformative (e.g., Mews, 2019). The transformational leadership behaviour themes that emerged displayed, to a greater or lesser extent, all the four categories of transformational leadership behaviours of Inspirational motivation (TfL-IM), idealised influence (TfL-II), intellectual stimulation (TfL-IS), and individualised consideration (TfL-IC). The TfL-IM themes that emerged, include: aiding

members to succeed, linking individual members with team tasks and organisational goals, and inspiring them to improve their outcomes, fostering a strong sense of pride among members. The TfL-II themes were: promoting a broad, inclusive vision, leader-member exchange to reach best decision, showing strong commitment to performance and to achieving team goals, creating trust and confidence, and leading by example. The TfL-IS themes, which featured only in few responses were: empowering members to disagree with leadership and encouraging members' creativity; and the TfL-IC themes, which featured quite a lot in the data were: showing genuine compassion, making interpersonal connections and empathising with the needs of individual members. A very small number of respondents suggested that team leaders exhibited autocratic and unempathetic leadership behaviour which negatively impacted team performance. Table 4.7 displays the themes and main themes that they integrate into, and figures 4.8a - 4.8e show the initial codes that these themes were derived from. Earlier in this discussion, it was found that the teams whose leadership exhibited transformational behaviours and where intragroup conflict was mainly managed constructively, these teams performed well, and members were committed and satisfied with being in the team. This suggests, as demonstrated in the extracted themes, that the prospects of team success were enhanced by the leader's concern with promoting group commitment, individual member's satisfaction, confidence to perform, and importance of participative work. In particular, the leader's behaviour of paying attention to the needs of individual members; valuing and incorporating their ideas; and expressing gratitude helped to gain their trust, created a cohesive and productive work group, and enhanced both team performance and team members' morale. These outcomes were viewed by participants to come about through the leader, working harder and meticulously with team members, stepping in, encouraging, serving as a role model, and emphasising the value of identifying with the team. Also, the leader behaviour of seeking new ideas were shown to bring team

members together, create a safe environment, engender trust, improve learning, and result in better decisions and enhanced team performance. Moreover, listening, encouraging, and helping members, coaching, motivating, displaying optimism, showing pride in the vision; and increasing members' confidence in the intrinsic value of performance; all were seen to enhance team performance and viability.

Table 4.7 Themes showing leadership attributes and behaviours

Theme	Main theme
Making interpersonal connections with members	TfL individualised consideration behaviour (TfL-IC)
Empathising with needs of individual	TfL individualised consideration behaviour (TfL-IC)
Treating members as unique individuals	TfL individualised consideration behaviour (TfL-IC)
Encouraging professional development & personal growth	TfL individualised consideration behaviour (TfL-IC)
Showing genuine compassion	TfL individualised consideration behaviour (TfL-IC)
Showing commitment to task goal achievement	TfL idealised influence behaviour (TfL-II)
Creating trust and confidence in members	TfL idealised influence behaviour (TfL-II)
Leading by example	TfL idealised influence behaviour (TfL-II)
Empowering employees to disagree with leadership	TfL idealised influence behaviour (TfL-II)
Promoting a broad inclusive vision	TfL idealised influence behaviour (TfL-II)
Inspiring members to improve their outcomes	TfL inspirational motivation behaviour (TfL-IM)
Aiding members to succeed	TfL inspirational motivation behaviour (TfL-IM)
Promoting common vision and strong commitment to goals	TfL inspirational motivation behaviour (TfL-IM)
Explaining where the team and organisation is going	TfL inspirational motivation behaviour (TfL-IM)
Fostering a strong sense of purpose among members	TfL inspirational motivation behaviour (TfL-IM)
Linking individual employee and organisational goals	TfL inspirational motivation behaviour (TfL-IM)
Encouraging members' creativity	TfL intellectual stimulation behaviour (TfL-IS)
Empowering employees to disagree with leadership	TfL intellectual stimulation behaviour (TfL-IS)
Displaying lack of compassion and empathy with needs of individual members	Uncaring, autocratic leadership behaviour
Displaying inability to make interpersonal connecting with members	Uncaring, autocratic leadership behaviour
Showing inability to create trust and confidence in members	Uncaring, autocratic leadership behaviour

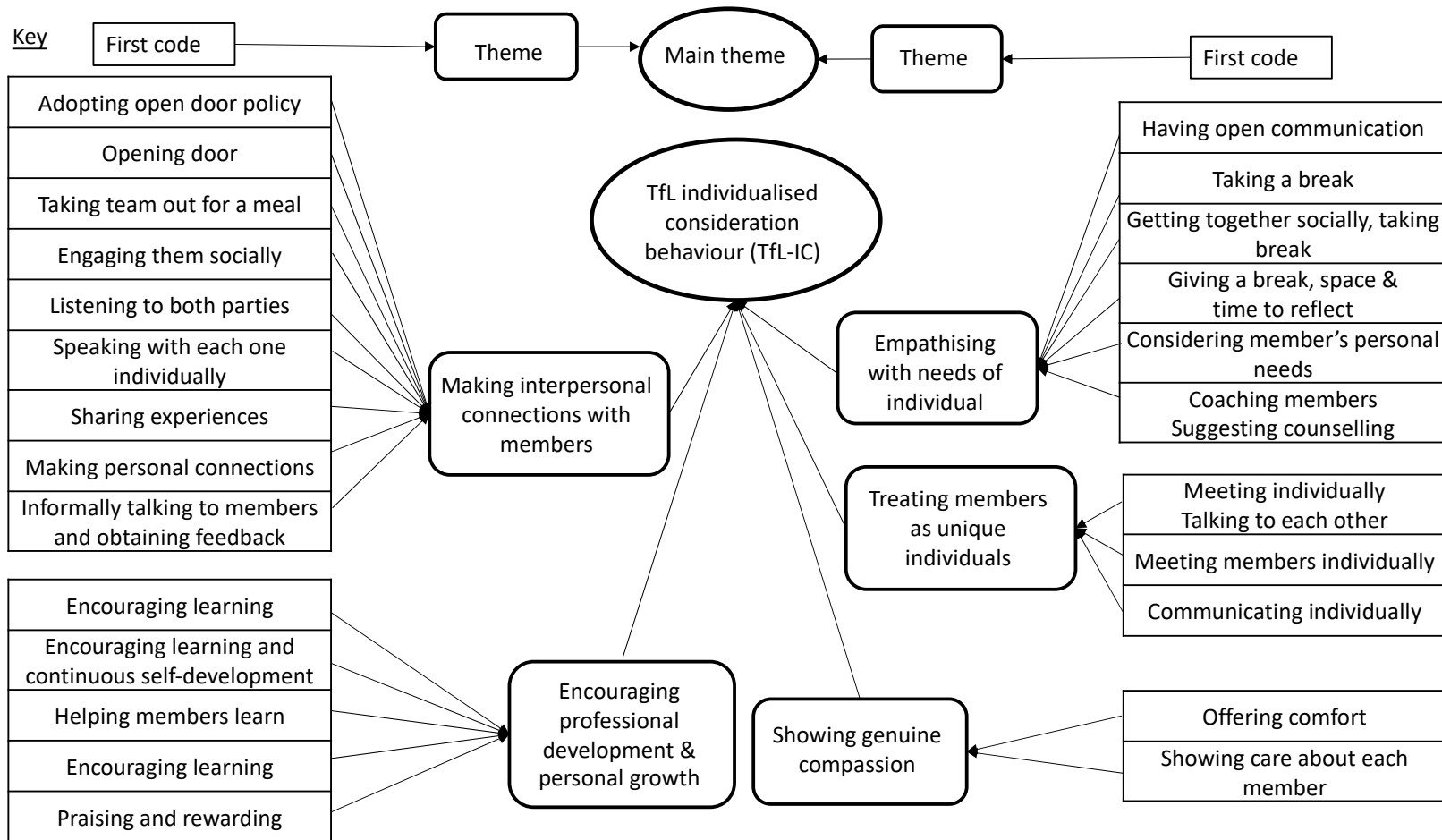


Fig. 4.8a. Coding for transformational leadership individualised consideration behaviour (TFL-IC)

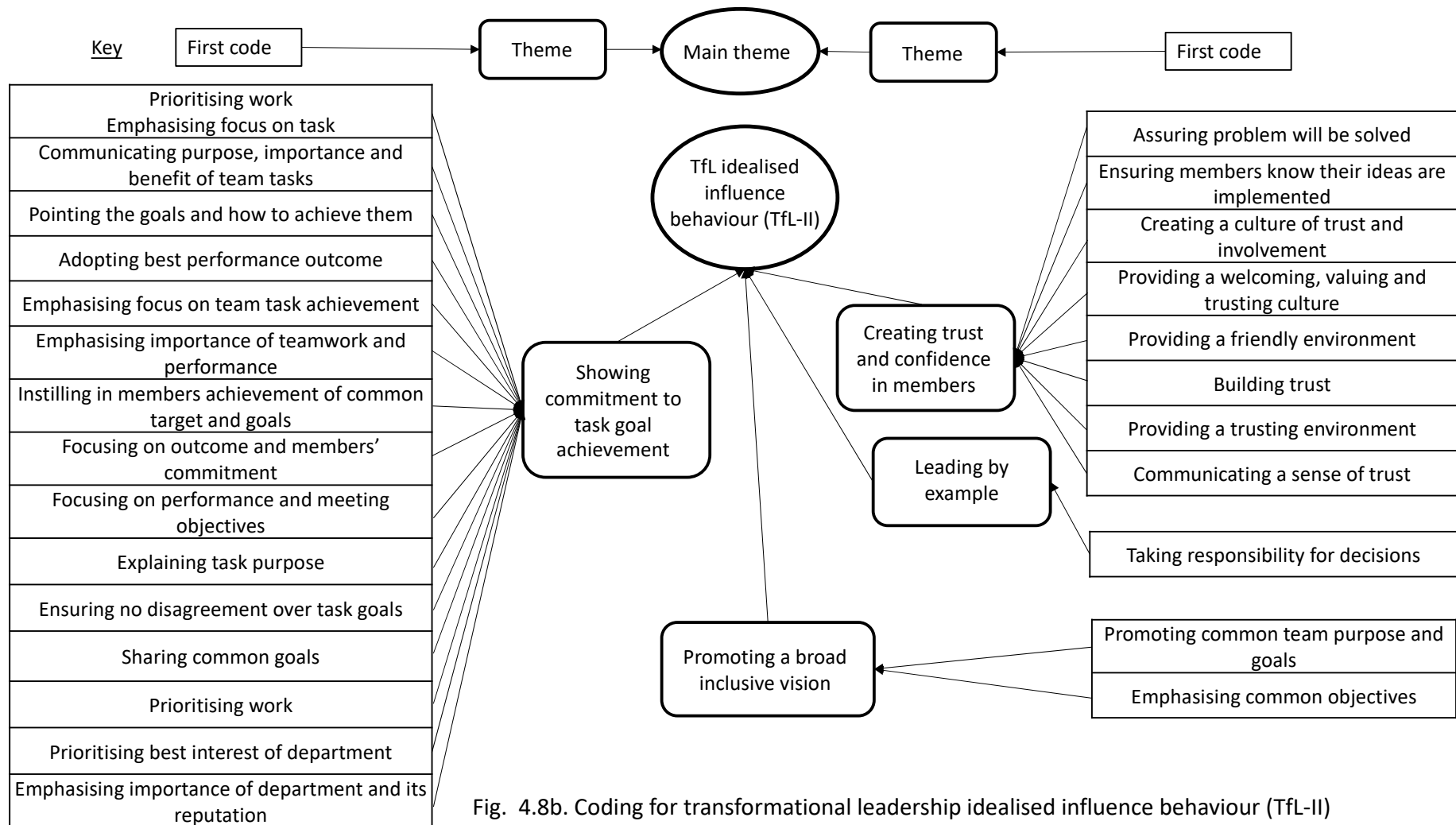


Fig. 4.8b. Coding for transformational leadership idealised influence behaviour (TfL-II)

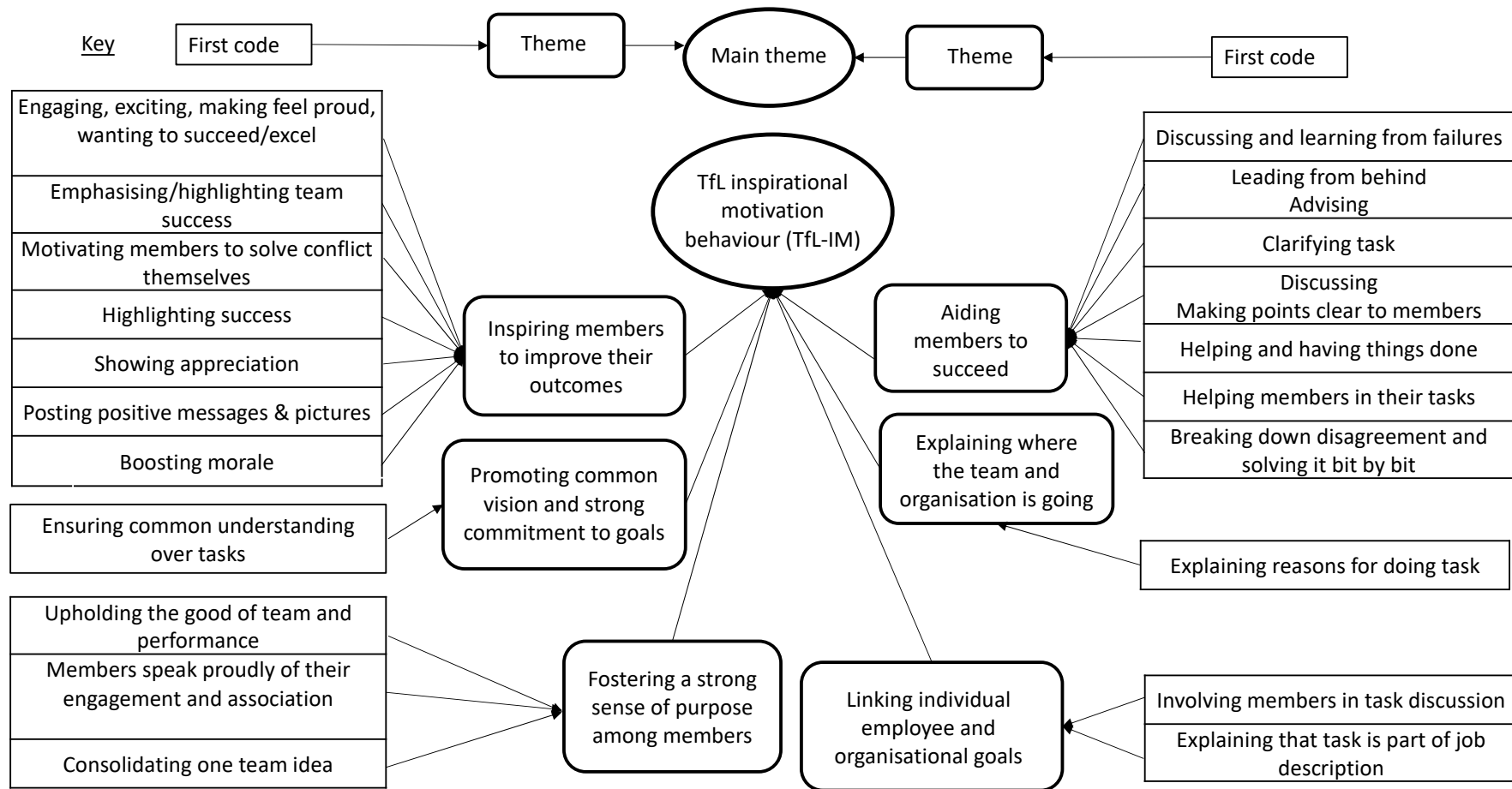


Fig. 4.8c. Coding for transformational leadership inspirational motivation behaviour (TfL-IM)

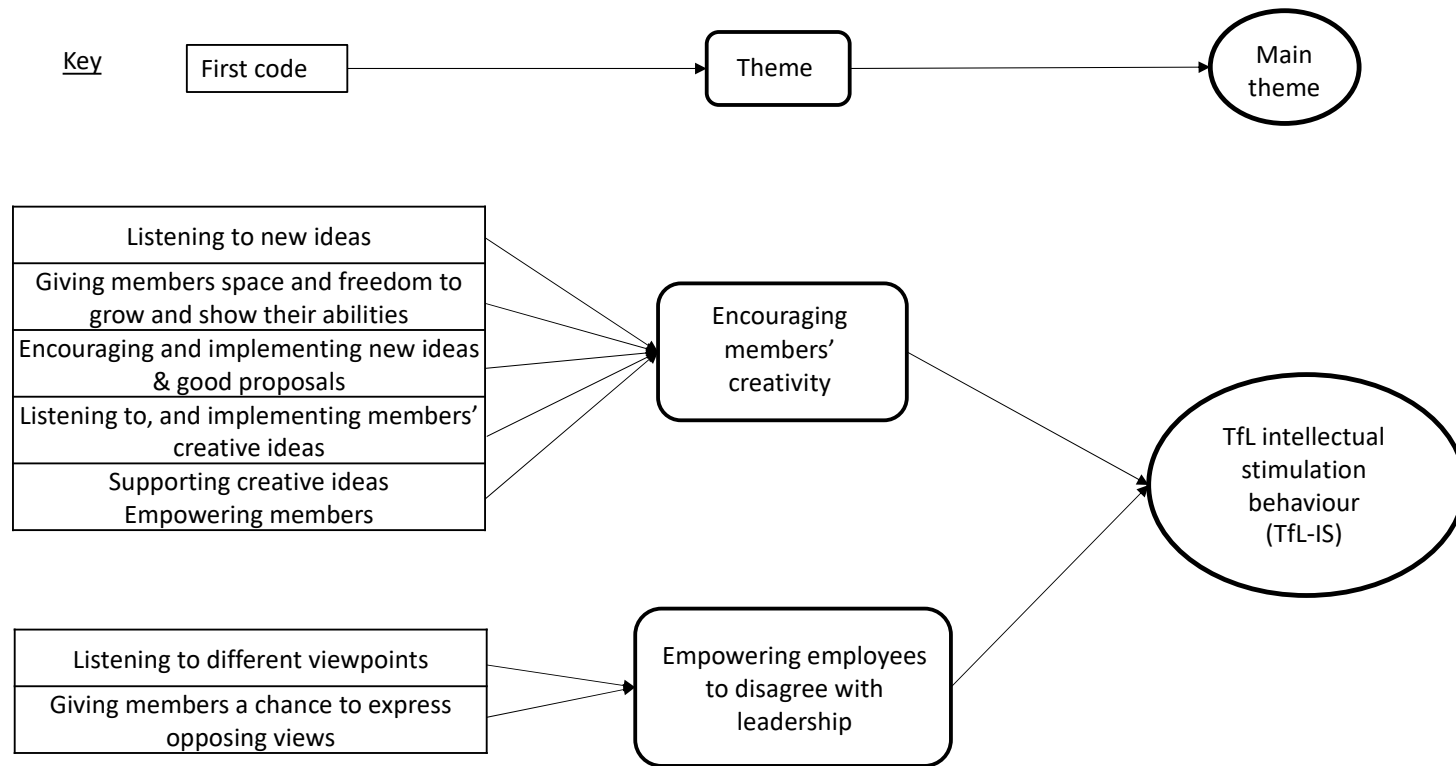


Fig. 4.8d. Coding for transformational leadership intellectual stimulation behaviour (TfL-IS)

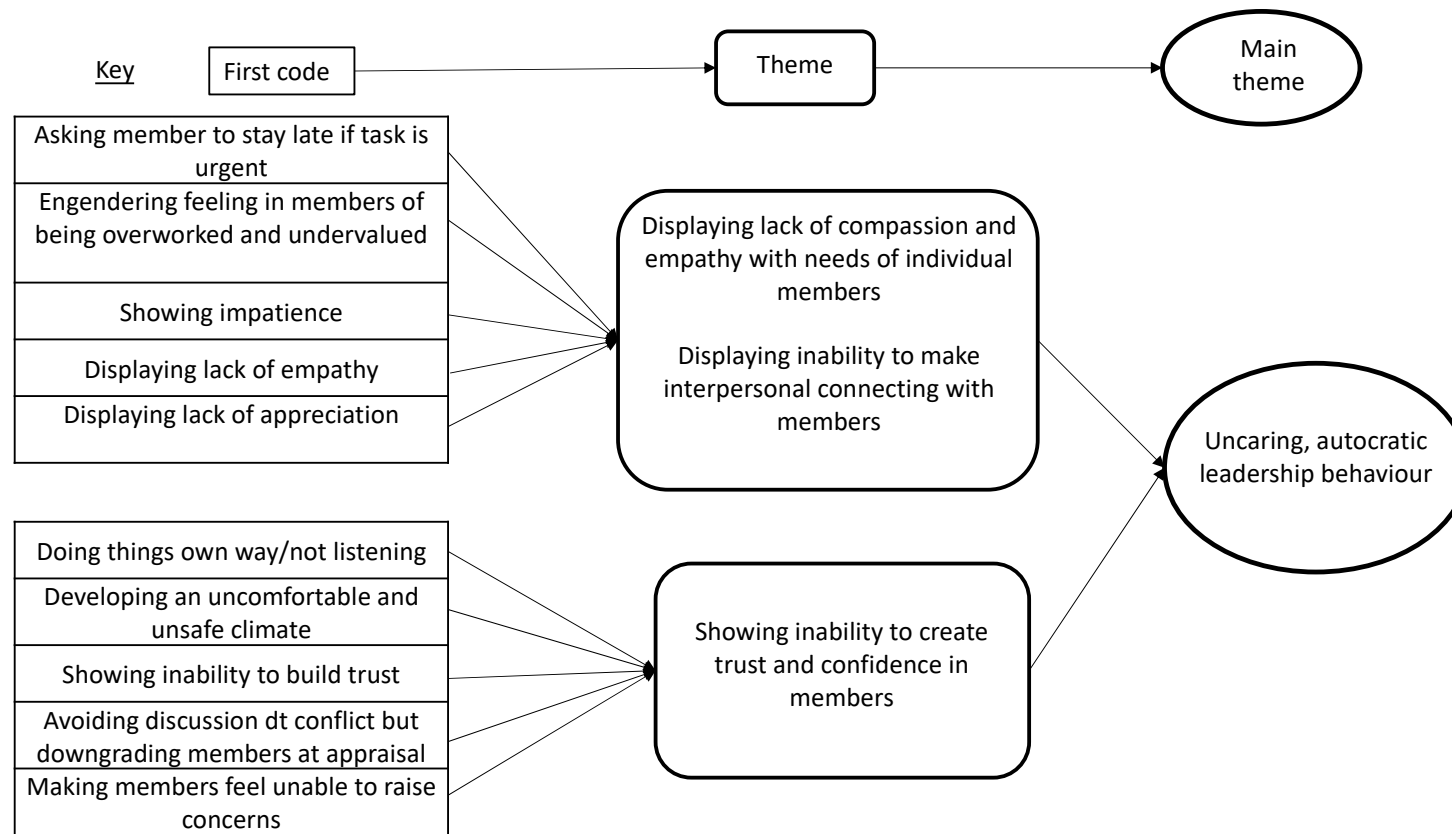


Fig. 4.8e. Coding for leader behaviour (Other)

4.3.5 Conclusion

Most respondents in this study indicated that diversity, particularly, cognitive diversity enhanced team performance; this finding accords with the information processing perspective (e.g., Chi *et al.*, 2009; Jackson *et al.*, 2003; Peters & Karren, 2009; Van der Vegt & Bunderson, 2005; Van Knippenberg & Schippers, 2007). Other respondents suggested that diversity, especially demographic diversity and faultlines, undermined group performance, cohesion, and members' satisfaction; this view is also supported by the social categorisation and social identity perspective research (e.g., De Dreu & West, 2001; Jackson *et al.*, 2003; Jehn *et al.*, 1999; Jehn, *et al.*, 2007; Lau & Murnighan, 2005; O'Reilly *et al.*, 1997; Thatcher *et al.*, 2003; Van Knippenberg *et al.*, 2004). Respondents also perceived group homogeneity to be more conducive to effective communication and increased cohesiveness and group performance than heterogeneous groups; again, finding support in the literature (e.g., Ely & Thomas 2001; Haslam, 2002). Other respondents, however, saw homogeneous groups as having limited potential for developing creative ideas and new solutions; a view also supported by published literature (De Dreu & West, 2001; Jehn *et al.*, 1999). These findings indicate that the association of diversity with team outcomes is complex and more likely to be indirect and non-linear. The findings of this study are supported by the results of most meta-analyses which show that the association of diversity with group performance and viability is rather complex, moderated and/or mediated by contextual variables, and is more likely to display a U-shape curvilinear form (e.g., Chen *et al.*, 2017; Dahlin *et al.*, 2005; Earley & Mosakowski, 2000; Gibson & Vermeulen, 2003; Gonzalez & Denisi, 2009; Richard & Shelor, 2002; Richard *et al.*, 2004; Schwab *et al.*, 2016; Van der Vegt & Bunderson, 2005).

This study's findings which relate to the association of diversity, intra-group conflicts, and group effectiveness also reflect the inconsistency reported by the literature, as the influence of

diversity on intra-group conflicts was differently reported to have positive and negative effects, or no effect (e.g., Pelled *et al.*, 1999; Jehn *et al.*, 1999; O'Reilly *et al.*, 1997; Williams & O'Reilly, 1998). Analysis of the interviews also shows that respondents perceived that diversity causes poor communications, misunderstandings, friction, and intra-group conflicts, and consequently decreases group cohesion and the satisfaction of members with being in the team. These findings again concur with the literature (e.g., Milliken & Martins, 1996; O'Reilly *et al.*, 1997; Van Knippenberg *et al.*, 2004). The study's findings further show that task conflicts frequently escalate to relational conflicts, particularly, if left unresolved; and that the co-occurrence of task with relationship conflicts has negative effects on team performance and cohesion; these findings are supported by past research (e.g., Ayoko *et al.*, 2002; Chatman & Flynn, 2001; De Wit *et al.*, 2012; Jehn, 1995; Jehn & Bendersky, 2003; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Pelled, 1996; Olson *et al.*, 2007; Mooney *et al.*, 2007; Simons & Peterson, 2000; Yang & Mossholder, 2004). The findings further show that diversity (gender and nationality) faultlines harm team performance and viability; again, concurring with past research (e.g., Lovelace *et al.*, 2001; Mohammed & Angell, 2004; Randel, 2002).

On the role of transformational leadership, analysis of the respondents' interviews indicates that team leaders predominantly displayed the transformational leadership behaviours of inspirational motivation, idealised influence, individualised consideration, and intellectual stimulation. These team leaders seem to have created a team atmosphere of mutual trust and psychological safety where their team members feel they can share their ideas among other team members without risk to themselves (Edmondson, 1999; Milliken *et al.*, 2003). These findings also concur with the literature as they suggest that transformational leadership behaviours motivate team members to identify with their team by increasing the social identification of group members, inspiring them to engage in working for the good of the group

(Bass & Avolio, 1993; Kouzes & Posner, 2002; Van Knippenberg & Van Knippenberg, 2005; Wang *et al.*, 2011). Moreover, the findings suggest that transformational leaders have also been positively associated with enhanced performance through their willingness to encourage and intellectually stimulate their team members to question and suggest ideas, and engage in divergent thinking (Gong *et al.*, 2008; Jung, 2001; Jung *et al.*, 2003; Liao & Chuang, 2007; Shin & Zhou, 2003, 2007). The findings further indicate that transformational leadership behaviour decreases the negative association of diversity with the co-occurrence of task and relationship conflicts and group performance through motivating, inspiring and developing positive approaches to group tasks and problems (Ashkanasy & Tse, 2000; McColl-Kennedy & Anderson, 2002). This study also suggests that these transformational leaders adopt accommodating, co-operative and compromise conflict management behaviour as opposed to competitive conflict management; suggesting that such a constructive conflict management approach results in more effective team performance and enhances team integration (Zhang *et al.*, 2011).

This exploratory study provided evidence that task conflicts in diverse group functioning is invariably accompanied by relationship conflicts; all types of diversity are associated with the co-occurrence of task and relationship conflicts, and with team performance and cohesiveness. The findings also suggest that the co-occurrence of task and relationship conflicts is harmful for team performance and viability. There is evidence in the data to suggest that the association between diversity and team performance, on the one hand, and between diversity and the co-occurrence of task and relationship conflicts, on the other, is non-linear. This evidence further indicates that these relationships are likely to be influenced by other contextual factors. Furthermore, the study's findings show that transformational leadership behaviour decreases the negative effects of diversity on the co-occurrence of task and relationship conflicts and

team performance. This study thus provisionally supports the theoretical model which was developed by analysing the literature (see figure 2.1).

4.4 Reflexivity

Researchers, it is argued, construct what they claim to find; constructivists recognise that what they describe in their research has no existence apart from their involvement in it (Lumsden, 2019; Steier, 1991). While there are several constructionist approaches to inquiry, their common starting point, according to Steier (1991), is the notion that worlds are constructed by scientific inquirers who are at the same time participants in their worlds. In describing social systems, the categories, and standards that researchers apply to understand their constructed worlds are necessarily immersed in models that they have also participated in constructing. Hence, the centrality of the notion of reflexivity for the inquiry, where reflexivity can be understood as a bending back on itself; a turning-back of one's experience upon oneself (Lumsden, 2019; Steier, 1991).

Reflexivity in research thus requires researchers to display how they chose and refined their topic and sharpened the research problem; chose and refined the methodological approach; acted in the field and interacted with participants; documented the research; analysed and interpreted data; conceptualised and theorised the phenomenon; and presented the findings (Breuer & Roth, 2003). Understanding reflexivity as a turning-back of one's experience upon oneself, the researcher will now examine his role in the research process. The researcher's presentation of this reflexive account of his research journey, focuses on those aspects that pertain to his person as a researcher, the participants, and the context of the research.

The researcher is related to one of the founders of UBT but neither the founder nor himself has an executive position at the University. He was aware that this kinship might result in perceived unequal power relations with the participants of this study; he was also aware that this proximity might have the disadvantage of attracting answers that the participants felt he would like to hear, rather than giving genuine responses. However, he felt that his conduct throughout the data collection and interview process (see 3.2.2.4 Ethical considerations) alleviated this perceived effect. The researcher also has good knowledge of the Ahlia University in Bahrain and Al Esraa University in Iraq through collaborative organisational and personal ties.

Furthermore, the researcher's role in every stage of this research process cannot be ignored; he structured the phenomena to be investigated, the process and the outcome; and structured the dialogue with his participants and their feedback to his interpretations. He also decided on what aspects of the research process were to be noted, documented, and analysed, and what findings to be reported, leaving out events and facets of the field which he felt were not salient or important. The researcher also constructed the plausibility, coherence, and credibility of his findings.

The researcher chose the particular relationship angle to investigate, that of the association of team diversity with conflict and team effectiveness, and the role leadership (specifically transformational leadership) in this association. It was his choice to adopt a pragmatic mixed methods research design; he chose the context for undertaking the research, the population, sample, and designed the interview questions. Moreover, it was also the researcher who decided that theoretical saturation (Strauss & Glaser, 1967) was obtained, a subjective judgement. The researcher also offered his own interpretation of the data, while being aware that the interpretive outcome of his qualitative study is not a unique solution. However, in his

structuring of the research process, the researcher endeavoured to collect credible data, followed research procedures that are widely accepted in the academic community, felt that he had produced authentic, dependable, and credible findings. The researcher's subjectivity and bias have also been minimised as these findings are supported by the findings of past studies; they also triangulated well with the results of the quantitative study (please see chapter 3, section 3.2.2.3 and chapter 6, section 6.2).

Chapter 5

Quantitative Data: Results and Analysis

5.1 Introduction

The aim of this chapter is to test the relationships of the theoretical model which hypothesised that 1) workgroup diversity has a curvilinear U-shaped effect on group performance (hypotheses H1a and H1b), 2) workgroup diversity has a negative linear effect on group viability (hypotheses H2a and H2b), 3) workgroup diversity has a curvilinear inverted U-shaped effect on co-occurrence of task and relationship conflict (hypotheses H3a and H3b), 4) co-occurrence of task and relationship conflict has a negative linear effect on group effectiveness (performance and viability) (hypothesis H4), 5) co-occurrence of task and relationship conflicts mediate the relationship between workgroup diversity and group effectiveness (group performance and group viability) (hypotheses H5a and H5b), 6) transformational leadership moderates the relationship between workgroup diversity and co-occurrence of task and relationship conflict (hypotheses H6a and H6b), 7) transformational leadership moderates the negative and indirect effect of workgroup diversity on group effectiveness through the co-occurrence of task and relationship conflict (hypothesis H7) (see fig. 2.1, Chapter 2).

The characteristics of the sample which was used to test these hypotheses was discussed in the methodology chapter under section 3.2.3.1 Sample size and sampling procedure. The testing procedure which confirmed face validity and content validity of these scales were also undertaken in the methodology chapter under section 3.2.3.5 Validity and reliability of the scales. Testing the factorability of the measurement scales is undertaken in section 5.2, testing their validity through the estimation of the goodness of fit using confirmatory factor analysis technique, AMOS (version 23) (section 5.3), and testing the reliability of the scales (sub-

section 5.4). Aggregation of individual level data to group level data was conducted under section 5.5, testing of the model's hypotheses in section 5.6, and the chapter is concluded in section 5.7.

5.2 Factor analysis (principal component analysis - PCA)

5.2.1 Cognitive diversity scale

The five items of the cognitive diversity scale were subjected to the principal component analysis using SPSS version 23. Before performing this analysis, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix (Table 5.1) shows many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin (KMO) value is 0.89, exceeding the recommended value of 0.6 (Field, 2005), and Bartlett's test of sphericity reached statistical significance, $p = 0.000$ ($p < 0.01$), supporting the factorability of the correlation matrix (Table 5.2). The principal component analysis of the cognitive diversity scale resulted in one component with eigenvalues exceeding 1 (3.851), accounting for 77.16% of the variance (Table 5.3).

Table 5.1

Correlation matrix (CD)		diver1	diver2	diver3	diver4	diver5
diver1	Pearson Correlation	1				
	N	354				
diver2	Pearson Correlation	.709	1			
	Sig. (2-tailed)	.000				
	N	354	354			
diver3	Pearson Correlation	.770	.761	1		
	Sig. (2-tailed)	.000	.000			
	N	354	354	354		
diver4	Pearson Correlation	.692	.711	.768	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	354	354	354	354	
diver5	Pearson Correlation	.616	.652	.708	.752	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	354	354	354	354	354

Table 5.2

KMO and Bartlett's Test (CD)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.890
Bartlett's Test of Sphericity	Approx. Chi-Square	1340.704
	df	10
	Sig.	.000

Table 5.3

Total Variance Explained (CD)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.858	77.160	77.160	3.858	77.160	77.160
2	.420	8.406	85.566			
3	.289	5.774	91.340			
4	.233	4.658	95.998			
5	.200	4.002	100.000			

Extraction Method: Principal Component Analysis.

The result from the varimax rotation also shows that the factor loadings are greater than 0.4 (see Table 5.4). The interpretation of the one component is consistent with Van der Vegt and Janssen's (2003) original formulation of the scale.

Table 5.4

Component Matrix ^a (CD)	
	Component
	1
diver1	.862
diver2	.873
diver3	.915
diver4	.894
diver5	.847
Extraction	Method:
Principal	Component
Analysis.	
a. 1 components extracted.	

5.2.2 Co-occurrence of task and relationship conflict scale

The eight items of the co-occurrence of task and relationship conflict scale were subjected to the principal component analysis using SPSS version 23. Before performing this analysis, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix shows many coefficients of 0.3 and above (Table 5.5). The Kaiser-Meyer-Olkin (KMO) value is 0.866, exceeding the recommended value of 0.6 and Bartlett's test of sphericity reached statistical significance, $p = 0.000$ ($p < 0.01$) (Table 5.6), supporting the factorability of the correlation matrix. The principal component analysis of the co-occurrence of task and relationship conflict scale resulted in two components with eigenvalues exceeding 1 (4.50 and 1.84), accounting for 41.52 % and 37.82% of the variance respectively (Table 5.7). The two components result explains a total of 79.34 % of the variance. The result from the varimax rotation also shows that the factor loadings of all components are greater than 0.4 and that there are no cross loadings (Table 5.8). These results are consistent with the assumed theoretical basis.

Table 5.5

Correlations (CTRC)		rel1	rel2	rel3	rel4	tas1	tas2	tas3	tas4
rel1	Pearson Correlation	1							
	N	354							
rel2	Pearson Correlation	.761	1						
	Sig. (2-tailed)	.000							
	N	353	353						
rel3	Pearson Correlation	.787	.796	1					
	Sig. (2-tailed)	.000	.000						
	N	354	353	354					
rel4	Pearson Correlation	.724	.752	.823	1				
	Sig. (2-tailed)	.000	.000	.000					
	N	354	353	354	354				
tas1	Pearson Correlation	.297	.312	.278	.226	1			
	Sig. (2-tailed)	.000	.000	.000	.000				
	N	354	353	354	354	354			
tas2	Pearson Correlation	.356	.304	.333	.296	.712	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000			
	N	354	353	354	354	354	354		
tas3	Pearson Correlation	.371	.356	.364	.366	.630	.696	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		
	N	354	353	354	354	354	354	354	
tas4	Pearson Correlation	.370	.364	.381	.328	.600	.666	.719	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	
	N	354	353	354	354	354	354	354	354

Table 5.6

KMO and Bartlett's test (intergroup conflict, CTRC)		
KMO and Bartlett's test (intergroup conflict)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.866
Bartlett's Test of Sphericity	Approx. Chi-Square	2065.876
	Df	28
	Sig.	.000

Table 5.7

Total Variance Explained (CTRC)									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	4.508	56.347	56.347	4.508	56.347	56.347	3.322	41.522
2	1.840	22.996	79.343	1.840	22.996	79.343	3.026	37.821	79.343
3	.437	5.460	84.803						
4	.307	3.839	88.642						
5	.286	3.573	92.215						
6	.259	3.238	95.453						
7	.209	2.613	98.066						
8	.155	1.934	100.000						

Extraction Method: Principal Component Analysis.

Table 5.8

Rotated Component Matrix ^a (CTRC)		
	Component	
	1	2
rel1	.867	
rel2	.884	
rel3	.915	
rel4	.895	
tas1		.846
tas2		.874
tas3		.845
tas4		.825

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

5.2.3 Transformational leadership

Inspection of the correlation matrix (Table 5.9) shows many coefficients of 0.3 and above. The Kaiser-Meyer-Oklin (KMO) value is 0.975, exceeding the recommended value of 0.6 and Bartlett's test of sphericity reached statistical significance, $p = 0.000$ ($p < 0.01$) (Table 5.10), supporting the factorability of the correlation matrix. The principal component analysis of the Transformational leadership scale results in one component with eigenvalues exceeding 1 (11.985), accounting for 58% of the variance (Table 5.11). The result from the varimax rotation also shows that the factor loadings of all components are greater than 0.4 and that there are no cross loadings (Table 5.12).

Table 5.9

Correlation matrix (TFL)		Ide1	Ide2	Ide3	Ide4	Ide5	Ide6	Ide7	Ide8	Ins1	Ins2	Ins3	Ins4	Int1	Int2	Int3	Int4	Ind1	Ind2	Ind3	Ind4	
Ide1	Pearson Correlation N	1 354																				
Ide2	Pearson Correlation Sig. (2-tailed) N	.520 .000 354	1 354																			
Ide3	Pearson Correlation Sig. (2-tailed) N	.540 .000 354	.617 .000 354	1 354																		
Ide4	Pearson Correlation Sig. (2-tailed) N	.479 .000 354	.545 .000 354	.651 .000 354	1 354																	
Ide5	Pearson Correlation Sig. (2-tailed) N	.548 .000 354	.603 .000 354	.589 .000 354	.645 .000 354	1 354																
Ide6	Pearson Correlation Sig. (2-tailed) N	.568 .000 354	.625 .000 354	.622 .000 354	.627 .000 354	.665 .000 354	1 354															
Ide7	Pearson Correlation Sig. (2-tailed) N	.578 .000 354	.543 .000 354	.595 .000 354	.535 .000 354	.559 .000 354	.640 .000 354	1 354														
Ide8	Pearson Correlation Sig. (2-tailed) N	.556 .000 354	.555 .000 354	.576 .000 354	.614 .000 354	.626 .000 354	.644 .000 354	.598 .000 354	1 354													
Ins1	Pearson Correlation Sig. (2-tailed) N	.497 .000 354	.578 .000 354	.530 .000 354	.516 .000 354	.557 .000 354	.588 .000 354	.551 .000 354	.580 .000 354	1 354												
Ins2	Pearson Correlation Sig. (2-tailed) N	.501 .000 354	.544 .000 354	.607 .000 354	.537 .000 354	.545 .000 354	.611 .000 354	.579 .000 354	.551 .000 354	.591 .000 354	1 354											
Ins3	Pearson Correlation Sig. (2-tailed) N	.553 .000 354	.585 .000 354	.544 .000 354	.564 .000 354	.586 .000 354	.652 .000 354	.513 .000 354	.556 .000 354	.566 .000 354	.595 .000 354	1 354										
Ins4	Pearson Correlation Sig. (2-tailed) N	.550 .000 354	.601 .000 354	.567 .000 354	.579 .000 354	.580 .000 354	.624 .000 354	.565 .000 354	.598 .000 354	.650 .000 354	.624 .000 354	.679 .000 354	1 354									
Int1	Pearson Correlation Sig. (2-tailed) N	.503 .000 354	.564 .000 354	.559 .000 354	.516 .000 354	.565 .000 354	.582 .000 354	.552 .000 354	.554 .000 354	.515 .000 354	.534 .000 354	.569 .000 354	.638 .000 354	1 354								
Int2	Pearson Correlation Sig. (2-tailed) N	.459 .000 354	.569 .000 354	.553 .000 354	.559 .000 354	.584 .000 354	.570 .000 354	.508 .000 354	.526 .000 354	.570 .000 354	.569 .000 354	.576 .000 354	.628 .000 354	.625 .000 354	1 354							

Int3	Pearson Correlation	.534	.588	.568	.548	.522	.568	.528	.554	.507	.494	.514	.564	.645	.569	1					
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000						
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354					
Int4	Pearson Correlation	.514	.541	.583	.536	.559	.611	.555	.559	.587	.574	.596	.595	.590	.572	.565	1				
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000					
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354				
Ind1	Pearson Correlation	.539	.486	.492	.522	.501	.522	.489	.551	.515	.508	.553	.582	.524	.472	.526	.579	1			
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000				
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354			
Ind2	Pearson Correlation	.543	.521	.514	.524	.543	.557	.525	.552	.499	.504	.502	.518	.535	.543	.540	.608	.568	1		
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000			
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354		
Ind3	Pearson Correlation	.494	.499	.558	.515	.527	.575	.522	.574	.513	.530	.521	.554	.530	.526	.568	.576	.628	.594	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	
Ind4	Pearson Correlation	.458	.478	.538	.510	.491	.588	.517	.594	.522	.509	.465	.582	.514	.498	.528	.605	.528	.534	.605	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354	354

Table 5.10

KMO and Bartlett's test (TFL)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.975
Bartlett's Test of Sphericity	Approx. Chi-Square	4876.18
	df	190
	Sig.	.000

Table 5.11

Total Variance Explained (TFL)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.589	57.946	57.946	11.589	57.946	57.946
2	.803	4.014	61.959			
3	.680	3.401	65.360			
4	.637	3.184	68.545			
5	.610	3.052	71.597			
6	.556	2.778	74.375			
7	.495	2.477	76.851			
8	.487	2.436	79.287			
9	.460	2.298	81.585			
10	.435	2.177	83.761			
11	.406	2.031	85.793			
12	.390	1.951	87.744			
13	.358	1.788	89.532			
14	.355	1.774	91.306			
15	.348	1.741	93.047			
16	.321	1.604	94.650			
17	.310	1.549	96.199			
18	.276	1.379	97.578			
19	.246	1.231	98.809			
20	.238	1.191	100.000			

Extraction Method: Principal Component Analysis.

Table 5.12

Component Matrix ^a (TFL)	
	Component
	1
Ide1	.717
Ide2	.760
Ide3	.776
Ide4	.758
Ide5	.776
Ide6	.820
Ide7	.752
Ide8	.784
Ins1	.751
Ins2	.757
Ins3	.769
Ins4	.808
Int1	.763
Int2	.754
Int3	.750
Int4	.783
Ind1	.726
Ind2	.736
Ind3	.749
Ind4	.726
Extraction	Method:
Principal	Component
Analysis.	
a. 1 components extracted.	

5.2.4 Group viability scale

The 5 items of the group viability scale were subjected to the principal component analysis. Before performing this analysis, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix (Table 5.13) shows many coefficients of 0.3 and above. The Kaiser-Meyer-Okin (KMO) value is 0.873, exceeding the recommended value of 0.6 (Field, 2005), and Bartlett's test of sphericity reached statistical significance, $p = 0.000$ (p

< 0.01), supporting the factorability of the correlation matrix (Table 5.14). The principal component analysis of the group viability scale resulted in one component with eigenvalues exceeding 1 (3.504), accounting for 70 % of the variance (Table 5.15).

Table 5.13

Correlations (Group viability)		via 1	via 2	via 3	via 4	via 5
via 1	Pearson Correlation	1				
	N	354				
via 2	Pearson Correlation	.726	1			
	Sig. (2-tailed)	.000				
	N	354	354			
via 3	Pearson Correlation	.760	.762	1		
	Sig. (2-tailed)	.000	.000			
	N	354	354	354		
via 4	Pearson Correlation	.708	.734	.783	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	353	353	353	353	
via 5	Pearson Correlation	.400	.403	.388	.445	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	354	354	354	353	354

Table 5.14

KMO and Bartlett's Test (Group viability)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.873	
Bartlett's Test of Sphericity	Approx. Chi-Square	1123.277
	Df	10
	Sig.	.000

Table 5.15

Total Variance Explained (Group viability)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.504	70.089	70.089	3.504	70.089	70.089
2	.737	14.743	84.832			
3	.293	5.864	90.696			
4	.265	5.295	95.991			
5	.200	4.009	100.000			

Extraction Method: Principal Component Analysis.

5.2.5 Task interdependence scale

Task interdependence scale includes five items which were subjected to the principal component analysis. Before performing this analysis, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix (Table 5.16) shows many coefficients of 0.3 and above. The Kaiser-Meyer-Olkin (KMO) value is 0.856, exceeding the recommended value of 0.6 (Field, 2005), and Bartlett's test of sphericity reached statistical significance, $p = 0.000$ ($p < 0.01$), supporting the factorability of the correlation matrix (Table 5.17). The principal component analysis of the task interdependence viability scale resulted in one component with eigenvalues exceeding 1 (3.762), accounting for 75.24 % of the variance (Table 5.18 and table 5.19).

Table 5.16

Correlations (task interdependence)		interdep1	interdep2	interdep3	interdep4	interdep5
interdep1	Pearson Correlation	1				
	N	354				
interdep2	Pearson Correlation	.800	1			
	Sig. (2-tailed)	.000				
	N	354	354			
interdep3	Pearson Correlation	.710	.794	1		
	Sig. (2-tailed)	.000	.000			
	N	354	354	354		
interdep4	Pearson Correlation	.591	.664	.723	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	354	354	354	354	
interdep5	Pearson Correlation	.569	.634	.672	.738	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	354	354	354	354	354

Table 5.17

KMO and Bartlett's Test (task interdependence)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.856	
Bartlett's Test of Sphericity	Approx. Chi-Square	1314.544
	df	10
	Sig.	.000

Table 5.18

Total Variance Explained (task interdependence)						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.762	75.242	75.242	3.762	75.242	75.242
2	.550	11.004	86.246			
3	.280	5.591	91.837			
4	.236	4.721	96.558			
5	.172	3.442	100.000			

Extraction Method: Principal Component Analysis.

Table 5.19 Component matrix (task interdependence)

Component Matrix ^a	
	Component
	1
interdep1	.847
interdep2	.901
interdep3	.902
interdep4	.855
interdep5	.829

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

5.3. Confirmatory factor analysis: Convergent and discriminant validity

Prior to analysing the data, confirmatory factor analysis (CFA) was conducted at the individual level to check sufficient convergent and discriminant validity among all variables. A five-factor CFA model (see figure 5.1) was first tested, including cognitive diversity, TFL, relationship conflict, task conflict, and group viability, which showed that the measurement model fitted the data well ($\chi^2=877.9$, $df=655$, $CFI=0.98$, $SRMR=0.03$, $RMSEA=0.03$); factor loadings for all items were significant, demonstrating convergent

validity) (see table 5.20). To prove discriminant validity, the original five-factor model was compared with two models: with a four-factor model combining relationship conflict and task conflict into one latent variable (see figure 5.2); and with a one-factor model that incorporated all five variables (see figure 5.3). Chi-square difference tests were used to compare the models. Model comparison results revealed that the alternative measurement models fitted the data poorly compared to the original five-factor model (see Table 5.20). Thus, the hypotheses were tested using these five variables as discriminant constructs (The five-factor model is shown in table 5.21).

Figure 5.1 CFA, path diagram (Five factors model)

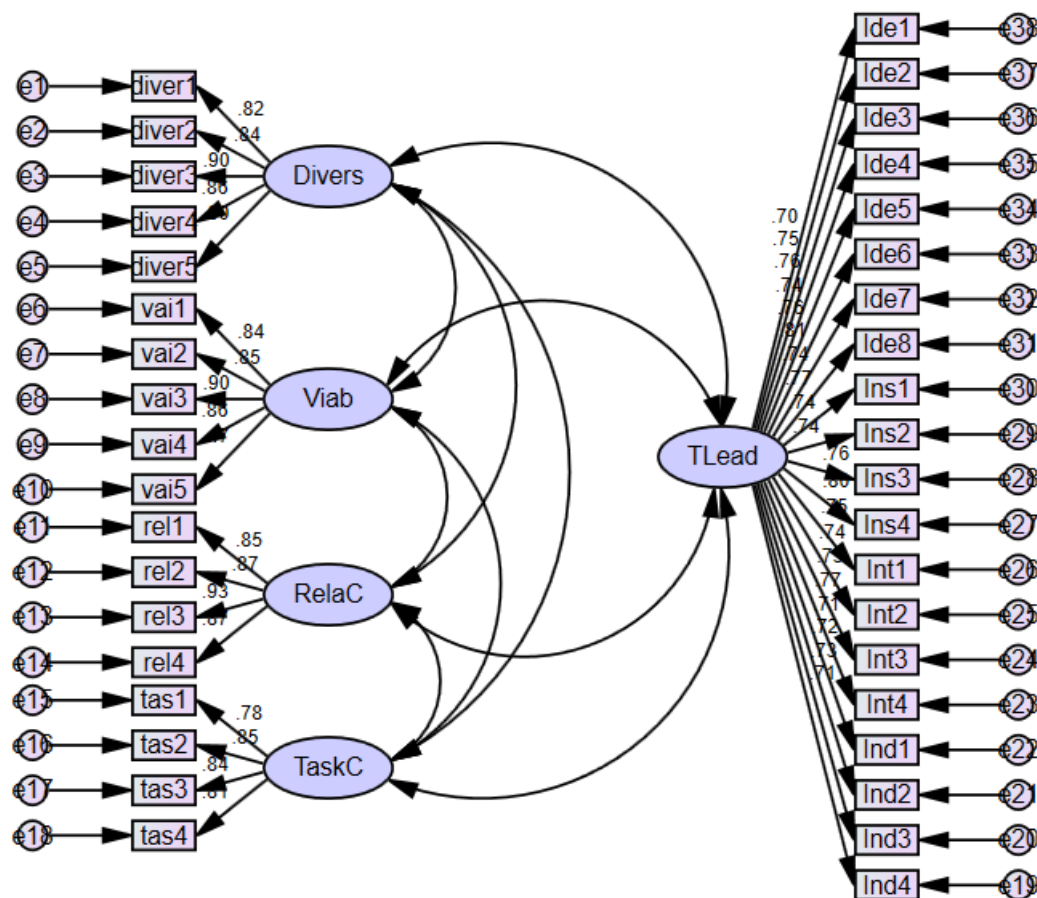


Figure 5.2 CFA, path diagram (Four factors model)

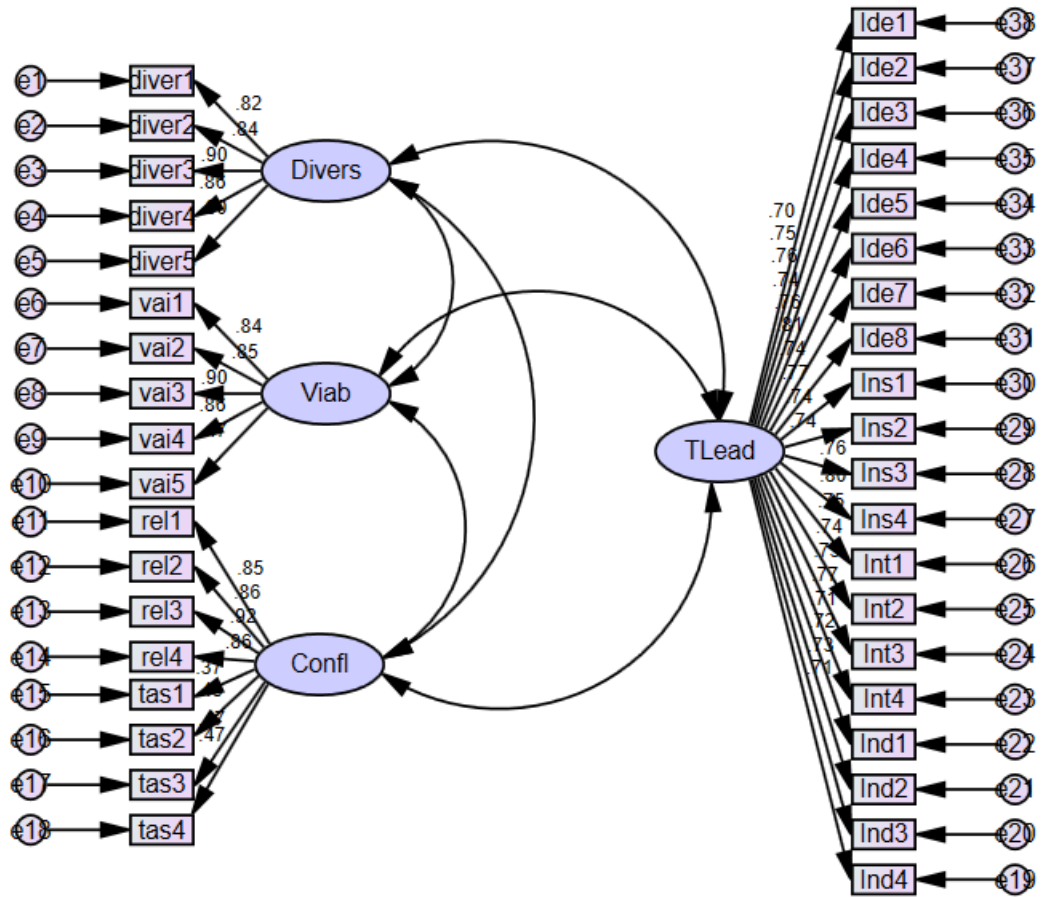


Figure 5.3 CFA, path diagram (One factor model)

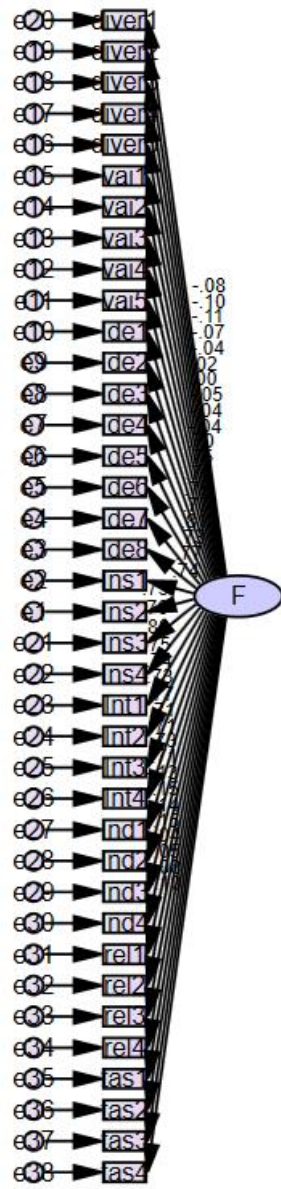


Table 5.20. Confirmatory factor analyses for study variables.

Model	χ^2	$\chi^2 df$	CFI	RMSEA	SRMR	$\Delta\chi^2$	$\chi^2 \Delta df$
5-factor	912.5	655	0.97	0.03	0.03	--	--
4-factor	1543.57	659	0.90	0.06	0.05	660.6*	4
1-factor	5394.8	665	0.49	0.14	0.16	3,872.6*	10

Notes: $n = 354$ and 56 teams. The five-factor model loads all five scale items on their own respective factors and is the hypothesized structure; the four-factor model loads cognitive team diversity, group viability, and TFL on the first three factors, respectively, and task conflict and relationship items on the fourth factor; the one-factor model loads all items on a single factor. ** $p < 0.01$.

Table 5.21 CFA (Five factors model)

Items			Estimate	S.E.	C.R.	P
diver1	<---	Divers	.824	.082	14.980	***
diver2	<---	Divers	.837	.056	18.792	***
diver3	<---	Divers	.904	.054	21.108	***
diver4	<---	Divers	.863	.053	19.705	***
diver5	<---	Divers	.800	.052	17.584	***
via 1	<---	Viab	.840	.070	16.515	***
via 2	<---	Viab	.853	.051	19.810	***
via 3	<---	Viab	.899	.050	21.514	***
via 4	<---	Viab	.863	.050	20.182	***
via 5	<---	Viab	.469	.062	9.056	***
rel1	<---	RelaC	.852			
rel2	<---	RelaC	.866	.052	21.210	***
rel3	<---	RelaC	.929	.046	23.948	***
rel4	<---	RelaC	.873	.048	21.514	***
tas1	<---	TaskC	.775			
tas2	<---	TaskC	.845	.071	16.554	***
tas3	<---	TaskC	.843	.069	16.515	***
tas4	<---	TaskC	.813	.070	15.857	***
Ind4	<---	TLead	.709			
Ind3	<---	TLead	.729	.074	13.456	***
Ind2	<---	TLead	.716	.070	13.201	***
Ind1	<---	TLead	.706	.070	13.028	***
Int4	<---	TLead	.768	.072	14.163	***
Int3	<---	TLead	.733	.074	13.518	***
Int2	<---	TLead	.739	.079	13.640	***
Int1	<---	TLead	.749	.075	13.810	***
Ins4	<---	TLead	.798	.076	14.718	***
Ins3	<---	TLead	.758	.080	13.993	***
Ins2	<---	TLead	.744	.077	13.719	***
Ins1	<---	TLead	.738	.083	13.607	***
Ide8	<---	TLead	.770	.080	14.216	***

Items			Estimate	S.E.	C.R.	P
Ide7	<---	TLead	.737	.078	13.596	***
Ide6	<---	TLead	.812	.082	14.980	***
Ide5	<---	TLead	.765	.076	14.113	***
Ide4	<---	TLead	.745	.076	13.744	***
Ide3	<---	TLead	.763	.078	14.075	***
Ide2	<---	TLead	.747	.079	13.784	***
Ide1	<---	TLead	.698	.071	12.874	***

5.4 Reliability

Reliability of a measuring instrument, in this case, cognitive diversity, transformational leadership, relationship conflict, task conflict, group viability, and group performance measures are tested through internal consistency (Cronbach's alpha). Table 5.22 presents Cronbach's alpha values for the cognitive diversity, transformational leadership, relationship conflict, task conflict, group viability, group performance, and task interdependence are 0.95, 0.96, 0.93, 0.89, 0.96, 0.88, and 0.91 respectively. All of these Cronbach's alpha values are high (>0.75) and are therefore acceptable.

Table 5.22 Reliability (Cronbach's alpha)

Scales	Cronbach's alpha
Cognitive diversity	0.93
TFL	0.96
Task conflict	0.89
Relationship conflict	0.93
Group viability	0.88
Group performance	0.97
Task interdependence	0.91

5.5 Justifying Data Aggregation

Group level data requires special statistical procedures to analyse the data (Klein & Kozlowski, 2000). One of those procedures is to justify the aggregation of individual level data to group level. The researcher justified aggregation statistically by using *r_{wg}*. The *r_{wg}* is an index of the agreement or consensus across perceivers in a common setting. The *r_{wg}* is calculated by interrater agreement using James *et al.*'s (1984) formula (see below) by comparing an observed group variance to an expected random variance. *r_{wg}* was used to justify the aggregation of individual group members' survey responses to the group level for cognitive diversity, TFL, relationship conflict, task conflict and group viability. The *r_{wg}* for cognitive diversity was 0.75, for TFL 0.96, for relationship conflict 0.78, for task conflict 0.77, and for group viability 0.87 (Table 5.23). All of the *r_{wg}* values were above the critical cut-off value of 0.70 (James *et al.*, 1984), suggesting it was appropriate to aggregate individual responses to the group level.

$$r_{wg}(J) = J[1 - (S_{X_j}^2/\sigma_E^2)] / J[1 - (S_{X_j}^2/\sigma_E^2)] + (S_{X_j}^2/\sigma_E^2)$$

where;

r_{wg}(J) is the within-group interrater agreement

$S_{X_j}^2$ is the mean of the observed variance on the J parallel items

α_E^2 is the variance on x_j that would be expected if all judgments were due excessively to random measurement error,

Table 5.23. Within-Group Interrater Agreement (*r_{wg}*) of the study variables

Variable	No. of items	Minimum <i>r_{wg}</i>	Maximum <i>r_{wg}</i>	Average <i>r_{wg}</i>
Cognitive diversity	5	0.42	0.97	0.75
Task conflict	4	0.56	0.98	0.77
Relationship Conflict	4	0.47	0.96	0.78
TFL	20	0.65	0.94	0.96
Group viability	5	0.57	0.96	0.87

5.6 Hypothesis testing

Means and standard deviations of the study variables are reported in table 5.24 as individual level. Correlations among the variables are displayed in table 5.25 as group level. The correlations among the study variables tended to be low to high (generally ranging from .00 to -.54). The correlations among the variables ranged from .00 (group size fit and task interdependence) to -.54 (co-occurrence and group performance).

Table 5.24 Item-Level Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Task interdependence	354	1.80	5.00	3.8463	.81508
interdep1	354	1.00	5.00	4.0169	.92172
interdep2	354	1.00	5.00	4.0000	.90638
interdep3	354	1.00	5.00	3.9068	.92483
interdep4	354	1.00	5.00	3.7486	.96486
interdep5	354	1.00	5.00	3.5593	.98610
Cognitive Diversity	354	1.00	5.00	3.0017	1.00880
diver1	354	1.00	5.00	2.8842	1.14927
diver2	354	1.00	5.00	3.1073	1.18766
diver3	354	1.00	5.00	3.0424	1.18341
diver4	354	1.00	5.00	3.0000	1.14402
diver5	354	1.00	5.00	2.9746	1.07610
Transformational Leadership	354	.65	4.00	2.1831	.72926
Ide1	354	.00	4.00	2.1299	.89699
Ide2	354	.00	4.00	2.1921	.99707
Ide3	354	.00	4.00	2.1949	.98365
Ide4	354	.00	4.00	2.2090	.95883
Ide5	354	.00	4.00	2.1554	.94981
Ide6	354	.00	4.00	2.1610	1.03182
Ide7	354	.00	4.00	2.1808	.97625
Ide8	354	.00	4.00	2.2147	1.00097
Ins1	354	.00	4.00	2.1836	1.03899
Ins2	354	.00	4.00	2.2062	.96679
Ins3	354	.00	4.00	2.1780	1.00957
Ins4	354	.00	4.00	2.1836	.95666
Int1	354	.00	4.00	2.0565	.93843
Int2	354	.00	4.00	2.1977	.99597
Int3	354	.00	4.00	2.1723	.92875
Int4	354	.00	4.00	2.1780	.90292

Ind1	354	.00	4.00	2.1723	.87859
Ind2	354	.00	4.00	2.2175	.88464
Ind3	354	.00	4.00	2.2260	.93093
Ind4	354	.00	4.00	2.1271	.95993
Relationship Conflict	354	1.00	5.00	2.0817	.95231
rel1	354	1.00	5.00	2.0734	1.02392
rel2	354	1.00	5.00	2.1638	1.10176
rel3	354	1.00	5.00	2.0367	1.03003
rel4	354	1.00	5.00	2.0537	1.02653
Task Conflict	354	1.00	5.00	2.4753	.95448
tas1	354	1.00	5.00	2.4746	1.04877
tas2	354	1.00	5.00	2.4831	1.13706
tas3	354	1.00	5.00	2.4463	1.09787
tas4	354	1.00	5.00	2.4972	1.11454
Group Viability	354	1.00	5.00	2.7556	.97061
via 1	354	1.00	5.00	2.6186	1.17278
via 2	354	1.00	5.00	2.7232	1.16715
via 3	354	1.00	5.00	2.7062	1.17027
via 4	354	1.00	5.00	2.7006	1.15665
via 5	354	1.00	5.00	3.0311	1.18616
Valid N (listwise)	354				

Table 5.25 Correlations among study variables

Variable	Means	SD	1	2	3	4	5	6	7	8	9	10
1. Group size	6.32	4.81	1									
2. Task interdependence	3.84	0.62	0.00	1								
3. Cognitive diversity	2.99	0.71	0.01	-0.12	1							
4. Transformational leadership	2.24	0.64	-0.11	0.02	-0.08	1						
5. Task conflict	2.53	0.61	-0.14	0.09	0.33*	-0.16	1					
6. Relationship conflict	2.07	0.62	0.01	0.12	0.27*	-0.27*	0.29*	1				
7. Co-occurrence	0.57	0.24	-0.19	-0.08	0.28*	-0.18	0.01	-0.01	1			
8. Demographic diversity	0.37	0.13	0.34**	-0.15	-0.11	-0.05	-0.18	0.07	0.09	1		
9. Group performance	3.17	1.16	0.08	0.05	-0.16	0.20	-0.01	-0.08	-0.54**	-0.13	1	
10. Group viability	2.63	0.90	0.19	0.14	-0.30*	0.01	0.02	-0.03	-0.45**	-0.24	0.10	1

Notes: $n=56$ groups. ** $p<0.01$; * $p<0.05$.

Hypothesis set H1

Hypothesis 1 stated that the relationship between workgroup diversity and performance would be curvilinear, such that as work group diversity (*H1a*: cognitive diversity; *H1b*: demographic diversity) increased, group performance would decline; but only to a point, beyond this point further diversity would lead to an increase in group performance. A hierarchical regression analysis was conducted using the quadratic model to test this hypothesis. A scatterplot bivariate graph was created in order to better visualise the strength and direction between diversity and group performance. The predictor variables were squared before the variables were entered in the simple regression model.

Table 5.26 presents the results of the hierarchical regression analysis, including control variables (group size and task interdependence) and the main effect of TFL. To test the curvilinear relationship between workgroup diversity and group performance (*H1*), entering cognitive diversity and demographic diversity and its quadratic terms into the model resulted in a significant amount of incremental explained variance in group performance (change in $R^2=0.25$, $p<0.01$); the coefficient of the quadratic term for cognitive diversity was significant and positive (*H1a*: 1.08, $p<0.01$), indicating a U-shaped relationship with group performance, while the coefficient of the quadratic term for demographic diversity was non-significant (*H1b*: 5.83, $p>0.05$). These findings partially support *H1*.

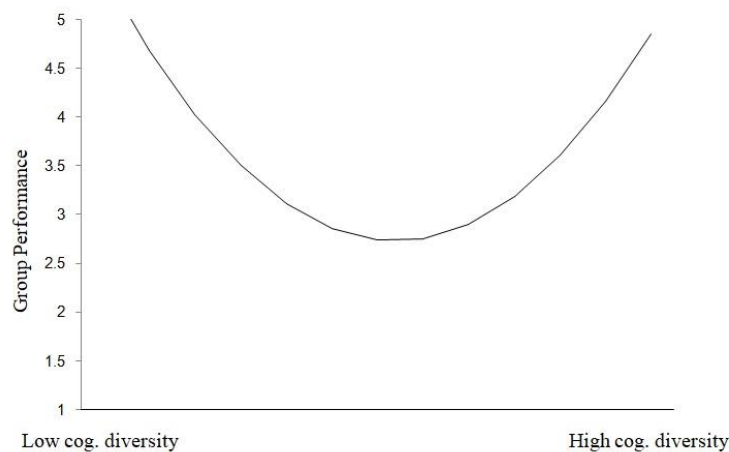
As recommended by Aiken and West (1991), the results were graphed. Group performance decreased as cognitive diversity increased, and once cognitive diversity reached a certain point, group performance reached its lowest level and then increased as cognitive diversity increased further (Figure 5.4).

Table 5.26 Results of hierarchical regression analysis: H1

Independent Variables	Model1: Performance		Model2: Performance	
	B	t	B	t
Step 1: Control variables				
Team size	0.03	.786	0.05	1.465
Task Interdependence	0.07	.294	-0.24	-.997-
Transformational leadership (TFL)	0.38	1.538	0.03	.104
Step 2: Main effects				
Cognitive diversity (COGND)			-0.22	-1.025-
Demographic diversity (DEMODO)			-0.64	-.481-
COGND squared			1.05**	3.010
DEMODO squared			8.35	.921
<i>F</i>	0.95		2.95**	
<i>R</i> ²	0.05		0.30	
<i>Change in R</i> ²			0.25**	

Notes: $n=56$ groups. Unstandardised regression coefficients are reported. $*p<0.05$, $**p<0.01$.

Figure 5.4 The relationship between cognitive diversity and group performance.



Hypothesis set H2

Hypothesis set H2 assesses the ability of the independent variables of: cognitive diversity and demographic diversity to predict group viability (H2a, H2b), after controlling for the team size, task interdependence, and transformational leadership. To test H2, this study examined whether workgroup diversity had a linear relationship with group viability. As shown in Table 5.27, entering workgroup diversity and its quadratic terms into the model resulted in a significant amount of incremental explained variance in group viability (change in $R^2=0.21$, $p<0.01$); the coefficient of the linear term between cognitive diversity

and viability was significant and negative ($H2a: -0.47, p<0.01$). The coefficient of the linear term between demographic diversity and viability was also significant and negative ($H2b: -2.36, p<0.05$). These findings fully support $H2$.

Table 5.27 Results of hierarchical regression analysis: H2

Independent Variables	Model1: Viability		Model2: Viability	
	B	T	B	T
Step 1: Control variables				
Team size	0.04	1.391	0.06*	2.402
Task Interdependence	0.19	1.000	0.06	.338
Transformational leadership (TFL)	0.04	.195	0.05	.221
Step 2: Main effects				
Cognitive diversity (COGND)			-0.47**	-2.659-
Demographic diversity (DEM0D)			-2.36*	-2.239-
COGND squared			-0.10	-.363-
DEM0D squared			3.93	.546
<i>F</i>	0.98		2.43*	
<i>R</i> ²	0.05		0.26	
<i>Change in R</i> ²			0.21**	

Notes: $n=56$ groups. Unstandardised regression coefficients are reported. * $p<0.05$, ** $p<0.01$.

Hypothesis set H3

Hypothesis 3 stated the relationship between workgroup diversity and CTTC (co-occurrence of task and relationship conflict) would be curvilinear, such that as work group diversity ($H3a$: cognitive diversity; $H3b$: demographic diversity) increased, CTTC would increase; but only to a point; beyond this point, further increase in diversity would lead to a drop in CTTC. A hierarchical regression analysis was conducted using the quadratic model to test this hypothesis. A scatterplot bivariate graph was created in order to better visualise the strength and direction between the diversity and CTTC. The predictor variables were squared before the variables were entered into the simple regression model. Table 5.28 shows the results of the hierarchical regression analyses, including the control variables (group size and task interdependence) and the main effect of TFL. To test the curvilinear relationship between workgroup diversity and CTTC ($H3$), entering workgroup diversity (cognitive and demographic) and its quadratic terms into the model resulted in a significant amount of incremental explained variance in CTTC (change in $R^2=0.19$,

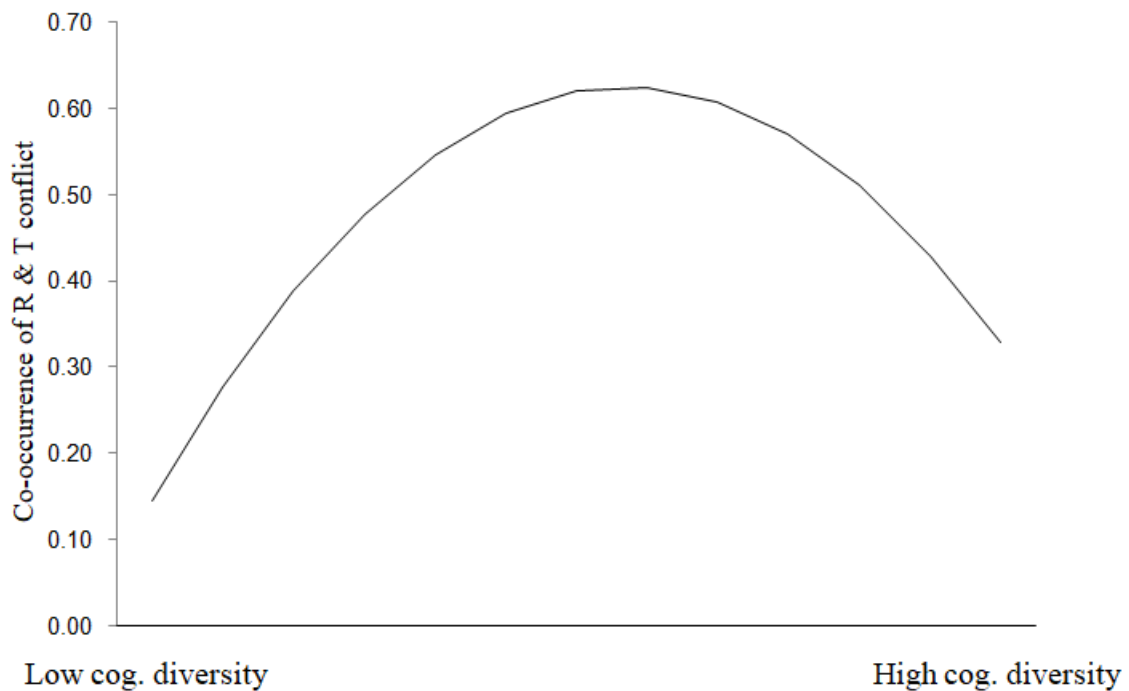
$p < 0.01$); the coefficient of the quadratic term for cognitive diversity was significant and negative (-0.17 , $p < 0.01$), consistent with the anticipated inverted U-shaped relationship, while the coefficient of the quadratic term for demographic diversity was non-significant (2.41 , $p > 0.05$). CTRC increased as cognitive diversity increased, and once cognitive diversity reached a certain level, CTRC peaked and then declined as cognitive diversity increased further (Figure 5.5). These findings partially support hypothesis *H3*.

Table 5.28 Results of hierarchical regression analysis: H3

Independent Variables	Model1: CTRC		Model2: CTRC	
	B	T	B	T
Step 1: Control variables				
Team size	-0.01	-1.604-	-0.02*	-2.257-
Task Interdependence	-0.03	-.553-	0.02	.466
Transformational leadership (TFL)	-0.08	-1.590-	-0.01	-.049-
Step 2: Main effects				
Cognitive diversity (COGND)			0.06	1.312
Demographic diversity (DEMODO)			0.47	1.668
COGND squared			-0.17**	-2.213-
DEMODO squared			2.14	1.114
<i>F</i>	1.64		2.49*	
<i>R</i> ²	0.08		0.27	
<i>Change in R</i> ²			0.19*	

Notes: $n=56$ groups. Unstandardized regression coefficients are reported.* $p < 0.05$, ** $p < 0.01$.

Figure 5.5 The relationship between cognitive diversity and co-occurrence of conflict.



Hypothesis set H4

To test *H4*, the analysis examined whether CTRC was negatively related to group effectiveness (performance and viability). Table 5.29, Model 3 shows that the addition of CTRC into the model resulted in a significant amount of incremental explained variance in group performance (change in $R^2=0.14$, $p<0.01$) and the coefficient of CTRC was significant and negative (-2.13 , $p<0.01$).

In addition, Table 5.30, Model 3 demonstrates that the entering CTRC into the model led to a significant amount of incremental explained variance in group viability (change in $R^2=0.11$, $p<0.01$) and the coefficient of CTRC was significant and negative (-1.40 , $p<0.01$).

The findings above are consistent with expectations regarding *H4*. In general, the results show that CTRC is linearly, negatively related to group performance and viability.

Table 5.29 Results of hierarchical regression analysis: H4a

Independent Variables	Model1: Performance		Model2: Performance		Model3: Performance	
	B	T	B	t	B	T
Step 1: Control variables						
Team size	0.03	.786	0.05	1.465	0.02	.465
Task Interdependence	0.07	.294	-0.24	-.997-	-0.19	-.870-
Transformational leadership (TFL)	0.38	1.538	0.03	.104	0.02	.090
Step 2: Main effects						
Cognitive diversity (COGND)			-0.22	-1.025-	-0.09	-.469-
Demographic diversity (DEMOD)			-0.64	-.481-	.36	.299
COGND squared			1.05**	3.010	0.71*	2.121
DEMOD squared			8.35	.921	12.93	1.565
Step 3: Mediator						
Co-occurrence of conflict					-2.14**	-3.495-
<i>F</i>	0.95		2.95**		4.71**	
<i>R</i> ²	0.05		0.30		0.44	
<i>Change in R</i> ²			0.25**		0.14**	

Notes: *n*=56 groups. Unstandardised regression coefficients are reported. **p*<0.05, ***p*<0.01.

Table 5.30 Results of hierarchical regression analysis: H4b

Independent Variables	Model1: Viability		Model2: Viability		Model3: Viability	
	B	T	B	T	B	T
Step 1: Control variables						
Team size	0.04	1.391	0.06*	2.402	0.04	1.579
Task Interdependence	0.19	1.000	0.06	.338	0.09	.546
Transformational leadership	0.04	.195	0.05	.221	0.04	.217
Step 2: Main effects						
Cognitive diversity (COGND)			-0.47**	-2.659	-0.38*	-2.273
Demographic diversity (DEMOD)			-2.36*	-2.239	-1.70	-1.675
COGND squared			-0.10	-.363	-0.38	-1.213
DEMOD squared			3.93	.546	6.93	1.016
Step 3: Mediator						
Co-occurrence of conflict					-1.40**	-2.773
<i>F</i>	0.98		2.43*		3.38**	
<i>R</i> ²	0.05		0.26		0.37	
<i>Change in R</i> ²			0.21**		0.11**	

Notes: *n*=56 groups. Unstandardised regression coefficients are reported. **p*<0.05, ***p*<0.01.

Hypothesis set H5

Hypothesis set H5 proposes indirect relationships linking cognitive diversity and demographic diversity to group effectiveness (performance (H5a) and viability (H5b), using the CTRC as a mediator. Testing the relationship between workgroup diversity (cognitive and demographic diversity) and group performance through the mediation of CTRC (hypothesis H5a-1) is undertaken using Baron and Kenny's (1986) four steps test.

1) The relationship between cognitive diversity squared and group performance is tested, and the result shows significant relationship between these variables ($\beta = 1.05, p < 0.01$) (see Table 5.31). 2) The relationship between cognitive diversity squared and CTRC is tested and the result shows there is a significant relationship between these two dimensions ($\beta = -.17, p < 0.01$) (see table 5.28). 3) The relationship between CTRC and group performance is tested and the result shows a significant relationship between these two variables ($\beta = - 2.56, p < 0.01$) 4) The relationship between cognitive diversity and group performance is tested in the presence of CTRC, and the result shows that relationship is changed from negative to positive ($\beta = .71, p < 0.01$) (see table 5.29). In hypothesis H5a, the statistics for path c is $B = 1.05$, and for path c' is $B = .71$; therefore $ab = 0.43 (-.17 * - 2.56)$. It is necessary to test if the change from c to c' is significant to claim mediation. Sobel test (Preacher & Hayes, 2004) is used. The statistical significance is equal to Z-test = 2.047, $p < 0.05$ (see Table 5.31). As there is evidence for mediation, it is concluded that the relationship between cognitive diversity and group performance is mediated by CTRC after having statistically controlled for team size, task interdependence, and TFL. Hypothesis H5a-1 is thus supported.

Table 5.31 Sobel test (H5a-1)

Hypothesis	Input of Sobel test	Sobel Z test	Standard error (s_{ab})
H5a-1	a = -0.17 b = -2.65 $s_a = 0.074$ $s_b = 0.588$	2.0467*	0.220

** $p < 0.01$

a= unstandardised coefficient B resulting from Met predicting Tas, s_a = Standard error

b= unstandardised coefficient B resulting from Tas predicting Rel, s_b = Standard error

The relationship between demographic diversity and group performance through the mediation of CTRC (H5a-2) is similarly tested, again using Baron and Kenny's (1986) four steps test. The result shows: 1) the relationship between demographic diversity squared and group performance is tested, and the result shows non-significant relationship between these variables ($\beta = 8.35, n.s.$) (see Table 5.26). 2) The relationship between demographic

diversity squared and CTRC is tested and the result shows there is no significant relationship between these two dimensions ($\beta = 2.14, n.s.$) (see table 5.28). 3) The relationship between CTRC and group performance is tested, and the result shows a significant relationship between these two variables ($\beta = - 2.56, p < 0.01$). 4) The relationship between demographic diversity and group performance is tested in the presence of CTRC, and the result shows that relationship is non-significant ($\beta = 12.93, n.s.$) (see table 5.29). Therefore, hypothesis H5a-2 which proposed an indirect relationship between demographic diversity and performance using CTRC as mediator is not supported because conditions 1, 2 and 4 of Baron and Kenny's test are not met.

Testing the relationship between cognitive diversity and group viability through the mediation of CTRC (hypothesis H5b-1) is undertaken, again using Baron and Kenny's (1986) four steps test. 1) The relationship between cognitive diversity and group viability is tested, and the result shows significant relationship between these variables ($\beta = -.47, p < 0.01$) (see table 5.27). 2) The relationship between cognitive diversity squared and CTRC is tested and the result shows there is a significant negative relationship between these two dimensions ($\beta = -.17, p < 0.01$) (see table 5.28). 3) The relationship between CTRC and group viability is tested, and the result shows a significant relationship between these two dimensions ($\beta = -1.68, p < 0.01$). 4) The relationship between cognitive diversity and group viability in the presence of CTRC is tested, and the result shows change significant relationship from level 1 % to 5 % ($\beta = -.38, p < 0.05$) (see table 5.30). As conditions 1, 2, 3, and 4 are statistically significant, a mediated path is implied. Sobel test throws Z-test = 2.033, $p < 0.05$, standard error (s_{ab}) = 0.0257 (see Table 5.32). As Z value is statistically significant, there is evidence for mediation. Hypothesis H5b-1 is thus supported.

Table 5.32 Sobel test (H5B-1)

Hypothesis	Input of Sobel test	Sobel Z test	Standard error (s_{ab})
H5b-1	a = -0.17 b = -1.68 $s_a = 0.070$ $s_b = 0.452$	2.0330**	0.14047

** $p < 0.01$

a= unstandardised coefficient B resulting from Met predicting Tas, s_a = Standard error

b= unstandardised coefficient B resulting from Tas predicting Ass, s_b = Standard error

Testing the relationship between demographic diversity and group viability through the mediation of CTRC (hypothesis H5b-2) is undertaken using Baron and Kenny's (1986) four steps test. 1) The relationship between demographic diversity and group viability is tested, and the result shows a significant relationship between these variables ($\beta = -2.36$, $p < 0.05$) (see table 5.27). 2) The relationship between demographic diversity squared and CTRC is tested and the result shows there is no significant relationship between these two variables ($\beta = 2.14$, *n.s.*) (see table 5.28). 3) The relationship between CTRC and group viability is tested, and the result shows a significant relationship between these two variables ($\beta = -1.68$, $p < 0.01$). 4) The relationship between demographic diversity and group viability in the presence of CTRC is tested, and the result shows no significant relationship ($\beta = -1.70$, *ns*) (see table 5.30). As conditions 2 is not statistically significant, this mean that CTRC has not mediated the relationship between demographic diversity and group viability. Hypothesis H5b-2 is not supported.

Hypothesis set H6

Hypothesis set H6 proposed that TFL moderates the relationship between workgroup diversity and CTRC. In other words, the relationship between workgroup diversity and CTRC will be inverted U-shaped when TFL is low and be negative linear when TFL is high. To test this, the product terms were introduced between TFL and cognitive diversity and between TFL and cognitive diversity-squared into the analysis (M3). To test interaction effects, this needs to include both independent variable, moderator variable, and their

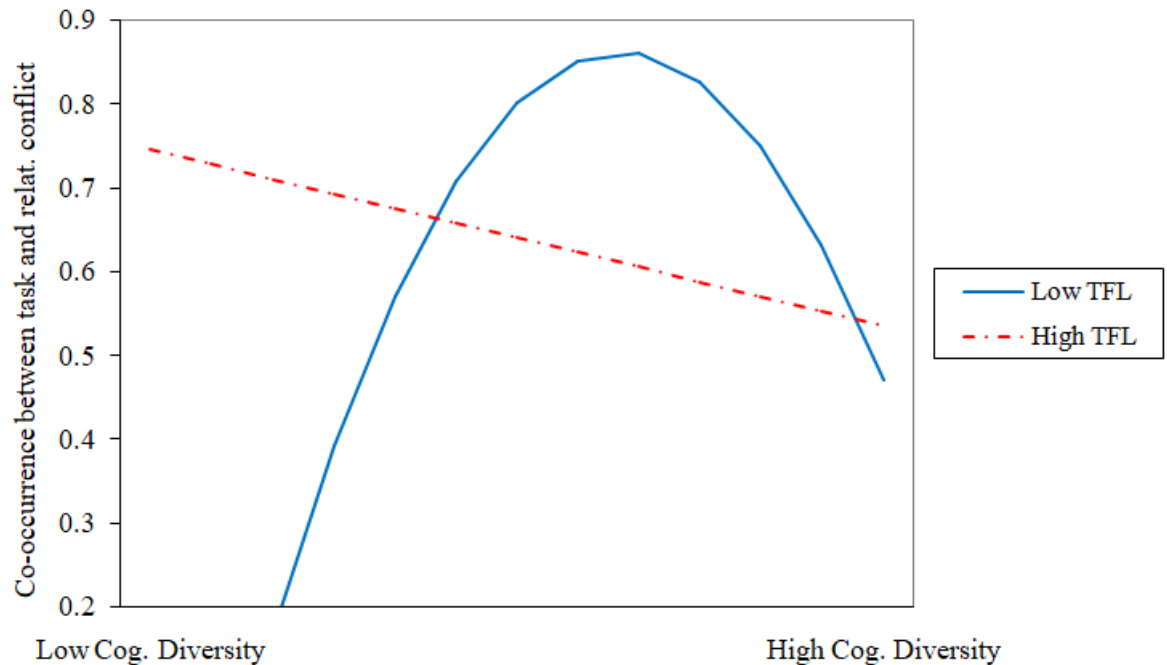
interaction (product) term. It is recommended that the independent variable and moderator are centred before calculation of the product term to reduce multicollinearity (Aiken and West, 1991). To mean-centre these variables we need to subtract the mean of each variable (independent variable and moderator variable) from each observation's score on that variable. The results indicated that the linear interaction between cognitive diversity and TFL was significant in the presence of the cognitive-diversity-squared term (-0.18 ; change in $R^2=0.12$, $p<0.05$) (see table 5.33). The product terms were also entered between TFL and demographic diversity and that between TFL and demographic diversity-squared into the analysis (M3). The results indicated that the linear and non-linear interaction between demographic diversity and TFL was non-significant. These findings support *H6a* but not *H6b*. To facilitate interpretation of this effect, Figure 5.6 illustrates the relationships between cognitive diversity and CTTC (see Aiken and West, 1991). Figure 5.6 shows that the relationship between cognitive diversity and CTTC was inverted U-shape in groups with low levels of TFL and has a negative linear shape in groups with high levels of TFL. This finding supports *H6a*.

Table 5.33. Results of hierarchical regression analysis: H6

Independent Variables	Model1: CTTC		Model2: CTTC		Model3: CTTC	
	B	T	B	T	B	T
Step 1: Control variables						
Team size	-0.01	-1.604-	-0.02*	-2.257-	-0.02*	-2.651
Task Interdependence	-0.03	-.553-	0.02	.466	-0.01	-.111
Transformational leadership (TFL)	-0.08	-1.590-	-0.01	-.049-	-0.08	-.957
Step 2: Main effects						
Cognitive diversity (COGND)			0.06	1.312	0.11	1.968
Demographic diversity (DEMOD)			0.47	1.668	0.60*	2.165
COGND squared			-0.17**	-2.213-	-0.16*	-2.127
DEMOD squared			2.14	1.114	2.20	.988
Step 4: Interaction effects						
COGND × TFL					-0.18*	-2.241
COGN squared × TFL					0.18	1.608
DEMOD × TFL					-0.20	-.365
DEMOD squared × TFL					-0.39	-.095
<i>F</i>	1.64		2.49*		2.59**	
<i>R</i> ²	0.08		0.27		0.39	
Change in <i>R</i> ²			0.19*		0.12*	

Notes: $n=56$ groups. Unstandardised regression coefficients are reported. * $p<0.05$, ** $p<0.01$.

Figure 5.6 The moderating effect of TFL on the cognitive diversity–co-occurrence of conflict relationship.



Hypothesis set H7

The next set of hypotheses relates to how CTRC mediates the interaction linear effect of cognitive diversity and TFL on group performance. This type of relationship represents mediated moderation effects. To assess mediated moderation, the researcher followed Preacher *et al.*'s (2007) method. According to Preacher and his colleagues, the mediated moderation is supported if three conditions are met: (1) The interaction between the independent variable (workgroup diversity) and the moderator (TFL) is significantly related to the mediator (CTRC) as indicated by Hypotheses H6; (2) After controlling for the interaction between the independent variable (workgroup diversity) and the moderator (TFL), the mediator (CTRC) remains significantly related to the dependent variable (performance and viability); and (3) The conditional indirect effect of the independent variable (workgroup diversity) on dependent variable (performance and viability) via the

mediator (CTRC), differs in strength across low and high levels of the moderator variable (TFL). Table 5.33 (H7-a) shows that the interaction of cognitive diversity with TFL was significant in predicting CTRC ($\beta = -.18, p < .05$), while the interaction between demographic diversity and TFL was non-significant in predicting CTRC. The findings reported above provided support for the first condition in the mediated-moderation test regarding cognitive diversity only.

With respect to the second condition, model 2 and 3 in Table 5.34 report that the interaction linear effect of cognitive diversity and TFL on group performance was non-significant with ($0.27, p > 0.05$) with the presence of the mediator variable (CTRC). Results also indicated the interaction linear effect of demographic diversity and TFL on group performance was non-significant ($-3.21, p > 0.05$) with the presence of the mediator variable (CTRC), thus not supporting the second condition. Since the second condition was not met, testing for the third condition became unnecessary.

Table 5.34 Results of hierarchical regression analysis: H7-a

Independent Variables	Model1: Performance		Model2: Performance		Model3: Performance	
	B	T	B	T	B	T
Step 1: Control variables						
Team size	0.05	1.465	0.02	.465	0.01	.343
Task Interdependence	-0.24	-.997-	-0.19	-.870-	-0.89	-.356
Transformational leadership (TFL)	0.03	.104	0.02	.090	-0.02	-.037
Step 2: Main effects						
Cognitive diversity (COGND)	-0.22	-1.025-	-0.09	-.469-	-0.17	-.648
Demographic diversity (DEMODO)	-0.64	-.481-	.36	.299	-0.09	.069
COGND squared	1.05**	3.010	0.71*	2.121	-0.63	1.720
DEMODO squared	8.35	.921	12.93	1.565	13.16	1.303
Step 3: Mediator						
Co-occurrence of conflict			-2.14**	-3.495-	-2.02**	-2.991
Step 4: Interaction effects						
COGND × TFL					0.27	.747
COGND squared × TFL					0.11	.202
DEMODO × TFL					-3.21	-1.289
DEMODO squared × TFL					-8.93	-.487
<i>F</i>	2.95**		4.71**		3.33**	
<i>R</i> ²	0.30		0.44		0.48	
<i>Change in R</i> ²			0.14**		0.04	

Notes: $n=56$ groups. Unstandardized regression coefficients are reported. * $p < 0.05$, ** $p < 0.01$.

H7-b stated that CTRC mediates the interaction linear effect of workgroup diversity and TFL on group viability. The results of the first condition are similar to the H7-a above. As for the second condition (see table 5.35), regression results indicated the interaction linear effect of cognitive diversity and TFL on group viability was non-significant (-0.48, $p>0.05$) with the presence of the mediator variable. Results also indicated the interaction linear effect of demographic diversity and TFL on group viability was non-significant (-2.41, $p>0.05$) with the presence of the mediator variable, thus the second condition was not met. Since the second condition was not met, testing for the third condition became unnecessary. The above results clearly indicate that the hypothesis H7 is not met.

Table 5.35 Results of hierarchical regression analysis: H7-b

Independent Variables	Model1: viability		Model2: viability		Model3: viability	
	B	T	B	T	B	t
Step 1: Control variables						
Team size	0.06*	2.402	0.04	1.579	0.03	1.314
Task Interdependence	0.06	.338	0.09	.546	-0.03	-1.182
Transformational leadership (TFL)	0.05	.221	0.04	.217	0.24	.797
Step 2: Main effects						
Cognitive diversity (COGND)	-0.47**	-2.659	-0.38*	-2.273	-0.15	-0.737
Demographic diversity (DEMODO)	-2.36*	-2.239	-1.70	-1.675	-1.48	-1.465
COGND squared	-0.10	-.363	-0.38	-1.213	-0.34	-1.205
DEMODO squared	3.93	.546	6.93	1.016	-1.75	-2.227
Step 3: Mediator						
Co-occurrence of conflict			-1.40**	-2.773	-1.88**	-3.651
Step 4: Interaction effects						
COGND × TFL					-0.48	-1.751
COGND squared × TFL					0.40	.999
DEMODO × TFL					-2.41	-1.271
DEMODO squared × TFL					-27.67	-1.978
<i>F</i>	2.43*		3.38**		3.48**	
<i>R</i> ²	0.26		0.37		0.49	
<i>Change in R</i> ²			0.11**		0.12*	

Notes: $n=56$ groups. Unstandardized regression coefficients are reported. * $p<0.05$, ** $p<0.01$.

5.7 Conclusion

This study treats CTRC as a collective-level bivariate construct referring to the strength of the interrelationship between task conflict and relationship conflict within a group. An eight-item CTRC scale, referring to the one-to-one correlation between a member's relationship conflict and the member's task conflict, was developed by combining Jehn's (1995) four-item task conflict scale with her four-item relationship conflict scale.

In relation to the other scales used in this study, Van der Vegt and Janssen's (2003) measure was used to measure cognitive diversity; and following Jehn *et al.* (1999), Polzer *et al.* (2001), and Van der Vegt and Janssen (2003), demographic data (age, gender and tenure) was averaged to produce one demographic group diversity measure. The Multifactor Leadership Questionnaire (MLQ 5X-Short; Bass and Avolio, 1995) was used for measuring transformational leadership. Furthermore, following Oh *et al.* (2004), this study used Sparrowe *et al.*'s (2001) scale to measure group performance, and Tekleab *et al.*'s (2009) 5-item scale to measure group viability.

Using SPSS version 23, these scales were tested for the factorability of their correlation matrices using principal component analysis; they were all consistent with their original formulation. The factorability of the CTRC scale which was developed by the researcher was also confirmed. Furthermore, the goodness of fit of the scales was tested using confirmatory factor analysis. The statistics obtained confirmed the construct, convergent and discriminant validity of these scales. The reliability measures of Cronbach's alpha of the scales were also acceptable.

The model's hypotheses were tested using the hierarchical regression analysis technique. The hypotheses which proposed direct and curvilinear causal relationships, hypothesis sets H1, H2, H3 and H4, were tested in the normal way; while the indirect hypothesis set H5

linking group diversity and group effectiveness via CTRC, was tested using mediator variable analysis (Baron and Kenney, 1986); and the moderated hypothesis sets H6 and H7 were tested using moderator analysis. Some of these hypotheses were statistically supported, while others were not supported (see Table 5.36).

Table 5.36 Summary of the results of the model's hypotheses

Hypothesis	Relationship (→ linear, U-shape, ∩-shape)	Test result
<i>Direct linear & curvilinear relationships</i>		
H1a	Cognitive diversity U Group performance	Supported
H1b	Demographic diversity U Group performance	Not supported
H2a (-)	Cognitive diversity → Group viability	Supported
H2b (-)	Demographic diversity → Group viability	Supported
H3a	Cognitive diversity ∩ CTRC	Supported
H3b	Demographic diversity ∩ CTRC	Not supported
H4a (-)	CTRC → Group performance	Supported
H4b (-)	CTRC → Group viability	Supported
<i>Mediated relationships</i>		
H5a-1 (-)	Cognitive diversity → CTRC → Group performance	Supported
H5a-2 (-)	Demographic diversity → CTRC → Group performance	Not supported
H5b-1 (-)	Cognitive diversity → CTRC → Group viability	Supported
H5b-2 (-)	Demographic diversity → CTRC → Group viability	Not supported
<i>Moderated relationships (Moderator: Transformational Leadership)</i>		
H6a (-)	Cognitive diversity → CTRC	Supported
H6b (-)	Demographic diversity → CTRC	Not supported
<i>Moderated mediation (Moderator: Transformational Leadership)</i>		
H7a (-)	Diversity → CTRC → Group performance	Not supported
H7b (-)	Diversity → CTRC → Group viability	Not supported

Chapter 6

Discussion, Contributions, and Implications

6.1 Introduction

Analysis of the literature on diverse workgroup functioning (chapter 2) resulted in proposing a theoretical model of hypotheses pointing to several causal relationships between the variables of cognitive and demographic diversity, co-occurrence of task and relationship conflicts, group performance and viability, and transformational leadership (Fig. 2.1). Although many studies have suggested several processes that could explain the relationship between diversity and group effectiveness, for example, learning behaviour, communication, conflict types, identification, and cohesion (Kearney & Gebert, 2009; Tekleab *et al.*, 2016; Van der Vegt & Bunderson, 2005), this relationship remains fuzzy with inconsistent results being persistently reported. One crucially important but missing mechanism in the literature examining this relationship, that this study highlights, is the effect of the co-occurrence of task and relationship conflicts (CTRC). Furthermore, past research has unfailingly reported high positive correlations between task and relationship conflicts and the inevitability of their co-occurrence in workgroup functioning (e.g., Mooney *et al.*, 2007). Nevertheless, there are few studies investigating the impact of diversity on the co-occurrence of task and relationship conflicts (as reported, for example, in Bendersky *et al.*, 2014; De Dreu & Weingart, 2003; De Wit *et al.*, 2011; Greer & Dannals, 2017; Meier *et al.*, 2013; Simons & Peterson, 2000). Furthermore, although the literature acknowledges the harmful effect of the co-occurrence of task with relationship conflicts on group outcomes (e.g., Greer *et al.*, 2008; Mooney *et al.*, 2007; Jehn & Bendersky, 2003; Mooney *et al.*, 2007; Shaw *et al.*, 2011; Simons & Peterson, 2000; Yang & Mossholder, 2004), studies that examine the combined effects of these two types of

conflict (CTRC) on group outcomes are hard to find. Thus, the potential of CTRC in explaining the relationship between diversity and group outcomes remains largely uninvestigated.

6.2 Triangulating the findings and referring to the literature

The results from the quantitative analysis show that cognitive diversity have a curvilinear U-shaped association with group performance, supporting hypothesis H1a. These results indicate that group performance decreased as cognitive diversity increased until a certain point was reached where group performance was at its lowest level; beyond this point, performance increased as cognitive diversity increased further (see figure 5.4). These results are supported by the literature; for example, Van der Vegt and Bunderson (2005) reported that the association of cognitive diversity with group learning and performance in groups with low shared identification (i.e., highly diverse group on value and perspective) displayed an upright U-shape form. However, the result also contrasts with some studies which showed an inverted U-shaped relationship, for example, Van der Vegt and Bunderson's (2005) study of homogeneous groups with high shared identification, and Chi *et al.*'s (2009) study of diverse (tenure) groups with high HR practices that nurtured identification and consequently innovation.

This study's result, however, did not support hypothesis H1b as it did not show any significant association between demographic diversity and group performance, and as such, it concurs with Harrison *et al.* (1998, 2002) findings. However, it contrasts with the results of several other studies which displayed an inverted U-shape relationship between demographic diversity and group performance, mediated and/or moderated by a variety of contextual variables (e.g., Ali *et al.*, 2011; Frink *et al.*, 2003; Gonzalez & Denisi, 2009). The results of this study thus suggest that where there is an association between diversity

and group performance, this association is likely to be non-linear, concurring with the view that the inconclusive results of past studies might be contingent on contextual moderating variables which have not been considered (see, Van Knippenberg *et al.*, 2004; Van Knippenberg & Schippers, 2007).

The result also triangulates well with the findings of the qualitative study, as the latter showed mixed associations between diversity (cognitive and demographic) and group performance as discussed in ‘chapter 4, section 4.3.1.1 Diversity’s association with team performance’. However, although these findings were mixed, most respondents indicated that diversity enhanced team performance. This finding is tabulated in table 4.5a and its thematic map displayed in figure 4.5; both show that the participants’ responses were mixed. These inconsistent findings, the literature suggests, point to potential influences of unaccounted for moderator/mediator variables and curvilinear relationship influencing the main effect between the investigated variables (see, for example, Ayoko & Konrad, 2012; Bell *et al.*, 2011; Harrison & Klein, 2007; Horwitz & Horwitz, 2007; Leung *et al.*, 2008; Neumeyer, & Santos, 2020; Shin & Zhou, 2007; Valls *et al.*, 2016; Van Dijk *et al.*, 2016; Van Veelen & Ufkes, 2019; Van Knippenberg *et al.*, 2004). By showing inconsistent findings, the qualitative research of this study points to non-linear relationships and thus triangulates with the results of the quantitative study.

This study’s quantitative results also show significant negative linear associations of cognitive and demographic diversity with group viability, supporting hypotheses H2a and H2b. These results concur with past studies which reported that cognitive diversity increased group members’ dissatisfaction and undermined effective communications and cohesion within the group (Milliken & Martins, 1996; O’Reilly *et al.*, 1997; Van Knippenberg *et al.*, 2004). Other studies investigating direct and mediated or moderated

effects also show that less demographically diverse groups are more cohesive, and their members are more satisfied with their group (e.g., Brewer & Brown, 1998; Schippers *et al.*, 2003; Williams & O'Reilly, 1998). The negative impact of diversity and diversity faultlines on group integration is also reported to cause negative affective reactions and reduces satisfaction and cohesion among members of the whole group (e.g., Harrison *et al.*, 2002; Lau & Murnighan, 2005; Rico *et al.*, 2007). Again, this result triangulates well with this study's qualitative findings, which generally indicate that diversity undermined group integration and viability, although, one or two respondents felt that diversity enhanced integration and viability. This minority finding is also in contrast to the literature and may suggest that some variables unique to those respondents' studied context, might have resulted in this finding. The discussion in 'chapter 4, section 4.3.1.2 Diversity's association with members' commitment and satisfaction with the team' show that most respondents reported negative effect of diversity on team integration with a minority of responses suggesting either positive or no relationship. Table 4.5b and figure 4.5, both show that the participants' responses were mixed.

In relation to the association of diversity with the co-occurrence of task and relationship conflict (CTRC), the results indicate that cognitive diversity has an inverted U-shape relationship with CTRC (supporting hypothesis H3a), while demographic diversity was not so associated with CTRC (H3b was not supported). CTRC increased as cognitive diversity increased, and once cognitive diversity reached a certain level, CTRC peaked and then declined as cognitive diversity increased further (Figure 5.5). This result triangulates with the finding from the qualitative research, where respondents observed that cognitive and demographic diversity caused both task and relationship conflicts, and that task conflict invariably escalated to relational conflict. However, the discussion in 'section 4.3.2

Diversity's association with intragroup conflict and its effect on team performance and viability' shows that effect of cognitive diversity and nationality diversity on task conflict is either enhancing or neutral, the effect of cognitive diversity on relational conflict is negative, and that the effect of demographic diversity on both types of conflict is mixed. These effects are illustrated in the thematic map, figure 4.6a., again pointing to non-linear relationships; thus, triangulating with the results of the quantitative study.

This study's results also showed that the co-occurrence of task and relationship conflict has a negative linear association with both group performance (confirming hypothesis H4a) and group viability (confirming hypothesis H4b). These results are supported by the literature which indicates that the positive effects of task conflict on group performance is undermined by the extent to which it co-occurs with relationship conflict (De Wit *et al.*, 2012, 2013; Farh *et al.*, 2010; Jehn & Bendersky, 2003; Jehn & Chatman, 2000; Jehn & Mannix, 2001; O'Neill *et al.*, 2018; Tjosvold, 2008a). The literature also suggests that the co-occurrence of relationship conflict with task conflict is harmful for group viability and members' satisfaction (e.g., Bruk-Lee *et al.*, 2013). This study's qualitative findings, on the whole, triangulate with the quantitative results as respondents reported that the effect of task conflict on performance, commitment and satisfaction is mixed, while the effect of relational conflict and CTTC are harmful for all these outcomes. These effects are illustrated in the thematic map of figure 4.6b. The literature is also inconsistent over the association of diversity with conflict types (e.g., Eisenhardt *et al.*, 1997; Jehn *et al.*, 1999; O'Reilly *et al.*, 1997; Pelled *et al.*, 1999; Williams & O'Reilly, 1998). Generally, however, research shows that work-group diversity association with task and relationship conflicts is mainly negative (Ayoko *et al.*, 2002; Chatman & Flynn, 2001; Jehn *et al.*, 1997; Jehn *et al.*, 1999; Olson *et al.*, 2007; Pelled, 1996). Furthermore, although research is prevalent on

the effects of group diversity on task conflict and relationship conflict, there is very little research on the effect of diversity on the co-occurrence of task and relationship conflict (see: Lau & Murnighan, 2005; Xie & Luan, 2014), and no study has investigated the effect of diversity on CTRC as a single bivariate construct. Therefore, this study's findings provide a new and meaningful addition regarding the association of diversity with CTRC and the latter with team outcomes and might encourage much needed research in this area.

It was also shown that the co-occurrence of task and relationship conflict (CTRC) mediated the curvilinear association of cognitive diversity with group performance (supporting hypothesis H5a-1) and mediated the negative linear association between diversity and group viability (supporting hypothesis H5b-1). This mediation effect has not been investigated before, and as such it constitutes a further new contribution to the literature on diverse workgroup functioning. On the other hand, the results also show that CTRC did not mediate the association of demographic diversity with group performance (H5a-2 was not supported) and did not mediate the association of demographic diversity and group viability (H5b-2 was not supported). The qualitative finding of this research triangulated with the result of the quantitative research; it indicated that diversity was associated with task and relationship conflicts as well as with their co-occurrence (CTRC), and that the co-occurrence of task and relationship conflicts undermined both team performance and viability. This strongly suggests that CTRC mediated the effect of diversity on these team outcomes, as shown in figures 4.6a and 4.6b.

As for the moderating effect of transformational leadership (TFL), the study's results provided evidence to suggest that transformational leadership moderated the relationship between cognitive diversity and the co-occurrence of task and relationship conflict

(confirming hypothesis H6a) but did not moderate the relationship between demographic diversity and the co-occurrence of task and relationship conflict (hypothesis H6b was not supported). There was strong evidence in the findings of the qualitative research of this study that the transformational leadership conflict management behaviour of diverse team leaders decreased the likelihood of task conflicts escalating to relational conflicts, thus preventing their co-occurrence. Although, to the researcher's knowledge, no research has been conducted to investigate this moderation effect, studies show that the concern of transformational leaders with developing collective identity and group values is likely to reduce conflict within teams and increase group cohesion and effectiveness (e.g., Lim & Ployhart, 2004). Furthermore, as TFL team leaders espouse and promote cooperative goals, they are more likely to deal with occurring conflicts openly and constructively, preventing task-related conflicts from escalating into relationship conflicts (Tjosvold, 2008a; Zhang *et al.*, 2011). Moreover, empirical studies show that transformational leadership has a positive relationship with constructive styles of conflict management and a negative relationship with non-constructive styles (Saeed *et al.*, 2014), where through team identification, team members perceive conflict as a mutual problem that needs common consideration and solutions that benefit all (Tjosvold, 2008a; Tyler & Blader, 2003; Zhang *et al.*, 2011). The findings from the qualitative research triangulated with the results of the study's quantitative research. These findings show a marked influence of transformational leadership behaviour in preventing task conflict from escalating to relational conflict and minimising the harmful effect in the event of their co-occurrence (CTRC). In particular, respondents' perceptions of their own or their leaders' conflict management behaviour gave rise to the themes of depersonalising the problem, containing conflict; establishing positive feelings and minimising feelings of anger; creating and communicating a common vision, incorporating members' needs; communicating, developing quality leader-member

exchange; accommodating, compromising collaborating, and developing a supportive climate; as well as avoiding conflict. These findings are discussed in 'section 4.3.3 Leadership conflict management behaviour' and displayed in table 4.6 and the thematic maps of figures 4.7a - 4.7g.

The quantitative results presented no evidence to indicate that transformational leadership moderated the indirect negative association of diversity and group performance via the co-occurrence of task and relationship conflict (hypothesis H7a is not supported). This result contrasts with past studies which reported that transformational leadership positively moderated the indirect effect of diversity on group outcomes by reducing the negative effects of task and relationship conflict mediators on group performance (Ayoko & Konrad, 2012). It also contrasts with the finding of Shin and Zhou (2007) which reported that transformational leadership positively moderated the relationship between cognitive diversity and team creativity, and with Kearney and Gebert's (2009) observations which showed that transformational leadership increased the positive effects of diversity on team performance. Furthermore, this study's results did not support hypothesis H7b, as transformational leadership was not shown to moderate the indirect negative association of diversity and group viability via the co-occurrence of task and relationship conflicts. These results contrast with the qualitative findings of this study as these findings concurred with the literature. The findings indicated that respondents felt that transformational team leaders' behaviour significantly decreased the harmful effects of CTTC arising from diversity on group performance and viability. Such a moderation effect was shown in the leaders' behaviours of: aiding members to succeed; linking individual members with team tasks and organisational goals; explaining where the team and organisation are going; inspiring members to improve their outcomes, fostering a strong sense of pride; promoting

a broad, inclusive vision; showing commitment to goals, creating trust and confidence; leading by example; empowering members to disagree with leadership; encouraging members' creativity; showing genuine compassion, empathising with the needs of individual members; making interpersonal connections; and encouraging ongoing development and personal growth of members. These findings are discussed in 'section 4.3.4 Team leader's leadership attributes and behaviours'; the extracted themes are displayed in table 4.7 and their connection to data in the thematic map figures 4.8a to 4.8e.

This study attempted to resolve the inconsistent findings between diversity and group effectiveness by including CTRC and TFL in a moderated-mediation model. Although no evidence was found in the quantitative results of a curvilinear effect of demographic diversity on group performance, the study found a U-shape curvilinear relationship between cognitive diversity and group performance. It also indicated that TFL may be an important contextual variable affecting the outcomes of diversity in groups. Results revealed that TFL moderated the relation between cognitive diversity and CTRC such that when TFL is low, the relationship between cognitive diversity and CTRC is of an inverted U-shape form, and when TFL is high, cognitive diversity has a negative linear effect on CTRC. The results also revealed that CTRC mediated the relationship between cognitive diversity and group effectiveness.

The findings from the qualitative part of this study, on the whole, triangulated with its quantitative results, providing evidence that task conflict in diverse group functioning is invariably accompanied by relationship conflict, and that diversity is associated with the co-occurrence of task and relationship conflicts (CTRC), with the latter negatively affecting team performance and viability. The findings also suggest that task conflict can be beneficial for team performance but that its co-occurrence with relationship conflict

decreased its positive effects. Furthermore, the findings show that the association of diversity with intra-group conflicts and group outcomes were inconsistent as respondents reported positive, negative and no relationships. The mixed findings indicate that this association is non-linear, triangulating with the study's quantitative results. No significant inferences can be drawn from one or two respondents reporting that diversity might enhance members' commitment and satisfaction with their group or that diversity might decrease relationship conflict. The findings further show that transformational leadership behaviour decreases the effects of diversity on the co-occurrence of task and relationship conflicts and enhances team outcomes, generally triangulating with the results of the quantitative analysis.

6.3 Theoretical contributions

This study makes three important contributions both to diversity and conflict literature. First, despite the call to move from the assumption of simple linear relationships to complex non-linear relationships between diversity and the group outcomes (e.g., Horwitz & Horwitz, 2007), this study found that both assumptions can exist, depending on the nature of the outcome variable being investigated. Specifically, cognitive diversity was found to have an upright U-shaped relationship with group performance, consistent with past research (Gibson & Vermeulen, 2003; Van der Vegt & Bunderson, 2005). On the other hand, the findings revealed that workgroup diversity (cognitive and demographic) had a negative linear relationship with group viability. Overall, the results bring more clarity to considerations regarding the relationship between diversity and group outcomes by noting that the shape of this relationship, whether linear or non-linear, depends on the nature of the outcome variable being investigated. If the outcome variable includes information- or psychological-related aspects, it is more appropriate to assume linear effects. If the outcome

features both information and psychological aspects, it is more appropriate to assume non-linear effects.

Second, even though many team processes have been examined to explore the relationship between diversity and group outcomes, other important processes remain unexplored. This study found that the co-occurrence of task and relationship conflict (CTRC), conceptualised as a single bivariate construct, plays a central mediating role in this relationship. This finding not only extends the relatively sparse research exploring the role of mediating variables on the relationship between diversity and group outcomes, but it also provides a broader and more reliable information regarding the role of CTRC in mediating this relationship. Although past research has suggested that one means by which diversity might enhance or diminish group effectiveness is intra-group conflict (Amason, 1996; Jehn *et al.*, 1999), unlike the present study, they dealt with each type of conflict in isolation. Thus, the insights obtained from that research were incomplete. In addition, although existing meta-analyses indicate that task conflict is negatively related to performance when relationship conflict is high (De Dreu & Weingart, 2003), these results remain ambiguous because there is no match in the levels of analysis (O'Neill *et al.*, 2018), i.e., interactions were examined at the study level, but conclusions were drawn at the group level.

Third, although past studies have indicated that transformational leadership (TFL) mitigated the negative effect of diversity on group processes and outcomes (Kearney & Gebert, 2009; Shin & Zhou, 2007), the interaction effects between TFL and diversity on CTRC have not, to the researcher's knowledge, been studied. This study is the first to investigate how TFL moderates the relationship between group diversity and CTRC. These results show that a transformational leader not only reduces the negative consequences of diversity (e.g., relationship conflict) but also simultaneously contributes to increasing its positive benefits (e.g., task conflict). Specifically, under conditions of low TFL, the

relationship between cognitive diversity and CTTC has an inverted U-shaped form, whereas under conditions of high TFL, it is negatively linear.

6.4 Practical implications

This study has important practical implications. First, organisations seeking to enhance the performance of their departments might be advised to maintain either very low or very high level of diversity within groups. With a moderate level of diversity, task conflict may be dysfunctional for team effectiveness because it will be highly correlated with relationship conflict. Second, organisations attempting to effectively manage diversity may need to consider the important role of the leadership behaviour displayed by managers; diverse groups will function best if they are managed by transformational leaders (innate or through training). To take full advantage of diversity and avoid potential disadvantages, managers should endeavour to avoid stirring up personal differences with the emergence of task conflict.

6.5 Limitations and future research

This research has limitations that also reveal future research avenues. The limitations of the qualitative part of this research were discussed in chapter 4 in 'section 4.3 Findings and Discussion'. The researcher had acknowledged these limitations but argued that they have not undermined the findings of the research; he also pointed to areas of further research which these limitations have potentially opened. The researcher observed further limitations of this study. First, since the sample was comprised of only one group (scientific departments), the generalisability of results to other working populations is limited. Future studies should examine the relationships addressed here in workgroups from different sectors. Second, this study's cross-sectional design is another limitation, implying that it

cannot show that diversity caused intra-group conflict, and that intra-group conflict in turn led to group performance and viability. To test such causal relationships, a longitudinal or experimental design is needed. A third limitation concerns the reliance on supervisor ratings rather than objective measures of group effectiveness. Although much research in this area (e.g., Van der Vegt & Bunderson, 2005; Keller, 2001) has considered supervisor ratings rather than objective measures of group performance as common measures of group effectiveness, future research should employ behaviour-based, and/or objective performance measures to ensure the robustness of the results.

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