

**School of Management**

**An Exploration of the Impact of Personality and Role Behaviour on  
Team Effectiveness**

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Doctor of Philosophy  
of  
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## DECLARATION

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) – updated March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # RDBS-101-15.

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## ABSTRACT

A key question driving team research today is the question of how personality traits affect team effectiveness. Much of the extant literature has focused on connecting individual personality traits to team effectiveness through team-level personality traits. Whereas this is an important line of enquiry, it does not account for individual personality differences nor does it consider individual behaviour within teams, which may operate as an important link between personality traits and team effectiveness. In addition, there is a lack of research to explain the higher-order situational factors that may influence the personality-behaviour relationship which may ultimately influence team effectiveness.

In order to extend this branch of team scholarship, the purpose of this study is to answer the research question: What is the relationship between individual team member personality traits and team effectiveness? Specifically, drawing on the theory of behaviour as a multilevel linking mechanism, the study connects individual member personality to team effectiveness through individual role behaviours and team-level role configurations. Thus, the study examines personality using the Five-Factor Model (FFM). The study also examines team task specificity and team interdependence as moderators of the personality-behaviour relationship, by drawing on trait-based interactionist theory and situational strength theory. A multilevel model is developed and tested to answer the main research questions. An amended model is proposed to reflect the outcomes of the study.

The study comprises two phases. The first, quantitative, phase tests the hypothetical model by surveying 401 members of 105 teams in China and 300 members of 66 teams in Australia. This phase is followed by a second, qualitative, phase which explores the results of the quantitative analysis by conducting interviews with 10 team members in China and 10 team members in Australia.

At the individual level, the quantitative results demonstrated a bandwidth match between the FFM personality traits and role behaviour - such as Conscientiousness and Agreeableness – which were strongly associated with task role behaviour and social role behaviour, respectively. For the cross-level moderating effects, team task

specificity was found to moderate the relationship between personality traits and task role behaviour, whereas team interdependence was found to moderate the relationship between personality traits and social role behaviour. At the team level, the quantitative results indicated that task role configuration predicted team performance. However, social role configuration did not predict member satisfaction. Additionally, the posited relationship between team task specificity and team performance was not found.

The qualitative component was used to explore the quantitative results in four ways. First, the statistically significant findings by examining individual personal experiences or interpretations of working in a team context. The qualitative findings suggested that people with high levels of Conscientiousness were believed to engage in more task role behaviour because they are more internally driven by task goals or because they have better work skills. Second, the complex cross-level effects. While team task specificity was found to moderate the personality-behaviour relationship in the quantitative phase, the qualitative findings indicated that such moderating effects may be contingent on job roles. Third, to examine the contradiction between the quantitative results and the qualitative findings. While the relationship between team task specificity and team performance was found to be statistically non-significant, the qualitative findings suggested otherwise. Fourth, the qualitative findings identified some potentially important themes that were not incorporated into the original research questions but are, nonetheless, worthy of further exploration. One such theme was “apathy”. While this personality trait is not covered by the FFM personality dimensions, team members referred to it as a negative personality trait that is harmful to teamwork and team outcomes.

The results of this study add to extant literature by providing new insights into the relationship between personality and team effectiveness. It concludes that personality plays an important role in teams, whereby its effects on team effectiveness might be transmitted through team members’ behaviour and affected by team contexts. Furthermore, it identifies important themes to incorporate into management practices in terms of member recruitment and team building. Future researchers might examine the personality traits that are not included in the FFM dimensions and their impact on team functions as well as conducting a cultural comparison of how personality and behaviour in context can contribute to team effectiveness.

## **DEDICATION**

To my family.

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# **CHAPTER 1 INTRODUCTION**

## **1.0 Overview**

In this chapter, an overview of this study, as well as an introduction to the area of team research from which the core research problem concerning personality and team effectiveness is drawn, are offered. Research gaps in extant literature regarding personality and teamwork are identified; subsequently, the research questions addressed in this study are based on these gaps. Next, the research framework of this study, which is presented in terms of the relevant underpinning theories and how they inform the development of the research model, is outlined. The researcher then introduces the mixed-methods approach that is adopted to answer the research questions. The research design comprising two consecutive phases – quantitative and qualitative – is then discussed alongside the study's contributions and limitations. The chapter concludes with a roadmap of the contents of each chapter and explains how all chapters are connected.

## **1.1 Background**

While teams change in both their form and membership, what drives team effectiveness is still a key question for team scholars (Mathieu et al. 2008, Maynard et al. 2012, Tannenbaum et al. 2012). In a practical sense, to make effective human resource management decisions, managers need to know why some work teams are more effective than others (Barrick, Mount, and Li 2013). Consequently, a vast amount of research has been carried out to examine various antecedents and mechanisms that may impact team processes and effectiveness (Mathieu et al. 2014). Among the factors studied that contribute to team results, personality has been the subject of continuous research interest over the last few decades for a variety of reasons (LePine et al. 2011). For example, personality is thought to be especially important to team dynamics because practitioners care about it, and they are eager to find why team members with certain personality traits do what they do (Barrick and Mount 2012). Moreover, because individual team members are the building blocks of a team, their feelings, thoughts and behaviours which are affected by their personality traits, will influence their task activities and interpersonal behaviours, and therefore may influence ultimate team effectiveness (LePine et al. 2011).

In terms of research on personality as a contributor to team effectiveness, previous scholars have drawn predominantly on the team personality composition approach; that is, adding individual personality traits to team-level constructs (e.g., Bell 2007, Colbert, Barrick, and Bradley 2014, Gonzalez-Mulé et al. 2014). These team personality compositions are usually examined in terms of how they relate to team processes or outcomes. Essentially, this method reflects a simple, single level heuristic of the input-process-outcome (IPO) model (Cohen and Bailey 1997). Although the team personality composition approach has made headway in understanding the role of personality in teams, it has some limitations; namely, that an aggregated perspective runs the risk of ignoring rich individual level detail in terms of personality traits and the relevant psychological processes affected by team contexts. Moreover, members influence team situations, not only through their implicit personality traits, but also through their explicit work-related behaviours. Thus, such team processes or mediators are underemphasised by the team personality composition approach (LePine et al. 2011, Humphrey and Aime 2014).

In their literature review, LePine et al. (2011) summarised an alternative approach to investigate personality in work teams. Specifically, they named the above team personality composition approach Pathway A. By contrast, they introduced Pathway B which investigates how individual personality traits influence team outcomes via individual behaviours. According to LePine et al. (2011), Pathway B reflects the heuristic of the input-mediator-outcome-input (IMOI) model: an updated version of the classic IPO model (Ilgen et al. 2005). The IMOI model differs from its predecessor in that it has incorporated temporal effects into team functions and expanded the nature of mediating mechanisms between team inputs and outcomes (Ilgen et al. 2005).

Drawing on the tenets of the IMOI model, the Pathway B approach incorporates individual differences and multilevel considerations by connecting individual personality traits to team effectiveness through individual behaviours. However, Pathway B approach has been underexplored because it requires a multilevel framework which demands more complex research methods and corresponding research implementation. These demands may have subsequently deterred many team scholars from pursuing the Pathway B approach (LePine et al. 2011, Humphrey and Aime 2014).

To the researcher's knowledge, only two studies have followed the Pathway B approach by adopting a micro-dynamic view in investigating the relationship between individual personality traits and team effectiveness. The first of these studies, Stewart, Fulmer, and Barrick (2005), used a novel way of operationalising role behaviours as a multilevel linkage; by distinguishing individual role behaviours from team role configurations and then connecting them with individual personality traits and team performance criteria. Drawing on this idea of using role behaviours to link individual personality traits and team results in a cross-level way, the second study, by Tasa, Sears, and Schat (2011), incorporated the situational effects of collective efficacy when examining the relationship between individual personality traits and role behaviours.

Despite the advances made by these studies, the majority of personality and team scholars continue to cluster around the well-explored Pathway A (Colbert, Barrick, and Bradley 2014). As such, many notable team scholars have called for a move beyond the ongoing prevalence of team personality composition research in favour of Pathway B, using a micro-dynamic lens to examine individual attributes and team dynamics (e.g., LePine et al. 2011, Bell and Kozlowski 2012, Mathieu et al. 2014). This call for new research reveals the apparent knowledge gap regarding personality in work teams, mainly due to the paucity of research using the Pathway B approach. It is this knowledge gap that the current study is designed to address.

Furthermore, although the two aforementioned studies using Pathway B have demonstrated significant relationships between individual personality traits, behaviour and team outcomes, there are still a number of questions left unanswered. Firstly, the relationship between personality operationalised by the Five-Factor Model (FFM) and role behaviour still remains unclear. While Stewart, Fulmer, and Barrick (2005) incorporated all five dimensions of the FFM when investigating the personality-behaviour relationships, Tasa, Sears, and Schat (2011) only examined two dimensions of the FFM – Conscientiousness and Agreeableness as predictors of team member behaviours. Nonetheless, neither of these two studies found expected relationships between some personality traits (for example, Neuroticism, Openness and Extraversion) and role behaviours. Secondly, the boundary conditions that influence the personality-behaviour relationship also remain unclear; namely, how team

contextual factors moderate the behavioural expressions of personality traits. Tasa, Sears, and Schat (2011) examined collective efficacy as a contextual factor and its effect on the personality-behaviour relationship; nevertheless, they pointed out the need for more research on contextual factors and how these factors interact with members' personality traits and behaviours. Thirdly, from the perspective of research methods, neither of these two studies have utilised field samples and only numerical results were obtained. Last but not least, it is the current researcher's interest to examine if the western-developed constructs - such as personality, role behaviour, and team effectiveness - and their associated measurements apply similarly in different national settings. By gathering data from two different national settings, the focus of this study remains on individual personality traits and role behaviour, team-level role behaviour, team effectiveness and interactions between these constructs.

## **1.2 Research Questions**

The aim of this study is to address the research gaps identified above. As a step further along Pathway B, an investigation on how individual personality traits influence team effectiveness via individual and collective role behaviours will be undertaken: a strategy expected to enrich the existing findings of personality in teams under the dominant team personality composition approach (LePine et al. 2011). Also, an attempt to reconcile the unexpected findings yielded in previous empirical studies will be made; for example, in the work by Stewart, Fulmer, and Barrick (2005) and Tasa, Sears, and Schat (2011). Specifically, it is expected that new empirical evidence will be added to the extant literature by addressing: (a) how each of the FFM traits (including Neuroticism, Openness and Extraversion) affects members' role behaviours; (b) how team task specificity and team interdependence moderate the personality to behaviour relationships; and c) how role behaviours and team role configurations transfer the effects of personality traits onto team effectiveness. Accordingly, one major research question has been developed:

*What is the relationship between individual team member personality traits and team effectiveness?*



In order to answer the major research question more readily, a number of associated, research questions will be addressed:

- (1) What is the relationship between individual team member personality traits and task role behaviour?
- (2) What is the relationship between individual team member personality traits and social role behaviour?
- (3) How does team task specificity moderate the relationship between individual team member personality traits and their task role behaviours in the team?
- (4) How does team interdependence moderate the relationship between individual team member personality traits and their social role behaviours in the team?
- (5) What is the relationship between team task specificity and team performance?
- (6) What is the relationship between task role configuration and team performance?
- (7) What is the relationship between social role configuration and member satisfaction?

### **1.3 Definitions of Terms**

As the subjects of this study are individuals nested within work teams which comprise two levels of analysis – the individual level and the team level, the definitions of terms are similarly categorised.

The individual level constructs include personality and role behaviour. For personality, the widely used definition offered by Hogan (1991) is utilised for this study where personality is defined as consistent internal states or patterns that explain a person's thoughts, emotions and behavioural tendencies. Team members' role behaviour is defined as a cluster of related and goal-oriented behaviours that a person exhibits in a teamwork situation where interpersonal activities are involved (Stewart, Fulmer, and Barrick 2005).

As for teams, this study employs a combination of several scholarly definitions and thus defines teams as work units constructed by two or more members who (a) have common goals but different roles and responsibilities, (b) work interdependently, (c) are affected by team and organisational environments, and (d) have at least some degree of self-regulation and self-management (Harrison and Humphrey 2010,

Morgeson, Derue, and Karam 2010, Derue et al. 2011, Bell and Kozlowski 2012). For the purposes of this study, the term ‘teams’ is confined to permanent functional work teams operating in business organisations. Other types of teams - e.g., sports teams, military teams, or temporary project-based teams - are beyond the scope of the study.

Another concept that requires definition is team contextual factors: these include team task specificity and team interdependence. Team task specificity is understood by its antonym, team task uncertainty, which is defined as “a team’s lack of prior knowledge about which operational problems will arise when, and the best way of dealing with them” (Cordery et al. 2010, 240). Team “interdependence is defined as the extent to which team members cooperate and work interactively to complete tasks” (Stewart and Barrick 2000, 137).

Regarding the understanding of team effectiveness, two indicators are used for the purpose of this study: team performance and member satisfaction. This study adopts an outcome-based perspective to define team performance that uses five outcome-based components to rate team performance. These components comprise quality of work, quantity of work, overall performance, completing work on time and responding quickly to problems, which is in line with the practices of previous personality and team scholarship (e.g., Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011, Barrick, Parks, and Mount 2005). Member satisfaction is defined as the affective reactions that team members have towards their roles, colleagues and the team (Mathieu et al. 2008).

#### **1.4 Theoretical Framework**

Based on a review of extant literature or essential current knowledge of personality in teams, a number of theories were deployed to address the research questions from all levels of analysis. At the individual level, five personality traits of the FFM, namely, Conscientiousness, Agreeableness, Neuroticism, Openness and Extraversion, were examined in terms of their relationships with two forms of team members’ role behaviour: task role behaviour and social role behaviour. These individual level personality-behaviour relationships are supported by trait-based interactionist theory

(Tett et al. 2013) which proposes that personality traits are activated to express as relevant behaviours by relevant cues that are pertinent to the work environment.

The cross-level moderating effects, namely, team contexts moderating the personality-behaviour relationship, include (a) the effects that team task specificity have on the relationship between personality and task role behaviour; and (b) the effects that team interdependence have on the relationship between personality and social role behaviour. These cross-level relationships are underpinned by situational strength theory (Meyer, Dalal, and Hermida 2010), which proposes that the behavioural expressions of personality traits may be amplified or suppressed by contextual factors.

The team-level section of the research framework is based on the assumptions that member personality traits, role behaviours and team contexts would have eventual and critical effects on team effectiveness. By linking the individual level elements to the team-level outcomes, the interplay of personality and team contexts is posited to influence team effectiveness as transmitted by role behaviours at both the individual and the team level. In other words, personality is connected to team effectiveness through individual role behaviours and team-level role configurations. This cross-level behavioural linkage is supported by the theory of behaviour as a multilevel linking mechanism (Stewart, Fulmer, and Barrick 2005), which proposes the use of individual behaviours and team-level behaviours as a bridge between individual attributes and team processes or outcomes. Specifically, this study examines three relationships at the team level: (a) the relationship between task role configuration and team performance, (b) the relationship between social role configuration and member satisfaction, and (c) the relationship between team task specificity and team performance. A hypothetical model was developed to reflect all the relationships ranging over three different levels of analyses, namely, the individual level, the cross-level, and the team-level.

## **1.5 Research Methods**

In this study, a mixed-methods research design was considered to be the most appropriate approach because it facilitates a systematic integration of quantitative and qualitative evidence to address the research questions which involve individual

attributes and behavioural processes in teams. Initially, a quantitative phase (survey) was used to examine the interplay between individual team members' personality traits, role behaviours, situational factors, and team effectiveness. In addition, because the research questions involve individual attributes, behavioural processes, team dynamics and situational factors, the use of quantitative data and analysis alone is insufficient to reveal the potential richness of the research phenomena. Therefore, the second, qualitative phase, was conducted to explore individual team members' experiences and interpretations of the answers to the research questions. The quantitative data and the qualitative data were analysed separately but were integrated for discussion in the final chapter to offer a more comprehensive answer to the research questions.

It should be noted that the mixed-methods approach reflects the researcher's particular philosophical position on knowledge and research. This may be understood as 'post-positivist' (Lincoln, Lynham, and Guba 2011), which values both problem-setting and the creation of new knowledge. This stance has relevance in this study as the researcher appreciates the usefulness of quantitative measures in explaining different concepts and the patterns of relationships between them. Moreover, the researcher also recognises that qualitative interviews provide a means of gaining access to detailed information and insights from insiders that cannot be fully grasped through a quantitative survey. Thus, the investigation is based on two assumptions: firstly, that a large amount of quantitative data can offer convincing evidence for the relationships being tested; and secondly, that the rich qualitative data is expected to assist the understanding of the quantitative evidence and address the research questions more thoroughly.

## **1.6 Significance**

The current study is significant for both theory and practice in personality and team scholarship. Firstly, a multi-theoretical framework is employed to explain the role that personality plays in work teams: a perspective well-grounded in literature (Stewart, Fulmer, and Barrick 2005, LePine et al. 2011, Tett et al. 2013, Mathieu et al. 2015). Combining a team effectiveness conceptual framework with the three theories, namely trait-based interactionist theory (Tett et al. 2013), situational strength theory (Meyer,

Dalal, and Hermida 2010), and behaviour as a multilevel linking mechanism theory (Stewart, Fulmer, and Barrick 2005), not only provides a comprehensive understanding of the connections between individual personality traits, individual role behaviours, team contexts and team outcomes, but also develops findings to extend existing knowledge in the discipline. While the quantitative results are expected to help reconcile the uncertainties in previous empirical research, the rich qualitative findings are expected to support the existing theories with stronger empirical evidence in terms of adding individual team member experiences and interpretations. Furthermore, the qualitative findings help identify new aspects regarding the boundary conditions of the theories. In summary, by testing and interpreting the research model which is underpinned by the theoretical framework, this study offers an adjusted model - also known as the research outcome model (ROM) - which offers a starting point for future research on personality in teams.

Secondly, the micro-dynamic view adopted in this study to examine personality in work teams is a direct response to the persistent calls made by team scholars in the past (Humphrey and Aime 2014). In this regard, this study pays close attention to individual differences and how individual personality traits influence team effectiveness via individual behaviours instead of simply adding individual personality scores together and relating the total score to team outcomes criteria. This is a strategy expected to enrich the existing and dominant team composition approach investigating the role of personality in teams, as mentioned above. Thirdly, unlike previous empirical studies that have often used military, students or other simulated teams in an experimental setting, this study is grounded in the field. By using field samples of work teams in business organisations, this study expands the findings to the field settings to increase generalisability. Last but not least, findings from this study offer several practical implications for managers or team leaders, especially in terms of human resource recruitment and team building.

## **1.7 Limitations**

In conducting this study, several limitations that could be addressed in future research were encountered. Firstly, regarding research units of analysis, this study has focused on individual members and their teams. Thus, factors and mechanisms at higher levels

of analysis such as organisations and industries, were not taken into consideration. A second limitation concerns a lack of empirical evidence to thoroughly address the role that Extraversion and member satisfaction play in team dynamics and outcomes. Thirdly, due to the researcher's resource constraints, not all of the interviews were conducted face-to-face; some interviews were conducted via telephone, which may exacerbate the effects of different modes of communication. That is, if interviewed face-to-face, participants might respond differently from when they are interviewed over telephone, which may subsequently influence the findings.

## **1.8 Organisation of the Chapters**

This thesis is presented in six chapters. The first chapter presents a brief introduction, narrowing from the general topic of team research to the core research problem of personality and team effectiveness. The research gaps in extant literature that have formed the basis of the research questions are identified in this chapter. To answer these research questions, the research framework is introduced in terms of how constructs and relationships are created, alongside the key theories that underpin this framework. The multilevel research concept and suggested areas of relevant theories provide a rationale for the plan to use a mixed-methods sequential explanatory design in this study and are outlined in this chapter. The significance and limitations of this study are also noted.

In Chapter 2, the literature review, a detailed discussion of the existing knowledge related to the research discipline is presented. Included in this discussion is an outline of the theoretical and empirical understandings of the research topic, noting relevant gaps in existing knowledge, with a focus on personality and team effectiveness: the central topic of the present study. The review of extant literature presented in this chapter is designed to establish the multilevel research framework that addresses the interplay of individual personality, role behaviours and team contexts on team effectiveness. A hypothetical model of relevant knowledge about the topic is presented as the foundational framework of the study; importantly, the required research instruments to measure each variable can be identified from this framework for use with the research participants to ensure that they closely match the identified research questions. The chapter concludes with the development of research hypotheses.

In Chapter 3 the methodological aspects of how the study was conducted are explained. In addition to a discussion of the research paradigm, informed by the nature of the research questions and the relevant research philosophy, the chapter explains the mixed-methods approach and the relevant sequential explanatory research design in the study. More specifically, the first quantitative phase is explained in terms of participants, procedures, measures and analysis. In addition, the second qualitative phase is discussed with respect to participants, procedures, interview schedules and analysis.

In Chapter 4, the analysis of the quantitative data and results, including the demographics of participants, the descriptive analysis of each variable and the inferential analysis to test each hypothesis, are reported. The regression models to test single level relationships and the multilevel models to test the cross-level relationships are established and tested. Each hypothesis is tested and results are reported. The chapter concludes with a discussion of how the quantitative findings link to the qualitative investigations.

In Chapter 5 the thematic analysis and findings of the qualitative phase, which offers further evidence to enrich the statistical results of the quantitative phase, are presented. The thematic analysis is organised into two broad sections: a confirmatory analysis and an exploratory analysis. The confirmatory analysis was conducted to find narrative threads in the interview data that allow greater depth in comprehending the hypotheses that were statistically supported. In contrast, the exploratory analysis was conducted to find qualitative evidence to further explain the hypotheses that were not supported by the statistical analysis. For both analytical sections, the qualitative findings are presented with the evidence and relevant participant quotes.

Chapter 6 presents a discussion of the integrated results from both the quantitative and the qualitative phases and is based on the contributions that the findings of this study have made to existing knowledge. This chapter presents the four key contributions of the study: (a) it identifies the theoretical implications for personality research in work teams; (b) it confirms those fundamental theories underpinning each part of the research framework; (c) it extends the findings of previous studies; and (d) incorporates the richness that the qualitative component brought into the research as

an extension of the quantitative results. Suggestions for future research and practical implications are also discussed. The chapter concludes with the research outcome model, which provides a summary of the study topics and demonstrates how the findings have advanced knowledge on personality and team effectiveness.



## CHAPTER 2 LITERATURE REVIEW

### 2.0 Overview

This chapter presents an in-depth review of the literature on personality and team effectiveness and examines the key debates, contradictions and opportunities for further enquiry. It focuses on the role of personality in work teams and highlights the connections between this role and the research objectives of the study. Justification of research questions is presented alongside a multilevel research model developed from the extant literature. Each section of the hypothetical model is examined in terms of relevant constructs and fundamental theoretical underpinnings. The chapter concludes with the presentation of the research hypotheses.

### 2.1 Personality and Team Effectiveness Research

#### *2.1.1 The Growing Popularity of Team Research*

In the contemporary business world, work teams have become ubiquitous units, in which members complete tasks, deliver work results and achieve goals interdependently rather than separately (Kozlowski and Ilgen 2006, LePine et al. 2008, Mathieu et al. 2008, LePine et al. 2011, Tannenbaum et al. 2012, Mathieu et al. 2014). Correspondingly, scholarly and practitioner interest in teams has increased in a number of fields including organisational behaviour (OB), management psychology, human resource management (HRM) and management more generally. Indeed, as early as 2008, Cascio and Aguinis (2008) conducted a keywords study and found that team research was amongst the most popular themes in the OB field. More recently, in a search for studies that contained the keyword ‘teams’ in the seven most influential OB and management journals (such as the Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly and Personnel Psychology), Humphrey and Aime (2014) observed an increase in the percentage of articles: from around 10% in 1993 to 14% in 2013. Thus, not only have teams as work units been employed widely in the field, scholarly interest in teams is also steadily increasing: a clear indication of both the practical and academic significance of research on teams.

### ***2.1.2 Team Effectiveness as a Central Issue in Team Research***

Alongside the widespread use of teams in the workplace, management researchers have not only focused on the advantages and disadvantages of teams or how differently structured teams benefit an organisation, but also on within-team phenomena, such as individual level and team-level contributors to team effectiveness (LePine et al. 2011, Tasa, Sears, and Schat 2011). The importance and potential impact of team effectiveness research connects to practitioners' search for an understanding of what makes some work teams more effective than others. This information is essential to develop and employ appropriate staffing and managerial practices that can enhance team performance and member satisfaction. In response to this practical need, much research has been carried out to investigate the mechanisms that have an impact on team effectiveness (e.g., Crawford and LePine 2013, Mathieu et al. 2014), as has been noted by several published reviews in this field (Ilgen et al. 2005, Mathieu et al. 2008, LePine et al. 2011). Two conceptual frameworks have been developed to guide this research stream on team effectiveness: the IPO model (Cohen and Bailey 1997) and the IMOI model (Ilgen et al. 2005).

### ***2.1.3 Overarching Frameworks of Team Effectiveness Research***

As a broad conceptual framework, the IPO model has guided team effectiveness research for nearly half a century. This model considers a team as a system in which team inputs enter certain team processes and are transformed into team outcomes. This model later evolved to become the IMOI model, which incorporates temporal effects into team functions and expands the nature of mediating mechanisms between team inputs and team outcomes (Ilgen et al. 2005). Within these overarching frameworks, many team scholars have agreed that team effectiveness is directly influenced by how a team is constructed (Ilgen et al. 2005, Kozlowski and Ilgen 2006, Bell 2007, Mathieu et al. 2008, Bell et al. 2011, Hollenbeck, Beersma, and Schouten 2012, Mathieu et al. 2014). Therefore, in the following paragraphs, each element in both the IPO model and the IMOI model is reviewed. Additionally, a comparison is made between the two models in terms of how factors and mechanisms that may contribute to team effectiveness are treated differently.

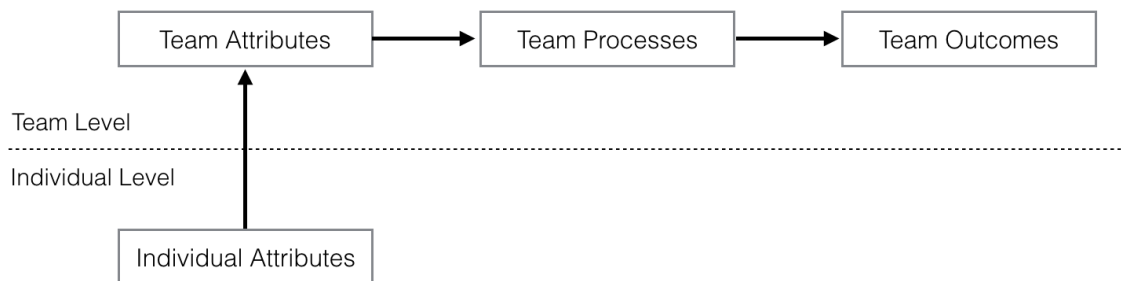
In both models, 'inputs' refer to factors or resources that have impacts on team function by enabling members to act and interact with one another. Team inputs are

hierarchical in nature and can be examined from the level of the individual, the team and the organisation. For example, individual level inputs include member personality traits (LePine et al. 2011, Tasa, Sears, and Schat 2011, Colbert, Barrick, and Bradley 2014), member demographics (Bell et al. 2011), cognitive ability (Woolley et al. 2010), and member strategic core roles (Summers, Humphrey, and Ferris 2012). Team-level inputs include team interdependence (Barrick et al. 2007), team leader influences (Zhang, Waldman, and Wang 2012), and team empowerment (Chen et al. 2007). Organisational level inputs include organisational engagement (Barrick et al. 2015) and the openness of the organisational climate (Mathieu et al. 2007).

The term ‘processes’ refers to “mediating processes that explain why certain inputs affect team effectiveness and viability” (Ilgen et al. 2005, 519). Team processes include: (a) transaction processes, which refer to the preparation stage and involve the activities of understanding situations, analysing problems, planning for specific actions and setting the tone for the next stage (Lanaj et al. 2013, Resick et al. 2014, Kuenberger, Mathieu, and Ruddy 2015); (b) action processes, which refer to the task behaviour stage and involve communication, coordination, task implementation and task-related backup behaviours (LePine et al. 2008, De Jong and Elfring 2010, Tasa, Sears, and Schat 2011, Davison et al. 2012, Summers, Humphrey, and Ferris 2012); (c) interpersonal processes, which refer to the social interaction stage and involve socialising within the team, handling conflicts, motivating other members, building team solidarity and managing stress and emotions (Bradley et al. 2012, Breugst et al. 2012, Killumets et al. 2015). Mathieu et al. (2008) have categorised ‘outcomes’ into three broad types: performance, member satisfaction and member viability. At least one out of the three categories have been widely used as indicator(s) of team effectiveness in previous team research (Hu and Liden 2011, LePine et al. 2011, Tasa, Sears, and Schat 2011, Maynard et al. 2012, Mathieu et al. 2014).

Although both the IPO model and the IMOI model (Ilgen et al. 2005) of team effectiveness recognise work teams as inherently multilevel phenomena, comprising individual members nested in a wider context (Mathieu et al. 2008), they adopt different perspectives to explain the multilevel issues related to team effectiveness research. Here, a level refers to the unit of analysis, on which data measuring a specific variable are collected and analysed, and by which hypotheses are tested (Hornung et

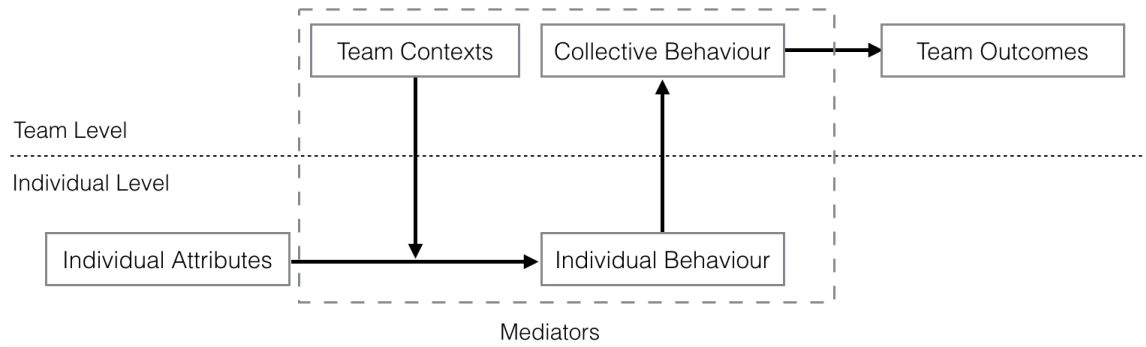
al. 2010). For example, work teams are located at the team level while individual members of a team are located at the individual level. Therefore, to investigate how certain individual member attributes (individual = level 1) influence team performance (team = level 2), one has to combine the two levels to make the investigation possible. To connect the individual level attributes to the team-level elements, researchers guided by the IPO heuristic have adopted a team composition approach. Specifically, individual member attributes are added to team-level constructs, which are then correlated to team outcomes. As such, all constructs under examination are at the team level and therefore single level investigations can be applied (Mathieu et al. 2008, Mathieu et al. 2014). The IPO model is shown in Figure 2.1.



**Figure 2.1 Team Composition Research of Team Effectiveness**

Adapted from Mathieu et al. (2008)

By contrast, the IMO model (Ilgen et al. 2005) applies a different approach. As it is beyond this study's scope to examine the feedback of team outcomes on team inputs, the IMO model (Ilgen et al. 2005) has been shortened to the IMO model. In particular, this model points to the fact that team phenomena are complex and, therefore, the investigation of how individual attributes predict team outcomes should not be limited to the aggregated team-level attributes. Instead, what lies between individual attributes and team outcomes could span across levels. Hence, these factors and cross-level connections between individual attributes and team outcomes are described as 'mediators'. More specifically, mediators could be represented by bottom-up effects, such as behaviour as a multilevel linking mechanism between individual attributes and team outcomes (Stewart, Fulmer, and Barrick 2005, LePine et al. 2011, Tasa, Sears, and Schat 2011). Also, mediators imply top-down effects, such as team contextual factors moderating the behavioural expressions of individual attributes (Tasa, Sears, and Schat 2011, Li 2012). The IMO model is shown in Figure 2.2.



**Figure 2.2 Micro-Dynamic Team Research of Team Effectiveness**

Adapted from Mathieu et al. (2008)

The present study represents an effort to investigate individual attributes and associated mechanisms that can be predictive of team effectiveness by using a micro-dynamic approach guided by the IMO model (Ilgen et al. 2005). As the extant literature demonstrates, individual level inputs and their effects on team effectiveness are especially important because individuals are the building blocks of a team (Barrick 2005, LePine et al. 2011). However, although the majority of previous team researchers have identified the importance of individual differences, most of them have ultimately focused on the aggregated individual attributes, using the IPO heuristic to conduct single level relationship investigations. This team composition research is potentially limited because of the exclusion of individual level complexities and mechanisms that span different levels (thus multilevel relationship investigations). Therefore, one research gap regarding team effectiveness is a lack of research guided by the IMO model (Ilgen et al. 2005) which incorporates individual differences and behaviours. Accordingly, many notable team researchers have called for a move beyond the static team composition approach towards a micro-dynamic approach when examining team effectiveness (Bell and Kozlowski 2012, Tannenbaum et al. 2012). More recently, in 2014, Humphrey and Aime highlighted that:

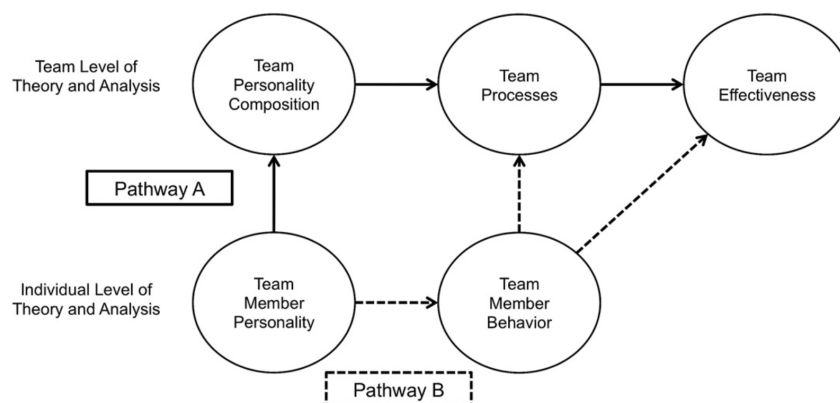
*Many of the limitations in our study of teams emerge from a highly static explanatory collectivism, privileging aggregated inputs and structures over dynamic interactions and organizing events. In particular, our review of the literature shows a scarcity of research searching below the surface of the collective into the ways in which individuals relate to each other in teams, interact, and organize to carry out personal, social, and organizational goals (Humphrey and Aime 2014, 444).*

#### ***2.1.4 Personality and Team Effectiveness***

In essence the key topic of this study is a branch of the team effectiveness research that has been outlined above, which focuses on individual personality traits, role behaviour, team contexts as well as the related mechanisms that affect team effectiveness. Adopting this line of inquiry with a focus on personality and role behaviours in context contributes to the contemporary literature in several important ways. Firstly, personality has been widely understood as an especially significant individual attribute that influences team functioning. This is because members' feelings, thoughts and behaviours which are coloured by personality, not only relate to their task activities, but also influence their interaction with other members (Barrick et al. 2007, LePine et al. 2011). Secondly, member role behaviour has been referred to as the major mechanism connecting the elements and phenomena within a team (Stewart, Fulmer, and Barrick 2005, Belbin 2010, Mathieu et al. 2015), and behaviour is a more proximal result of personality when it is compared to performance (Tett and Christiansen 2007, Li 2012). Thirdly, team contexts are regarded as central to the explanation of how the personality to role behaviour relationship is moderated by contextual factors, which was proposed by trait activation theory (Tett et al. 2013) and situational strength theory (Meyer, Dalal, and Hermida 2010, Meyer et al. 2014, Judge and Zapata 2015).

#### ***2.1.5 Two Pathways to Investigating Personality in Teams***

Previous literature shows that there are two pathways to examining personality in teams, which are based on different methods of integrating individual personality into team dynamics (LePine et al. 2011), as shown in Figure 2.3.



**Figure 2.3 Pathway Approaches to Investigate Personality in Teams**

Source: LePine et al. (2011, 314)

#### *2.1.5.1 Pathway A: A Team Composition Approach*

As demonstrated in Figure 2.3 (page 18), the logic behind Pathway A suggests that aggregation of members' personality directly influences team processes and team effectiveness (Bell 2007, Mathieu et al. 2014). It is this logic that reflects the team composition approach guided by the IPO model (Cohen and Bailey 1997). Indeed, Pathway A is straightforward to follow because the multilevel concern to connect individual personality to team-level elements no longer exists once individual personality is aggregated to team personality composition. Accordingly, most studies of the role of personality in teams have been conducted according to the principles of Pathway A (e.g., Barrick et al. 1998, LePine 2003, English, Griffith, and Steelman 2004, Peeters et al. 2006, Bell 2007, Humphrey et al. 2007, Prewett et al. 2009, Miron-Spektor, Erez, and Naveh 2011, Colbert, Barrick, and Bradley 2014, Kramer, Bhawe, and Johnson 2014, Mathieu et al. 2014). For example, individual members' personality scores have been totalled and averaged to a score to represent the overall team score on that trait (Kramer, Bhawe, and Johnson 2014). Elsewhere, variations of individual personality scores (Prewett et al. 2009) and the score of a focal team member (LePine 2003, Li 2012) have been used to compose a team personality score.

Although research following Pathway A has helped make some headway in understanding the role that personality plays in team process and effectiveness, teamwork scholars have more recently pointed out several flaws or limitations of the Pathway A approach. Firstly, totalling team members' personality to suggest a team personality may not reflect the reality of team experiences and processes; rather, it is the individual members who possess personality traits (LePine et al. 2011). Secondly, members influence team situations, not by their implicit personality traits, but by their explicit and observable behaviours; that is to say, how members think and act (Christiansen and Tett 2008, Judge and Zapata 2015). Thirdly, as different personality taxonomies and team personality operationalisation approaches were chosen across studies, their respective findings are difficult to fit together. Even for studies drawing on the same task-oriented theory and using similar team personality measures, patterns of results have been inconsistent and difficult to interpret (Prewett et al. 2009, LePine et al. 2011, Mathieu et al. 2014).

#### *2.1.5.2 Pathway B: A Micro-Dynamic Approach*

Circumventing the limitations of Pathway A, Figure 2.3 (page 18) shows another approach to examining member personality and team effectiveness: this is Pathway B, which is delineated by dashed lines. At its core, Pathway B emphasises that team members' personalities influence team outcomes indirectly through member behaviour or relevant team processes. When grouped together within a team setting, team members bring to the team their distinct behaviours that are coloured by their unique personality traits. Subsequently, team members' collective activities lead to different team outcomes, which incorporates individual differences and contributions into the research of team dynamics and team effectiveness (Bell 2007, Humphrey and Aime 2014). In fact, Pathway B is consistent with the micro-dynamic view reflected by the IMO model (Ilgen et al. 2005), which values individual differences when examining how personality traits contribute to team functioning. As such, Pathway B entails multilevel investigations. However, very little research has been devoted to this line of thought although it appears to have potential to expand our understanding of personality and team dynamics (Crawford and LePine 2013). The limited research following Pathway B was ascribed to the fact that, although relationships between personality traits and work behaviour in team settings have been studied extensively, how individual behaviour crosses levels and influences team outcomes still remains conceptually unclear (LePine et al. 2011). Moreover, conducting research along Pathway B requires multilevel designs and data analysis techniques that complicate the research process even further (LePine et al. 2011, Humphrey and Aime 2014).

To the researcher's knowledge, only two studies have followed Pathway B when investigating the relationship between personality and team outcomes. Stewart, Fulmer, and Barrick (2005) took the initiative to use team member role behaviour as a cross-level mechanism, bridging individual personality traits to team outcomes. Accordingly, the authors developed a model containing multilevel concepts and relationships. At the individual level, they focused on the relationships between the FFM personality traits (Conscientiousness, Agreeableness, Neuroticism, Openness and Extraversion) and individual members' role behaviour. At the team level, their model depicted how role behaviour configurations – i.e., role behaviour at the team level - may influence team outcomes. The linking mechanism between individual personality traits and team outcomes was named a “cross-level emergence” (Stewart,



Fulmer, and Barrick 2005, 345), by which individual role behaviour was totalled into the collective role structure of the team, or team role configuration.

The contributions of Stewart, Fulmer, and Barrick (2005) are manifold. Firstly, the individual personality traits of Agreeableness, Conscientiousness and Neuroticism were found to be predictive of team member task role behaviour and social role behaviour. Secondly, the authors justified using the mean value, variance and skew of individual role behaviour scores as three valid methods to represent team role structures. Thirdly, their study provides an approach to investigate personality in work teams with the assumption that the effects of individual personality traits on team cohesion and task performance may be transmitted by individual members' role behaviour and team role configurations.

Drawing on the work of Stewart, Fulmer, and Barrick (2005), Tasa, Sears, and Schat (2011) have also developed a multilevel linking mechanism to connect individual level personality traits: first to behaviour, then to team-level behavioural configurations and, finally, to team effectiveness criteria. At the individual level, the authors tested the extent to which personality traits expressed as member behaviour. However, they only considered two empirically evidenced personality dimensions – Conscientiousness and Agreeableness - and another individual attribute 'core self-evaluation' as focal individual level traits. Also, they did not adopt role behaviours but used teamwork behaviour with two dimensions as behavioural criteria instead; namely, performance management behaviours and interpersonal teamwork behaviours.

In extending Stewart, Fulmer, and Barrick (2005), Tasa, Sears, and Schat (2011) incorporated the cross-level interactions in their model by examining whether an individual's behavioural expression of personality was contingent on the team's overall confidence of its capability. In this regard, Tasa, Sears, and Schat (2011) have contributed to research on personality in teams by utilising Pathway B to examine how individual personality may influence team outcomes via individual behaviour. More importantly, their study pointed to the value of examining top-down effects in teams, such as the notion that group confidence may moderate the individual level relationship between personality and behaviour.

### ***2.1.6 Identifying Research Gaps***

Drawing on these reviews of the discipline, one can see that previous team researchers have tended towards a collective view when examining how team member personalities influence team dynamics and outcomes, with the majority of research using the Pathway A approach. By comparison, there is little research that goes deeper than the surface of all-team-level investigations in order to examine how individual differences influence the way people behave and interact with each other towards the completion of team goals: Pathway B approach. The ongoing and ultimate prevalence of team personality composition research thus seems problematic and perhaps outdated, given that many team researchers are calling for a move beyond the static aggregation approach towards adopting a micro-dynamic lens to examine individual level inputs, mediators and team outcomes (Bell and Kozlowski 2012, Mathieu et al. 2012, Tannenbaum et al. 2012, Mathieu et al. 2014).

Indeed, even in the two studies that did follow Pathway B – with researchers examining individual behaviours as a multilevel linking mechanism between personality and team outcomes – the findings did not fully explore the multilevel relationships between personality, role behaviour and team process outcomes reflected by Pathway B. Specifically, Stewart, Fulmer, and Barrick (2005) observed unexpected relationships between Extraversion/Openness and role behaviour but they mentioned that the reason for those unexpected results were unclear. Elsewhere, Tasa, Sears, and Schat (2011) did not address how Extraversion/Openness/Neuroticism may influence member behaviours and team effectiveness. Accordingly, a number of research gaps can be concluded. Firstly, conflicting results have been observed regarding the relationship between certain FFM personality traits (such as Neuroticism, Openness and Extraversion) and role behaviour. Secondly, neither Stewart, Fulmer, and Barrick (2005) nor Tasa, Sears, and Schat (2011) conducted research in the workplace but used simulated teams and only numerical results were obtained regarding personality traits, behaviour, and team outcomes. Thirdly, despite the existence of other important team-level situational factors that might accentuate or mitigate the magnitude of the personality-behaviour relationship, only collective efficacy has been tested. Fourthly, these studies did not address higher-order situational factors, such as contextual factors of the team.

Consequently, many personality and team scholars have called for more clarity in order to fill these research gaps. For example, LePine et al. (2011) have discussed the unexpected findings in the work of Stewart, Fulmer, and Barrick (2005) and noted that these findings “need to be addressed and investigated in future research” and further that, “although scholars have begun to consider the impact of these types of behaviors on team relevant outcomes... much more work is needed” (LePine et al. 2011, 319-320). Moreover, other team scholars have expressed the need for additional examination of cross-level moderating effects that team contexts may have on the personality-behaviour expressions (LePine et al. 2011, Mathieu et al. 2014).

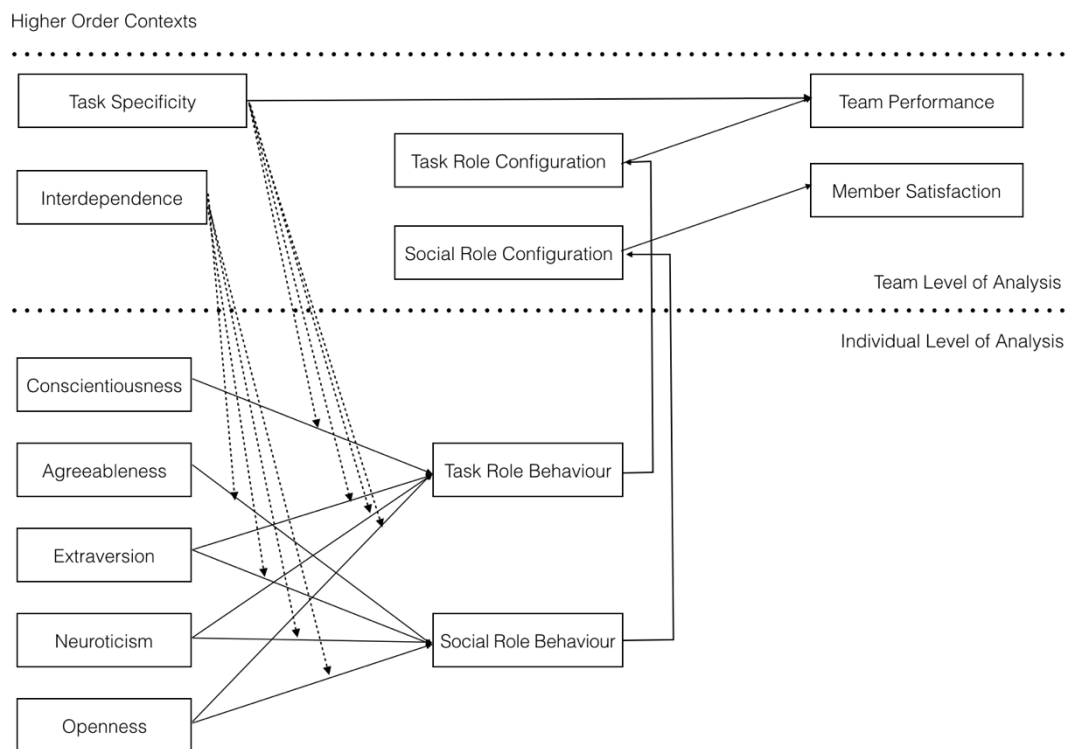
It is relevant to note that the literature review is mainly quantitatively driven. To the researcher’s knowledge, there is a paucity of qualitative research on the relationships between personality and team effectiveness through role behaviours. The decision to adopt a mixed methods approach for this study i.e. a quantitative phase followed by a qualitative phase provides a platform for future qualitative research into the impact that personality traits and team contexts may have on team effectiveness via role behaviours.

### ***2.1.7 Introducing the Research Model of This Study***

This study can, therefore, be best understood as an effort to fill the identified research gaps by answering the major research question: What is the relationship between individual member personality and team effectiveness? By using a multi-theoretical perspective and multilevel approach, this study is designed to offer insight into the role that personality plays in teams. In particular, it focuses on connecting individual personality traits to team effectiveness indicators through role behaviour at the individual level and role behaviour configurations at the team level. Moreover, this study seeks to address whether the personality-behaviour relationship is influenced by different team contexts - different levels of team task specificity and team interdependence. Team-level factors that may contribute to team effectiveness are also investigated.

Figure 2.4 (page 24) illustrates the hypothetical research model. At the individual level, the study seeks to incorporate individual differences and clarify the relationship between individual personality traits and member role behaviour. The study also

attempts to explain the cross-level moderating effects of team contexts (team task specificity and team interdependence) on the relationship between personality traits and team member role behaviours. At the team level, the aim is to examine how team role configurations are related to team outcomes (team performance and member satisfaction) and whether team contexts have direct relationships with team outcomes. Moving away from the tendency to focus on simulated student teams, this study examines work teams in the field, thus providing an opportunity to generalise the findings to workplace contexts. Finally, as an attempt to tap into higher-order contexts, the research model is investigated in both the Australian and Chinese contexts to discern whether or not direction or magnitude of the relationships change across broader contexts.



**Figure 2.4 Hypothetical Research Model**

## 2.2 Individual Level Constructs, Fundamental Theories and Hypotheses

### 2.2.1 Personality

In this section, the researcher reviews the key element in the individual level component of the research model, namely, personality. This section starts with the definition of personality and is followed by a review of the importance of personality

in team research. The researcher then identifies the evolution of research on personality as an antecedent or contributor of team dynamics. The FFM model, as a personality taxonomy employed in this study, is then introduced and specified. Finally, the literature on the personality-behaviour relationship, as well as personality as a team input, are reviewed.

#### *2.2.1.1 Definition, Significance and Evolution*

For the purposes of this study the well-accepted definition offered by Hogan (1991) is utilised where personality is understood as consistent internal states or patterns that explain a person's thoughts, emotions and behavioural tendencies. Indeed, the seminal work of Hogan (1991) has been used in numerous studies examining personality and its related constructs or mechanisms.

Personality has been widely understood as an especially important individual input on team performance (LePine et al. 2011, Bradley et al. 2013, Colbert, Barrick, and Bradley 2014, Mathieu et al. 2014). The reasons for this are manifold. First, members' feelings, thoughts and behaviours that are influenced by their personality traits not only directly relate to their own task activities but also influence interactions with other members when conducting interdependent tasks (LePine et al. 2011). Second, practitioners care about personality and they are eager to understand why members with certain personality traits adopt certain behaviours in the team environment (Barrick, Mount, and Li 2013). Third, it is more valuable in practice to focus on individual members who are more easily developed through training or staffing, than those stable and deep-rooted factors at the team level or the organisation level (LePine et al. 2011). Fourth, one can take advantage of a well-accepted taxonomy of personality so that research findings can be compared with previous research to fit into the extant body of knowledge. Last but not least, given the vast amount of research on general mental ability regarding how members can influence team performance, it seems important to understand how team members' psychological processes are impacted by their personality traits; namely, why team members do what they do and how it impacts on team outcomes.

As key scholars in the field, examining the work of Barrick et al. provides an overview of how personality – as an important psychological attribute – and its related phenomena have been researched and extended over the past 25 years. Their work can be grouped into three stages. In the first stage, prior to 1998, much of the work was devoted to identifying single level relationships between personality and performance criteria (Barrick and Mount 1991) and possible moderators, such as job autonomy (Barrick and Mount 1993). Moreover, their research on personality and performance was confined to employees who worked in sales positions and goal orientation was tested as a mediator between personality traits and job performance (Barrick, Mount, and Strauss 1993). Additionally, as a measurement extension, a comparison was made between the validity of observer-rated personality (e.g., supervisor, colleague and customer) and self-reported personality (Mount, Barrick and Strauss 1994). From the results, it was argued that higher levels of validity could be achieved by using a combination of self-assessment and observer-ratings for personality measurement (Mount, Barrick, and Strauss 1994).

The second stage started from 1998, when these researchers incorporated communication, interaction and cooperation into their research on personality. More specifically, they started to examine more complex research questions, such as how personality might influence team processes and team effectiveness when members' interpersonal interactions were considered (Barrick et al. 1998). Interactions between different personality traits and other individual attributes and the combined effects on performance were also examined (Mount, Barrick, and Strauss 1999, Witt et al. 2002, Colbert, Barrick, and Bradley 2014). In addition, the relationships between personality traits and occupational types were explored, such as the connections between the FFM personality traits and Holland's occupational themes, including Realistic (Doers), Investigative (Thinkers), Artistic (Creators), Social (Helpers), Enterprising (Persuaders), Conventional (Organisers) (Barrick, Mount, and Gupta 2003).

The third stage as demonstrated in recent studies, is characterised by descriptions of more complicated psychological processes between personality and outcome criteria, as well as the contingencies of such relationships from multilevel perspectives. For example, Barrick et al. started to pay more attention to the phenomena that exist between personality and performance, or mediators, such as team member role

behaviour (Stewart, Fulmer, and Barrick 2005), counterproductive work behaviour (Mount, Ilies, and Johnson 2006) and purposeful work behaviour (Barrick, Mount, and Li 2013). In particular, in 2013, they developed a theory about personality and purposeful work behaviour, which explains how personality predicts workplace behaviour by incorporating goal-achieving orientation as a mediator and job characteristics as moderators (Barrick, Mount, and Li 2013). Extending the third stage, the current study examines role behaviours as the mediators between personality and team effectiveness. It also investigates whether the behavioural expressions of personality traits will change across different team contexts.

#### *2.2.1.2 Personality Taxonomies*

Regarding the operationalisation of personality, there are a variety of taxonomies, such as the California Psychological Inventory (Megargee 2009), 16 Personality Questionnaires (Chamorro-Premuzic and Furnham 2014), the Hogan Personality Inventory (Hogan 2007) and the FFM (Goldberg 1990, 1999). In this study, personality is operationalised by the FFM for a number of reasons. Firstly, as a term with more than 18,000 citations on Google Scholar (Judge et al. 2013), the FFM has been extensively used in personality research and thus enables the findings of this research to be connected to previous empirical findings (Goldberg 1999, Roberts et al. 2007, Barrick, Mount, and Li 2013). Secondly, many experts in personality research have pointed out that the FFM is well suited to predict broad criteria such as work behaviour and performance (Barrick 2005, Stewart 2008, Ones and Viswesvaran 1996).

Although some scholars contend that finely grained personality traits are more likely to predict specified work-related criteria in contextualised settings, namely, those unique aspects of work behaviours of a particular occupational type (Tett and Christiansen 2007, Penney, David, and Witt 2011), the research questions in this study are not confined to specific work situations or certain aspects of workplace behaviour. Rather, the core of this study is to identify the general relationship patterns between personality dimensions, role behaviour and team outcomes that are meaningfully influenced by specific team contextual characteristics. Thus, the use of broader personality traits is preferable for prediction and explanation; that is to say, a concept bandwidth (Judge et al. 2013). In addition, one has to consider the subsequent

measurement of a construct taxonomy when making the decision about which taxonomy to use (Mathieu et al. 2012). In this sense, the FFM has been chosen because it has mature developed scales that have been shown to have acceptable psychometric properties with accessibility (LePine et al. 2011, Penney, David, and Witt 2011).

One of the earliest efforts regarding the FFM was made by Goldberg (1990), who analysed a large pool of descriptors of personality in the English language. By clustering these trait descriptors, Goldberg found more evidence for the five-dimensional structure of personality. For example, Goldberg first grouped 1,431 terms that described personality traits into 75 clusters, and the FFM structure emerged after a series of factor analysis procedures (Goldberg 1990). Although there are differences in terms of precise meaning (or even name) of each FFM dimension, a well-accepted interpretation of the FFM would include the following dimensions: Extraversion, Neuroticism, Agreeableness, Conscientiousness and Openness. All the FFM dimensions were shown in the research model in Figure 2.4 (page 24). Developed from the work of previous scholars (Goldberg 1999, McCrae and Costa Jr 1999, Judge and Ilies 2002, Hogan 2007, Barrick and Mount 2012, Judge et al. 2014), below is a more detailed description of the FFM dimensions:

- (a) Extraversion is often associated with two components – being sociable and ambitious – and therefore, traits under this dimension involve being sociable, talkative, initiating, expressive, assertive, competitive and ambitious;
- (b) Neuroticism (also known as Emotional Stability) as a second FFM dimension includes trait descriptors that describe one's emotional status and fluctuations, such as being calm, cool-headed, confident, secure and not being anxious or angry;
- (c) Agreeableness, also known as Friendliness, is associated with the extent to which people are liked by others. Traits under this dimension include being friendly, good-natured, cooperative, flexible, trusting, courteous, soft-hearted and tolerant;
- (d) Conscientiousness, as the fourth dimension, reflects one's dependability, such as being responsible, careful, thorough, diligent, attentive to details, persistent, organised, achievement-oriented and hardworking;
- (e) Openness is a trait group that has caused the most controversy; some scholars have interpreted it as intellect while others believe that it is related to flexibility and acceptance of new experiences. In most cases, Openness has been considered a



combination that includes being imaginative, innovative, adaptable, curious, original, broad-minded, intelligent and artistically sensitive.

Although the FFM has been frequently examined in terms of its relationship with individual performance or team performance (Judge and Ilies 2002, Peeters et al. 2006, Judge et al. 2013), it has been argued that behaviour may be a stronger predictor of performance as it is more proximal to team performance comparing to personality (Tett and Christiansen 2007). In fact, the latest personality-related research shows that personality to behaviour relationships are gaining incremental attention (Bell and Kozlowski 2012). Moreover, the contingency of personality to behaviour relationships has been explored and a variety of moderators examined, such as gender differences (Lee et al. 2013), compound personality traits (Gonzalez-Mulé, DeGeest, and Mount 2013) and organisational commitment (Guay et al. 2016). In line with this trend, the current researcher believes that previously accumulated knowledge on personality offers a basis for a more thorough investigation of how personality influences role behaviours in teams, how such relationships are moderated by cross-level effects of team characteristics and – more importantly – how the interplay of personality, role behaviours and team context influence crucial team outcomes. In other words, it is time to embrace more complicated situations in work teams where interpersonal activities are presented, as well as the effects of cross-level contextual factors, when investigating the mechanisms of personality, work behaviours and collective performance.

### ***2.2.2 Role Behaviour***

The other component of the personality-behaviour relationship is role behaviour, which is reviewed in this section. The researcher first specifies the definition of role behaviour that is utilised for the purpose of this study, followed by its taxonomy. Then a review as to how the antecedents and results of role behaviour have been researched by previous scholars is presented. The dyadic structure of role behaviour is also reviewed and reconstructed using the theory of team role experience and orientation (TREO) (Mathieu et al. 2015) so that role behaviours have the same conceptual bandwidth with the FFM personality traits. Using the FFM to operationalise personality and the TREO structure to operationalise role behaviours provides ground

for the hypothetical relationships between personality traits and members' role behaviour.

#### *2.2.2.1 Definition, Significance and Evolution*

A role is defined as a cluster of related and goal-oriented behaviours that a person exhibits in a teamwork situation where interpersonal activities are presented (Stewart, Fulmer, and Barrick 2005). The use of team member roles is understood as the major means for linking the individual and organisational levels of research and theory (Katz and Kahn 1978, 219). Because roles are fundamental features of both individual members and work teams (Ilgen and Hollenbeck 1991, Sluss, Van Dick, and Thompson 2011), they have been incorporated fully into the research model. Likewise, as noted by Kozlowski and Klein (2000), roles reflect consistent patterns of behaviour at the individual level, and role configuration reflects collective activities and interaction at the team level.

Previous literature on team roles has shown that there are two ways of describing role behaviours and examining the antecedents or results of roles; namely, role as position and role as person (Aritzeta, Swailes, and Senior 2007, Mumford et al. 2008, Killumets et al. 2015). Role as position refers to the expected behaviours required by the particular position that a team member occupies (Katz and Kahn 1978, Klein and Kozlowski 2000, Killumets et al. 2015). This type of team role is more likely to be associated with the responsibilities of a position and the requirements of job demands (Mathieu et al. 2015). Researchers who have employed this type of team role focus on assessing the extent to which team roles are fulfilled and the related process losses, such as role ambiguity (Grant and Rothbard 2013), team loafing (Price, Harrison, and Gavin 2006) and dysfunctional conflict (Amason 1996, De Dreu and Weingart 2003, De Dreu 2007).

Role as person, by contrast, refers to an individual member's consistent behaviours, which are affected by the inclinations of the person and the characteristics of a team setting (Ilgen and Hollenbeck 1991, Mumford et al. 2008, Killumets et al. 2015). Unlike that of role as position, the questions of interest related to role as person are more associated with explaining individual differences that might incline members to

enact particular roles when working in a team, as well as how team member role behaviours influence team outcomes (Stewart, Fulmer, and Barrick 2005, Mumford et al. 2008, Killumets et al. 2015). As the aim of the present study is to examine how individual members' personality traits influence their role behaviours, how team contextual features moderate personality to role behaviour expressions, and how collective role behaviour relates to team effectiveness, the perspective of viewing roles as personal has been adopted. In other words, it is assumed that members' roles originate from themselves to fulfil their behaviour, rather than a result of their job demands or responsibilities.

The factors contributing to role behaviours and the results of role behaviours have been examined extensively in previous studies (Aritzeta, Swailes, and Senior 2007, Belbin 2010, Killumets et al. 2015). In relation to these studies, previous researchers have tested the FFM personality traits as potential antecedents and team performance as the crucial outcome of different role behaviour dimensions (Stewart, Fulmer, and Barrick 2005). However, the relationship between the FFM personality and role behaviours was not well established. As discussed, researchers have examined the effects that the FFM personality dimensions have on role dimensions, yet their studies have been inconclusive. For example, although Conscientiousness and Agreeableness were found to be positively related to task role behaviour and social role behaviour, respectively, the relationships between the other FFM dimensions (for example, Extraversion, Neuroticism, and Openness) and role behaviours turned out to be inconsistent from one study to another (Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011). In terms of team performance as a result of role behaviours, previous researchers have argued that the processes by which task roles and social roles contribute to team performance were assumed to be different (Stewart, Fulmer, and Barrick 2005). Task roles aggregate and directly relate to team performance in terms of task accomplishment, whereas social roles indirectly act on team performance by creating an atmosphere that is conducive to effective task performing and collaborating: essential elements for team performance (Stewart, Fulmer, and Barrick 2005, Aritzeta, Swailes, and Senior 2007, Mumford et al. 2008, Tasa, Sears, and Schat 2011).

#### *2.2.2.2 Task Role Behaviour and Social Role Behaviour*

Researchers have offered several classic alternatives to operationalise team members' role behaviours. For example, Mumford, Campion, and Morgeson (2006) synthesised 120 team member roles in the literature into 10 broader categories that capture the essence of those roles. The 10 categories were clustered into three further general role types: task, social and boundary-spanning roles. Elsewhere, other scholars used a dyadic role typology, such as task roles and social roles, which is a well-accepted and empirically proven role typology (Stewart, Fulmer, and Barrick 2005, Aritzeta, Swailes, and Senior 2007, Sluss, Van Dick, and Thompson 2011). Task roles generally refer to a group of behaviours targeting the completion of tasks and the collective team goals, including workload sharing, setting team goals and working cooperatively towards the goals, analysing and solving problems, monitoring progress and adhering to deadlines. Alternately, social roles involve behaviours that are directed towards interpersonal harmony within the team as well as the behaviours devoted to a team climate which encourages successful teamwork, such as listening to and respecting other members' opinions, admitting their colleagues' contributions, making an effort towards an environment that is open for communication and cooperation, and caring for other members' feelings and emotions (Stewart, Fulmer, and Barrick 2005, Mumford et al. 2008, LePine et al. 2011, Killumets et al. 2015).

For the purposes of this study, the widely used dyadic role structure is adopted as a classifier of team member role behaviours. Furthermore, task roles and social roles are operationalised as task role behaviour and social role behaviour as shown in the research model in Figure 2.4 (page 24) based on the role theory developed by Mathieu et al. (2015), as discussed below.

#### *2.2.2.3 Team Role Experience and Orientation*

Team Role Experience and Orientation (TREO) theory (Mathieu et al. 2015) is used to specify the broad task-social dyadic role classification discussed above. As the latest taxonomy of role as person, the TREO dimensions are defined as team members' inclinations, preferences and past experiences of behaviours that they exhibit when working in a team; therefore, this type of team member role behaviours depends on the differences of individual attributes (Mathieu et al. 2015). The six different role

dimensions of the TREO consist of Organiser, Doer, Connector, Innovator, Challenger and Team Builder (Mathieu et al. 2015). According to Mathieu et al. (2015), these role dimensions were developed from previous role taxonomies or typologies that have been discussed in relevant studies since 1948. Although the size of previous role taxonomies varied from two to more than 10 categories, Mathieu et al. (2015) suggested that the six-dimensional TREO would be an effective team role taxonomy because it was synthesised from previous research and was well-grounded in the literature. It should be noted, however, that the TREO theory only summarises possible roles that team members enact in general: it does not provide self-reported behavioural markers in a given context, such as a specific team setting. Drawing on Mathieu et al. (2015), each of the six TREO dimensions is outlined below:

- (a) Organisers are members who arrange team activities by planning for each member's task performance, tracking everyone's progress and coordinating members' teamwork;
- (b) Doers are members who focus on taking responsibilities and getting tasks done and can be relied upon to finish jobs before deadlines and ensure the basic requirements of team success;
- (c) Connectors are members who act as a bridge by linking the team with external resources, such as people, parallel teams or other entities and ensure that outside resources or support required by the team are always in good condition;
- (d) Innovators, as the last type, are members who provide original and creative ideas and suggestions, strategies or approaches for solving problems, making decisions and dealing with other challenges;
- (e) Challengers are members who break the mould and propose all aspects of possibilities, explanations and solutions and push other members to explore all situations;
- (f) Team Builders are members who devote themselves to building team solidarity, creating a positive atmosphere within the team, resolving conflicts and achieving common ground as well as caring about other members' emotional needs.

The choice to use the TREO taxonomy to further operationalise team member task role behaviour and social role behaviour in the current study was based not only on the aforementioned scholarly arguments. This choice was also based on a further argument

that was presented by the researchers who developed the TREO theory (Mathieu et al. 2015), stating that a higher-level factor sits above the six TREO dimensions and the six dimensions originate from this higher-level factor. According to Mathieu et al. (2015) Organisers and Doers were developed from a task-oriented aspect; namely, getting tasks completed. By contrast, Challengers and Innovators were developed from a change-oriented aspect: that of questioning the team situations or existing ways of performing tasks and offering new ways of doing jobs. Connectors and Team Builders, differently, were referred to as sub-sets of the social-emotional aspect.

From this argument, it seems appropriate to use the task-social role structure to group the six dimensions of the TREO theory. In fact, the change-oriented aspect, which includes Challenger and Innovator, is also related to team tasks because the act of questioning existing approaches to task performance, pushing the team to explore all possible solutions and creating imaginative ideas for getting problems solved, are all concerned with improving team performance and achieving task-related goals. Using a similar logic, the role of Connector can be located under task role behaviour because sourcing help or other resources from outside teams is also in line with achieving better task results and team goals. Nevertheless, such team roles might differ when the team's functional area is different. For example, for manufacturing teams working on an assembly line or for maintenance teams, there is less need for team roles such as Challenger or Innovator than that required for product design teams or marketing teams. As argued by Mathieu et al. (2015), the TREO is a role taxonomy for teams in general and includes all possible roles that might exist in work teams: it was not an accurate set of role behaviours reported by team members in any particular setting. In addition, a comparison between the definition of social role behaviour and that of Team Builder shows that these two team roles are very similar, with tasks such as building within-team solidarity and better atmosphere for teamwork, paying attention to members' emotional needs, solving conflicts, and trying to achieve agreements (Stewart, Fulmer, and Barrick 2005). In summary, the current study employs the TREO theory by classifying: (a) the dimensions of Organisers, Doers, Challengers, Innovators, and Connectors into task role behaviour and (b) the dimension of Team Builder into social role behaviour.

Another major reason for adopting the TREO theory to specify task role and social role structure was that the TREO dimensions were distinct from, yet shown to be correlated with, all the FFM dimensions in an expected pattern, indicating that there is a bandwidth match between the TREO and the FFM. Specifically, Mathieu et al. (2015) developed hypotheses regarding the correlation patterns between the FFM dimensions and the TREO dimensions. They used military team samples and business student team samples to test the hypotheses. The results of their study significantly supported the expected correlations between the FFM and the TREO, which are listed in Table 2.1.

**Table 2.1 Correlations between The FFM and The TREO Dimensions**

<i>Big 5 Dimensions</i>	<i>TREO Dimensions</i>					
	Organizer	Doer	Team Builder	Connector	Innovator	Challenger
Conscientiousness	+	+			+	
Agreeableness		+	+	+		-
Extraversion			+	+	+	+
Emotional Stability	+	+	+			
Openness to Experience			+	+	+	+

Source: Mathieu et al. (2015, 21)

Drawing on Mathieu et al. (2015) which shows a bandwidth match between the TREO and the FFM, this study utilises the TREO dimensions to reconstruct the dyadic task/social role structure and then examines the relationships between the FFM and role behaviours. Following this line of inquiry, the aim of this study is to fill the knowledge gap by reconciling the previously reported unclear relationships between certain FFM traits and role behaviours.

### ***2.2.3 Trait Activation Theory and the Personality-Behaviour Relationship***

The conceptual basis of the FFM personality traits to role behaviour relationship is trait activation theory (Tett and Burnett 2003). Trait activation theory is characterised by the central idea that personality traits are activated to be expressed as relevant work behaviour when trait-relevant cues are present, either in the work environment or in interpersonal activities (Tett and Burnett 2003, Tett et al. 2013, Judge and Zapata 2015). It is this theory that supports the linkage between the FFM and role behaviour in the research model presented in Figure 2.4 (page 24).

#### ***2.2.3.1 The Principles of Trait Activation Theory***

According to Tett and Burnett (2003), the trait-based interactionist model sets the foundation for explaining the conditions under which personality traits will predict behaviours in particular settings. More specifically, it has been argued that the individual's personality traits will only be exhibited as visible behaviours when he or she is pressed; for example, when there is situation-trait relevance (Tett and Burnett 2003). A situation is trait-relevant when it has cues that are relevant to those traits that act as a call for the particular traits to respond. For example, a situation where respondents face a messy desk is relevant to the FFM dimension of Conscientiousness. If a person responds to the cue of his or her messy desk by organising it, it would suggest that this person has high levels of Conscientiousness; alternately, if a person ignores the cue and does nothing to the messy desk, then this person is likely to have low levels of Conscientiousness. Based on these conceptual assumptions, empirical studies have shown that correlations between self-reported personality traits and trait-relevant behaviours become stronger in situations where appropriate trait-relevant cues are provided than in situations where such cues are absent (Derue et al. 2011, Farh, Seo, and Tesluk 2012, Barrick, Mount, and Li 2013, Judge et al. 2014).

#### ***2.2.3.2 Different Sources of Trait-Relevant Cues***

Tett and Burnett (2003) stated that it is necessary to identify multiple sources or levels of trait-relevant cues so that a trait to behaviour relationship can be established and explained. They also recognised that there are three levels of situational factors that potentially moderate how latent personality traits express themselves as relevant work



behaviours: task-level, social level also referred to as group-level, and organisational level. These three levels of trait-relevant cues are specified and compared below.

Trait-relevant cues at the task level relate to the nature of job tasks, including the contents of every task, daily specified responsibilities, work schedules and procedures required to complete every task. For example, the situational features of Realistic, Investigative, Artistic, Social, Enterprising and Conventional (RIASEC) job types (De Fruty and Mervielde 1999) were examined in terms of how the cues associated with each job type would activate each FFM personality trait to be expressed as work behaviours (Tett and Burnett 2003, Furnham 2008).

Trait-relevant cues at the social level emerge from a team member's work-related relationships with others and interpersonal interactions. Such cues derive from the demands and expectations of other people who interact with the individual, including co-workers or team members, supervisors, subordinates and customers. Social-level cues differ from task-level cues especially with respect to the extent to which people are able to recognise them; that is to say, it is always easier for people to be more aware of the existence of task-level cues than social-level cues, whereas scholars have argued that social-level cues are potentially as important as task-level cues (Tett and Burnett 2003, Christiansen and Tett 2008, Judge and Zapata 2015).

Trait-relevant cues at the organisational level can be inferred from broad features of the organisation. Tett and Burnett (2003) gave an example of cues at this level in two different organisations: one of which has a clear hierarchical organisation structure and the other has a non-hierarchical, flat structure. Thus, the two different organisations can be expected to have unique characteristics and corresponding cues that might activate different personality traits to be expressed as work behaviours. Cues at this broad level have been considered as complex situational factors that might moderate the role of personality and behaviours in the workplace (Tett and Burnett 2003, Judge and Zapata 2015) because the organisational-level cues (for example, hierarchical level) do not necessarily share the same origins as the personality trait of interest (for example, Conscientiousness).

These different sources and levels of trait-relevant cues have been extended to empirical studies in work team contexts, in terms of individual member personality

traits, trait-relevant cues, and members' triggered task role behaviour or social role behaviour (Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011). In the current study, the focus is on task-level and team-level cues and, although the importance of organisational-level cues is acknowledged, such examination is beyond the scope of this study.

#### ***2.2.4 Developing Individual Level Hypotheses***

For the purpose of this study, the individual level hypotheses connect to the FFM personality and member role behaviours and have been developed according to the following rationale. Firstly, the FFM personality traits and two forms of members' role behaviour operationalised by the TREO dimensions are compared in order to identify conceptual connections. Secondly, those connections are explained by trait activation theory in terms of which situational cues would trigger certain FFM personality traits to be exhibited as relevant TREO role behaviours. Linking back to the research model, the individual level hypotheses are those hypothetical linkages between the FFM dimensions and task/social role behaviour, as shown in Figure 2.4 (page 24).

Specifically, members who score high on Conscientiousness are responsible, thorough, careful, diligent, attentive to detail, persistent, organised, achievement-oriented and hardworking, which may be reflected in behaviours such as tracking the progress of members' work and ensuring that team performance meets set timelines (Organiser), working diligently and completing one's own tasks with high quality in a timely manner (Doer) and trying new ideas and new methods to deal with tasks for better achievement (Innovator). From the perspective of trait activation theory, Conscientiousness is likely to be triggered when task level cues are presented, such as when the job requires attention to detail, precision, rule-following, meeting deadlines and achieving high quality work results (Tett and Burnett 2003, Christiansen and Tett 2008). Such cues are important aspects of contemporary work teams, as teams are designated to complete complex tasks more accurately and efficiently (Kozlowski and Ilgen 2006, LePine et al. 2011, Mathieu et al. 2014). Accordingly, it is assumed that members who have a high level of Conscientiousness are more likely to enact three of the TREO role behaviours that relate to this personality trait: Organiser, Doer, and Innovator which fall into the scope of task role behaviour. Consequently, the following hypothesis is proposed:

### **H1a: Conscientiousness is positively related to task role behaviour.**

Agreeable members, representing another key personality dimension of the FFM, are friendly, good-natured, cooperative, flexible and are liked by others. Not only does this accord with behaviours such as doing one's own job, but also with cooperating and offering backup to other members and helping them to finish their jobs, which contributes to building a team atmosphere with warmth and harmony and devoting time to maintaining good relationships with co-workers in the team. From the perspective of trait activation, Agreeableness is likely to be activated by social level cues, such as within-team interpersonal interactions, helping customers and cooperating with other members to complete tasks better (Tett and Burnett 2003, Barrick et al. 2007, Tasa, Sears, and Schat 2011). Therefore, team members who have a high level of Agreeableness are likely to enact the TREO dimension Team Builder which represents social role behaviour.

However, it might be particularly difficult for agreeable members to question other members' ideas and approaches to performing job tasks, nor would it be easy for them to raise doubts about their team's work strategies, developing paths and overall future plans. Therefore, Agreeableness and the TREO dimension of Challenger may come into conflict. Also, from the perspective of trait activation theory, when triggered by situations that demand fast reactions to a changing environment or questioning existing strategies, approaches and solutions, Agreeableness may offset relevant behaviours such as being sceptical about what the team is doing, which may create task or relationship conflicts (Tett and Burnett 2003, Killumets et al. 2015). Thus, there is a lack of conceptual linkage between Agreeableness and the TREO dimensions that reflect task role behaviour. Consequently, only the linkage between Agreeableness and Team Builder (social role behaviour) is hypothesised as below:

### **H2a: Agreeableness is positively related to social role behaviour.**

Extravert team members are described as sociable and ambitious, which is in line with behaviours such as building good rapport with people from both within the team (Team Builder) and outside the team (Connector), proposing creative ideas, approaches and solutions to certain task-related problems encountered by the team to improve task-related performance (Innovator), pushing the team to experience all possible

alternatives for future development and changes and questioning the value of what the team is involved in (Challenger). From the perspective of trait activation, Extraversion is likely to be activated by task and social level cues such as a high demand of communication with people outside the team, constantly changing task requirements, and interpersonal interactions in the team (Tett and Burnett 2003). These cues can be found in team settings as teams not only involve task accomplishment in a collective environment with increased competitive pressures (Griffin, Neal, and Parker 2007, Morgeson and Humphrey 2008, Cordery et al. 2010) but also mutual interactions among different members to work as an ongoing work unit (Kozlowski and Ilgen 2006, LePine et al. 2011, Mathieu et al. 2014). Accordingly, it is assumed that, when activated by the aforementioned relevant situational cues within the team, team members who have high levels of Extraversion are likely to enact four TREO role behaviour dimensions related to Extraversion: Connector, Innovator, Challenger which represent task role behaviour, and Team Builder which represents social role behaviour. Thus, the following hypotheses are proposed:

**H1b: Extraversion is positively related to task role behaviour.**

**H2b: Extraversion is positively related to social role behaviour.**

Team members who are emotionally stable tend to be calm, cool-headed, confident, feel secure and do not become anxious or angry easily. Neuroticism, as the opposite of Emotional Stability, therefore, is unlikely to result in behaviours such as structuring and scheduling task work within the team, planning every team member's job role and between-member task ties to work towards common team goals, reminding members to do their part and work within deadlines (Organiser), taking action, completing tasks assigned to them and achieving satisfying work results, making them reliable within the team (Doer), handling aggressive co-workers and helping co-workers to move forward from within-team conflict (Team Builder). From the perspective of trait activation, Neuroticism is likely to be activated by both task-level and social level cues such as high-risk work situations, constantly changing work environments including frequent changes in leadership, uncertainty of control over outcomes and aggressive co-workers. It is notable that these characteristics are not new to contemporary work teams (Mathieu et al. 2008, Cordery et al. 2010, Summers, Humphrey, and Ferris 2012). However, some researchers have identified three new features emerging in

contemporary work teams: dynamic composition, technology-based communication layering, and multiple team membership (Maynard et al. 2012, Tannenbaum et al. 2012). These features show that team members who are placed in a more dynamic work environment with on-going changes undertake more responsibilities and are assigned more challenging tasks, which may form more cues that activate the trait of Neuroticism (Bell and Kozlowski 2012, Kozlowski and Chao 2012, Tannenbaum et al. 2012). Therefore, it is assumed that members high in Neuroticism are much less likely to enact three TREO roles: Organiser, Doer (task role behaviour) and Team Builder (social role behaviour). Consequently, the following hypotheses are proposed:

**H1c: Neuroticism is negatively related to task role behaviour.**

**H2c: Neuroticism is negatively related to social role behaviour.**

Lastly, members with high levels of Openness tend to be imaginative, innovative, adaptable, curious, original, broad-minded and intelligent. These traits are associated with a number of role behaviours, such as building internal and external relationships and connections (Team Builder and Connector), using creative approaches in task performing and problem-solving (Innovator) and questioning if there are ways other than the conventional methods to achieve a team goal (Challenger). From the perspective of trait activation theory (Tett and Burnett 2003), Openness is likely to be activated by situational cues such as creativity, learning, training, adventures, frequent travel and tolerance of other members' ideas: these cues also apply to team situations (Tett and Burnett 2003) and contemporary work teams (Kozlowski and Ilgen 2006, Mathieu et al. 2008, Maynard et al. 2012). Therefore, it is assumed that team members who have high levels of Openness are likely to enact four TREO dimensions related to this trait: Connector, Challenger, and Innovator (task role behaviour) and Team Builder (social role behaviour). Hence, the following hypotheses are developed:

**H1d: Openness is positively related to task role behaviour.**

**H2d: Openness is positively related to social role behaviour.**

### **2.3 Cross-Level Constructs, Fundamental Theories and Hypotheses**

This section reviews the literature supporting the cross-level effects that team contextual factors have on the individual level personality-behaviour relationship, as

part of the hypothetical model shown in Figure 2.4 (page 24). It first introduces the key constructs, namely, team task specificity and team interdependence, which are selected from various team contextual factors for the purpose of this study - i.e., to examine whether the personality-behaviour relationship changes across different team contexts represented by team task specificity and team interdependence. Then, situational strength theory, which underpins the cross-level effects that team contexts have on the relationship between personality traits and role behaviours, is reviewed. Here the researcher also reviews different types of situational strength and specifies how the situational strengths associated with team task specificity and team interdependence are operationalised in the context of this study. Finally, hypotheses concerning these cross-level effects, namely, the contextual boundaries of the personality-behaviour relationship are developed.

### ***2.3.1 Team Task Specificity***

Task specificity, also known as task clarity or the opposite of role ambiguity, describes the extent to which an individual understands his or her job with respect to expected task-related behaviours, the methods to perform the tasks and the consequences of his or her job (Rousseau 1978, Ilgen and Hollenbeck 1991, Breauagh and Colihan 1994, Tubre and Collins 2000, Withey, Gellatly, and Annett 2005, Molleman, Emans, and Turusbekova 2011, Grant and Rothbard 2013, Kauppila 2014). In a team context, task specificity can be understood by its antonym – task uncertainty – which is defined as “a team’s lack of prior knowledge about which operational problems will arise when, and the best way of dealing with them” (Cordery et al. 2010, 240). Unlike task specificity at the individual level, task specificity at the team-level manifests itself in the individual member who not only knows his or her own job, but who also has higher task ties or work relations with other members in the team (Katz and Kahn 1978, Ilgen and Hollenbeck 1991, Tubre and Collins 2000, Cordery et al. 2010, Molleman, Emans, and Turusbekova 2011). An important distinction to note is that task specificity deals with whether tasks are clearly specified or ambiguous and this should be differentiated from the concept of task complexity (Cordery et al. 2010). Stated differently, simple team tasks do not necessarily link to high team task specificity. For example, a software programming team might work on a big and complex project (reflecting highly complicated team tasks) but have access to detailed information about methods

to be used along with helpful resources to deal with each procedure (high team task specificity).

Task specificity has been referred to as a contextual feature that facilitates expected work behaviours by previous scholars (Johns 2006), and the theoretical discussions about using task specificity as a contextual variable in team research dates back several decades (Pearce and Ravlin 1987). Empirically, task specificity as a form of situational strength was empirically found to moderate relationships between individual attributes and work-related behaviours, such as moderating individual personality traits to be expressed as voluntary work behaviours (Meyer et al. 2014), moderating individuals' security and pro-social values to be expressed as proactive behaviours (Grant and Rothbard 2013), moderating individuals' self-enhancement motives to be expressed as performance related behaviours (Yun, Takeuchi, and Liu 2007), and moderating individuals' Conscientiousness to be expressed as effort behaviour (Withey, Gellatly, and Annett 2005).

However, to the researcher's knowledge, team task specificity has not been examined in terms of its cross level moderating effects on the personality to role behaviour relationship at the individual level of analysis. Therefore, this study employs team task specificity – the importance of which has been well recognised – as a contextual factor to gain a better understanding of how the FFM personality traits are expressed as role behaviours within a team context. Team task specificity as a cross level moderator can be found in the hypothetical model shown in Figure 2.4 (page 24).

Researchers have revealed three core dimensions of task specificity: clarity about tasks, clarity about methods to complete these tasks and clarity about performance-related consequences (Kauppila 2014). Specifically, the first dimension of task clarity is also known as scheduling-related clarity and comprises the schedules and sequences of the work activities of a position. The second dimension, known as process-related clarity, deals with approaches and methods required to get a task done. The third dimension relates to performance-evaluation clarity, such as knowing the consequences of one's job and the minimum level at which team members must perform tasks to be accepted by their supervisors (Yun, Takeuchi, and Liu 2007, Grant and Rothbard 2013).

Accordingly, this study adopts this three-dimensional task specificity structure, applying this taxonomy of team task specificity as a situational factor moderating the FFM personality to member role behaviour relationships. In addition, as the current study is conducted within a team setting, two more aspects of team task specificity are added into the examination; namely, clarity of a member's own task and responsibilities and task ties with other members of the team.

### ***2.3.2 Team Interdependence***

Team interdependence refers to “the extent to which team members cooperate and work interactively to complete tasks” (Stewart and Barrick 2000, 137). Teams with high and low interdependence have been labelled as ‘real teams’ and ‘working groups’ (Katzenbach and Smith 1993, Mathieu et al. 2008). Although included as a crucial element in many definitions of work teams, researchers have continued to call for more empirical studies about team interdependence and the role it plays in influencing team results (Mathieu et al. 2008, Bell and Kozlowski 2012). Moreover, other scholars have emphasised the role of team interdependence in team research in that it was unlikely for a researcher to develop knowledge about work teams unless team interdependence was considered (Barrick et al. 2007, Hambrick, Humphrey, and Gupta 2015).

There have been multiple attempts to clarify the construct of team interdependence to identify different types of team interdependence and their influence on team processes and outcomes (Gully et al. 2002). Consequently, scholars have distinguished three dimensions of team interdependence (Robbins et al. 2013): input, process, and outcome interdependence, which are outlined in more detail below:

- (a) Input interdependence has been understood as the extent to which team members share their knowledge, skills, experiences or other resources as contributing factors to the teamwork;
- (b) Process interdependence has been understood as the way tasks are designed and distributed in the team. For example, a product-development team can be assigned design tasks that have each designer undertaking an individual section, or all team members can work together on the total task;
- (c) The third type of team interdependence has been understood as feedback or outcome interdependence. In teams with low outcome interdependence, each



member's performance is evaluated and compensated separately and a member is given feedback concerning only his or her own behaviour and performance. Team members are not mutually connected in terms of consequences of their work behaviours, performance and compensation; thus, they do not share responsibility. In contrast, for teams with high outcome interdependence, individual members' behaviours are assessed as an entity that closely relates to their collective performance with performance-related feedback given to all members rather than separately, and rewards or penalties are distributed according to group performance.

Although there is no definitive evidence of team interdependence as a moderator of personality to role behaviour relationships, it has been considered both an input factor and a moderator in a variety of other situations. For example, Stewart and Barrick (2000) evaluated the relationships between team-level interdependence and team performance of supervisor ratings and they found that interdependence interacted with team task types to affect team performance. Elsewhere, in an attempt to examine team interdependence and its role in organisational teams, team interdependence was found to moderate relationships between team autonomy and team performance (Langfred 2005). Likewise, team interdependence was found to positively moderate the relationships between team-level cohesion and performance in that the positive cohesion to performance relationship became stronger for teams who had higher-level interdependence (Barrick et al. 2007). More recently, by investigating top management teams in technology companies, researchers found that structural team interdependence, horizontal, vertical and reward interdependence, moderated two groups of classic predictions (Hambrick, Humphrey, and Gupta 2015).

The majority of past empirical research on team interdependence and its influence on crucial team results has focused either on process or outcome interdependence (Barrick et al. 2007, De Dreu 2007, Hambrick, Humphrey, and Gupta 2015). Likewise, in this study these two aspects of team interdependence are incorporated into the research model to test it as another team contextual factor that may moderate the focal relationship between the FFM personality and member role behaviour, as shown in Figure 2.4 (page 24). Furthermore, process interdependence is divided into two parts, goal and task interdependence, for the purpose of more accurate measurement as suggested by (Barrick et al. 2007).

### ***2.3.3 Situational Strength Theory Supporting Cross-Level Effects***

With respect to the cross-level moderating effects that team contexts have on the FFM to role behaviour relationships as show in the research model in Figure 2.4 (page 24), situational strength theory offers a conceptual explanation. The core of this theory regarding personality and behaviour is that situational factors have the potential to facilitate or constrain the expression of personality traits as behaviours and affect the predictive validity of personality traits to behaviours (Meyer, Dalal, and Hermida 2010, Tett et al. 2013, Meyer et al. 2014). Situational strength as a moderator was integrated with personality to behaviour relationships by the trait-based interactionist model (Tett and Burnett 2003); later it was conceptualised as a broad construct (Meyer, Dalal, and Bonaccio 2009, Meyer, Dalal, and Hermida 2010, Meyer et al. 2014).

It should be observed that the trait-relevant situation is just one element that makes it reasonable to expect certain personality traits to be expressed in behaviours; trait relevance is distinct from situational strength, which offers further understanding about the extent to which certain traits are exhibited as relevant behaviours (Tett and Burnett 2003, Meyer, Dalal, and Hermida 2010, Judge and Zapata 2015). In other words, trait relevance and strength are two different aspects of situations and both are required for a full comprehension of how personality traits are exhibited as relevant behaviours in certain work settings. The aforementioned trait activation theory has been used as a theoretical basis for individual hypotheses on the relationships between the FFM and role behaviours, whereas a combination of trait relevance theory and situational strength theory works as a conceptual basis for cross-level hypotheses on the moderating effects that team contexts have on the FFM to behaviour relationships. Moreover, while trait-relevant cues activate a certain personality trait, the strength of the respective situation influences the extent to which all traits are expressed as relevant behaviours (Judge and Zapata 2015).

According to situational strength theory, the extent to which personality traits are expressed as behaviours depends on the strength of trait-relevant cues. Specifically, strong situations tend to dilute behavioural differences impacted by individual personality difference as there are stimuli that encourage uniform individual behaviours. By contrast, weak situations allow individuals to behave discretely, on their own and, therefore, individual behavioural differences tend to be more affected

by an individual's unique personality traits (Tett and Burnett 2003, Christiansen and Tett 2008, Cooper and Withey 2009, Meyer, Dalal, and Hermida 2010, Meyer et al. 2014). Strong situations that restrain trait expressions are those with job-related information that is clearly defined and structured (high clarity), job-related information that remains stable from different sources (high consistency), when there is no freedom to make decisions or take actions (high constraints) and penalties or rewards are closely related to the consequences of one's job (high consequences). In such situations, expected work behaviours are easier to observe, regardless of individuals' personality differences. Weak situations, on the contrary, are associated with low clarity, low consistency, low constraints and low consequences, which offers more opportunities for individuals with different personality traits to behave according to those traits.

To return to the previously mentioned example of the messy desk that may contain further cues relevant to the trait of Conscientiousness (organised, methodical, attentive to detail) and the opportunities for individuals to engage in organising behaviours: it is also possible to have either strong or weak 'versions', which moderate the strength of trait expression. Specifically, if there are clear rules indicating that failure to organise the desk would incur some form of penalty (such as employment termination), this is a strong version of a situation relevant to Conscientiousness and, uniformly, people will engage in organising behaviours (organising and tidying the desk) regardless of their differences in terms of Conscientiousness. On the other hand, a lack of such rules would indicate a weak situation, which encourages people who have different levels of Conscientiousness to behave according to their own inclinations: high level conscientious people would respond by sorting out the desk and low level conscientious people would leave the desk messy and not engage in any organising behaviour. In addition, there might be other strong or weak situations that are irrelevant to the personality trait of Conscientiousness. In other words, trait-relevant situation theory supports the idea that, in appropriate situations, personality traits are predictive of certain behaviours, whereas situational strength explains other factors in situations that may facilitate or suppress personality to behaviour expressions.

Although theorists and researchers have extensively recognised the existence and importance of situational strength in the OB field as well as the mechanisms used to influence organisational phenomena related to individuals, teams and organisations, few have articulated the construct with respect to its conceptual operationalisation. Among the very first efforts to clarify situational strength, Meyer, Dalal, and Bonaccio (2009) proposed four aspects of this construct: (a) Clarity, describing the extent to which job-related tasks, behavioural expectations and responsibilities are available and easy to understand; namely, whether someone is aware of required tasks in his or her position and how to perform those tasks; (b) Consistency, involving the extent to which job-related information obtained from different sources is consistent and compatible; (c) Constraints, referring to the extent to which the person has autonomy for decision-making and actions, and; (d) Consequences, describing the extent to which an individual's actions significantly influence relevant stakeholders.

#### ***2.3.4 Developing Cross-Level Hypotheses***

For cross level hypotheses, the researcher proposes that team task specificity moderates all the FFM traits to task role behaviour relationships and that team interdependence moderate all the FFM traits to social role behaviour relationships, based on trait activation and situational strength theory. Linking back to the research model, these cross-level hypotheses are the hypothetical top-down effects that team contextual factors have on the relationships between the FFM and task/social role behaviour, as shown in Figure 2.4 (page 24).

Before engaging in a detailed discussion on team task specificity as a moderator of the FFM to task role behaviour relationship, it is necessary to distinguish teams with a high task specificity from those with a low task specificity. In team settings, task specificity entails not only knowing an individual's own job but also the connections between his or her task ties and members in other positions within the team (Ilgen and Hollenbeck 1991, Tubre and Collins 2000, Cordery et al. 2010, Molleman, Emans, and Turusbekova 2011, Judge and Zapata 2015). Therefore, work teams with high task specificity have members who understand their jobs, their expected work behaviours, the consequences of their job performance as well as the task ties between their positions and other positions in the team (those who they collaborate with to complete tasks better) (Macht 2014). In contrast, in teams with low task specificity, roles and

positions are unstructured, individual team members are unaware of or unclear about expected work behaviour and the consequences of their jobs, and team structure and workload sharing are decentralised (Barrick and Mount 1991).

The current study regards team task specificity as a situational factor within the situational strength operationalisation of ‘clarity’ (Meyer, Dalal, and Hermida 2010). Thus, the study examines the aggregated team-level task specificity and its moderating effects on the FFM to role behaviour relationships, as it is theoretically argued that situational effects might come from task, social, and organisational levels (Tett and Burnett 2003, Meyer, Dalal, and Hermida 2010, Meyer et al. 2014). According to Tasa, Sears, and Schat (2011), aggregated team efficacy moderates the relationship between Conscientiousness and performance management behaviours, in that the relationship between Conscientiousness and performance management behaviours become stronger when team efficacy is low.

Similarly, in the current study, for high task-specific teams where expected task behaviours of each position are well-defined and the workflow and task ties are well-structured, members do not have the freedom to behave with discretion and, therefore, one would expect low variance in behaviours across team members who have different personality traits (Barrick and Mount 1991, Tett and Burnett 2003, Cooper and Withey 2009, Meyer, Dalal, and Hermida 2010). In other words, high team task specificity would erode the behavioural differences created by unique personality traits as every member is required to behave uniformly. By contrast, for low task-specific teams, where expected task behaviours of each position are not articulated and task-related cooperation patterns are not structured (weak situations), members are allowed to behave according to their own inclinations and, therefore, it is more likely to observe behavioural expressions influenced by individual members’ unique personality traits (Barrick and Mount 1991). Consequently, the following hypothesis is proposed:

**H3: Team task specificity will moderate the relationships between individual personality traits and task role behaviour, such that:**  
**(a) personality traits to task role behaviour relationships will become stronger when team task specificity is low and;**

**(b) personality traits to task role behaviour relationships will become weaker when team task specificity is high.**

Turning to team interdependence, it is anticipated that team interdependence – the extent to which members affect one another – will moderate the baseline relationships between the FFM traits and social role behaviour. Before developing the relevant hypotheses, however, it is necessary to distinguish teams with high level interdependence from those with low level interdependence.

According to Hambrick, Humphrey, and Gupta (2015), team interdependence has at least part of its origins in team design or team arrangement. In other words, teams might be structured in a way that members depend on each other to complete tasks and receive payoffs as a collective; or conversely, members have few task ties in their daily work and each member's work is assessed and compensated independently (Hambrick, Humphrey, and Gupta 2015). Since this study emphasises process and outcome interdependence, a high or low interdependence that reflects strong or weak situations can be summarised around these two core aspects. Specifically, teams with high level interdependence have members who are interdependent on task goals and workload sharing, are mutually related in terms of task performance and problem solving, must rely on each other to fulfil their own responsibilities, are evaluated as a collective and receive collective payoffs and feedback as a result of group actions and effectiveness. Conversely, teams with low interdependence have members who work and perform tasks in an independent way, deal with their own tasks and goals respectively with little mutual interdependence, can undertake their own job responsibilities without cooperation or backup from others, are assessed independently based on their own behaviour and performance, and receive separate compensation or performance-related feedback.

Situational strength theory has been employed to support hypotheses on team interdependence as a moderator of the personality-behaviour relationships. Similarly, it is necessary to distinguish how different levels of team interdependence may moderate the relationship between personality and behaviour before developing the hypotheses. High team interdependence reflects a situation in which members are required to interact with others more often and at a greater degree, forming a strong

situation where uniform behaviour is more likely to be observed. For example, when team interdependence is high, team members are more likely to cooperate with each other and maintain good interpersonal relationships (rather than behaving according to their unique personality traits) to achieve better collective team performance and higher collective compensation. In such cases, one can expect to observe a higher level of social role behaviour to be engaged by team members, such as building team solidarity, solving conflicts, listening to others' opinions and suggestions, caring about others' emotional needs, helping others to recover from failure, and encouraging others to deal with challenges. By contrast, when team interdependence is low, there is a lack of contextual triggers for the expression of social role behaviour and thus only team members with relevant personality traits are expected to engage in social role behaviour. Consequently, the following hypothesis is proposed:

**H4: Team interdependence will moderate the relationships between individual personality traits and social role behaviour, such that:**

- (a) personality traits to social role behaviour relationships will become stronger when team interdependence is low and;**
- (b) personality traits to social role behaviour relationships will become weaker when team interdependence is high.**

Thus far, both individual level and cross-level hypotheses have been justified and presented. The next section examines core constructs and relationships at the team level given that the ultimate goal of the current study is to understand how team member personality and related mechanisms contribute to the effectiveness of their teams.

## **2.4 Team-Level Constructs, Fundamental Theories and Hypotheses**

This section reviews the constructs and relationships within the team-level of analysis, as part of the hypothetical model in Figure 2.4 (page 24). Firstly, both types of role configurations, namely task role configuration and social role configuration, which represent individual role behaviour incorporated into the team-level, are reviewed as potential contributors to team effectiveness. It is specified how role configurations are operationalised - i.e., the mean value of individual role behaviour. Secondly, the

researcher reviews team performance and member satisfaction as two indicators of team effectiveness. The theory of behaviour as a multilevel linking mechanism is then discussed in terms of providing a framework to connect individual personality traits and team effectiveness through role behaviour and role configuration. Finally, the team-level hypotheses which focus on the relationship between contributing factors and team effectiveness are developed.

#### ***2.4.1 Team Role Configurations***

Team role configuration is a combination of individuals' role behaviours, which represent the stable behavioural patterns of the group and is defined as "the cyclical pattern of activity among members who compose a team" (LePine 2003, 28). According to Stewart, Fulmer, and Barrick (2005), member roles refer to consistent patterns of behaviour and team role configuration refers to collective activities at the team-level. Additionally, consistent with task and social roles that reflect a dyadic role behaviour structure at the individual level, collective roles at the team-level also have a dyadic structure; namely, task role configuration and social role configuration, as in the research model in Figure 2.4 (page 24).

One should note that both team task and social role configuration are meaningful team phenomena and isomorphic to their counterparts at the individual level (individual member task roles and social roles). This is because task role behaviours exhibited by individual members are not mitigated or diminished by other members engaging in their own task role behaviour. In a similar vein, individual members' social role behaviour, such as helping and comforting others, simply add to the overall positive interpersonal interactions within the team (Stewart, Fulmer, and Barrick 2005, Driskell et al. 2006, Tasa, Sears, and Schat 2011). However, because configuration in team research has many forms (for example, composition, compilation and other sub-forms), it is first necessary to discuss the exact form or forms of configuration used in this study before being able to develop propositions on collective role configurations and team effectiveness criteria.

##### ***2.4.1.1 Two Configuration Methods***

As noted by Kozlowski and Klein (2000), individual member role behaviours can create collective role configuration in one of two ways: composition or compilation.



Composition refers to the aggregation of individual level role behaviours in a linear way, which indicates that all lower level members have comparable role behaviours and they are weighted equally in constructing the team-level role configuration. The most frequent use of composition is averaging individual role behaviour scores, or mean value (Barrick et al. 1998, Stewart, Fulmer, and Barrick 2005, LePine et al. 2011, Tasa, Sears, and Schat 2011, Mathieu et al. 2014). Conversely, compilation method holds that team-level role configuration is a complex integration of individual level role behaviours and these behaviours are not equally weighted in contributing to team-level role configuration. For example, the contributor scoring the least or the most, or the situation of the majority of individual members (i.e., skewness) have been used for the compilation of role behaviour at the team level (Barrick et al. 1998, LePine 2003, Stewart, Fulmer, and Barrick 2005, LePine et al. 2011).

#### *2.4.1.2 Using Mean Value to Construct Team Role Configurations*

The choice between composition and compilation to operationalise team-level role configuration from individual role behaviours has been said to depend on the type of tasks that a work team undertakes. For example, Barrick et al. (1998) have argued that using the task taxonomy developed by Steiner (1972) would justify the selection, with the composition approach being more appropriate for additive tasks (for example, those tasks requiring joint contributions from each member to complete and the compilation approach being more appropriate for disjunctive (only one or a few members performing well is sufficient to complete tasks) and conjunctive tasks (requiring each individual member to perform at a minimum acceptable level to complete tasks). Accordingly, teams that will be chosen in the context of this study are work units in business organisations undertaking additive tasks, where each member has his or her own role that does not overlap with the role of others. Stated differently, successful task performance requires that every member contributes jointly and equally. Thus, it is unlikely that only one or a few members are able to ensure the success of the team. As a result, the mean value of individual role behaviour scores is used to construct team-level role configurations.

#### *2.4.2 Team Performance*

Managers want complex tasks to be accomplished and teams are designed to serve this end (LePine et al. 2011). Accordingly, in organisational behaviour and team literature,

team performance has received most research attention and has been the most widely studied outcome-related construct (Mathieu et al. 2008). Therefore, team performance has been incorporated as an important indicator of team effectiveness, as shown in the research model in Figure 2.4 (page 24). As for the more specific components of team performance, Mathieu et al. (2008) have offered three subcategories: organisational level performance, behaviour and outcome based team performance and role based team performance. Organisational level performance is the objective performance data of an organisation, which is regularly used in team research on top management teams (TMTs) since they have inputs and dynamics that are often directly aligned with organisational outcomes (Barrick et al. 2007). Examples of firm level criteria in TMT studies are firm profitability (Bunderson and Sutcliffe 2002, Gardner, Gino, and Staats 2012), firm sales performance data (Srivastava, Bartol, and Locke 2006) and firm financial ratios (Barrick et al. 2007). However, firm-level benefits may not be directly relevant in teams that operate at lower levels. In fact, few studies that focus on work teams would incorporate organisational level performance because these teams are not directly associated with significant organisational results and, consequently, forming a linkage between characteristics of these teams and organisational level performance is problematic. For example, it is unlikely to achieve more than a rough estimate of how much basic administration production teams contribute to their organisation's profits. Even for teams that are closer to delivering results, there may be a need to provide a compilation or combination model to explain how team-level outcomes are linked to firm level profits, thereby justifying the model. That said, the TMTs are not the specific focus of this study, which does not delve deeply into organisational level outcomes but rather focuses on team-level performance.

The differentiation of behaviour-based and outcome-based team performance dates back to Beal et al. (2003), who presented a dual theory of team performance. Behaviours refer to actions that team members take to perform tasks and achieve goals, whereas outcomes describe the ultimate achievement of work teams. Moreover, according to Beal et al. (2003), behaviour-based team performance is determined more by the individuals that compose a team, while outcome-based team performance is likely to be influenced by more complex factors including member behaviours and other factors such as market conditions and company history. Empirically, these types of team performance have been widely examined. For example, behaviour-based team

performance has been examined as the collective extent to which members experiment with different methods of performing tasks, identifying troubles, discussing and correcting mistakes, and seeking feedback from supervisors (Kirkman et al. 2004). Other examples include the following: team learning behaviour, which describes the average level of team members in improving task knowledge and skills (Sung and Choi 2012); decision making processes, which represent members' cognitive task performance (Stewart, Courtright, and Barrick 2012); and team-level proactivity, which encompasses behaviours such as seeking better options to complete tasks and trying to avoid mistakes beforehand (Kirkman and Rosen 1999). As for outcome based team performance, common variables used include quality and efficiency of teamwork across different types of teams, such as maintenance groups, service teams, production crews, sales teams, and military teams (Lester, Meglino, and Korsgaard 2002, Barrick et al. 2007, Killumets et al. 2015).

Other researchers have advocated more generalisable indices of team performance such as role-based performance. This particular aspect of team performance depicts the degree to which members have enough of the required competencies to play their assigned roles and perform tasks as a unit, regardless of team types (Mathieu et al. 2008). For example, Chen et al. (2007) examined how leadership and team empowerment influence a member's role-based performance – whether they are competent and willing to play their roles within the team as well as in the organisation – and they generated team performance measures that could be used across different teams. However, it cannot be denied that research incorporating role-based performance may involve uncertainties and complexity caused by many other factors than those within a researchers' interests (Chen et al. 2007). Specifically, the relationship between team members' sense of empowerment and their role-based performance might be subject to the length of time that members have been in the team and the level of difficulty in handling roles (Mathieu et al. 2014).

Since each of the above mentioned three performance criteria captures only one aspect of team results, some researchers have integrated the criteria and proposed the usage of a mixed indicator to measure team performance more completely in the one study. For example, some researchers adapted several team performance measurements from previous work and used a composite measure that included team members' behaviours

of planning, problem detecting and solving, helping and mentoring, self-development behaviours as well as the overall outcomes of these behaviours (Hiller, Day, and Vance 2006). In their seminal work, Barrick et al. (1998) measured team performance in a more versatile manner by including planning and interpersonal communication, quality and quantity, and member commitment.

For the purposes of this study, an outcome-based perspective of team performance is adopted. For team-level investigations, role behaviour configurations are considered as independent variables and to avoid confusion, performance criteria as dependent variables must be the result of behaviours. This perspective enables a comparison between the results of the current study and those of previous scholarship on personality and team related issues that have also adopted outcome-based team performance (e.g., Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011). As role-based team performance entails complex temporal effects, which are not within the scope of this study, they are not examined. Thus, this study adopts five outcome-based indicators that are used to rate team performance, namely, quality of work, quantity of work, overall performance, completing work on time and responding quickly to problems.

#### ***2.4.3 Member Satisfaction***

As pointed out by Mathieu et al. (2008), member satisfaction is another important aspect of team effectiveness as it directly influences member viability; namely, the possibility of brain drainage. Over the past twenty years, not only have team managers realised the importance of members' emotions and the time they are willing to stay in the team, but team researchers have also given increased attention to members' affective reactions and viability, among which member satisfaction and job commitment are most frequently studied (Mathieu et al. 2008). For example, the extent to which members are satisfied with the team atmosphere and the respect received from other members or supervisors has been examined (De Dreu and Weingart 2003, De Dreu 2007, Shaw et al. 2011, Mathieu et al. 2014). As such, for the purposes of this study, member satisfaction is also examined as another indicator of team effectiveness, as shown in the research model in Figure 2.4 (page 24).

#### ***2.4.4 Theory of Behaviour as a Multilevel Linking Mechanism***

While the theory of behaviour as a multilevel linking mechanism, also known as multilevel behavioural theory, is not the fundamental theoretical basis for relationships between team role configurations and team effectiveness, it provides an overall explanation for how each part of the research model fits together; specifically, the possibility that individual role behaviours and their counterparts at the team level can be used to link individual personality and team effectiveness in a multilevel way, which sets the foundation for the current research model.

This theory was developed by Stewart, Fulmer, and Barrick (2005), who took the initiative to use team member role behaviours as a cross level mechanism, bridging individual level personality traits to team-level outcomes; these being team performance and team cohesion. As such, the authors developed a model containing multilevel concepts and relationships. At the individual level, their focus was on the relationships between personality traits and individual members' role behaviours. At the team level, the model depicted how collective role behaviours influenced team outcomes. The link or mechanism between the individual level and the team level was understood as the "cross-level emergence" (Stewart, Fulmer, and Barrick 2005, 345), where individual role behaviours experienced a complex process and became the team-level role structure of the team. For the bridging process linking the individual level to the team level, which was lifting individual task roles and social roles upwards to their team-level equivalents, Stewart, Fulmer, and Barrick (2005) summarised three possible approaches to operationalising task or social role structures at the team level: composition (mean value), compilation (variance) and bloc measure (skew). Lastly, for team-level relationships, they examined the relationships between different forms of role structure and two aspects of team effectiveness: social cohesion and task performance. Their findings indicated that the multilevel behavioural linking mechanism does make sense in explaining complex relationships between personality and team effectiveness. This theory has been further used as a conceptual basis for cross level models examining personality, behaviours and team outcomes and has been evinced by recent researchers (LePine et al. 2011, Tasa, Sears, and Schat 2011).

#### ***2.4.5 Traditional Team Effectiveness Framework***

Although the IPO model is not sufficient to explain multilevel connections between personality and team effectiveness if used alone, it nonetheless offers theoretical support for the proposed relationships between team role configurations and team effectiveness indicators. According to the IPO model, team outcomes are a result of team processes (Cohen and Bailey 1997, Ilgen et al. 2005, Mathieu et al. 2008, Crawford and LePine 2013). Researchers have conceptualised these team processes into three dimensions (Marks, Mathieu, and Zaccaro 2001), which are described as follows: (a) transition processes refer to when members analyse and assess task related problems or situations, and plan or adjust next step activities; (b) action processes refer to when members take actions and collaborate with each other to complete tasks; and (c) interpersonal processes refer to ongoing interpersonal activities and social interactions.

Meta-analyses and reviews have demonstrated that these three team process dimensions are positively related to team effectiveness criteria, such as team performance, member satisfaction and social cohesion (LePine et al. 2008, Mathieu et al. 2008, Mathieu et al. 2014). Furthermore, although member role behaviour is an individual level construct that represents patterns of individual activities and mutual interactions, the combination of individual roles represents stable patterns of team process (Stewart, Fulmer, and Barrick 2005, Kozlowski and Ilgen 2006, Tasa, Sears, and Schat 2011).

#### ***2.4.6 Developing Team-Level Hypotheses***

For team-level hypotheses, this study posits two groups of relationships. The first group of relationships deals with team role configurations and team effectiveness indicators, and the second group of relationships deals with team task specificity and team performance, as shown in the research model in Figure 2.4 (page 24).

##### ***2.4.6.1 Team Role Configurations and Team Effectiveness***

From the perspective of the IPO model (Cohen and Bailey 1997), team-level task role configuration shares many similarities with transition and action processes because they are task related and action oriented. Likewise, team-level social role configuration has much in common with interpersonal processes since it focuses on handling

interpersonal relationships and building team solidarity. As for the most relevant empirical evidence, previous researchers have found positive relationships between aggregated task role configuration and team performance (Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011) and positive relationships between aggregated social role configuration and member satisfaction (Tasa, Sears, and Schat 2011) or social cohesion (Stewart, Fulmer, and Barrick 2005). Therefore, task role configuration is expected to predict team performance, while social role configuration is expected to predict member satisfaction. As both task and social role configurations are operationalised as the mean value of individual role behaviour, the following hypotheses are proposed:

**H5: Team task role configuration positively predicts team performance.**

**H6: Team social role configuration positively predicts member satisfaction.**

#### *2.4.6.2 Team Task Specificity and Team Effectiveness*

The positive relationship between team task specificity and team performance is well supported by relevant literature. According to role ambiguity theory, ambiguity – which is the opposite of task specificity – “can be seen as a threat or stressor... that can divert focus of attention and deplete energy” (Grant and Rothbard 2013, 810), and it is a fundamental dimension of job context (Johns 2006). Generally, scholars have put forward three important arguments regarding the impact of job ambiguity on performance: (a) From the perspective of performance evaluation, ambiguity is a threat to performance as it blurs an individual’s performance expectation and hinders the assignment of specific performance goals to each individual (Yun, Takeuchi, and Liu 2007); (b) From a cognitive view, it is likely that ambiguity will hinder job performance, because work-related behaviours are most likely to be inefficient, misdirected or insufficient, regardless of how much effort an individual has made (Cordery et al. 2010); (c) From a motivational perspective, ambiguity also weakens job performance because it renders the effort-to-performance and performance-to-reward expectancies unclear to individuals (Jackson and Schuler 1985, Breugh and Colihan 1994).

Empirically, although the meta-analysis by Jackson and Schuler (1985) indicated that ambiguity was negatively related to job performance at a modest level, the results of more recent meta-analysis exhibited a significant negative relationship between ambiguity and job performance (Tubre and Collins 2000, Gilboa et al. 2008). On that basis, it has been assumed in this study that the mechanism of how low-level task specificity negatively predicts job performance at the individual level would also apply for situations at the team level. Low team task specificity results in a lack of knowledge of the most effective and expected job behaviours within the team, unclear member expectancies of effort-to-performance and performance-to-reward connections: low team task specificity would therefore be detrimental to team performance. Conversely, high team task specificity means that members are clearly aware of expected behaviours and methods to complete tasks as well as the consequences of their work behaviours: high team task specificity therefore enhances team performance. Thus, the following hypothesis is proposed:

**H7: Team task specificity positively predicts team performance.**

It is important to note that this study does not posit any relationship between team interdependence and member satisfaction. This is because team interdependence cannot eliminate interpersonal issues such as relationship conflict (Hambrick, Humphrey, and Gupta 2015). In other words, although a higher level of team interdependence is associated with more chances of members working together and spending more time together, it does not necessarily mean that members are more satisfied with each other or with working in the teams.

## **2.5 Conducting this Study in Two National Contexts**

Data for this study will be collected in Australia and China to understand, firstly, whether the measures of the FFM, task/social role behaviour, team role configurations, team task specificity and interdependence, team performance and member satisfaction are contextually different; and, secondly, to ascertain whether the relationships between these measures, as depicted in the research model, are contextually different. As such, the research model will be tested in two country contexts and subsequent differences noted and utilised as a platform to contribute to knowledge about the



impact and influence of personality in work teams. That noted, this study is not intended to be a cross-cultural comparative study. While the data collection, analysis, and presentation of results were conducted within two separate countries, these research activities were designed to address the research question associated with individual personality traits, role behaviour and team effectiveness. A cultural comparison based on the findings of this study could be considered as a valuable step moving forward but it is outside the scope of the current study.

Prior research has shown that although the FFM personality has its origin in Western countries, the five-factor structure and construct validity are also applicable to Asian countries (Yoon, Schmidt, and Ilies 2002, Zheng et al. 2008, Chudzikowski et al. 2011). For example, researchers conducted a comparative study by administering the Revised Neo Personality Inventory (NEO-PI-R) test (McCrae and Costa Jr 1999) to a professional sample of 717 Korean employees and compared the results with those collected from a normative North American sample of 1000 individuals (Yoon, Schmidt, and Ilies 2002). They found that the five-factor structure fitted the Korean sample in the same manner as the USA sample, and the interrelationships between the FFM dimensions were similar for the two cultural samples (Yoon, Schmidt, and Ilies 2002). More recently, other researchers conducted a FFM personality test using International Personality Item Pool (IPIP) (Goldberg 1999) scales based on a large Chinese sample, where a factor analysis showed a clear five-dimension structure of personality (Zheng et al. 2008).

Earlier studies have investigated psychological effects in different country contexts, which can be used as a guide for this study (e.g., De Pillis and Reardon 2007, Liu, Spector, and Shi 2007, Soto et al. 2011). Although the effects examined in that work are not directly related to personality and team research, the emergent ideas, strategies and approaches can be incorporated into this study. For example, Soto et al. (2011) investigated the relationship between emotional suppression and psychological functioning in the context of European Americans and Hong Kong Chinese, respectively, and observed significantly different results. Elsewhere, De Pillis and Reardon (2007) compared the single level effects of personality and persuasive messages on an individual's entrepreneurial intention between Irish and American samples and they found the relationship patterns were significantly different across

two contexts. Guided by these investigations, this study is expected to make several unique contributions to personality and team research.

## **2.6 Chapter Summary**

This chapter has surveyed the broader area of team research, in which the relevant scholarly topics of personality, role behaviour, team contexts and team effectiveness have been reviewed and explained. From this literature review, it is clear that, while team personality composition approach has been thoroughly explored, research on connecting personality to team results through behaviour is still limited. There is also limited research on the boundary conditions of the personality-behaviour relationship. These gaps in the literature have subsequently been utilised in this study to introduce and frame the research questions; namely ‘what is the relationship between individual personality and team effectiveness’? The studies and investigations outlined in this chapter have enabled the development of a two-level research model, comprising the individual level and the team level, where each part of the research model has been explained in terms of core constructs, underpinning theories and empirical evidence. Correspondingly, a series of hypotheses has been developed to depict the relationships at the individual level, cross-level, and team level of analysis. Justifications for these hypotheses have also been provided. Finally, Table 2.2 (page 63), summarises the specific research hypotheses developed from an examination and consideration of extant literature regarding the hypothetical research model, which forms the foundation for the next chapter: Chapter 3 – Research Methods.

**Table 2.2 List of Research Hypotheses**

<p style="text-align: center;"><b>Individual Level</b></p> <p>H1a: Conscientiousness is positively related to task role behaviour. H1b: Extraversion is positively related to task role behaviour. H1c: Neuroticism is negatively related to task role behaviour. H1d: Openness is positively related to task role behaviour.</p> <p>H2a: Agreeableness is positively related to social role behaviour. H2b: Extraversion is positively related to social role behaviour. H2c: Neuroticism is negatively related to social role behaviour. H2d: Openness is positively related to social role behaviour.</p>
<p style="text-align: center;"><b>Cross-Level</b></p> <p>H3: Team task specificity will moderate the relationships between individual personality traits and task role behaviour, such that: (a) personality traits to task role behaviour relationships will become stronger when team task specificity is low and; (b) personality traits to task role behaviour relationships will become weaker when team task specificity is high.</p> <p>H4: Team interdependence will moderate the relationships between individual personality traits and social role behaviour, such that: (a) personality traits to social role behaviour relationships will become stronger when team interdependence is low and; (b) personality traits to social role behaviour relationships will become weaker when team interdependence is high.</p>
<p style="text-align: center;"><b>Team-Level</b></p> <p>H5: Team task role configuration positively predicts team performance. H6: Team social role configuration positively predicts member satisfaction. H7: Team task specificity positively predicts team performance.</p>

## **CHAPTER 3 RESEARCH METHODS**

### **3.0 Overview**

This chapter is organised into three parts. Firstly, the mixed-methods approach and sequential explanatory design are discussed with respect to the topic of this study as well as the researcher's 'post-positivist' stance. Secondly, the quantitative phase is explained in terms of (a) the pilot study which aimed to validate the survey instruments and to facilitate the survey administration, (b) the research participants and procedures, (c) measures of all constructs ranging from personality, role behaviour, team contexts to team effectiveness indicators, and (d) the quantitative data analysis techniques. Thirdly, similar to the explanation of the quantitative phase, the follow-on qualitative phase is explained in several parts, including (a) how the interviews were designed to link to the survey, (b) interview participants and procedures, (c) the development of the interview schedule and questions, and (d) the qualitative data analysis techniques. The chapter concludes with a visual model indicating all procedures of the sequential explanatory design.

### **3.1 Mixed-Methods Approach and Sequential Explanatory Design**

A mixed-methods approach is considered especially useful for management research because it helps to clarify complex social and behavioural issues (Tashakkori and Creswell 2007, Tashakkori and Teddlie 2010, Teddlie and Tashakkori 2012). However, very few personality and team scholars have used a mixed-methods approach in their studies with a majority using only a quantitative approach (Barrick et al. 1998, Barrick, Mount, and Gupta 2003, Barrick and Mount 2012, Barrick, Mount, and Li 2013). As an extension of previous studies in terms of research methods, this study adopts a mixed-methods approach by incorporating both a quantitative phase and a qualitative phase to address the core research problems of personality and team effectiveness.

As described by previous methodology scholars (Creswell and Clark 2011, Bryman and Bell 2015), a combination of quantitative and qualitative methods may be the best option to investigate the research problem which involves individual personality, behaviours and team dynamics. The first, quantitative, phase focuses on statistical

relationships between the core variables of personality, role behaviours team contexts and team effectiveness. As a follow-up, the second, qualitative, phase seeks to explore the statistical test results in greater depth. Such integration is meaningful as the quantitative phase is expected to provide a general understanding of the research problem, while the qualitative phase is expected to refine the statistical results by adding participants' views, experiences, and interpretations, in more detail, a technique suggested by Creswell (2014).

The choice of a mixed-methods sequential research design is also a result of the researcher's stance regarding knowledge and access to knowledge, which refers to basing the study on assumptions about what is known and how it can be known (Bryman and Bell 2015). This stance might be understood as 'post-positivist' (Lincoln, Lynham, and Guba 2011). Specifically, the social world is not understood as something external to the researcher and, therefore, it cannot be completely objectively grasped. That noted, the researcher does not hold that the social world is completely subjective and can only be grasped in terms of an individual subjective perspective. In summary, an integration of both quantitative and qualitative methods is utilised here as best practice in terms of enhancing the rigour of this study and making the findings more robust.

### **3.2 Phase 1: Survey**

A survey was conducted in Phase 1 of this study due to its unique qualities: firstly, a survey possesses an economical design, whereby a large amount of data can be collected to test the hypotheses as stated in Table 2.2 (page 63). Secondly, conducting a survey allows the researcher to gain more control over the research process in terms of collecting data that are most relevant to the core variables and hypotheses (Saunders and Lewis 2012). In addition, a survey generates structured and standardised data, which can be easily understood or analysed using descriptive and inferential statistics (Fowler Jr 2014). Therefore, this particular quantitative research approach was adopted for the first phase of this study.

The survey study in Phase 1 aimed to identify whether there are significant relationships between the FFM personality traits, two forms of role behaviour, two aspects of team context, and two indicators of team effectiveness based on the survey

data collected from 701 participants from two country samples. The data were collected via an email-based survey, using instruments adapted from previous scales and refined by a pilot survey. A detailed description of all key elements in the survey is provided below, including the pilot study, participants, procedures, measures and analysis techniques.

### ***3.2.1 Pilot Study***

A pilot study was conducted to validate the survey instrument which was adapted from previously developed scales. Firstly, content validity of the survey instrument was secured by administering it to participants who were individual team members working in the field. These participants provided valuable comments regarding the questions on the instrument and the variables being measured. Accordingly, some question items in the demographic section deemed irrelevant by participants were deleted; for example, nationality and organisation tenure because they are beyond the scope of this study. Secondly, some participants from the Chinese context reported a few translation errors which were perhaps due to the fact that the accredited translators may not have the required background knowledge in personality assessment in organisational behaviour. For example, 'I like order' was translated into, 'I like listening to commands', when the actual meaning was, 'I like everything to be in an organised condition'. These translation errors on the instruments in Chinese language were then rectified by conducting back translation. Thirdly, the reliability and validity of the instrument were established by calculating internal consistency indices and running prominent factor analysis for each sub-scale, and thus some items with bad factor loading levels were deleted. In summary, the pilot study was intended as a small-scale simulation of the main survey, which helped to improve the instruments as well as identify the possible obstacles in the administration of the main survey.

### ***3.2.2 Participants and Procedures***

According to previous meta-analyses, personality would become a stronger predictor of behaviour or performance criteria when using a field sample (Bell 2007, Bell et al. 2011). Therefore, all survey participants were recruited from the work field, that is, employees working in teams in business organisations. Organisational level factors such as industry, size, structure, tenure and climate were not considered as they are beyond the scope of the current study.

As this survey required embedded samples – work teams and individual members nested in teams – the survey data were collected in a series of rounds, which was in line with the work of previous team scholars (Teddle and Yu 2007, Creswell and Creswell 2014). The first round was purposive sampling of business organisations in each country context to ascertain accessibility for the survey. The second round involved choosing teams and members from the organisations that were selected in the first round. Ideally, probability sampling should be conducted to increase generalisability of the findings. However, the researcher adopted purposive sampling, as most previous studies on personality in teams have used this approach (Tasa, Sears, and Schat 2011, Mathieu et al. 2014), thereby making the survey feasible (Kemper, Stringfield, and Teddle 2003). One criterion for selecting work teams was that the teams must have functioned for over six months. The reason for this time requirement was that the survey involved a supervisory rating of team performance and it has been argued that poor acquaintance might undermine the reliability and validity of supervisor-rated team performance (Oh, Wang, and Mount 2011).

Responses were obtained from 401 team members from 105 Chinese teams and 300 team members from 66 Australian teams. The overall response rate was 78.4% for the Chinese sample and 66.2% for the Australian sample. The researcher contacted each company's human resource department for an approval to approach their work teams. 134 teams from the Chinese context and 99 teams from the Australian context were invited to participate in this survey. For the teams that agreed to participate, the team leaders or supervisors were asked to rate their team performance and they were trained by the researcher to assist the survey administration in their teams – e.g., answering questions that participants may have, and reminding the participants of returning the completed questionnaires. Survey invitation emails, which included a participant information sheet, a participant consent form and the survey instruments, were distributed to these team supervisors. Supervisors were then requested to distribute the emails to their team members to complete, and all completed questionnaires were emailed back to the researcher. To correctly match supervisors with their team members, a coding scheme was adopted with unique organisation codes and team codes. A prize draw was also introduced to encourage a higher response rate.

The Chinese sample comprised 401 employees, including team supervisors from 105 work teams operating in businesses in China. Of the participants, 54.4% are male and 45.6% are female. The three most popular age groups are 26-30 (49.4%), 31-35 (30.2%) and 21-25 (15.7%). In terms of team focus or area of functionality, office administration (28.7%) and customer service teams (17.5%) were the most frequent team types, followed by marketing (16.2%), maintenance (12.7%), human resource management (12.2%), product design (7.0%), operations (2.7%), and brand management (1.5%). 1.5% of respondents did not report their team function.

**Table 3.1 Demographic Characteristics of the Chinese Sample**

Item	Answer	Count	Percentage
Gender	Female	183	45.6%
	Male	218	54.4%
	Total	401	100%
Age	Below 20	0	0%
	21-25	63	15.7%
	26-30	198	49.4%
	31-35	121	30.2%
	36-40	10	2.5%
	41-45	6	1.5%
	46-50	0	0%
	Above 50	0	0%
	Unknown	3	0.7%
	Total	401	100%
Team Focus	Office Administration	115	28.7%
	Customer Service	70	17.5%
	Marketing	65	16.2%
	Maintenance	51	12.7%
	Human Resource	49	12.2%
	Product Design	28	7.0%
	Operation	11	2.7%
	Brand	6	1.5%
	Unknown	6	1.5%
	Total	401	100%



The Australian sample comprised 300 employees, including team supervisors from 66 work teams operating in businesses in Australia. Of the participants, 62.3% are male and 37.7% are female. The three most popular age groups are 31-35 (34.3%), 26-30 (29.3%), and 36-40 (13.7%). In terms of team focus or functionality, sales (33.3%) and office administration (14.3%) are the most frequent team types, followed by accounting teams (11.7%), marketing (9.7%), purchasing (8.3%), customer service (6.3%), maintenance (6.0%), and labour work (2.7%). 7.7% of respondents did not specify their team function.

**Table 3.2 Demographic Characteristics of the Australian Sample**

Item	Answer	Count	Percentage
Gender	Female	113	37.7%
	Male	187	62.3%
	Total	300	100%
Age	Below 20	0	0
	21-25	34	11.3%
	26-30	88	29.3%
	31-35	103	34.3%
	36-40	41	13.7%
	41-45	7	2.3%
	46-50	5	1.7%
	Above 50	0	0
	Unknown	22	7.3%
	Total	300	100%
Team Focus	Sales	100	33.3%
	Office Administration	43	14.3%
	Accounting	35	11.7%
	Marketing	29	9.7%
	Purchasing	25	8.3%
	Customer Service	19	6.3%
	Maintenance	18	6.0%
	Labour	8	2.7%
	Unknown	23	7.7%
	Total	300	100%

### **3.2.3 Measures**

The researcher collected survey data from different sources (from team supervisors ratings to team members self-evaluation) to minimise common method variance (Podsakoff et al. 2003). Individual members were requested to rate their own personality and role behaviour. Peer-review was not adopted to measure personality and role behaviour as this approach would increase the length of the questionnaire exponentially and incur potentially weak validity. For the measurement of team task specificity, team interdependence and member satisfaction, the researcher used self-reports and then added them to corresponding team-level values, which was in line with previous practices (Stewart, Fulmer, and Barrick 2005, Liden et al. 2006, De Dreu 2007, Tasa, Sears, and Schat 2011, Li 2012). By contrast, team supervisors were requested to rate the overall team performance as supervisor rating was recognised as the most popular measurement of team performance (Mathieu et al. 2008). All scales were originally written in English. For their use in the Chinese context, scale translation was done following standard translation and back translation as suggested by Brislin (1986) to ensure accuracy in wording and expression. All these procedures are consistent with previous studies that involve personality and team dynamics in different country contexts (e.g., Li 2012).

In terms of data aggregation checks, the researcher calculated intra-class correlations (ICC) for all team-level variables, and their measurement data were collected from individuals to ensure the reliability of adding individual scores to represent team-level values, which is consistent with previous researchers (e.g., Bliese, Chan, and Ployhart 2007, Li 2012). These team-level variable aggregations include task/role configuration, team task specificity, team interdependence and member satisfaction, as discussed in section 3.2.3.8 (page 70).

#### **3.2.3.1 Personality**

The FFM personality traits were measured by the International Personality Item Pool (IPIP) (Goldberg 1999, Roberts et al. 2007). The researcher adopted the 50-item IPIP scale for its high statistical reliability and validity across different cultures, its availability (free of charge), its compact content and the fact that it has been well used in China (Zhai et al. 2013). All items in the IPIP were stated in a five-point scale (ranging from 1 = ‘strongly disagree’ to 5 = ‘strongly agree’). The reliability

coefficients of all sub-scales were 0.89 for Conscientiousness, 0.84 for Agreeableness), 0.91 for Neuroticism, 0.70 for Openness, and 0.88 for Extraversion, respectively. Sample items are:

- (a) Extraversion: 'Doesn't mind being the centre of attention';
- (b) Agreeableness: 'Sympathises with others' feelings';
- (c) Conscientiousness: 'Pays attention to detail';
- (d) Neuroticism: 'Has frequent mood swings';
- (e) Openness: 'Has a vivid imagination'.

#### *3.2.3.2 Task Role Behaviour*

Task role behaviour was operationalised by five of the six TREO dimensions developed by Mathieu et al. (2015); namely, Organiser, Doer, Challenger, Innovator and Connector. The researcher measured task role behaviour using items derived from Mathieu et al.'s (2015) markers of the TREO dimensions, which were directly available from their academic paper. It should be noted that, for the original TREO scale, each TREO dimension has two aspects of measurement – role orientation and behavioural experience (Mathieu et al. 2015). However, because this survey focuses on role behaviour rather than role orientation, only items related to behavioural experience were adopted to measure task role behaviour. This resulted in 20 items in total. All items were rated on a five-point scale, from 1 denoting 'never' to 5 denoting 'very often'. The reliability coefficient for this scale was 0.74. Sample items are:

- (a) Innovator: 'My teammates often view my suggestions as creative or innovative';
- (b) Connector: 'I learn how to get outside resources that our team needs to be successful';
- (c) Organiser: 'I structure team activities';
- (d) Doer: 'My primary focus is on getting my assignments done for the team';
- (e) Challenger: 'I am the one who questions why we are doing things in a certain way';

#### *3.2.3.3 Social Role Behaviour*

Social role behaviour was operationalised by one of the six TREO dimensions – Team Builder – developed by Mathieu et al. (2015). Therefore, the researcher adopted the markers of the Team Builder dimension in the TREO scale to measure social role

behaviour with four items in total. Additionally, as explained above, this study only employed items related to behavioural experience rather than role orientation. All items were organised in a five-point scale, from 1 denoting ‘never’ to 5 denoting ‘very often’. The reliability coefficient for this scale was 0.60. A sample item was: ‘I calm people down and get them focused on the task when things get stressful’.

#### *3.2.3.4 Team Task Specificity*

The task specificity scale was adapted from the work of Breugh and Colihan (1994): job ambiguity items (JAI). The JAI included three sub-scales to measure task scheduling, work methods, and performance criteria, respectively, and has been widely adopted by previous researchers (e.g., Tremblay and Roger 2004, Grant and Rothbard 2013). The researcher measured task specificity by using 10 items from the JAI. All items were organised in a five-point scale, from 1 denoting ‘very false’ to 5 denoting ‘very true’. Consistent with previous studies (Tremblay and Roger 2004, Grant and Rothbard 2013), the researcher collected individual level scores on the JAI items and added them to a group value to represent team-level task specificity. To ensure acceptable within-group agreement and between-group difference for such aggregation, data aggregation checks were conducted, which are introduced in section 3.2.3.8 (page 70). The reliability coefficient for this scale was 0.86. An example of this scale is: ‘I know what is the best way to go about getting my work done’.

#### *3.2.3.5 Team Interdependence*

Team interdependence was measured by adapted items for the interdependence sub-scale of work group characteristics measure (WGCM) (Campion, Medsker, and Higgs 1993). This sub-scale focuses on three dimensions of team interdependence – task, goal and outcome interdependence – with nine items in total. All items were organised in a five-point scale, from 1 denoting ‘very false’ to 5 denoting ‘very true’. Consistent with previous research (Langfred 2005, Li 2012), the researcher collected individual level scores on the WGCM items and added them to a group value to represent team interdependence. To ensure acceptable within-group agreement and between-group difference for such aggregation, data aggregation checks were conducted and achieved acceptable results, as reported in section 3.2.3.8 (page 70). The reliability coefficient

for this scale was 0.85. A sample item is: ‘I cannot accomplish my tasks without information or materials from other members of my team’.

#### *3.2.3.6 Team Performance*

Team performance was assessed by supervisor ratings. The researcher adapted the team performance scale developed by Barrick et al. (1998), which has been extensively used by personality scholars in the past (e.g., Li 2012, Stewart, Courtright, and Barrick 2012). Supervisors or team leaders were requested to use this scale to rate each team as a work unit. There are five performance dimensions on this team performance scale, including quality of work, quantity of work, overall group performance, time management, and quick responses to problems, with eight items in total. All items were rated using a five-point scale, from 1 = ‘very poor’ to 5 = ‘outstanding’. The reliability coefficient for this scale was 0.94. Sample items on each performance dimension were:

- (a) Quality of Work: ‘Complete work thoroughly, accurately and according to specifications’;
- (b) Quantity of Work: ‘Maintain steady, acceptable level of work output’;
- (c) Overall Performance: ‘An evaluation of overall performance against work expectations’;
- (d) Time Management: ‘Complete assigned work within acceptable time frame’;
- (e) Quick Problem-Solving: ‘Take prompt action to solve problems that appear during work’.

#### *3.2.3.7 Member Satisfaction*

Member satisfaction was assessed by three items adapted from the Member Satisfaction Scale (MSS) developed by Gladstein (1984) and widely used in previous investigations (e.g., Duffy, Shaw, and Stark 2000, Humphrey and Aime 2014). All items were organised in a five-point Likert scale, from 1 denoting ‘strongly disagree’ to 5 denoting ‘strongly agree’. To ensure acceptable within-group agreement and between-group difference for aggregation, data aggregation checks were conducted and obtained acceptable results, as reported in section 3.2.3.8 (page 70). A sample item for this scale included: ‘I am pleased with the way my colleagues and I work together’. The reliability coefficient for this scale was 0.89.

### *3.2.3.8 Data Aggregation Checks*

Task role behaviour and social role behaviour were both aggregated to task role configuration and social role configuration, respectively, to test the hypothesis that team-level role configurations were predictive of team effectiveness. Because the researcher was assessing the degree to which these role behaviours were exhibited, in aggregate within the team, these measures conformed to what Klein and Kozlowski (2000) referred to as configuration constructs. Specifically, “constructs of this type capture the array, pattern, or configuration of individuals’ characteristics within a unit... Unlike shared unit properties, however, configuration unit properties are not assumed to coalesce and converge among the members of a unit” (Kozlowski and Klein 2000, 30-31). Thus, two aggregated measures of role behaviour captured the extent to which they were enacted as a whole, irrespective of whether or not team members agreed about them. The approach to aggregation was also consistent with what Chan (1998) has referred to as an additive aggregation composition model. Although such models do not require inter-rater agreement, the researcher conducted a one-way analysis of variance and found that between-group variance for task role behaviour was significant in both samples, but that for social role behaviour it was non-significant.

The researcher measured task specificity and team interdependence by using individual scores and adding them to team-level values. For task specificity, the ICC (1) coefficient, which represents the degree of variability among individual responses that was attributable to team membership, was 0.38 for the Chinese sample and 0.26 for the Australian sample. The ICC (2) coefficient, which represents the reliability of the team-level mean value, was 0.86 for the Chinese sample and 0.74 for the Australian sample. For team interdependence, the values for ICC (1) and ICC (2) were 0.39 and 0.85 for the Chinese sample and 0.21 and 0.67 for the Australian sample, respectively. Such results demonstrated that task specificity and interdependence displayed an appropriate degree of within-group agreement relative to between-group variance and thus supported the aggregation of individual scores to team-level values (Kozlowski and Klein 2000).

For member satisfaction, the researcher used the mean value of individual scores to represent team member satisfaction and thus calculated interclass correlations to

determine the appropriateness of such aggregation. ICC (1) was 0.48 and ICC (2) was 0.76. Both indicators suggested that the agreement among team members regarding the level of team satisfaction was adequate.

### ***3.2.4 Analysis Techniques***

Confirmatory factor analysis (CFA) was used to assess discriminant validity of all the nine variables including personality, role behaviour, team contexts and team effectiveness: this is consistent with the practices of previous scholars (e.g., Thompson 2004, Barrick et al. 2007, Chen et al. 2007, Li 2012). As a procedure prior to hypothesis testing, CFA was considered especially important because constructs related to team dynamics might conceptually overlap (Li 2012).

For the hypotheses concerning single-level relationships, in line with previous practices (e.g., Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011, Li 2012), a regression analysis was used for testing. Such hypotheses included personality to role behaviour relationships as well as role configuration to team effectiveness relationships.

For the hypotheses concerning cross-level moderation effects, hierarchical linear modelling (HLM) was adopted; again, in line with previous researchers (Kozlowski and Klein 2000, Bliese, Chan, and Ployhart 2007, Mathieu et al. 2012) and included how team-level contextual factors (such as task specificity and interdependence) moderate the relationships between two individual level variables (such as personality and role behaviour). Some researchers have argued that the HLM is one of the most advanced analytical techniques to deal with multilevel issues as it allows the use of proper standard errors and degrees of freedom to minimise violations of statistical assumptions for independence (Kozlowski and Klein 2000, Gavin and Hofmann 2002).

HLM runs a two-level calculation and relevant significance checks to test hypotheses. Specifically, it regresses slope terms onto team contexts and estimates the degree to which those slope terms can be predicted by team contexts. In other words, cross-level hypotheses involving interactions between the FFM personality and team contexts on role behaviour are assessed in the Level 2 part of the HLM. Therefore, as an example,

equations about moderating influences that team task specificity or interdependence have on Conscientiousness to task role behaviour relationships is written as follows, where  $i$  and  $j$  indicate team member  $i$  of work team  $j$ :

$$\text{Level 1} \quad \text{Task roles}_{ij} = b_{0j} + b_{1j} (\text{Conscientiousness}) + e_{ij}$$

$$\text{Level 2} \quad b_{0j} = \gamma_{00} + u_{0j}$$

$$b_{1j} = \gamma_{10} + \gamma_{11} (\text{Team Task Specificity}) + u_{1j}$$

### 3.3 Phase 2: Interviews

In the second, qualitative phase, interviews were adopted to help explain why certain hypotheses, tested in the first survey phase, were supported while others were not. The value of this approach has been noted by previous researchers (e.g., Ritchie et al. 2013, Creswell and Creswell 2014). In his seminal work, Kvale stated that the purpose of an interview “is to gather descriptions of the life-world of the interviewees with respect to interpretation of the meaning of the described phenomena” (Kvale 1983, 174). Likewise, the researcher selected the interview method to further investigate the survey findings, as an interview can incorporate an individual’s personal views, experiences and interpretations of the research topic. Next, the researcher discusses how this follow-on phase was expected to add depth to the quantitative results and therefore better answer the research questions of this study. Then, the essential elements of the interview phase, including participants, procedures, interview schedules and analysis, are given.

#### 3.3.1 The Aim of Phase 2

Creswell and Tashakkori (2011) pointed out that in a sequential explanatory study, some results of the first quantitative phase need further examination in the second qualitative phase, including but not limited to “statistically significant results, statistically nonsignificant results, key significant predictors, variables that distinguish between groups, outlier or extreme cases, distinguishing demographic characteristics” (Creswell and Clark 2011, 186). Accordingly, the aim of Phase 2 is to further address the survey results in terms of (a) why certain dimensions of the FFM were found to statistically predict task role behaviour; (b) why certain dimensions of the FFM were found to statistically predict social role behaviour; (c) why the hypothesised



relationships between certain FFM dimensions and task/role behaviour were not found; (d) how the personality-behaviour relationships change across different team contexts represented by team task specificity and team interdependence; (e) why task role configuration was found to statistically predict team performance; (f) why the hypothesised relationship between social role behaviour and member satisfaction was not found; (g) why the hypothesised relationship between team task specificity and team performance was not found.

By addressing these questions, Phase 2 of this study is expected to provide further evidence to answer the research questions described in Chapter 1. For example, one of the original research questions was ‘what is the relationship between individual member personality and task role behaviour?’. While the survey results show that certain FFM traits are significantly predictive of task role behaviour, the findings of Phase 2 are expected to explain why certain FFM traits predict or do not predict task role behaviour. Also, it is meaningful to see how insiders - team members in the field - view members’ personality and behaviour when team contexts are taken into consideration, as the assumption of the cross-level effects that team contexts may have on the personality-behaviour relationship is still a relatively new topic in personality and team research (LePine et al. 2011). In summary, Phase 2 is designed to further investigate the survey results and add more depth to the answers to the research questions.

### ***3.3.2 Participants and Procedures***

The researcher purposefully recruited 20 participants for Phase 2 who did not participate in the survey study, with 10 participants from the Australian context and 10 participants from the Chinese context. The criteria for selection comprised the following: a) participants must be employees working in business organisations in Australia or China; and b) participants must have been working in their current teams for more than six months. These criteria were similar to those of the survey participants. All 20 interview participants were referrals from the researcher’s connections in the field but not directly acquainted with the researcher. During the sampling process, both team leaders and team members were recruited to ensure that both supervisory and member views on the research questions were obtained.

Regarding demographics, the Australian sample comprised eight male employees and two female employees, while the Chinese sample comprised six male employees and four female employees. The mean age of the Australian participants was 36.24 years ( $SD = 8.62$ ) and that of Chinese participants was 31.21 ( $SD = 4.41$ ). For the Australian sample, seven out of the 10 participants were business owners or senior managers, whereas for the Chinese sample, eight employees were entry-level team members and two held management roles. Each interview lasted between 20 to 40 minutes and all interview conversations were taped and transcribed in full. The researcher transcribed and translated all the Chinese interviews while all the Australian interviews were passed to an external transcribing service provider to transcribe. Due to the fact that participants came from two countries, the researcher adopted both face-to-face appointments and telephone calls to conduct the interviews; thus, the majority of interviews with Australian participants were conducted face-to-face and all interviews with Chinese participants were conducted over the phone. To ensure richness and depth of the interview data as suggested by Creswell (2014), the researcher adopted multiple data sources: a) 20 in-depth interviews, and b) the researcher's handwritten notes which contain additional information of each interview but cannot be reflected on the audio tapes – e.g., the appearance of interview venues, interviewees' emotional expressions, and any informal conversations that came out of the taped interviews.

### ***3.3.3 Interview Schedules***

Based on the research questions as well as the survey results, the researcher developed an interview schedule to guide the semi-structured interviews. Questions on the interview schedule explored three themes. The first group of questions was designed to provide background and ask the interviewees about the topic under discussion; namely, personality and behaviour in team settings. For example, interviewees were asked to describe the type of personality traits that they like working with and the type of personality that they avoid working with. It is reasonable to believe that such questions can help interviewees to recall various personality traits that they might want to discuss further.

The second group of questions starts with a transition question which moves the topic from personality to personality in teamwork, encouraging the participants to talk about their teams and their roles in the team – e.g., 'Could you tell me what kind of work

you are doing in your team?’ The rest of the questions in this group centre around the research questions as well as the key survey results. For example, in order to further address the research question and the survey results regarding the personality-behaviour relationship, the corresponding interview question was posed: ‘Thinking about personality, what type of people tend to display more task-focused behaviour, such as tracking progress, analysing and solving problems and keeping deadlines? Why?’ This type of semi-structured question is expected to give the interviewees a chance to talk freely about the personality traits that they experienced or believed are predictive of task role behaviour, which not only helps to explain the relationship between the FFM and role behaviours, but may also introduce other personality traits that are not covered by the FFM but are predictors of role behaviours. Other interview questions were designed to explore the unexpected quantitative findings. For example, to further address the posited relationship between social role behaviour and member satisfaction which was not supported by the survey results, the researcher developed a corresponding interview question: ‘Do you agree that the more people are involved in people-focused behaviour, the more satisfied the team is? Why?’ Furthermore, interviewees were requested to provide reasons for their answers and in this manner, the researcher obtained valuable data regarding personal views and experiences that pertained to the research questions.

Given that some constructs in this study have specific meanings, for example, task role behaviour or social role behaviour, these meanings were explained to the interviewees several times during the conversation to help them capture the constructs accurately. One example narration is as follows: ‘For people-focused behaviour, we consider this to be behaviours targeting interpersonal relationships when working in a team, such as showing more respect to others, caring about others’ feelings, and admitting others’ contributions.

The final group of questions was presented at the end of the interview to encourage participants to provide additional information concerning the topic of personality in work teams. One example is as follows: ‘Is there anything that you would like to add about your experience of working in teams, people’s personality and behaviour, team performance and member satisfaction?’ However, in order to keep the interviews

within a manageable length to avoid the interviewees' fatigue, the researcher did not include every aspect of the quantitative findings into the interview schedule.

It is relevant to note that, although survey items and interview questions are asked from different perspectives - i.e. self-evaluation vs a combination of self-evaluation and assessment of, and by others, these instruments collect participants' individual perceptions. The quantitative results are an outcome of statistical analysis of data collected using previously validated survey instruments. In order to provide a deeper understanding of the statistical results, the qualitative phase focusing on the individual perceptions of the statistical results was undertaken.

### ***3.3.4 Analysis Techniques***

Full transcripts of the interviews formed the raw data for the qualitative analysis. As the topics or themes had already emerged in the quantitative findings and were incorporated into the interview schedule, the researcher conducted a thematic analysis to analyse the data. Before the data analysis, the researcher adopted verification procedures, including triangulating different sources of information, member checking, reviewing and resolving disconfirming evidence and supervisors' auditing; techniques suggested by previous scholars (e.g., Creswell and Clark 2011, Creswell and Creswell 2014). For example, the researcher cross-checked the interviewees' job roles in the team by conducting a short audit with their colleagues or supervisors.

The interview data were open-coded using the NVivo© programme for Mac. Ten themes were identified as the first set of coding categories, which were subsequently refined and consolidated, including: a) popular personality traits, b) unwelcome personality traits, c) the FFM to task role behaviour expressions, d) the FFM to social role behaviour expressions, e) the role of team contexts, f) team task specificity as a predictor of team performance, g) task role configuration as a predictor of team performance, h) social role configuration as a predictor of member satisfaction, i) job roles, and j) additional themes.

Further sub-themes and categories that comprised the above broad themes were also identified. Coding categories therefore drew on both the qualitative research questions (which were drawn from the quantitative findings) and themes emerging from

interview conversations. For example, 'Conscientiousness', as a sub-theme under the broad theme of 'popular personality traits', was a core component of the research question regarding the personality-behaviour relationship. However, 'apathy', a personality trait commonly mentioned by a number of Australian interviewees, was a sub-theme under the broad theme of 'unwelcome personality traits', it does not fit into the FFM structure but emerged directly from the interview data. At a later stage of analysis, the NVivo© Matrix was run to analyse the number of sentences per theme across the 20 interview transcripts to show which themes were discussed most often by interview participants.

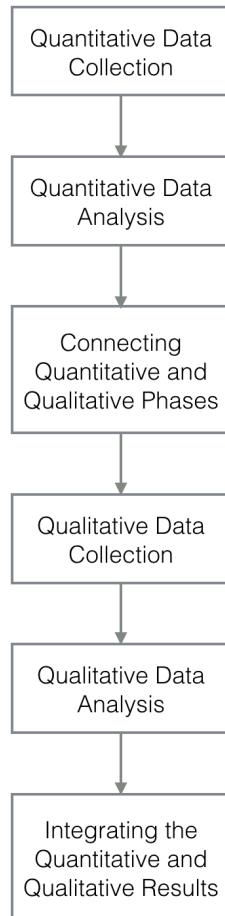
In addition to the above coding and categorisation process, the researcher also partitioned the interviewees into different groups in order to discern if there were different themes in their responses. For example, the conversations of the Australian interviewees and those of the Chinese interviewees were analysed separately and the theme structures were presented for each country context even though this is not a cross-cultural comparative study. Also, the researcher divided the interviewees into two groups based on their roles in the team (leaders or followers) who provided noticeably different answers to several key interview questions, such as the questions regarding team task specificity. After a comprehensive synthesis of interview materials and supporting evidence, a number of tables were constructed to summarise the key themes, supporting narrative evidence and the strength of evidence: these are shown in Chapter 5.

### **3.4 Chapter Summary**

This chapter has reported on the research methods adopted in this study; namely a sequential explanatory design. Two phases were conducted consecutively - a quantitative phase and a qualitative phase - to achieve greater analytical depth. In the first quantitative phase, a principle survey was administered to around 700 employees in two country contexts, using a purposive sampling method and a piloted survey instrument. Survey data were analysed by regression models and the HLM. In the second qualitative phase, the researcher used interviews to explore the survey results. Based on the survey results, qualitative research questions were developed and formed the basis of the interview schedules. The researcher interviewed 20 purposively

selected employees who worked in teams in the Australian context and the Chinese context. A thematic analysis was conducted for the interview data using the NVivo© 10 for Mac. A visual model for the procedures of the mixed-methods sequential design adopted is presented in Figure 3.1.

## Phase



## Procedures

- Survey (n=401 for the Chinese Sample, n=300 for the Australian Sample)
- Data Aggregation Checks (SPSS)
- Confirmatory Factor Analysis (AMOS)
- Descriptive Analysis (SPSS)
- Regression (SPSS)
- Hierarchical Linear Modelling (HLM)
- Noting Results in Two Samples
- Investigating Survey Results
- Developing Interview Schedule
- Individual Interviews (n=10 for the Chinese Sample, n=10 for the Australian Sample)
- Note Taking
- Coding and Thematic Analysis (NVIVO)
- Summarising Themes, Findings, and Evidence
- Noting Results in Two Samples
- Interpretation and Explanation of the Quantitative and Qualitative Results

**Figure 3.1 A Visual Model for the Sequential Research Design**

(Developed by the researcher)

## CHAPTER 4 QUANTITATIVE ANALYSIS AND RESULTS

### 4.0 Overview

This chapter describes the analytical procedures applied to the survey data and subsequently, reports the survey results. It begins with a confirmatory factor analysis (CFA), which was conducted to verify the uniqueness of seven individual level variables, including the FFM personality traits and task/social role behaviour. Inferential statistics carried out to test all the hypotheses are then presented. Regression analysis was conducted to test the hypotheses which lie within a single level of analysis, and the hierarchical linear modelling (HLM) was used to test the hypotheses that span different levels of analysis. Test results are categorised accordingly and reported. This chapter concludes with a discussion of the survey results which formed the basis of the interview stage in order to demonstrate how the quantitative phase and the qualitative phase are connected.

### 4.1 Descriptive Analysis and Validity Test

Table 4.1 (page 85) includes the correlations of all variables at the individual level for the Chinese sample, including the FFM personality traits and both forms of role behaviour. Strong correlations were found between Conscientiousness and task role behaviour (0.35,  $p < 0.01$ ) and between Agreeableness and social role behaviour (0.37,  $p < 0.01$ ). However, Neuroticism had negative correlations with both aspects of role behaviours: task role behaviour (-0.38,  $p < 0.01$ ) and social role behaviour (-0.24,  $p < 0.01$ ). Openness was positively related to task role behaviour (0.25,  $p < 0.01$ ) and Extraversion was negatively related to both task (-0.11,  $p < 0.05$ ) and social role behaviour (-0.25,  $p < 0.01$ ).

Table 4.2 (page 85) indicates that the Australian sample reflected a slightly different pattern in terms of the descriptive statistics and correlations for all individual level variables. As with the Chinese sample, positive correlations were found between Conscientiousness and task role behaviour (0.21,  $p < 0.01$ ), Agreeableness and social role behaviour (0.25,  $p < 0.01$ ). However, these positive relationships were not as strong as those in the Chinese sample. By contrast, Neuroticism had negative



correlations with both aspects of role behaviour: task role behaviour (-0.32,  $p < 0.01$ ) and social role behaviour (-0.20,  $p < 0.01$ ). Openness was positively correlated to both task role behaviour (0.11,  $p < 0.05$ ) and social role behaviour (0.12,  $p < 0.01$ ). Extraversion was not found to correlate to task role behaviour ( $p > 0.10$ ) but it was found to weakly correlate to social role behaviour (0.05,  $p < 0.01$ ).

**Table 4.1 Correlations of Individual Level Variables in Chinese Sample**

Variables	Mean	SD	1	2	3	4	5	6	7
1. Conscientiousness	3.61	0.79	1						
2. Agreeableness	3.65	0.68	0.14**	1					
3. Neuroticism	2.72	0.91	-0.42**	-0.34**	1				
4. Openness	3.49	0.49	-0.20**	0.25**	-0.16**	1			
5. Extraversion	3.14	0.80	-0.23**	-0.06^^	0.30**	0.08^^	1		
6. Task role behaviour	3.45	0.49	0.35**	0.09**	-0.38**	0.25**	-0.11*	1	
7. Social role behaviour	3.62	0.60	0.13**	0.37**	-0.24**	0.22^^	-0.25**	0.17**	1

n = 401. Asterisks indicate \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant

**Table 4.2 Correlations of Individual Level Variables in Australian Sample**

Variables	Mean	SD	1	2	3	4	5	6	7
1. Conscientiousness	3.55	0.81	1						
2. Agreeableness	3.16	0.87	0.12**	1					
3. Neuroticism	2.13	0.75	-0.47**	-0.31**	1				
4. Openness	3.53	0.65	0.18*	0.15**	-0.08^^	1			
5. Extraversion	3.62	0.63	0.15**	0.20**	-0.30**	0.03*	1		
6. Task role behaviour	3.50	0.93	0.21**	0.07**	-0.32**	0.11*	-0.13^^	1	
7. Social role behaviour	3.37	0.85	0.08**	0.25**	-0.20**	0.12**	0.05**	-0.12**	1

n = 300. Asterisks indicate \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant

Table 4.3 (page 86) includes the descriptive statistics and correlations for all the team-level variables in the Chinese sample. Several significantly positive correlations can be found; task role behaviour and team performance (0.39,  $p < 0.01$ ), and member satisfaction and team performance (0.41,  $p < 0.01$ ). Table 4.4 (page 86) includes the descriptive statistics and correlations for all the team-level variables in the Australian sample. Strong correlations were found between task role behaviour and task

specificity (0.23,  $p < 0.01$ ), task role behaviour and team performance (0.33,  $p < 0.01$ ) and social role behaviour with task specificity (0.25,  $p < 0.01$ ). Strong correlation was also found between member satisfaction and team performance (0.38,  $p < 0.01$ ).

**Table 4.3 Correlations of Team-Level Variables in Chinese Sample**

Variables	Mean	SD	1	2	3	4	5	6
1. Task role behaviour	3.44	0.22	1					
2. Social role behaviour	3.65	0.29	0.09**	1				
3. Task specificity	3.85	0.31	0.28**	0.13**	1			
4. Team interdependence	3.53	0.45	0.15^^	0.19**	0.09^^	1		
5. Member satisfaction	3.63	0.61	0.01^^	0.07^^	0.17^^	0.14**	1	
6. Team performance	3.68	0.80	0.39**	0.11^^	0.03^^	0.13^^	0.41**	1

n=105. Asterisks indicate \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant

**Table 4.4 Correlations of Team-Level Variables in Australian Sample**

Variables	Mean	SD	1	2	3	4	5	6
1. Task role behaviour	3.51	0.31	1					
2. Social role behaviour	3.47	0.23	0.04**	1				
3. Task specificity	3.62	0.28	0.23**	0.25**	1			
4. Team interdependence	3.44	0.33	0.08^^	0.14^^	0.11^^	1		
5. Member satisfaction	3.86	0.54	0.03^^	0.12^^	0.07*	0.22**	1	
6. Team performance	3.66	0.68	0.33**	0.04^^	0.03*	0.13^^	0.38**	1

n=66. Asterisks indicate \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant

To ensure that the seven individual level measures - the five dimensions of the FFM and the two aspects of member role behaviour - were distinct from one another, the researcher conducted a confirmatory factor analysis (CFA) to test a series of models with different numbers of factors. The first model was a one-factor model, which depicted a latent variable loaded by 7 observed variables, namely, Conscientiousness, Agreeableness, Neuroticism, Openness, Extraversion, task role behaviour and social role behaviour. Secondly, a two-factor model was tested. This model had task role behaviour and social role behaviour loaded on one factor and the five FFM traits on the other factor. The researcher tested the third model by loading task role behaviour and social role behaviour on two separate factors and the five FFM traits on a third

factor. The fourth model had the five FFM traits loaded on five separate factors and combined task role behaviour and social role behaviour on another factor to make the sixth factor. The last model tested was the seven-factor model as proposed in this study: task role behaviour, social role behaviour and the five FFM traits were each loaded on seven separate factors. All five models were compared in terms of model fitness indicators. The seven-factor model had the best model fitness indicators.

## **4.2 Individual-Level Hypotheses Testing**

Regression models were used to test Hypothesis 1 and Hypothesis 2 which only concern individual level relationships, as the regression analyses can not only illustrate the unique effects of each personality trait on role behaviour but also the combined effect of all the FFM dimensions. Specifically, task role behaviour was regressed on five dimensions of the FFM personality, respectively, to test the extent to which it related to the FFM personality traits. The researcher conducted similar analysis procedures to test the relationships between the FFM and social role behaviour. All test procedures were carried out separately for the Chinese sample and the Australian sample.

### ***4.2.1 Personality and Task Role Behaviour***

A multiple regression was run to predict task role behaviour from all five FFM personality dimensions. The researcher integrated test results from two samples into one table, and marked CN (Chinese sample) or AU (Australian sample) accordingly. As is demonstrated in Table 4.5 (page 88), the model using the five FFM dimensions to predict task role behaviour did not show a satisfactory model fit ( $R^2 = 0.29$  for the Chinese sample and  $R^2 = 0.17$  for the Australian sample), indicating that personality is only one of the factors contributing to team member task role behaviour.

Hypothesis 1 is associated with four specific hypotheses (H1a-d), predicting that four dimensions of the FFM personality traits are related to task role behaviour. To test these hypotheses, the researcher estimated the regression models with results reported in Table 4.5 (page 88). The range for Confidence Interval (CI) was 95%. For the Chinese sample, Conscientiousness was found to be positively linked with task role behaviour ( $\beta = 0.19$ , 95% CI is  $0.16 < 0.19 < 0.35$ ). Similar regression results were found for the Australian sample that Conscientiousness was positively related to task

role behaviour ( $\beta = 0.17$ , 95% CI is  $0.10 < 0.17 < 0.33$ ). These results supported Hypothesis 1a, suggesting that Conscientiousness is a predictor of task role behaviour. However, Hypothesis 1b, which proposes that Extraversion is positively related to task role behaviour, was not supported by either of the two samples ( $p > 0.10$ ). Hypothesis 1c was supported in both samples in that Neuroticism had a strong negative relationship with task role behaviour for both the Chinese sample ( $\beta = -0.26$ , 95% CI is  $-0.30 < -0.26 < -0.20$ ) and the Australian sample ( $\beta = -0.16$ , 95% CI is  $-0.28 < -0.16 < -0.04$ ). In addition, Openness was found to positively but weakly predict task role behaviour for both the Chinese sample ( $\beta = 0.16$ , 95% CI is  $0.07 < 0.16 < 0.24$ ) and the Australian sample ( $\beta = 0.08$ , 95% CI is  $-0.02 < 0.08 < 0.20$ ); therefore, Hypothesis 1d was supported.

**Table 4.5 Regression Analysis between the FFM and Task Role Behaviour**

FFM dimensions	Task Role Behaviour (CN)			Task Role Behaviour (AU)		
	$\beta^*$	CI**	Sig.	$\beta^*$	CI**	Sig.
Conscientiousness	0.19	0.16 to 0.35	$p < 0.05$	0.17	0.10 to 0.33	$p < 0.05$
Agreeableness	0.04	-0.05 to 0.10	$p < 0.05$	-0.02	-0.13 to 0.10	$p < 0.05$
Neuroticism	-0.26	-0.30 to 0.20	$p < 0.05$	-0.16	-0.28 to -0.04	$p < 0.05$
Openness	0.16	0.07 to 0.24	$p < 0.05$	0.08	-0.02 to 0.20	$p < 0.05$
Extraversion	0.03	-0.04 to 0.08	$p > 0.10$	-0.10	-0.23 to -0.02	$p > 0.10$
Model statistics	$R^2 = 0.29$		Adjusted $R^2 = 0.28$	$R^2 = 0.17$		Adjusted $R^2 = 0.15$

\* Coefficients are standardised beta weights. \*\* 95% confidence interval

#### ***4.2.2 Personality and Social Role Behaviour***

A multiple regression analysis was also conducted to predict social role behaviour from all five personality dimensions, and these results are presented in Table 4.6 (page 89). It was found that using five FFM dimensions to predict social role behaviour did not create an acceptable model fit for both samples (Chinese sample:  $R^2 = 0.37$ ; Australian sample:  $R^2 = 0.17$ ). This indicated that personality is only one of the factors involved in predicting team members' social role behaviour.

Hypothesis 2a was supported, in that Agreeableness positively predicted social role behaviour for both the Chinese sample ( $\beta = 0.24$ , 95% CI is  $0.18 < 0.24 < 0.35$ ) and the Australian sample ( $\beta = 0.21$ , 95% CI is  $0.10 < 0.21 < 0.32$ ). By contrast,

Extraversion was found to negatively predict social role behaviour for the Chinese sample ( $\beta = -0.11$ , 95% CI is  $-0.15 < -0.11 < -0.01$ ), while this effect was found to be non-significant for the Australian sample ( $p > 0.10$ ). Therefore, Hypothesis 2b was not supported. Hypothesis 2c was supported where Neuroticism had a negative relationship with social role behaviour for both the Chinese sample ( $\beta = -0.11$ , 95% CI is  $-0.15 < -0.11 < -0.01$ ) and the Australian sample ( $\beta = -0.06$ , 95% CI is  $-0.17 < -0.06 < 0.07$ ). The effect between Openness and social role behaviour was not found for either of the two samples ( $p > 0.10$ ); therefore, Hypothesis 2d was not supported.

**Table 4.6 Regression Analysis between the FFM and Social Role Behaviour**

FFM dimensions	Social Role Behaviour (CN)			Social Role Behaviour (AU)		
	$\beta^*$	CI**	Sig.	$\beta^*$	CI**	Sig.
Conscientiousness	0.03	-0.05 to 0.09	$p < 0.05$	0.05	-0.07 to 0.16	$p < 0.05$
Agreeableness	0.24	0.18 to 0.35	$p < 0.05$	0.21	0.10 to 0.32	$p < 0.05$
Neuroticism	-0.11	-0.14 to -0.01	$p < 0.05$	-0.06	-0.17 to 0.07	$p < 0.05$
Openness	0.09	0.01 to 0.21	$p > 0.10$	0.08	-0.06 to 0.17	$p > 0.10$
Extraversion	-0.11	-0.15 to -0.01	$p < 0.05$	-0.05	-0.16 to 0.06	$p > 0.10$
Model statistics	$R^2 = 0.37$		Adjusted $R^2 = 0.36$	$R^2 = 0.17$		Adjusted $R^2 = 0.15$

\* Coefficients are standardised beta weights. \*\* 95% confidence interval

### 4.3 Cross-Level Hypotheses Testing

Hypothesis 3 and Hypothesis 4 involved cross-level moderating effects; namely, that team-level task specificity is expected to moderate the relationship between the FFM personality traits and task role behaviour, and that team-level interdependence is expected to moderate the relationship between the FFM personality traits and social role behaviour. In other words, these two hypotheses involve the top-down effects that team contextual factors have on individual level relationships between individual level variables. To test these hypotheses, survey data were analysed using hierarchical linear modelling (HLM). These results are reported in the sections below.

#### 4.3.1 Assumptions for the Hierarchical Linear Model (HLM)

Because the data are clustered with individuals who are further nested in teams, and team-level contextual factors are expected to influence the individual level effects, the

slopes-as-outcomes model was selected to test the cross-level hypotheses, as suggested by previous researchers (e.g., Gavin and Hofmann 2002, Zhang, Zyphur, and Preacher 2009). One assumption of this model is that there must be significant within-team and between-team variance for independent variables. Accordingly, null models, which have neither predictors at the individual level nor moderators at the team level, were tested before testing the full model. The HLM equations for task role behaviour's null model were written as Equation (1) and (2). Similarly, the HLM equations for social role behaviour's null model were written as Equation (3) and (4). Table 4.7 includes all four HLM equations.

**Table 4.7 Null Models for Individual Level Independent Variables**

Null models for task role behaviour and social role behaviour		Equation No.
Level 1	Task Role Behaviour <sub>ij</sub> = $b_{0j} + e_{ij}$	(1)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(2)
Level 1	Social Role Behaviour <sub>ij</sub> = $b_{0j} + e_{ij}$	(3)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(4)

Note: *i* and *j* indicate individual *i* in work team *j*

Regarding the null model for task role behaviour, the researcher tested the group-level residual variance of the intercept and found it to be significant for both samples (Chinese sample: 0.24,  $p < 0.01$ ; Australian sample: 0.14,  $p < 0.01$ ). In addition, the ICC (1) for task role behaviour was 0.27 for the Chinese sample and 0.16 for the Australian sample, indicating that the variance in task role behaviour that existed between teams was 27% for the Chinese sample and 16% for the Australian sample. Similarly, for social role behaviour, the team-level variance of intercept was significant (Chinese sample: 0.35,  $p < 0.01$ ; Australian sample: 0.21,  $p < 0.01$ ). For social role behaviour, the ICC (1) was 0.37 for the Chinese sample and 0.23 for the Australian sample, indicating that between-team variance in social role behaviour was 37% for the Chinese sample and 23% for the Australian sample. In summary, between-group and within-group variances of both task and social role behaviour were significant for both samples, which fulfilled the conditions to test the full HLM model.

#### 4.3.2 Testing Cross-Level Moderating Effects

Hypothesis 3 posited that team task specificity moderates the relationship between the FFM and task role behaviour. Because there were three FFM traits found to have the anticipated significant relationship with task role behaviour, testing Hypothesis 3 involved checking three HLM models. Hence, Extraversion was not considered when testing Hypothesis 3 because the relationship between this personality trait and role behaviour was non-significant. For the three HLM models, each model contained one FFM trait as an individual level antecedent, task role behaviour as an individual level output and team task specificity as a team-level moderator, which has an effect on the slope of the individual level equation. Table 4.8 includes these three HLM models.

**Table 4.8 Slope-as-Outcome Models to Test Hypothesis 3**

Four Sets of HLM Equations		Equation No.
Level 1	Task Role Behaviour <sub>ij</sub> = $b_{0j} + b_{1j} (\text{Conscientiousness}_{ij}) + e_{ij}$	(5)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(6)
Level 1	Task Role Behaviour <sub>ij</sub> = $b_{0j} + b_{1j} (\text{Neuroticism}_{ij}) + e_{ij}$	(7)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(8)
Level 1	Task Role Behaviour <sub>ij</sub> = $b_{0j} + b_{1j} (\text{Openness}_{ij}) + e_{ij}$	(9)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(10)

Note: *i* and *j* indicate individual *i* in work team *j*

Firstly, the researcher tested whether team task specificity had top-down effects on the relationship between Conscientiousness and task role behaviour. As can be seen in Table 4.9 (page 92), the Conscientiousness to task role behaviour relationship was contingent on team task specificity as team task specificity predicted the slope of the relationship between Conscientiousness and task role behaviour (Chinese sample:  $\gamma = -0.47$ ,  $p < 0.05$ ; Australian sample:  $\gamma = -0.10$ ,  $p < 0.01$ ). Secondly, the researcher tested whether team task specificity interacted with the relationship between Neuroticism and task role behaviour. Test results are listed in Table 4.10 (page 92). The posited moderating effects that team task specificity might have on the relationship between Neuroticism and task role behaviour were not supported for either of the two samples (Chinese sample:  $\gamma = 0.22$ ,  $p > 0.1$ ; Australian sample:  $\gamma = 0.16$ ,  $p > 0.1$ ). Lastly, a slope-as-outcomes model was run to test the moderating effects that team task specificity

has on the relationship between Openness and task role behaviour. Table 4.11 (page 92) summarises the test results and demonstrates that the joint effect of Openness and team task specificity on task role behaviour was in the opposite direction (Chinese sample:  $\gamma = 0.41$ ,  $p < 0.01$ ; Australian sample:  $\gamma = 0.28$ ,  $p < 0.05$ ). In other words, it was found that the positive relationship between Openness and task role behaviour became stronger when task specificity was high, which was contrary to Hypothesis 3.

**Table 4.9 HLM Results for Equations (5) and (6)**

		CN		AU	
Variable		Coefficient	t	Coefficient	t
Level 1	Intercept	3.47** (0.02)	139.2	4.81** (0.04)	98.75
	Conscientiousness	0.18** (0.03)	7.30	0.13** (0.06)	3.19
Cross level	Task Specificity $\times$ Conscientiousness	-0.47* (0.14)	-2.94	-0.12** (0.07)	-1.40

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant. Effects are fixed with robust standard errors. Standard errors are in parentheses.

**Table 4.10 HLM Results for Equations (7) and (8)**

		CN		AU	
Variable		Coefficient	t	Coefficient	t
Level 1	Intercept	3.45** (0.02)	182.3	3.86** (0.04)	154.74
	Neuroticism	-0.26** (0.03)	-8.17	-0.13** (0.05)	-6.15
Cross level	Task Specificity $\times$ Neuroticism	0.22^^ (0.18)	1.22	0.16^^ (0.11)	1.08

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant. Effects are fixed with robust standard errors. Standard errors are in parentheses.

**Table 4.11 HLM Results for Equations (9) and (10)**

		CN		AU	
Variable		Coefficient	t	Coefficient	t
Level 1	Intercept	3.44** (0.02)	158.1	3.27** (0.02)	132.85
	Openness	0.28** (0.04)	6.57	0.17** (0.03)	4.94
Cross level	Task Specificity $\times$ Openness	0.41** (0.13)	3.12	0.28* (0.09)	2.13

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant. Effects are fixed with robust standard errors. Standard errors are in parentheses.



To summarise, the above test results partially supported Hypothesis 3 in that the relationship between Conscientiousness and task role behaviour was moderated by team task specificity for both samples. In addition, the hypothesised moderating effect that team task specificity has on the relationship between Neuroticism and task role behaviour was found to be non-significant for both samples. Openness, unexpectedly, was found to predict task role behaviour more positively when team task specificity was high for both samples, which did not support Hypothesis 3.

Hypothesis 4 posited that team interdependence acts as a cross-level moderator of the personality-behaviour relationship, such that the relationship between personality traits and social role behaviour becomes stronger when team interdependence is low. Similar to testing Hypothesis 3, the researcher estimated a series of slope-as-outcomes models to test Hypothesis 4, where the FFM traits were used as individual predictors of social role behaviour and team interdependence as a higher level moderator. Given that only Agreeableness and Neuroticism were found to significantly predict social role behaviour, the researcher tested two models using these two traits as the individual level predictors of social role behaviour, and team interdependence as a team-level moderator. The model equations are listed in Table 4.12.

**Table 4.12 Slope-as-Outcomes Models to Test Hypothesis 4**

Four Sets of HLM Equations		Equation No.
Level 1	Social role behaviour <sub>ij</sub> = $b_{0j} + b_{1j}(\text{Agreeableness}_{ij}) + e_{ij}$	(11)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(12)
Level 1	Social role behaviour <sub>ij</sub> = $b_{0j} + b_{1j}(\text{Neuroticism}_{ij}) + e_{ij}$	(13)
Level 2	$b_{0j} = \gamma_{00} + u_{0j}$	(14)

Note: *i* and *j* indicate individual *i* in work team *j*

The researcher first tested the model in which Agreeableness is the individual level predictor of social role behaviour, and team interdependence is team-level moderator of the relationship between Agreeableness and social role behaviour. For the Chinese sample, it was found that team interdependence interacted with the individual level relationship between Agreeableness and social role behaviour ( $\gamma = -0.21$ ,  $p < 0.01$ ), supporting Hypothesis 4. Such effects were found to be non-significant for the Australian sample ( $\gamma = -0.14$ ,  $p > 0.1$ ). Results are reported in Table 4.13 (page 94).

**Table 4.13 HLM results for Equations (11) to (12)**

	Variable	CN		AU	
		Coefficient	t	Coefficient	t
Level 1	Intercept	3.61** (0.03)	126.90	3.77** (0.04)	135.6
	Agreeableness	0.21** (0.05)	10.36	0.16** (0.05)	7.92
Cross	Team Interdependence × Agreeableness	-0.21* (0.10)	-2.71	-0.14^^	-4.28

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant. Effects are fixed with robust standard errors. Standard errors are in parentheses.

It follows the analysis to test whether team interdependence and Neuroticism have joint effects on social role behaviour: these results are listed in Table 4.14. For the Chinese sample, it was found that team interdependence interacted with Neuroticism and jointly influenced social role behaviour ( $\gamma = -0.50$ ,  $p < 0.05$ ), such that the relationship between Neuroticism and social role behaviour became weaker when team interdependence was high and became stronger when team interdependence was low. Similar results were found for the Australian sample ( $\gamma = -0.24$ ,  $p < 0.01$ ).

**Table 4.14 HLM results for Equations (13) to (14)**

	Variable	CN		AU	
		Coefficient	t	Coefficient	t
Level 1	Intercept	3.63** (0.02)	147.61	3.48** (0.04)	127.32
	Neuroticism	-0.16** (0.04)	-4.30	-0.11** (0.03)	-4.03
Cross level	Team Interdependence × Neuroticism	-0.50* (0.07)	-6.65	-0.24** (0.10)	-4.28

Note: \* $p < 0.05$ ; \*\* $p < 0.01$ ; ^^ p value non-significant. Effects are fixed with robust standard errors. Standard errors are in parentheses.

#### 4.4 Team-Level Hypotheses Testing

A series of hierarchical regression analyses were conducted to test Hypothesis 5, Hypothesis 6 and Hypothesis 7, which predicted the relationship between team-level contributing factors and team effectiveness indicators. Variance in team sizes was controlled for the regression analyses; in particular, the researcher first estimated basic models that have team size as the only predictor of team effectiveness indicators and then added the posited team-level contributing factors into the basic models to see whether the predictive power increased. Using this analytical procedure is consistent

with previous researchers who have examined similar team-level effects; specifically, the relationship between team inputs/processes and team effectiveness (e.g., Stewart, Fulmer, and Barrick 2005, Tasa, Sears, and Schat 2011, Li 2012).

#### ***4.4.1 Task Role Configuration and Team Performance***

Hypothesis 5 posited that task role configuration, operationalised by the mean value of task role behaviour at the individual level, is positively associated with team performance. The test results are listed in Table 4.15. The researcher added the mean value of task role behaviour into the basic model using team size to predict team performance and observed a sizeable increase in the value of  $R^2$  (from 0.03 to 0.16 in the Chinese sample and from 0.01 to 0.18 in the Australian sample). The increased  $R^2$  indicated that adding the mean value of task role behaviour into the model increased its predictive power to team performance. Additionally, the regression coefficients showed that task role configuration operationalised by the mean value of task role behaviour is significantly predictive of team performance (Chinese sample:  $\beta = 0.37$ ,  $p < 0.01$ ; Australian sample:  $\beta = 0.33$ ,  $p < 0.01$ ). Therefore, Hypothesis 5 was fully supported by data from both country samples.

**Table 4.15 Task Role Configurations and Team Performance**

Variable	CN	AU	CN	AU
	Model 1	Model 1	Model 2	Model 2
Team size	-0.18 <sup>^^</sup>	0.03 <sup>^^</sup>	-0.10 <sup>^^</sup>	0.01*
Task role behaviour (mean)			0.37**	0.33**
$R^2$	0.03	0.01	0.16	0.18
Adjusted $R^2$	0.02	-0.02	0.15	0.16

Note: n = 105 teams (CN); n = 66 teams (AU). Coefficients shown are standardised  $\beta$  weights. \* $p < 0.05$ ; \*\* $p < 0.01$ ; <sup>^^</sup> $p$  value non-significant

#### ***4.4.2 Social Role Configuration and Member Satisfaction***

Hypothesis 6 posited that social role configuration operationalised by social role behaviour at the individual level is positively related to member satisfaction. To test this hypothesis, the researcher controlled team size and introduced the mean value of social role behaviour into the basic model. As can be seen in Table 4.16 (page 96), the introduction of social role behaviour did not improve the model's predictive power  $R^2$ .

Regarding the regression result, all coefficients were found to be close to zero or non-significant. Therefore, Hypothesis 6 was not supported.

**Table 4.16 Social Role Configurations and Member Satisfaction**

Variable	CN	AU	CN	AU
	Model 1	Model 1	Model 2	Model 2
Team size	0.09 <sup>^^</sup>	0.04 <sup>^^</sup>	0.07 <sup>^^</sup>	0.01*
Social role behaviour (mean)			0.04 <sup>^^</sup>	0.03 <sup>^^</sup>
R <sup>2</sup>	0.01	0.00	0.01	0.01
Adjusted R <sup>2</sup>	0.00	-0.01	-0.01	0.00

Note: n = 105 teams (CN); n = 66 teams (AU). Coefficients shown are standardised  $\beta$  weights. \*p<0.05; \*\*p<0.01; <sup>^^</sup>p value non-significant

#### ***4.4.3 Team Task Specificity and Team Performance***

Apart from investigating the relationship between role configuration and team effectiveness, the researcher also considered the effect that team task specificity may have on team performance, as represented by Hypothesis 7. To test this hypothesis, the researcher estimated a basic model using team size to predict team performance and introduced team task specificity into the basic model, with results listed in Table 4.17. However, no incremental explanatory power was observed after incorporating team task specificity for both country samples. The regression coefficient was found to be near zero and non-significant, indicating that team task specificity is not predictive of team performance. Therefore, Hypothesis 7 was not supported for either of the two samples.

**Table 4.17 Team Task Specificity and Team Performance**

Variable	CN	AU	CN	AU
	Model 1	Model 1	Model 2	Model 2
Team size	-0.18 <sup>^^</sup>	0.03 <sup>^^</sup>	-0.19 <sup>^^</sup>	0.02 <sup>^^</sup>
Task specificity (mean)			-0.05 <sup>^^</sup>	0.03 <sup>^^</sup>
R <sup>2</sup>	0.03	0.00	0.03	0.00
Adjusted R <sup>2</sup>	0.02	-0.02	0.01	-0.01

Note: n = 105 teams (CN); n = 66 teams (AU). Coefficients shown are standardised  $\beta$  weights. \*p<0.05; \*\*p<0.01; <sup>^^</sup>p value non-significant

## **4.5 Linking Quantitative Results to the Following Qualitative Phase**

Drawing on the quantitative results, the following qualitative phase was conducted to examine the quantitative results further; in particular, why some hypotheses were supported and others not, by obtaining rich qualitative data from interviewees' personal experiences and interpretations of working in a team context.

### ***4.5.1 Exploring Hypotheses Supported by the Quantitative Results***

Hypotheses that were supported by the quantitative data span different levels of analysis. At the individual level, significant relationships were found between certain FFM personality traits and role behaviour. These significant personality-behaviour relationships were further investigated in the following qualitative phase for two reasons. Firstly, it was unclear why people high in certain FFM traits are inclined to engage in more role behaviour. Although the trait-based interactionist theory suggests that personality traits express themselves as relevant behaviour when activated by relevant cues (Tett and Burnett 2003), it is not particularly useful for the relationship between personality traits and role behaviour in a team setting: a relationship worthy of further qualitative investigation. Secondly, the quantitative phase did not count personality traits that might be predictive of role behaviour but are not included in the FFM. Thus, in the qualitative phase, individual team members were encouraged to talk openly about various personality traits and, in this manner, the researcher sought to capture other personality traits that may predict team members' role behaviour. In summary, investigation of the personality-behaviour relationship in this qualitative phase was intended to enrich the understanding of the bandwidth match between the FFM traits and role behaviour and to explore the uncharted topic of whether there are personality traits, other than those of the FFM that may act as predictors of role behaviour in a team environment.

Turning to the cross-level effects, it was statistically supported that team task specificity and team interdependence moderated the personality-behaviour relationship. These cross-level moderating effects form another important component of the qualitative phase for two reasons. Firstly, although situational strength theory offers a general explanation of how team contexts may moderate the behavioural expression of personality traits (Meyer, Dalal, and Hermida 2010, Meyer et al. 2014), this theory does not specify how people with certain FFM traits will change their role

behaviour when team contexts – team task specificity and team interdependence – change. Secondly, there might be other contextual factors that affect the individual personality-behaviour relationship but are not covered by the research agenda. A further qualitative investigation is expected to detect higher-order factors other than team task specificity and team interdependence that suppress or amplify the personality-behaviour relationship. Accordingly, interviewees were encouraged to interpret the role that team contexts play in influencing team members' role behaviour in order to attain a deeper understanding of how team task specificity and team interdependence or other team contexts affect the way members behave.

Only one out of three hypothetical relationships at the team-level was supported by the survey data – the relationship between task role configuration and team performance. Although behavioural theory as a multilevel linking mechanism depicts the process by which task role behaviour forms the team-level task role configuration and may act as a predictor of team outcomes, this theory does not articulate how this process occurs (Stewart, Fulmer, and Barrick 2005). Additionally, previous team scholars have called for nuanced qualitative research on the connections between task role configuration and team performance (LePine et al. 2011, LePine et al. 2012). A qualitative study, for example, might be expected to help explain the unclear relationships between collective team member behaviour and team effectiveness (LePine et al. 2011). Therefore, the topic of task role configuration and team performance was incorporated into the qualitative phase with the aim of better understanding how task role configuration positively predicts team performance.

#### ***4.5.2 Exploring Hypotheses Not Supported by the Quantitative Data***

The qualitative phase also focuses on the hypotheses that were not statistically supported. For example, the posited relationship between Openness and social role behaviour was not found. Similarly, Extraversion was posited to predict both task role behaviour and social role behaviour, but these effects were not supported by the analysis of the quantitative data. Previous scholars have called for more research on Openness and Extraversion in teams as previous empirical studies have yielded conflicting results regarding these two personality traits and team member behaviour (e.g., Stewart, Fulmer, and Barrick 2005, Crawford and LePine 2013). Therefore, drawing on individual members' experience and interpretations, the researcher seeks

to explore the role that Openness and Extraversion play in teamwork as well as explaining why the statistical results were silent on the posited relationship between these two personality traits and role behaviour.

Apart from the individual level effects, some cross-level effects were also found to be non-significant. For example, while team task specificity was posited to mitigate the relationship between Openness and task role behaviour, the statistical results showed otherwise. Additionally, the posited effects that team task specificity or team interdependence might have on the relationship between Agreeableness and role behaviour were found to be significant for the Chinese sample only. Accordingly, the researcher accounted for these unexpected results concerning complex cross-level effects in the following qualitative phase by examining the experiences of team members to explain why the statistical results did not support the hypotheses. In particular, the qualitative phase focused on how members from different country samples described team contexts and their effects on individual level phenomena.

Non-significant relationships were also obtained when testing team-level hypotheses. In particular, task specificity was posited to predict team performance, but this effect was not supported by the quantitative data. However, task specificity was found to significantly moderate the relationship between certain personality traits (for example, Conscientiousness and Openness) and task role behaviour. Because task role configuration was found to be strongly associated with team performance, it is appropriate to assume that task specificity may indirectly predict team performance. Therefore, the qualitative phase explored this assumption and identified how the indirect relationship between team task specificity and team performance evolves.

Another team-level hypothesis that was not supported by the quantitative data concerned the relationship between social role configuration and member satisfaction. It was posited that social role configuration positively predicts member satisfaction, but this effect was not found in the quantitative phase, indicating that member satisfaction is a sophisticated team phenomenon. Accordingly, it is reasonable to assume that team members may need other important elements to feel satisfied apart from being heard, cared about and respected. Therefore, the qualitative phase explored member satisfaction as an important indicator of team effectiveness and explored the potential factors that contribute to member satisfaction.

#### **4.6 Chapter Summary**

Overall, an analysis of the quantitative phase revealed a number of significant findings regarding the hypotheses posited in this study. Firstly, certain FFM personality dimensions were found to be significantly predictive of task role behaviour and social role behaviour. Secondly, it was found that team task specificity and team interdependence moderated the personality-behaviour relationship such that when these team contextual factors were low, personality traits were more likely to express as relevant role behaviours; the personality-behaviour relationship mitigated when the team contextual factors were high. Thirdly, the quantitative results also showed that team task role configuration significantly predicted team performance. However, some hypotheses were not supported by the quantitative data. Table 4.18 (page 101) summarises the findings of the quantitative phase, which form the basis for the subsequent qualitative exploration.



**Table 4.18 Summary of Quantitative Analysis Results**

Hypothesis	Results for CN sample	Results for AU sample
H1a: Conscientiousness positively predicts task role behaviour	supported ( $\beta = 0.19$ , 95% CI is $0.16 < 0.19 < 0.35$ )	supported ( $\beta = 0.17$ , 95% CI is $0.10 < 0.17 < 0.33$ )
H1b: Extraversion positively predicts task role behaviour	not supported (n.s.)	not supported (n.s.)
H1c: Neuroticism negatively predicts task role behaviour	supported ( $\beta = -0.26$ , 95% CI is $-0.30 < -0.26 < 0.20$ )	supported ( $\beta = -0.16$ , 95% CI is $-0.28 < -0.16 < -0.04$ )
H1d: Openness positively predicts task role behaviour	supported ( $\beta = 0.16$ , 95% CI is $0.07 < 0.16 < 0.24$ )	supported ( $\beta = 0.08$ , 95% CI is $-0.02 < 0.08 < 0.20$ )
H2a: Agreeableness positively predicts social role behaviour	supported ( $\beta = 0.24$ , 95% CI is $0.18 < 0.24 < 0.35$ )	supported ( $\beta = 0.21$ , 95% CI is $0.10 < 0.21 < 0.32$ )
H2b: Extraversion positively predicts to social role behaviour	not supported ( $\beta = -0.11$ , 95% CI is $-0.15 < -0.11 < -0.01$ )	not supported (n.s.)
H2c: Neuroticism negatively predicts social role behaviour	supported ( $\beta = -0.11$ , 95% CI is $-0.15 < -0.11 < -0.01$ )	supported ( $\beta = -0.06$ , 95% CI is $-0.17 < -0.06 < 0.07$ )
H2d: Openness positively predicts social role behaviour	not supported (n.s.)	not supported (n.s.)
H3: Team task specificity moderates the relationship between FFM personality traits and task role behaviour	supported: It weakens the relationship between Conscientiousness and task role behaviour (-0.47)	supported: It weakens the relationship between Conscientiousness and task role behaviour (-0.10)
	not supported: the moderating effects of team task specificity on Neuroticism to task role behaviour relationship (n.s.)	not supported: the moderating effects of team task specificity on Neuroticism to task role behaviour relationship (n.s.)
	not supported: It amplifies the relationship between Openness and task role behaviour (0.41)	not supported: It amplifies the relationship between Openness and task role behaviour (0.28)
H4: Team interdependence moderates the relationship between FFM personality traits and social role behaviour	supported: It weakens the relationship between Agreeableness and social role behaviour (-0.21)	not supported (n.s.)
	supported: It weakens the relationship between Neuroticism and social role behaviour (-0.50)	supported: It weakens the relationship between Neuroticism and social role behaviour (-0.24)
H5: Task role configuration positively predicts team performance	supported (0.37)	supported (0.33)
H6: Social role configuration positively predicts member satisfaction	not supported (n.s.)	not supported (n.s.)
H7: Team task specificity positively predicts team performance	not supported (n.s.)	not supported (n.s.)

## CHAPTER 5 QUALITATIVE ANALYSIS AND RESULTS

### 5.0 Overview

This chapter reports the qualitative analysis and results. It is organised into four parts. First, the researcher introduces the coding strategies, drawing on previous quantitative findings, which form the basis of the thematic analysis. Second, a report of the thematic analysis is provided, which allows for a deeper understanding of the quantitatively supported hypotheses. Third, the researcher presents a thematic analysis and results to further examine the hypotheses which were not supported by the quantitative data. Lastly, additional themes captured from the qualitative data, which were not covered by the quantitative analysis and not directly relevant to research questions but might help explain the core topic of personality in teams, are reported.

### 5.1 Pre-Analysis

In order to fully answer the research questions, interview transcripts were utilised as raw data. Based on the quantitative analysis results, the researcher created a number of parent nodes to code the data. For example, one such qualitative research question related to the FFM personality and task role behaviour, and therefore the ‘relationship between the FFM to task role behaviour’ was created as a parent node. Coding qualitative data into these parent nodes allowed the researcher to directly compare the qualitative results with the quantitative results, which adds depth to the responses to the research questions. The researcher then coded similar statements into the respective child nodes under each parent node. All parent nodes are listed in Table 5.1.

**Table 5.1 Parent Nodes of the Qualitative Data Coding**

Analysis Level	Parent Nodes in the Qualitative Data Coding
Individual level	relationship between the FFM and task role behaviour
	relationship between the FFM and social role behaviour
Cross-level	interplay of personality and task specificity on task role behaviour
	Interplay of personality and team interdependence on social role behaviour
Team-level	relationship between task specificity and team performance
	relationship between task role configuration and team performance
	relationship between social role behaviour and member satisfaction

## 5.2 Confirmatory Thematic Analysis

The researcher conducted a confirmatory thematic analysis of the qualitative data to explore the hypotheses which were supported by the quantitative data. Table 5.2 lists the key qualitative findings. For each qualitative finding listed in the table, the researcher identified the relevant evidence. A more detailed analysis, which contains direct quotes and the interviewees' classification information, is provided.

**Table 5.2 Themes of the Confirmatory Thematic Analysis**

Themes	Summary of Evidence (AU)	Summary of Evidence (CN)
Conscientiousness predicts task role behaviour.	Conscientious people engage in more task role behaviour because they are good at breaking down goals into achievable parts to achieve every day.	Conscientious people engage in more task role behaviour because they are better at time management, setting priorities, and self-management.
Neuroticism negatively predicts task role behaviour.	It is hard for neurotic people to cooperate with colleagues and to be involved in task role behaviour.	
Agreeableness predicts social role behaviour.	Agreeable people tend to engage in more social role behaviour but there is a limit; people will not engage in too much social role behaviour as they are not paid for it.	Agreeable people tend to engage in more social role behaviour to build good interpersonal relationships in the workplace.
Neuroticism negatively predicts social role behaviour.	People high in Neuroticism engage in less social role behaviour because neurotic people are selfish – suggesting that they overestimate their own importance, undervalue others' roles in the team, and are more likely to build resentment.	
Task role configuration predicts team performance.	A high level of task role configuration makes the team operate more systematically, which matches the nature of the team as a work unit.	A high level of task role configuration guarantees that the team will deliver positive results in time. Task role configuration also boosts the team's progress.

### 5.2.1 FFM Personality Traits and Task Role Behaviour

#### 5.2.1.1 Conscientiousness and Task Role Behaviour

In line with the quantitative results, most interviewees believed that Conscientiousness is a personality trait that contributes to task role behaviour, with notably different reasons provided. In particular, some interviewees believed that people high in Conscientiousness engage in more task role behaviour because they are inspired by their internal motivation for success. An example of this sentiment comes from one

Australian interviewee who talked about the internal drive to achieve goals and results when explaining why Conscientious people engage in more task role behaviour.

*I guess those focused and responsible people are more focusing on task side of teamwork, because they want to get those jobs done; they've got that passion. I guess goal-orientated people, people who know what they want, what their end game is, and they know how to break down that goal into smaller bits. They achieve every day. (AU02, sales director, team leader)*

In contrast, other interviewees stressed that conscientious people demonstrate more task role behaviour because they are more capable of working. A response indicative of this argument comes from a Chinese interviewee who focused on personal capabilities that lead to better goal achievement. According to this interviewee, people who are high in Conscientiousness are more likely to engage in task role behaviour as they have good communication skills and better time management skills.

*The behaviour you've just mentioned is actually a must-do in teamwork. But some people just don't have the ability to do it. I believe people who are responsible, punctual, and people who are good at communication will be more involved in task-focused behaviour. Good communication is a prerequisite of you doing your job in teamwork though. In the meantime, I believe people with punctuality on their mind tend to do more task behaviour, as they use their time more efficiently. (CN01, financial manager, team leader)*

#### *5.2.1.2 Neuroticism and Task Role Behaviour*

Another concept supported by both the quantitative and qualitative analysis results, is the detrimental effects that Neuroticism has on task role behaviour. As an example of the typical responses concerning Neuroticism and its negative influence on task role behaviour, an Australian interviewee mentioned that neurotic people cannot correctly distinguish between their own role and other team members' roles. In particular, he suggested that people who are high in Neuroticism tend to overestimate their own role, and underestimate that of colleagues in the team – they blame others if problems emerge, and they ascribe team achievement to themselves. According to this interviewee, it is very difficult for neurotic people to cooperate with other team members and get involved in task role behaviour.

*Those who have got a really bad attitude, by which I mean they're nagging and questioning performance of other team members all the time rather than looking at their own performance. So it flows into the behaviour type of area as well, but it is their personality, that 'me first' and everyone else minor. When there is that kind of attitude, then it demeans the responsibility and the roles and contributions of other team members, and that is very damaging to the team. (AU07, operation manager, team leader)*

Another example of this sentiment comes from one Chinese interviewee who indicated that neurotic people are unlikely to engage in task role behaviour such as solving problems but they are constantly complaining when there is a problem. He also believed that neurotic people are likely to upset other members.

*Neurotic people who constantly complain will not bother with task-focused behaviour. Not all positions in the team are perfect – it is very common to get into problems. However, some people just keep complaining of problems, which never solves any problem but will upset other people in the team. (CN02, managing director, team leader)*

### **5.2.2 FFM Personality Traits and Social Role Behaviour**

#### **5.2.2.1 Agreeableness and Social Role Behaviour**

For the statistically strong and positive relationship between Agreeableness and social role behaviour, there seems to be two response types across the interview data. One type of response suggests a belief that agreeable people tend to engage in more social role behaviour, but there is a limit. Specifically, people exhibit a certain degree of social role behaviour, but they will refrain from engaging in it excessively, because they are not getting paid for such behaviour. Some interviewees believed that the strategy for a team member is to find the correct level of social role behaviour to engage in, so that healthy interpersonal relationships can be maintained without consuming too much time. Below is an example of this typical response, as noted by one Australian interviewee.

*I mean we get paid to do a job, on the other hand, so we're expecting them to do that job. They've agreed to do the job, so we expect those people to do the job. Sure, the admin staff aren't responsible for handling irate customers.*

*That's me or the sales guys that look after that. I think we've all got our roles, and we've all got to respect each other's abilities and also their roles, because there's some things that people don't get paid enough to do, so they don't have to do those things. (AU02, sales director, team leader)*

By contrast, the other type of response suggests a belief that agreeable people tend to engage in more social role behaviour without mentioning a limit, as they want to build good interpersonal relationships at the workplace. In particular, there was widespread consensus among the Chinese interviewees that maintaining workplace friendship is critical. As an example, one Chinese interviewee said that interpersonal relationships in a team should be similar to family bonds.

*Except for selfish people, my co-workers, including myself, tend to consider friendship at work a really important thing. We will try our best to keep a good atmosphere in the team, always trying to show others the best of ourselves, and that we love to share. I think this is particularly important, because Chinese people have this culture of making people in the workplace feel like family. (CN10, marketing specialist, team member)*

#### 5.2.2.2 Neuroticism and Social Role Behaviour

Most interviewees talked about Neuroticism as a factor that deters team members from showing social role behaviour. An important reason for this argument is that neurotic people were seen to be self-centred. As such, there was widespread agreement that individuals with this type of personality trait continually put themselves first and other team members second. As an example, one Australian interviewee mentioned 'the virus effect', suggesting that neurotic people spread the negative moods across the entire team.

*People who can throw – people who have tantrums, they are negative, lazy, unfriendly, that will drag – it's like a virus, one bad person can drag everyone else down. (AU01, finance manager, team leader)*

Another example of this type of response comes from an Australian interviewee who said that, instead of caring for others' feelings, neurotic people were more focused on their own emotions. In particular, he believed that neurotic people will not stay and

help the team complete the tasks; they are more likely to build resentment than engage in social role behaviour.

*Those selfish people don't care about what others need and how others feel. So if there is a task to be done, selfish people will clock out exactly when it's time to go home, which builds resentment. (AU06, sales specialist, team member)*

In addition, one Australian team leader felt that people who are high in Neuroticism tend to overestimate the importance of their own roles and devalued the roles of others, which makes it difficult for them to engage in social role behaviour.

*Someone who has got a really bad attitude is always nagging and questioning the performance of other team members, rather than looking at their own performance. So it flows into the behaviour type of area as well. It is their personality, that 'me first' and everyone else, their roles are minor. When there is that kind of attitude, then it demeans the responsibility and the roles and contributions of other team members, and that is very damaging to the team. (AU07, operation manager, team leader)*

Similarly, one Chinese interviewee said that neurotic people are very demanding on how other team members are doing their jobs, although they might not do a good job themselves. According to this interviewee, neurotic people are unlikely to engage in social role behaviour because it is difficult for them to show respect to other members.

*I think colleagues who are fussy and picky will not bother with others in the team. These people are keen to be perfect, not only trying to be perfect themselves but also trying to make other people be perfect. Working with these people is definitely not funny, because they force you to work to their standard and in their way. (CN04, medical assistant, team member)*

### **5.2.3 Task Role Configuration and Team Performance**

Almost half the interviewees from each sample talked about the positive effects that task role configuration may have on team performance, with different reasons provided by respondents from different country samples. For the Australian sample, some interviewees stressed that high levels of task role behaviour – such as tracking progress, solving problems and keeping deadlines, will make the team work in a more

systematic way, which lifts overall team performance. Other interviewees described the nature of task role configuration as a form of teamwork targeting task goals, which matches the nature of the team itself, and therefore maintaining high task role configuration is a strategy to achieve better team performance. Still others proposed that a high level of task role configuration is associated with people's determination to pursue higher levels of achievement. Accordingly, examples of these types of responses are presented below.

*Everybody has different behaviour when looking at different jobs and getting things done, but I would say that to get things more systematic, it's important that the team has to be able to track progress, analysing and solving problems, and keeping deadlines. (AU03, marketing specialist, team member)*

*Yes, I do believe that enough people with task-focused behaviour is better for the team performance. Because in the end we're talking about a team. 'Team' means there is a lot of interaction and cooperation required. There is a lot of teamwork to be done. So, if you look at a nominal team, then, yes, task-focused behaviour is more preferred. (AU05, business development manager, team leader)*

*Yes, I definitely agree with that. If people involve themselves in behaviour like tracking progress, meeting deadlines, fixing problems, it means that they are eager to move forward, that they look at themselves as part of the business. (AU09, general manager, team leader)*

For the Chinese sample, some interviewees suggested that members could become used to a comfortable status without making much progress, and this is when task role configuration can make a difference – it works as a reminder, and stimulates members to make more progress towards the team goals. Below is a typical example of this type of response.

*Sometimes progress in my team is very slow. Everybody gets used to it. So, some of us might remind the whole team of the difference between what we have completed and what is expected, as well as the fact that the deadline is approaching. Those task behaviours will help the team get back to the right track. (CN03, electrical engineer, team member)*



By contrast, other Chinese interviewees interpreted the relationship between task role configuration and team performance from the perspective of the team functional area. As an example, one interviewee who was working in an accounting team stressed that task role configuration is critical for team performance, as it improves punctuality and accuracy of job completion. Another example of this type of response comes from a Chinese interviewee who talked about the situation of a sales team by stating that task role configuration – such as people collectively setting sales targets and trying to keep to them – will stimulate everyone to achieve more sales. Below are two quotes to illustrate the two examples, respectively.

*Totally agree. Good performance is not a one-day job, but it requires many small tasks being completed. Taking my current work group as an example, correct daily book-keeping, promptly tracking payables and receivables, reconciling daily and monthly, and handling other unexpected things, these are basics for our team to perform well. I don't know about other departments, but in the accounts department, task role behaviour actually has a final say on team performance. (CN01, financial manager, team leader)*

*I agree, especially when people are involved in behaviour like setting goals for the team. For example, if we set monthly or quarterly sales goals for sales people in my team, they will be motivated to do more sales, because they don't want their ability to be questioned. (CN02, general manager, team leader)*

To summarise, in the confirmatory thematic analysis, the researcher identified important themes and relevant evidence which have added more details to the corresponding quantitative results. Firstly, while the survey results supported the positive relationship between Conscientiousness and task role behaviour, the qualitative findings offered explanations of why the relationship is positive from the perspective of internal motivation and work skills. Secondly, the qualitative findings also offered explanations for the negative relationship between Neuroticism and task role behaviour from the perspective of task cooperation. Thirdly, they suggested that agreeable people tend to engage in more social role behaviour in order to build positive interpersonal relationships. However, there should be a limit of social role behaviour as people do not get paid for such behaviours. Fourthly, the qualitative findings explained why Neuroticism is negatively associated with social role behaviour.

Neurotic people were seen as selfish and thus they are more likely to build resentment with other members rather than engage in social role behaviour. Lastly, the qualitative findings provided an explanation for the task role configuration as a contributor to team performance in a number of ways. High task role configuration was seen as helping the team to operate systematically which then improves team performance. It was also felt that high task role configuration helps the team to deliver results on time which is part of team performance. These findings are integrated with the corresponding quantitative results and are further discussed in Chapter 6.

### **5.3 Exploratory Thematic Analysis**

Those research hypotheses which were not supported by the quantitative data formed the basis of the exploratory analysis in the qualitative phase. For example, it was proposed in the hypothetical model that Extraversion predicted both task role behaviour and social role behaviour. However, neither of these effects were found significant in the quantitative data analysis. The second, qualitative, phase of this study allowed for further exploration of these findings. Accordingly, a separate thematic analysis was conducted to explore the phenomena which were posited but not supported by the quantitative data.

Before the exploratory thematic analysis, the researcher identified a number of parent nodes to code the raw data, which included

- a) the relationship between Openness and role behaviours;
- b) the relationship between Extraversion and role behaviours;
- c) the interplay of team task specificity, personality, and role behaviours;
- d) the interplay of team interdependence, personality, and role behaviours;
- e) the relationship between team task specificity and performance; and
- f) the relationship between social role configuration and member satisfaction.

The interview statements were coded into each parent node and then analysed. Narrative themes under each parent node were identified based on a synthesis of the coded data. For each of the narrative themes, the relevant nature of evidence was provided – i.e., a summary of interviewees' responses. For example, evidence was found to support the relationship between Openness and task role behaviour, such that people who are high in Openness were seen as better at facilitating the information

flow in the team which was referred to as ‘team synchronisation’ by the interviewees. It should be noted that the percentage of interviewees is not provided for each theme of the exploratory thematic analysis, because the aim of the exploratory analysis was to identify the narrative evidence which would help to explain the non-significant statistical results. Also, in comparison to that of the confirmatory thematic analysis, more themes were found in the exploratory thematic analysis, which have enriched the hypothetical relationships and extended the answers to the research questions. Results of the exploratory thematic analysis are reported separately for the Chinese sample and the Australian sample, as listed in Table 5.3 (page 112). Next, for each theme, a detailed analytical result is presented with direct quotes from the interview transcripts.

**Table 5.3 Themes of the Exploratory Thematic Analysis**

Themes	Summary of Evidence (AU)	Summary of Evidence (CN)
Openness predicts task role behaviour, with different evidence across the two samples.	Openness and information flow/synchronisation across the team.  Openness and the ability to utilise team resources.	Openness and self-learning, to deal with uncertainty in the team.  The prediction is especially for members that are new to the team.
Openness predicts social role behaviour, with the evidence from the Australian sample only.	Openness and empathy.  Openness and an internal drive to make the team prosper.	Not applicable.
Extraversion predicts task role behaviour, with the evidence from the Chinese sample only.	Not applicable.	The prediction only exists for member roles which require high levels of communication.  Extraversion and the ambition to be successful.
Team task specificity does not influence team leaders' task role behaviour, with similar evidence from both samples.	No clearly defined jobs for leaders, but only performance targets.  Not influenced by their personality traits, leaders engage in task role behaviour constantly to ensure that team results are delivered as expected.	
Team task specificity influences team followers' task role behaviour, with different evidence across the two samples.	High team task specificity makes behaviour uniform, and restrains the expression of personality.  High team task specificity specifies penalties for task failures.  High team task specificity comes with clear incentives.	Low team task specificity encourages members to behave according to their personality traits.  Low team task specificity means task-related information is unavailable, which keeps members from doing task role behaviour.
High team interdependence encourages more social role behaviour, with similar evidence from both samples.	Members are seen as valuable assets when team interdependence is high. People engage in social role behaviour to maintain good relationships with co-workers to gain their support in work.	
	Leaders engage in more social role behaviour to lift up the morale of the team, and also to build up team cohesion.	
High team interdependence encourages more social role behaviour, with different evidence across the two samples.	To stay connected with their colleagues in the team so that they can constantly get updates on important tasks.	High team task interdependence leads to stress and tension, so people engage in social role behaviour to make the work less stressful.
Team interdependence does not influence social role behaviour, with evidence from the Chinese sample only.	Not applicable.	The aim to gain positive comments from co-workers. Good interpersonal relationships are part of career success. Social role behaviour is not needed in teamwork.

Themes	Summary of Evidence (AU)	Summary of Evidence (CN)
Social role configuration contributes to member satisfaction.	<p>Yields positive energy and spreads across the team, which makes members feel more satisfied.</p> <p>Makes people feel important and respected.</p> <p>Creates a positive climate in which people empathise with each other.</p>	Depends on whether acceptable team performance is achieved.
Team task specificity contributes to team performance.	<p>Specifies everyone's role in a team's workflow.</p> <p>Encourages team members not only to focus on their own roles, but also to help with others' roles.</p> <p>Enables fulfilment of roles in a timely manner, and stimulates effective cooperation.</p> <p>Reduces the chance of misfit of team members and tasks.</p> <p>Ensures that problems are directed to the correct person or subgroup within the team.</p>	<p>Is associated with good use of time so that people can focus on the job itself instead of wasting time on how to do the job.</p> <p>It contributes to team performance only when individuals are not coasting on others.</p> <p>Contributes to team performance, but it does not apply to the senior management team, whose jobs are critical but less clear.</p> <p>Contributes to team performance, but is not as important as other factors, such as members' ability, knowledge, or communication skills.</p>

### 5.3.1 Openness and Role Behaviour

Compared to other dimensions of the FFM traits, Openness was much less frequently mentioned by interviewees from both samples. Only three out of twenty interviewees explicitly mentioned openness when talking about task role behaviour. One Australian interviewee mentioned that Openness did contribute positively to task role behaviour, because people who are high in Openness are seen to be sensitive to new information, and they are good at communication. Therefore, it was suggested that they can spread task-related information to synchronise the team. Sharing task-related information with team members was seen as a component of task role behaviour, because it contributes to the team's task goals, as shown in the excerpt below.

*I would personally prefer working with more friendly, caring, and open-minded people. Because as a team it is very important that there is synchronisation between the team. They tend to be better off in doing a scan*

*of, like, tracking progress and solving problems. Because it requires a lot of communication. So, it's not like you have a task and you can just do it yourself – you're going to have team support to do that right. (AU05, business development manager, team leader)*

Some additional features of Openness contributing to task role behaviour were identified by another Australian interviewee, who suggested that open-minded people are good at utilising team resources to better achieve team task goals.

*Yeah, again, those who are open-minded, they look at every objective as a team goal and then they work, they find their ways – under direction, supervision, and in constant interaction with their managers – then they find their ways to achieve the targets. (AU07, operation manager, team leader)*

One Chinese interviewee also reported that Openness enabled people to engage in more task role behaviour, but he talked about a different process, namely that open-minded people are seen as good self-learners, and they tend to educate themselves when they are facing uncertainties. Therefore, it was suggested that people with a high level of Openness pick up new things much faster, and they take action faster than others, which helps to yield better task performance. In particular, this interviewee posited that Openness especially contributed to task role behaviour when individuals were new to an organisation, because that is the time that people face the highest level of uncertainty.

*I like working with people who are open to new stuff, and are passionate to embrace changes at work. I guess this is especially important when talking about new team members who just came on board. In small companies like us, it is not easy to provide full training for a new team member, because we don't have outside training providers, and everyone in the team has their own role to do, with very full daily schedules. If a member is open-minded, he will pick up things quickly, and make less trouble to the team. (CN06, customer care officer, team leader)*

Turning to openness and social role behaviour, only two Australian interviewees explicitly talked about openness as a predictor of social role behaviour. No interviewee from the Chinese sample raised this topic. Specifically, one Australian interviewee felt

that people who are high on Openness empathised with others' feelings, thoughts, and ideas, and thus it triggered more expression of social role behaviour.

*Open-minded people, I guess, will do more people-focused behaviour – they're more caring of others, and welcoming of other people's thoughts and feelings. (AU04, labourer, team member)*

By contrast, the other Australian interviewee who raised this theme talked about the collective benefits that are valued by open-minded people. It was suggested that, while working in a team, people who are high in Openness see much more than themselves as individuals – i.e., the collective benefits for the team. Therefore, open-minded people were seen by these interviewees as more likely to engage in social role behaviour in order to make their team prosper.

*Open-minded people are more focused, I suppose, in feeling and caring for others. I would rate it even as someone who values collectivism over individualism, typically are the ones who believe 'together we are a team and we can achieve this', rather than 'I am achieving this and you are not'. So, when that sort of attitude starts to come in, that's where it is the manager's responsibility as well; that he or she needs to motivate the team, to give them team tasks, and the incentives and other motivational areas should be such that they together work to achieve the team goals, rather than become personal-centric. When that happens – you know because they have a common goal – then they will work as a team in a much more coherent way, and they will have a lot of positive feelings towards each other, and respect towards each other as well. (AU07, operation manager, team leader)*

### **5.3.2 Extraversion and Role Behaviour**

Similar to Openness, very few interviewees mentioned the personality trait of Extraversion when talking about member role behaviour. Only two Chinese interviewees explicitly reported Extraversion as a predictor of task role behaviour. No Australian interviewees raised this topic. According to the one Chinese interviewee, Extraversion predicts task role behaviour only for certain job profiles. He suggested that extraverts in sales roles tend to engage in more task role behaviour, because they are talkative and they quickly build rapport with clients, which can communicate a

positive influence on the rest of the team. In this way, extraverts were seen to empower the rest of the members to achieve more sales.

*Those outgoing people, normally in our team are in sales positions. They are very talkative, get on very well with clients, and always have a passion for communication. They will make you feel empowered. Their enthusiasm is appealing to me all the time. (C02, managing director, team leader)*

The other Chinese interviewee who spoke to this concept, believed that extraverts engage in more task role behaviour because they are more ambitious and keen to be successful. He suggested that extraverts engage in more task role behaviour to help achieve the team's task goals, in order to achieve their personal success.

*I believe people who are keen to succeed will be more likely to engage in this task-focused behaviour. As part of the team, if you want to be successful, you must consider the team goal, and try to help the team through all kinds of tasks. (CN03, electrical engineer, team member)*

However, no narrative evidence was found regarding the relationship between Extraversion and social role behaviour. In comparison to the other dimensions of the FFM, Openness and Extraversion were mentioned less frequently by the interviewees. The possible reasons why interviewees talked less about Openness and Extraversion than they did about other personality traits are discussed in Chapter 6.

### **5.3.3 Team Task Specificity, Personality and Task Role Behaviour**

Regarding the topic of team task specificity, personality (as a broad concept), and task role behaviour, two distinct themes were found from the thematic analysis. Specifically, team leaders or senior managers insisted that task specificity has no impact on their engagement in task role behaviour. By contrast, from the responses of team followers, it can be seen that their engagement in task role behaviour is not only influenced by their unique personality traits but also by the level of team task specificity. Next, the researcher provides a detailed report on the evidence and excerpts for each of the two themes.



#### 5.3.3.1 Leaders: Task Specificity Does Not Influence Task Role Behaviour

Most team leaders reported that their job roles and tasks are not specified. Instead, they mentioned that they only have Key Performance Indicators (KPIs) that identify the targets that should be achieved. Nevertheless, there was consensus among the interviewees who are in leadership roles that they spontaneously engage in task role behaviour to ensure that the team's progress as well as results meet the requirement of their targets. As an example, one Australian team leader suggested that the leadership role itself represents many job responsibilities which might not be written anywhere but motivate managers to engage in more task role behaviour, in order to reach their performance targets.

*Being a manager, when you're given that role – that's what responsibility is, it will make me want to obviously track everything and analyse everything, so that you can meet your KPIs and all that. (AU01, finance manager, team leader)*

Another example of this sentiment comes from an Australian team leader who mentioned that some aspects of task role behaviour – analysing and solving problems for the team – are part of his job responsibilities. In his opinion, engaging in task role behaviour carries over to subsequent team performance, which could then be measured by business financials. For this interviewee, only his role as a boss was clearly defined. When other members in the team face problems and do not know the appropriate action to take, the problem-solving responsibility falls to him.

*I'm the managing director, so everybody knows that; that I'm the boss, so that's clearly defined, I guess. In my team, everyone would come to me when they don't know the answer to the question and the buck stops with me – I've got to make those calls. The performance outcomes – well, that's all got to do with how much money we've got in the bank. So that's like – we've got money in the bank, we're going okay. When the money runs out, we're in trouble. (AU02, sales director, team leader)*

There was similar evidence in the Chinese sample. As an example, one Chinese team leader described his own role as sophisticated and not known by other members, but his performance target was relatively clear – i.e., to achieve a specific level of profit

margin in a limited period of time. According to this interviewee, although he does not have clearly specified job roles and responsibilities, he engages in task role behaviour regularly to help the team deliver acceptable performance results. Also, he mentioned that members in his team do not know that the leader's roles are not clarified.

*I'm the boss – although my job wasn't clearly defined, it's not a big issue about how I work. I might have some performance target for myself, for example, getting 1 million margin this year, but this is not about doing specific jobs – it is simply a target. However, other members in my team never know that my jobs are not clarified. Although my job is not clear, I have to track progress every week, have to prepare for problems to happen. (CN02, general manager, team leader)*

#### 5.3.3.2 Followers: Team Task Specificity Influences Task Role Behaviour

For team members who are not in leadership roles, the interview data suggests a different story regarding the interplay of team task specificity, personality, and behaviours. That is, team task specificity was referred to be an important team context which either regulates members' engagement in task role behaviour or encourages members to behave according to their own personality traits, depending on the levels of team task specificity. Thus, two sub-themes can be identified from the responses of interviewees regarding their understanding of the role that team task specificity plays. First, it was mentioned that high team task specificity sets the rules which may inform members' engagement in task role behaviour. By contrast, low team task specificity, according to the interviewees, brings more uncertainties to the team so there is no regulation on how team members should behave, which encourages them to behave according to their unique personality traits. Below is a detailed report on the evidence that support the two sub-themes, respectively.

For the sub-theme of how high team task specificity may inform members' task role behaviour, it is interesting to note team leaders' views on team members' job roles. Although most team leaders mentioned that they do not have clearly defined job roles themselves, they reported that team followers should have clear job descriptions and KPIs. This is because each members' job roles and responsibilities are part of a complete workflow which leads to the team goals. As an example, one Australian team leader mentioned that there is an established workflow in his team, in which every

team member has a part. According to this team leader, it is difficult for his team members in that workflow to behave according to their own personalities, as the rules on how they should behave already exist.

*Of course, it (team task specificity) will influence their behaviour. Everyone needs to have their role and their tasks, which is their KPIs or job description, and everyone's responsible to do their part. I mean, the admin girl needs to make sure she balances the books every month, and we've got to make sure we pay the staff. I've got to make sure that the sales guys make the sales, and we've got to make sure that the installers put panels on the roof. I guess it's as simple as that. (AU02, sales director, team leader)*

Alternatively, high team task specificity is associated with penalties for failure to engage in certain expected behaviours. As an example, one Australian team leader mentioned that high team task specificity not only influences team members' behaviour by positioning the expected task role behaviour, but also implies the punitive consequences if team members fail to engage in the expected behaviours. Not getting payment from clients, according to this team leader, is one of these punitive consequences. As such, it was suggested that team members are more likely to behave in a way that would not lead to team failure, rather than behaving according to their unique personality traits.

*Yes, the job clarity will influence everyone's behaviour. I mean, people in my team have to know exactly what their roles are, and how these roles complement each other. They've also got to know what results are expected from them. If that is cleared, then people will do their roles correctly, and try to make deliveries in the planned timeframe. If we are not doing campaign activities on time, clients might be unhappy, they won't pay us. (AU09, general manager, team leader)*

There seems to be a third process by which high team task specificity affects team members' engagement in task role behaviour. Specifically, high job clarity in the team means specified incentives that encourage team members to engage in more task role behaviour, rather than behaving according to their unique personality traits. As an example, one Australian team leader talked about the situation in which both

individual performance and team performance are rewarded. In particular, this interviewee mentioned that team members engaged in more task role behaviour to achieve better individual and team performance, in order to get the rewards, regardless of their personality traits.

*Yes, so when we look at job definitions, every position has to fit in somewhere in the organisational structure. If it's the sales department, they will have individual sales targets, but collectively they're responsible for an overall team target. It goes for other people as well, those who might not necessarily be in sales, like customer support, admin or HR type of departments, or pricing or analyst. It is again a manager's task to make it as transparent as possible, create a definition around what is expected, and then how and where they fit into the organisational structure, so that it can be sort of measured how they are fitting in and achieving or not achieving overall team objectives. If it requires a lot of teamwork, then the incentive should be such that team performance is also incentivised, not just individual performance. (AU07, operation manager, team leader)*

Unlike the first sub-theme which focused on high team task specificity, low team task specificity was also reported to influence the behaviours of team members who are not in leadership roles. Evidence for the role that low team task specificity plays in teams can be divided into several groups, which are reported in the following paragraphs.

Firstly, low team task specificity creates a different team environment in which members' engagement in task role behaviour would change. As an example, one Chinese team leader talked about the consequences of obscure job roles in the team, suggesting that this kind of job uncertainty would make members lose their passion for teamwork. Nevertheless, she also mentioned that team members with high levels of Conscientiousness were more likely to handle the uncertain situations by asking the leader to clarify their job roles.

*I can't imagine how a team works if everyone's role isn't clear. I can see that if a job is not clearly defined, individuals' work result will be downgraded, even if they are very talented or skilled. It's like you will lose passion in your job, you can't see the meaning of your job, and you start doubting about your*

*role in the team. In saying that, capable and responsible people are more likely to jump out from this blurred situation – they may require their boss to specify their roles. (CN01, financial manager, team leader)*

Secondly, low team task specificity is associated with a difficult situation where task or workflow related information is unavailable and therefore team members do not know how their roles fit into the team. Thus, the difficult situation keeps members from engaging in task role behaviour. As an example, one Chinese interviewee noted that only when team members' roles and their part in the workflow are clarified can they accurately engage in task role behaviour. This interviewee also pointed out the difficulty associated with low team task specificity that keeps members from task role behaviour – not having enough information to track job progress, find solutions to a problem, or keep deadlines.

*I believe only when you know your job well, and understand your team goal well, can you actually do the task behaviour. If you don't understand your job, or don't know how your role fits into the team, it's just difficult for you to work. And if you are unsure about your role, it is impossible to track others' progress or even handle emerging problems. Keeping deadlines is even more out of the question, because you don't know what to do with that timeline. (CN03, electrical engineer, team member)*

There are other examples for which low team task specificity was identified as a factor to keep members from engaging in task role behaviour. Two Chinese team members provided very similar comments on why they believe task role behaviour will drop when team tasks are not specified. According to these two interviewees, they do not feel comfortable or confident to engage in task role behaviour – such as tracking others' progress or keeping time schedules - when team tasks are not clarified. One of the interviewees described a member in the context of low team task specificity as amateur and mentioned that an amateur does not have the ability to support the team. Two excerpts are listed below.

*I would not feel comfortable to do task behaviour if I wasn't sure what I am supposed to do in my role. Thinking about a situation, I would say it will be very embarrassing for me to check up how others are doing it and remind them*

*of deadlines if I did not even know how I was doing my job. Again, it is impossible to fix any problems, or even notice problems, if I did not understand my job. For deadlines, it is easy to make sense of the dates, but to know what quality and quantity of jobs that you need to accomplish before a certain date, is not easy at all. (CN05, admin manager, team member)*

*If I do not understand my job well, I would not be confident to chase up others in my team at all. Again, if I am an amateur, I would not be able to solve problems or support my team. (CN07, company accountant, team leader)*

It is worth mentioning that one Australian interviewee drew on his own experience and reported that he often fulfils his own jobs before he became involved in any teamwork to achieve team goals, i.e., task role behaviour. As he reported, task role behaviour should come at a later stage, after his own task goals are achieved.

*Obviously, having job clarity in place, we can make sure that things are moving well, so progress can be tracked and problems sorted. At the moment I'm doing marketing, so I've got to make sure that the lead generation and everything is coming in nicely and properly – have very good lead generation ... Obviously, helping the team to track progress, analysing and solving problems, that comes at a later stage ... I think mainly for my case, it's to focus on my basic fundamentals of the job scope, I have to fully achieve. Then I can do the rest of things, like helping the company on a different aspect. (AU03, marketing specialist, team member)*

#### **5.3.4 Team Interdependence, Personality and Social Role Behaviour**

In terms of the role that team interdependence plays in the team and how it influences members' social role behaviour, two conflicting themes emerged from the interview data. Whereas high team interdependence was proposed to facilitate team members' social role behaviour by some interviewees, the opposite view that team interdependence does not influence social role behaviour was given by other interviewees. In this section, the researcher details the narrative evidence that supports these two conflicting themes.

#### *5.3.4.1 Team Interdependence Encourages Social Role Behaviour*

According to the responses from most interviewees, high levels of team interdependence encourages team members to engage in more social role behaviour. That noted, three different sub-themes can be observed from the interview data. Specifically, high team interdependence stimulates the expression of social role behaviour, such that (a) it is associated with more interpersonal relationship and task cooperation in the team which need to be maintained with care, (b) it brings stress and tension to the team which need to be eased, and (c) it highlights the importance of team morale and cohesion which need to be built and lifted. In the next paragraphs, the researcher provides a detailed report on the evidence that support the three sub-themes, respectively.

Firstly, there is evidence showing that when team tasks are highly interdependent, team members are more important to each other, in terms of both interpersonal relationship and task cooperation. As an example, one Australian interviewee mentioned that he needs the support from his colleagues in the team if he wants to do a good job himself. Accordingly, this interviewee engaged in social role behaviour, such as treating colleagues respectfully and being kind to them, in order to gain that support. He also talked about the positive feedback that his colleagues returned to him. The direct quote is provided below.

*Obviously, if I was to do well, I need their support, and for me to get their support I need to give them my respect, and just kindness and everything. If someone helps you, you help them back, or if you help someone, you get that same help back. (AU01, finance manager, team leader)*

Another Australian interviewee talked about the long-term and mutually dependent cooperation within the team, which makes the engagement in social role behaviour necessary. Also, social role behaviour was described as a strategy to avoid isolation from others.

*Yes, if you are going to be working with these people every day, you always have to maintain a good relationship, to avoid being left behind at all. (AU06, sales specialist, team member)*

Similarly, one Australian interviewee justified the engagement in social role behaviour when tasks are connected within the team, while offering several interpretations of social role behaviour, such as arranging members to have lunch together on certain work days, and letting team members have their own schedules to work with.

*Well, because roles in my team are connected, I've got to be more careful when treating other people in the team. You know, to create a sense of belonging, we organise everyone to have lunch together, around the big table, on Mondays and Fridays. Also, I give them room for their own play, so that they can manage their time in a manner that they are used to. (AU09, general manager, team leader)*

In a slightly different way, one Chinese team leader mentioned that he tends to see his colleagues as valuable resources because he depends heavily on them to fulfil his own job. The form of social role behaviour, as discussed by this interviewee, includes giving prompt rewards to members who did a great job and helping members who had difficulty in their job.

*Yes, definitely. I really care about how people in my team look at me, how they feel, and I often try to know how they do their jobs. I reward people who have done a great job in a timely manner, and I help those who have difficulty at work. In my view, the most valuable asset is people, especially those who are skilled, experienced, and with a good personality. This might be because I rely heavily on others to do my job. (CN01, financial manager, team leader)*

As a final example of the evidence supporting the first sub-theme, one Australian interviewee stated that the tasks in his team were constantly changing. Because many critical changes happened in the hands of his colleagues, this interviewee reported that he had to engage in social role behaviour to stay connected with other members in the team, in order to be updated with important task-related information.

*Yeah, I will, because the things that I achieve is what people need, and I need to talk to them to see what they need. Because the thing is actually changing. Take an example, the week before sales people requested me to order some product, and maybe a few days later what they need is actually changing, simply because clients have changed their minds. Things are actually changing*



*every day. So it's important that before you deliver the result, you kind of communicate within the team, is something changing? So, yes, I would say that's because the result actually was someone's need, so it's important to care about what they are feeling. (AU08, bookkeeper, team member)*

Turning to the second sub-theme, there is evidence showing that team leaders tend to engage in more social role behaviour when team interdependence is high, in order to lift team morale and build team cohesion. As an example, one Australian team leader mentioned that tasks in his team are highly dependent, and he often engages in social role behaviour in order to inspire his team members and raise team morale. According to this interviewee, it is critical for the leader to engage in social role behaviour if he wants the members to do the same. Thus, this interviewee introduced a critical viewpoint that a team leader may influence the behaviours of members in the team; the leader's behaviour may be observed and copied by the rest team members. The direct quote is below.

*My role does depend on my team members' performance, and therefore it requires me to have the leadership traits which inspire others. If I'm expecting them to be open-minded and friendly, I'll have to be the same. It cannot be just one-way communication in these types of roles. You have to respect others' ideas as well, or be open to others' ideas and opinions, and take them on board. But that is a very critical part, as your team will sort of observe and also behave the way you behave. There is a very strong likelihood if you're not walking the talk, then they will say, 'well, the manager says one thing and does something else', then it cannot be inspirational for them, and it will only send wrong signals down the track. (AU07, operation manager, team leader)*

As another example, one Chinese team leader talked about social role behaviour as a critical part of his job. By engaging in social role behaviour such as listening to members' suggestions and acknowledging their contributions, he was able to improve team cohesion and ensure that members contribute more to the team. Also, he engaged in social role behaviour to make his team members feel more engaged and satisfied.

*Actually, social role behaviour is the most important part of my work. In order to make individuals in my team contribute more, I need to constantly listen to*

*what they say and their suggestions, and acknowledge their contributions. I believe only in this way can I make them part of the business, and make them feel engaged and satisfied. (CN02, general manager, team leader)*

For the third sub-theme, there is evidence showing that that high team interdependence often comes with tension and stress, as team members have to deal with both tasks and interpersonal relationships. Some interviewees indicated that members tend to engage in more social role behaviour when team interdependence is high, in order to ease the tension and stress. As an example, one Chinese interviewee stated that she always engaged in social role behaviour – such as listening to other team members, recognising and rewarding their contributions, and using a mild approach to correct their mistakes, to reduce the tension associated with a highly dependent team context.

*I normally do lots of people behaviour for my team. I watch them working, offer support to their work if they are facing problems, provide guidance on new situations whenever they need. I believe doing such support can remove some of their stress. Also, if someone is really doing an excellent job, I would report to the management, and apply a pay rise or promotion to them. I listen to them when they want to talk about jobs, although I always know that their opinions are useless in most cases. But I will still listen, and once they finish talking, I will explain to them why their suggestions will not work, and what the better options are. (CN07, company accountant, team leader)*

#### *5.3.4.2 Team Interdependence Does Not Influence Social Role Behaviour*

The second theme regarding the role that team interdependence plays suggests that team interdependence does not influence members' social role behaviour. It was articulated by some Chinese interviewees that their engagement in social role behaviour does not change with the level of task interdependence. Specifically, two conflicting sub-themes can be identified under this theme. On the one hand, social role behaviour is not subject to team interdependence but should be part of team members' work behaviour. On the other hand, social role behaviour is not necessary for teamwork, regardless of team interdependence. The sub-themes and supporting evidence are detailed in the following paragraphs.

Firstly, social role behaviour was described as an important facet of one's job in a team. As an example, one Chinese interviewee mentioned that she always engages in social role behaviour regardless of whether tasks are mutually dependent, because she values the interpersonal relationship in the team and wants her colleagues to have positive comments on her. The direct quote is below.

*Actually, no matter if I reply on others to do my job or not, I really care about how people see me, and what they might talk behind me. So normally I try my best at work, and I value my relationship with co-workers. (CN04, medical assistant, team member)*

Similarly, another Chinese interviewee mentioned that he kept engaging in social role behaviour even though his role was not highly reliant on that of others. He defined himself as 'a nice person' and therefore he chose to engage in social role behaviour to treat his colleagues in a nice way. Also, he stressed that he would not change his attitude towards social role behaviour if he is shifted to a workplace that has high levels of team interdependence.

*My role is not highly dependent on others, but I am nice to my team members, caring about their feelings and admitting their performance. I am a nice person, and I want to be nice at the workplace. But even if I am shifted to another team in which jobs are highly dependent, I would not think that I will change my attitude and try to be nicer. In my view, being nice is a basic thing, but no need to exaggerate it, even though you depend on others to complete your work. (CN06, customer care officer, team leader)*

Another Chinese participant talked about positive interpersonal relationships as a symbol of career success. By referring to social role behaviour as part of Chinese culture, this participant stressed that caring about colleagues and building rapport across the team was an enjoyable experience.

*It is an important Chinese culture that people at the workplace will try to maintain good work relationships, not excluding myself. I feel quite comfortable and enjoyable building the rapport and maintaining the relationships with my co-workers. For me, interpersonal relationships at work*

*is an important aspect of personal success. (CN10, marketing specialist, team member)*

Secondly, the appropriateness of engaging in social role behaviour in a team setting was questioned. As an example, one Chinese interviewee claimed that it was not necessary to engage in social role behaviour at the workplace, because such behaviour was supposed to exist only between friends but there was no friendship among team members. In particular, he stressed that there are competitions between members by giving an example of pay rise or job promotion. This interviewee then noted that he would rather keep the interpersonal relationship simple and focus on work than engage in social role behaviour.

*I am not a believer in the idea that friendship can exist at the workplace. My team members, or colleagues, or supervisors, are not my friends. What is a friend? It is hard to define, but one thing can be sure, is that friends do not have to compete. At the workplace, one is always competing, trying to do better, and get a pay rise or promotion. But if you get a pay rise or promotion, your colleagues will not be happy. Everyone believes that the self is always the one who deserves to be treated better. Therefore, I have to be harsh to people working around me, well, not really very harsh, you know, but just more focusing on work, not focusing on them personally. (CN10, marketing specialist, team member)*

As another example, one Chinese interviewee reported that he did not engage in social role behaviour no matter whether tasks were dependent or not. He also denied having friendships at the workplace by claiming that members work together in a team only to achieve some task goals not to make friends. According to this interviewee, the engagement in social role behaviour may distract team members from task goals which are crucial to the team. In particular, this interviewee stated his attitude against certain social role behaviour. He opposed listening or showing respect to other members' opinions especially when it was known that these opinions are incorrect, which can be a waste of time. The direct quote is provided below.

*No, I never devote time to caring about people in the workplace. Only kind people pay attention to how other people think and feel, but kind people are*

*more often than not small potatoes, and they will never be influential in a business. Talking about working in a team, the only reason you and other people are in this team is that you are working towards a common goal, you want to make a profit. You don't need to care about how they feel, because you are not friends. Talking too much about feelings will make a person miss the point, which is not good at all for work. And both my boss and I found it ridiculous to respect others' opinions at the workplace when you know such opinions are wrong, and you don't want to waste your time listening to these useless things. (CN09, operation manager, team leader)*

### **5.3.5 Social Role Configuration and Member Satisfaction**

Although the quantitative data analysis did not identify a significant relationship between social role configuration and member satisfaction, the qualitative data presented a different story – i.e., many interviewees reported that social role configuration may contribute to member satisfaction, with a variety of interpretations provided. Overall, two themes can be identified from the data. Firstly, social role configuration is a contributor to member satisfaction. Secondly, social role configuration contributes to member satisfaction but it is subject to some conditions. Both themes and relevant evidence are detailed in the following paragraphs.

#### **5.3.5.1 Social Role Configuration Contributes to Member Satisfaction**

For the theme suggesting that social role configuration is a contributor to member satisfaction, the relevant evidence has three parts: (a) social role configuration is associated with a spread of positive energy across the team which makes team members feel more satisfied; (b) high levels of social role configuration makes team members feel valued and respected; (c) social role configuration facilitates empathy between team members and enhances member satisfaction.

As an example, one Australian interviewee proposed that collective social role behaviour, or social role configuration can create positive energy and spread it across the team, which makes members feel happier. In particular, he described the positive energy and how it spreads and enhances member satisfaction as “virus effects”.

*Obviously, the more people-focused behaviour there is, the more satisfied the team will be. Again, relating to some of the questions there, the more people*

*with a positive energy sort of thing, it is like a virus, it spreads, so everyone else will be happy, and they will be showing more respect to each other, and would be caring about others and also contributing to each other as well. Definitely, if there's more people with a good energy, it will spread to everyone else, and it would be a good outcome. (AU01, finance manager, team leader)*

Similarly, another Australian interviewee indicated his thoughts that collective social role behaviour enhances member satisfaction by making team members feel more important and respected. He explained his viewpoint by referring to one of his sales strategies, namely, assuming that his clients had a “signage around their neck” asking to make them feel important. He also stressed that “everyone wants to be a cog in the wheel”.

*Yes, of course. Because the same sort of answers, people love to feel that they're respected. People in sales, one of the things in sales is that, one of the tricks in sales is that we pretend that everyone that we speak to has got a sign around their neck 'make me feel important', because everyone loves to feel that they are important. Everyone wants to feel that they are a cog in the wheel. (AU02, sales director, team leader)*

In another example, one Australian interviewee proposed that empathy is associated with the collective social role behaviour which can create a good work climate. According to this interviewee, team members are more satisfied when they empathise with each other, especially when “a feeling of friendliness” is acknowledged by all team members.

*Everyone on the team should be involved in people-focused behaviour, because if members are able to empathise with each other, then it creates a better work environment. That is ideal for achieving whatever team task they have to achieve, because they all empathise, they're on the same board. If you're able to inculcate a feeling of friendliness, caring towards each other in the team, then the team is likely to be more satisfied. Also, they will be more productive as well. (AU06, sales specialist, team member)*

#### 5.3.5.2 The Conditions

However, there was evidence that social role configuration as a contributor to member satisfaction is subject to some conditions. As an example, one Chinese interviewee talked about the importance of social role configuration but he also stressed that it does not contribute to member satisfaction until acceptable team performance is achieved.

*Individuals care about others and respect others; it is a critical thing, but this alone can't guarantee satisfaction in a team. In my opinion, another more important aspect that contributes to team satisfaction is team performance. Good interpersonal behaviour will make everyone in the team more satisfied after team performance is achieved. If a job isn't done, people's behaviour will not lead to higher satisfaction. (CN01, financial manager, team leader)*

Another example of this type of responses comes from a Chinese interviewee who talked about the role that social role configuration plays in influencing member satisfaction while providing more specific evidence. Specifically, he mentioned that for a team to be more satisfied all team members have to meet their timelines and accomplish their KPIs. Also, he stressed that getting jobs done should have the priority over team members' personal feelings.

*I think people in my team are more likely to be satisfied if jobs are perfectly done, timelines are met, and KPIs are achieved, because it means everyone will have a better mood and better pay. If people are merely trying to be mutually nice but not moving forward, at the end of day, everyone will be fired. So, jobs always come first, and personal feelings next. (CN06, customer care officer, team leader)*

As a slightly different example, one Chinese interviewee distinguished between “feeling better” and “feeling more satisfied”. By referring to his own experience, this interviewee reported that high levels of collective social role behaviour may make him feel better as a person but having his performance valued will make him feel satisfied.

*Again, my answer to this question is no, just as I mentioned somewhere in previous questions. When working, I will feel better if I am more respected and acknowledged as a person, but I will only feel satisfied when my work performance is acknowledged. (CN08, electrical engineer, team member)*

A final example comes from another Chinese interviewee who stressed that higher social role configuration may enhance member satisfaction on average, but such effects should exclude the team leader. It was not a good idea, this interviewee felt, for a team leader to be involved in too much social role behaviour, because part of the leader's role was to review and regulate other team members' jobs. As suggested by this interviewee, focusing on the interpersonal relationships with or showing too much care to poorly performing team members, would damage the teamwork and bring frustration to other team members.

*In my view, for people who are in basic positions, a big amount of people behaviour like caring for each other, and trying to be friends with each other is good for the team, because it can create a pleasant work climate. If they like each other, they will cooperate better. But for the boss or team leader, showing too much care or respect for people in the team is harmful, especially when people in your team are not performing as good as you expected. Showing respect and care to those who did a mess in their role will ruin a team, and incur frustration for everyone. (CN10, marketing specialist, team member)*

### **5.3.6 Team Task Specificity and Team Performance**

While the quantitative data analysis did not support team task specificity as a contributor to team performance, the qualitative thematic analysis showed a markedly different story. Specifically, there was consensus in both samples that team task specificity is an important contributing factor to team performance. That noted, a variety of explanations regarding the role that team task specificity plays in enhancing team performance can be observed from the interview data. Overall, two themes can be identified. Firstly, team task specificity contributes to team performance. Secondly, team task specificity as a contributor to team performance is subject to some conditions. Next, the evidence that supports these two themes, respectively, is detailed.

#### **5.3.6.1 Team Task Specificity Contributes to Team Performance**

For the first theme suggesting that team task specificity is an important contributor to team performance, the supporting evidence shows that highly specified job roles are associated with (a) better usage of time; (b) enhanced task cooperation; and (c) reduced chance of member-task misfit. As an example, one Australian interviewee mentioned



that team members need to know their roles as well as how their roles fit into the team's workflow from the beginning to the end, in order to have the team performance improved.

*Yeah, task specificity definitely influences team performance, because everyone's got a part to play, and they need to know what to do. It generally all starts from the beginning process, and it obviously feeds back into different departments. As long as they know what they're doing, and that is their role and they follow that, it will definitely increase performances, and results and stuff. (AU01, finance manager, team leader)*

Similarly, another Australian interviewee stressed the importance of having high levels of task specificity in the team and he outlined how each member's role is different in his team. According to this interviewee, not only should team members know their own job roles, they also need to know that of others in their team. A good understanding of everyone's role in that team, as reported, is essential for members to cooperate with each other and work towards the common goal.

*I think the office girls have their specific roles, and they've got their jobs to do, so they're pretty clear. We've got our marketing girl, and her job is to get the phone ringing, and she's got her KPIs there. The sales guys, they're clearly defined. We want them just to focus on sales. Of course, what's important is that we all recognise each other's roles, and help each other to achieve that goal. So, there's a few checks and balances there that we have in place, that try and help that along. (AU02, sales director, team leader)*

Another Australian interviewee also mentioned the importance of team task specificity in influencing team performance from the perspective of member cooperation. In particular, he stressed that team members need to help each other especially when their own tasks are completed. High levels of team task specificity enable team members to think about a broader picture and engage in more helping behaviour.

*Obviously, job clarity in the team is important, because that actually affects the team performance at the end of the day. For a good team to have good performance, all the team mates have to be initiating to help each other. Sometimes you're within the job scope, but if you've already achieved what*

*you have to do in your job area, then you can help the other team mates, to speed up the thing. So that this way, the entire team performance will be leveraged. We shouldn't sit on the narrow thinking of just focusing on our job scope. Sometimes we've got to think about the broader picture, like helping the team when they need it. (AU03, marketing specialist, team member)*

Differing slightly from the previous examples, one Australian interviewee explained that high team task specificity helps to direct the external queries to the correct team member and it ensures that all problems went to the member who was in charge. This correct assignment of tasks/cases, as discussed, contributes to team performance, as problems can be sorted in a fast and effective manner.

*If the overall job clarity is high, everybody knows what they are doing, then I know if there's some problem coming up. I know I should talk to that person. So I would say it will influence the team performance. As long as you can find the right person to whom you direct the problems, I think that's fine. But if the job role is not clear, we don't know how to transfer the information to the right person. (AU08, bookkeeper, team member)*

By referring to his own experience, one Chinese interviewee stressed that high team task specificity is vital for the performance of project management teams. He talked about the situation of his own team where people work based on projects. As identified, for the whole team to work smoothly, a thorough understanding of one's job roles and responsibilities is needed. In particular, this interviewee talked about the techniques which his team used to ensure job role clarity – using some workflow management platforms where each team member works in a specific section and follows the required procedures.

*Definitely it will. For example, my team mainly deals with projects, and the teamwork is actually based on every project. We have sales people, customer care person, admin person, labours, and accounts person. One project flows from one person to another, and it's like an assembly line. Therefore, everyone knowing their job, how they fit in the team, and what result is expected from their role, is critical for success of the whole team. To ensure jobs are clear to everyone, I believe there are some techniques from which we can benefit.*

*For example, we do use some online platforms, which enable everyone to work under certain tabs following certain procedures, to make sure all steps are done correctly. (CN02, general manager, team leader)*

Another Chinese interviewee also referred to his own experience when talking about the important role that team task specificity plays in affecting team performance. This interviewee described everyone's role in order which forms a complete workflow, from making the sales, customer care and communication, administration and implementation.

*Whether a team can deliver good results depends on everyone knowing their role, how their role is linked with other team members, and fulfilling their roles. If the salesmen do not know that they are supposed to do sales and how they can increase the chance to close a sale, then I have no project designs to work on, and the implementation team has nothing to do. If I did not know how to draw schematics, then we would have nothing to show the project owner and implementation team. If the implementation team always does a bad job, then all efforts by the sales guy and myself, as well as that of the admin team, will be wasted. (CN06, customer care officer, team leader)*

By contrast, some other interviewees talked about team task specificity as a contributor to team performance from the perspective of low levels of team task specificity and its detrimental effect on team performance. For example, one Australian interviewee described low team task specificity as an indicator of confusion, conflicts, and repetitive discussion about work. According to this interviewee, if jobs are not clearly defined, members may interfere with each other's job or might be doing their job incorrectly.

*Of course, until there is a job clarity everyone needs to know what they have to do. So that somebody is not interfering in another person's job, and the other person is not getting involved in endless, less confusion, the jobs are clearly defined. It's well defined. So, yeah, if it is not defined, if there is no job clarity in the team, people will be doing different things which they should not be doing, and we won't get the result. (AU05, business development manager, team leader)*

As another example, one Chinese interviewee mentioned the negative effects that low team task specificity may have on team performance. In particular, he stressed that if members have to spend time checking what they should do and how to do it, they are more likely to waste time rather than focus on the important job tasks.

*If people spend time figuring out what their jobs are and how to do the jobs, they absolutely have less time doing the actual work that really matters. I think it is definitely harmful to team performance. (CN01, financial manager, team leader)*

#### 5.3.6.2 The Conditions

Distinct from the first theme, the second theme suggests the conditions of the relationship between team task specificity and team performance – i.e., team task specificity contributes to team performance but only under certain circumstances. As an example, one Australian interviewee suggested that task specificity contributes to team performance only when there is a fit between team members and their job roles.

*Once we have company objectives, then it is the job of the manager – in my case how I do that in filtering that responsibility and targets to individuals and sub-groups within the team. So if they are not achieving the target, then I will not be able to achieve my target. So it is an interlinked thing, and, yes, you can single out if you haven't got the right person, then obviously you focus on that, and see if you can help them improve. If it's a case that it's a total misfit, then you probably look for another person there. Having job clarity for individuals and also goal clarity is very important for achieving the overall team objective. The performance, obviously if they perform well the objective will be achieved, as long as they are realistic objectives. (AU06, sales specialist, team member)*

Similarly, one Chinese interviewee talked about the importance of team task specificity and the role it plays in team performance, but he added that team task specificity contributes to team performance only when team members are not coasting on each other – i.e., each team member should perform equally acceptably. In particular, he mentioned that not only the team performance but each members' individual job performance should be assessed to avoid the social loafing behaviour.

*Yes, job clarity plays a big role in how my team works. You can't do your job unless you understand what your jobs are, and how to do them. But high job clarity doesn't necessarily mean good team performance. One situation is that you are in a team where members like coasting on each other. Even if all members in the team understand the job quite well, the teamwork didn't work out, because some people are not working. So I think performance evaluation not only on a team basis, but also individually, might help further. You know, although you are used to coast on others, you can't do this anymore once the team assesses your own performance. (CN03, electrical engineer, team member)*

Another Chinese interviewee suggested that team task specificity plays an important role in affecting the performance of team that are at the basic level of an organisation. However, the positive linkage between team task specificity and team performance, as discussed, did not apply to senior management teams who were believed to face constant changes and thus had low team task specificity. In particular, he talked about the difficulty that a senior management team can have when dealing with changing environments.

*The more basic job you do, the more that job clarity will influence your performance. In my team, because most team members are actually doing basic functions, so if their jobs are clear to them, it is directly linked with team performance. In saying that, I don't think the same situation will apply to senior managers, simply because management is more like art. First, you can never say that your job is clear enough, because your job is to point out a right direction for the team; again, really hard to tell what is the right direction in advance. Managers don't have rules to stick to. You know, some rules can be correct in one situation, but can also be useless when the situation changed. So I would say, the answer to this question depends on who you are talking about, basic position workers, or team leaders as we call senior managers. (CN09, operation manager, team leader)*

There were, however, some interviewees who indicated that team task specificity was only a minor contributing factor to team performance and talked about other factors that might be more important. For example, one interviewee stressed that team

members' capabilities, work habits, communication skills, and many other factors were more important contributing factors of team performance compared to team task specificity.

*I believe that job clarity does matter for sales positions in my team. You know, it is hard to imagine that salespeople don't know what and how to close sales. However, things are a bit different for other roles. You know, for after-sales job roles, maintaining certain level job clarity is necessary for performing your work, but I cannot find much reason why good team performance has a link to job clarity. I believe good team performance relies on good performance of everyone in the team and effective teamwork. For sales roles, it's more like that talented people will do better. But for other roles in my team, like after-sales processing, customer service, or admin, how good you do your job depends on how smart you are, how you pay attention to details, and whether you have good work habits – just too many things. And the teamwork depends on everyone's communication skills and the overall work atmosphere. In my view job clarity is just a minor factor for team performance. (CN10, marketing specialist, team member)*

To summarise, on the one hand, the exploratory thematic analysis has explored the phenomena which were hypothesised but not supported by the quantitative data. Firstly, whereas Openness as a predictor of team members' role behaviours was not supported by the survey data, the qualitative analysis shows that people high in Openness may engage in more task role behaviour from the perspective of team information synchronisation, using team resources and self-learning. There is also evidence showing that people high in Openness may engage in more social role behaviour from the perspective of empathy and internal drivers for a successful team. Secondly, whereas Extraversion as a predictor of team members' role behaviours was not supported by the survey data, the qualitative analysis shows that extraverts may engage in more task role behaviour from the perspective of communication and personal ambition. Thirdly, whereas social role configuration as a predictor of member satisfaction was not supported by the survey data, the qualitative analysis shows that a high level of collective social role behaviour may enhance member satisfaction in a number of ways, such as spreading positive energy through the team, or making members feel important and respected. There is also evidence that the role that

collective social role behaviour plays in member satisfaction may be subject to some conditions – e.g., acceptable team performance. Fourthly, whereas team task specificity as a predictor of team performance was not supported by the survey data, the qualitative analysis shows that team task specificity contributes to team performance in a number of ways, such as clarifying job roles and workflows, facilitating member cooperation, reducing member-task misfit, and reducing confusion and time-wasting. There is also evidence showing that the role that team task specificity plays in team performance may be subject to some condition – e.g., minimum social loafing behaviour.

On the other hand, the exploratory thematic analysis has provided more details to understand the hypotheses which involve complex cross-level effects. Firstly, for the posited effects that team task specificity has on the personality - behaviour relationship, the qualitative data shows that team task specificity may facilitate or suppress members' engagement in task role behaviour, excluding team leaders or senior managers. The evidence shows that team leaders tend to engage in task role behaviour constantly regardless of whether their tasks are specified or not. Secondly, for the posited effects that team interdependence has on the personality - behaviour relationship, the qualitative data shows that high team interdependence may facilitate members' engagement in social role behaviour from the perspective of members' mutual support or team cohesion. But there is also evidence that people may engage in social role behaviour regardless of the level of team interdependence, as a strategy to maintain good interpersonal relationships. By contrast, there is still evidence that some people do not support engagement in social role behaviour, regardless of the level of team interdependence.

Taken together, by conducting the exploratory thematic analysis, important themes and relevant evidence have been identified which may help to interpret the statistically non-significant results as well as the phenomena which involve complex cross-level effects. These themes and evidence are integrated with the corresponding quantitative results which are further discussed in Chapter 6.

### 5.3.7 Additional Themes

In addition to the themes reported and discussed so far, some interviewees drew on other themes to respond to the interview questions, which the researcher felt were important to help answer the research questions. Table 5.4 lists these themes and relevant evidence.

**Table 5.4 Additional Themes Emerging from the Interview Data**

Themes	Summary of Evidence
The counter-productive effects that neuroticism has on teamwork	People high in neuroticism can spread a negative mood across the team and they gradually get isolated.
Personality traits that are important to teamwork but not covered by the FFM dimensions	<p>Taking the initiative to work is described as a trait that identifies the best team members from the rest.</p> <p>Apathetic people work without passion and they should be avoided in teamwork.</p>
Contradiction between team task specificity and job autonomy	While team members reported that team task specificity was a prerequisite for their engagement in role behaviour, some team leaders believed that it was better to create a work environment in which team members worked with autonomy.
The effects of leaders' personalities and behaviour on members' behaviour in the team	Team members may be influenced by their leader's personality traits, and they may copy their leader's behaviour. Therefore, if the leader wants the members to behave in certain ways, he/she must set the example.
The alignment of role behaviour and leadership	Only team leaders should engage in task role behaviour and social role behaviour.
The dark side of social role behaviour	<p>Team members should avoid engaging too much in social role behaviour, as it distracts them from focusing on their tasks. It is the leader's role to engage in social role behaviour and keep the team united.</p> <p>Members engaging in too much social role behaviour are unlikely to have successful careers, as they care too much about others' comments.</p>
Different job roles in the team require the engagement of different role behaviour	Some job positions are more result-focused, and require members to engage in more task role behaviour, while other positions involve more cooperation or interactions between team members, and therefore these positions require more social role behaviour.
There should be a match between members' job profiles and their personality traits	Team leaders should make sure that members with different personality traits are allocated to job roles that match their personality traits, in order to deliver better team performance.



#### 5.3.7.1 Neuroticism in Teamwork

One such theme is the counter-productive effects that neuroticism may have on team functioning. For example, one Australian interviewee talked about Neuroticism by explaining why people with a high level of Neuroticism are not suitable to work in a team environment. This interviewee felt that neurotic people could not regulate their own emotions, and were likely to spread negative moods across the team. As such, he felt that neurotic people are unlikely to continue working with other team members and build a long-term, healthy work relationship at the workplace. This interviewee also observed how neurotic people might be gradually isolated from other people in the team, which is clearly counter-productive to positive team outcomes.

*As a personal experience working in this role for the last few years, I realised that there's no point being upset or angry in the day. It's always good to be happy, especially with the people around you, like the sales team as well. I could be upset about something, or I could be angry at something, but there's no point because at the end of the day, you're going to be here tomorrow and working again. Getting irritated easily can get you isolated from the colleagues, and you will find you no longer enjoy coming to work if you are isolated. So I believe I can get upset at certain things but I don't, and I feel that it actually makes the working experience better. It makes the day better, and it just gives an overall, a better result, a better outcome, a more positive environment. That's the only thing I can add to it, I guess. (AU01, finance manager, team leader)*

#### 5.3.7.2 Traits Not Covered by the FFM

The drive to take the initiative and get jobs done, was described as a key personality trait that identifies the best team players from the rest. Specifically, one Australian interviewee believed that autocratic people are always acting to complete jobs, without being reminded or pushed to do so. By contrast, democratic people, as described, always wait for other people to initiate a job, and then get themselves involved.

*I like to work with people who are autocratic, because basically it means that people who automatically will drive things, get things done. Not always pushing and taking a long time to get things done. Democratic people will be looking at the opinions of team mates. They might not be driving most things.*

*They will only drive when things have been told. So say we agree, we just do it together, but not starting or initiating. You will be waiting for another person to take the initiative, or waiting for other people's opinions before you start a particular task. (AU03, marketing specialist, team member)*

Conversely, one Australian team member talked about the personality trait 'apathy', which is not covered by the FFM personality traits. According to this interviewee, people who are high in apathy are not passionate about their jobs, nor do they feel part of the team. The reason they work is purely personal – to get paid or stay employed. As such, this interviewee felt that the people with a high level of apathy are unlikely to deliver any satisfying results, and they cannot become good team players.

*Personally, I avoid working with people that are apathetic – they're just doing the job for the money, or they're doing it because they need a job, or they're doing it because they have to. These people are indifferent to everything and they work without passion. I can't rely on apathetic people to deliver results, and I know they can't be good team players. So I'm not interested in working with apathetic people who are just doing it for a reason. I want people that are doing it because that's what they really want to do – people work with a passion. (AU02, sales director, team leader)*

#### 5.3.7.3 The Conflict between Task Specificity and Job Autonomy

Another theme is the conflict between task specificity and job autonomy. The majority of interviewees who are not in a leadership role noted that task specificity is a prerequisite of job completion, but it might be viewed differently by team leaders. According to one Australian team leader, for example, instead of articulating every task that team members needed to complete, it was better if managers create a framework and environment in which team members have some autonomy to work.

*What I'd like to say, is that in most situations people don't work – unless it's an emergency situation – people don't work well when they're given commands. So a manager probably needs to be more visionary and collective in their approach rather than command oriented. Of course, if there is a fire, then you have to give commands, do this, do that, and get out, whatever, so you can't be looking at a collective approach there. In the general business*

*environment, the manager sets the vision, and then creates the framework and environment for the team to achieve those visions and objectives. (AU07, operation manager, team leader)*

#### *5.3.7.4 The Effects of Leaders' Personality*

Regarding the importance of individual personality, some interviewees suggested that team members might be influenced by the leader's personality and behaviour. For example, one Australian manager described the leader's personality as "defining the organisational culture". This interviewee suggested that team leaders would have effects on a team, such that their personality and behaviour might be copied by team members – i.e., people would behave in line with their leader's behaviour.

*As a manager, you need to get down to people's personalities and behaviours, and work with them to think collectively rather than individually; they still have to think individually but keeping the collective tasks in mind. Team members will do what they observe you do, so the leader has to be walking the talk all the time; that what you expect from others you have to do yourself. If you expect them to be caring and empathise with others, then you have to do the same as well. So your personality is a great question, and in some ways that sort of behaviour and personalities start to define your organisational culture as well. (AU07, operation manager, team leader)*

#### *5.3.7.5 The Alignment of Role Behaviours and Leadership*

It is also relevant to note that social role behaviours were identified as a team leader's job and beyond the responsibilities of team followers. For example, one Chinese interviewee suggested that caring for colleagues' feelings or acknowledging their contributions – i.e., social role behaviour – should be the manager's role, and thus team followers should not engage in social role behaviour.

*I think people behaviour exists in every workplace. As an employee, our opinions and contributions are acknowledged by supervisors or managers. But, it feels to me that, if normal team members who are not managers try to do much people behaviour, it will ring the alarm for me. Such people might have a personality to cater to others deliberately, and I do not think it is necessary. (CN08, electrical engineer, team member)*

Likewise, task role behaviour, which concerns the progress of the entire team, was referred to as part of the team leader's role rather than that of team members. For example, one Chinese interviewee reported that he understands his own role and responsibilities but he does not worry about engaging in task role behaviour such as tracking the team's progress. Instead, this interviewee described task role behaviour as teamwork which falls into the team leader's responsibility.

*Normally I'm not the person to think about the whole picture. Yes, I understand my job and my role very well, but things like tracking progress are not my job, so I will not worry too much about it. As said, I think working at the team's level is what the leader will consider. (CN04, medical assistant, team member)*

Similarly, another Chinese interviewee talked about task role behaviour as part of the leader's job. In particular, he talked about how his team operates. The leader, as he explained, engages in task role behaviour such as making work schedules and allocating the workload to different team members. A coordinator, as he said, also engages task role behaviour especially focusing on progress tracking.

*Actually, helping the team to maintain progress and work smoothly, or handling some unexpected problems, are what our team leader does. We have a leader who does a good job developing business. We have progress meetings on a weekly basis, and this is the time when the leader analyses how everyone has worked in the current cycle, what problems we are facing, and what timelines we are in. Actually, we also have a coordinator who constantly follows up the problems that the leader has pointed out. So you see, tracking progress or solving group level problems is not in everybody's role, and I would not think that will change if my job is clearer to me. (CN10, marketing specialist, team member)*

#### 5.3.7.6 The Dark Side of Social Role Behaviour

Another interesting theme that is not covered by the research agenda but may help answer the research questions, is the dark side of social role behaviour. While the negative dimensions of social role behaviour were not explored as part of the formal research questions, it was mentioned by some interviewees. Specifically, there was a

sense in which interviewees felt that team members should focus more on getting tasks done, rather than getting involved in too much social role behaviour which was not directly contributing to task goals or team performance. For example, one Chinese interviewee felt that people who engage in too much social role behaviour are unlikely to be very successful in their careers, as they care too much about others' comments.

*My previous manager said that only kind people will care more about how others feel and think. You might think that kind people paying attention to others is a good thing, but others believe that it is extremely difficult for kind people to be very successful. They might be doing OK, but will never be excellent. (CN09, operation manager, team leader)*

#### 5.3.7.7 Job Positions and Role Behaviours

According to one Australian team leader, an effective job profile is a critical condition of role behaviour as a contributor to team performance. This interviewee felt that some positions in a team might not involve many interpersonal activities, but require more task achievement, and therefore task role behaviour is especially important for these positions. Other positions, as discussed, may require lots of interaction with people, and in these positions social role behaviour plays an important role in ultimate job performance. According to this interviewee, task role behaviour and social role behaviour are combined and positively contributing to team performance, and it is the manager's role to make sure team members' role behaviour match their job positions.

*It's always better to have a right balance of thought. We need to have people-focused behaviour people, and we need to have task-focused behaviour people. It's about finding who suits which role. It's about, like management needs to make the decision, OK, this person is suiting for this role, because he's more of, well, people-focused behaviour. If somebody is really focused on the task, he needs to be put in that kind of a profile. So that right balance is what actually the company needs, and that is even beneficial for these employees as well. It's not a good idea to get in someone who's like more people-focused behaviour, getting him to do a task where he doesn't need to interact with many people. Except for the management finding the right group or the right people. (AU05, business development manager, team leader)*

#### 5.3.7.8 Job Positions and Personality Traits

In addition, some interviewees suggested that there should be a match between team members with different personality traits and their job roles. For example, one Chinese team leader talked about the way in which personality may or may not complement the position: a team member who is outgoing and careless, they said, might not be suitable for administrative positions, but could be a good match with a sales position, because he/she might be very good at building rapport and making sales.

*I just want to add that for management position, it is really important to know how to match people with different personalities with different positions in the team. A certain personality might be an asset for position A, but not suitable for position B. An outgoing but careless person will do a very bad admin job, but might be a good salesperson. A quiet person might not be good at sales, but may do a great admin job – it's all about matching correct people with correct positions. (CN02, general manager, team leader)*

### 5.4 Chapter Summary

This chapter has reported the qualitative data analysis procedures and findings, which allowed for more depth in understanding the quantitative results. First, the qualitative findings further addressed the research hypotheses that were supported by the quantitative data, by offering individual team members' interpretations of the hypothesised relationships, which formed the confirmatory thematic analysis of the qualitative phase. Second, an exploratory thematic analysis was conducted to utilise the qualitative data to further explore the hypotheses that were not supported by the quantitative data. Lastly, the themes that emerged from the interview data but were not directly associated with the research questions were identified and presented. These themes represented how some interviewees answered the interview questions by drawing on their own experiences, as well as their observations of working in teams. The qualitative results are integrated with the quantitative results and further discussed in Chapter 6.

## **CHAPTER 6 DISCUSSION AND CONCLUSION**

### **6.0 Overview**

This chapter is organised into five sections. Firstly, the main thesis objectives are reviewed and the key findings of both phases are summarised. Secondly, the theoretical contributions of the study are discussed in terms of how the integrated findings addressed the major research question: ‘What is the relationship between individual member personality and team effectiveness?’ The associated research questions are also examined here in light of the quantitative and qualitative findings. The findings are then compared with those of previous studies to ascertain how this study can provide empirical evidence for, or an extension to, existing relevant theories. Significantly, valuable findings from the rich qualitative data are explained in this chapter, which may add new knowledge to personality in work teams. Thirdly, practical implications are extracted from the findings and interpreted in terms of how they may inform current management practices. Fourthly, a Research Outcome Model (ROM) is discussed in terms of how it differs from the original research model and what it means. This chapter concludes with a discussion of potential directions for future research.

### **6.1 Thesis Objectives Revisited**

As noted in Chapter Two, traditional team composition research has focused on the impact of aggregated personality on team outcomes (Bell 2007, Bell and Kozlowski 2012, Maynard et al. 2012, Crawford and LePine 2013, Colbert, Barrick, and Bradley 2014). According to Humphrey and Amie (2014) however, one limitation of this approach is the assumption of individual homogeneity, which overlooks individuals’ potentially unique influences on team dynamics. To address this limitation, the current study has sought to integrate team composition research with four theories central to personality research in teams. In particular, the study examined whether the effects of individuals’ personality traits on team effectiveness can be understood through individuals’ role behaviour and team-level role configurations in certain team contexts, namely, different levels of team task specificity and team interdependence. Two consecutive phases – quantitative and qualitative – were conducted to investigate the research questions, the findings of which are integrated and discussed in this chapter.

Overall, the study makes several important contributions to contemporary literature on the effects of personality traits on team effectiveness. Firstly, it has validated team members' role behaviours as the connection between individual personality traits and team effectiveness, as suggested by other researchers in the field (Sluss, Van Dick, and Thompson 2011, Killumets et al. 2015). Specifically, it has used the TREO dimensions to operationalise role behaviour and has thus examined how the FFM personality traits predict role behaviour and how group-level role behaviours (role configurations) predict team performance and member satisfaction. In this regard, the study demonstrates that members' role behaviour is an important element in teamwork because it transfers the effect of individual personality traits onto team outcomes.

Secondly, this study has examined whether team task specificity and team interdependence moderate the relationship between personality and role behaviour in a 'top-down' manner; namely, team-level variables moderating the relationship between individual level variables. Thirdly, the study adopted a two-stage design to obtain a rich understanding of the core research phenomena concerning personality, behaviour, and team effectiveness. Whereas the first quantitative phase tested the hypotheses and provided statistical evidence for personality and role behaviour as contributing factors to team effectiveness, the second qualitative phase captured individual interpretations of these research phenomena. In addition, the study has collected data from the corporate sector instead of using military or student teams which have been the focus of previous studies. Finally, the study reported the different findings across two countries, suggesting an opportunity for future research exploring the impact of culture on personality in teams.

## **6.2 Summary of Findings**

### ***6.2.1 Integrated Results: Personality-Behaviour Relationships***

The integrated findings on the relationships between personality traits and both forms of role behaviour have answered the research sub-questions 1 and 2:

- (1) What is the relationship between individual team member personality traits and task role behaviour?
- (2) What is the relationship between individual team member personality traits and social role behaviour?



Specifically, the statistical results (Phase 1) demonstrated that Conscientiousness and Openness predicted task role behaviour, and Agreeableness predicted social role behaviour. Neuroticism, on the contrary, was found to be negatively associated with both task role behaviour and social role behaviour. However, the hypothesised relationship between Extraversion and role behaviour was not found.

In contrast, the qualitative findings (Phase 2) offered more nuanced evidence to explain these personality-behaviour relationships. Firstly, individual team members high in Conscientiousness were described as internally driven to achieve task goals or having better work skills and therefore are more likely to engage in task role behaviour. Secondly, members with a high level of Agreeableness were seen by the majority of Chinese interviewees to engage in more social role behaviour to build good interpersonal relationships in the workplace. However, most Australian interviewees presented a slightly different perspective: they believed that agreeable people engage in social role behaviour only up to a limit – they do not engage in excessive social role behaviour simply because they are not paid for such behaviours. Thirdly, individuals with a high level of Neuroticism were reported as unlikely to engage in both forms of role behaviour because they were seen as having difficulty in cooperating with each other and could build up resentment easily within the team. Fourthly, there was some limited evidence supporting Openness as a contributor to task role behaviour from the perspective of within-team information synchronisation and learning process. Fifthly, only limited evidence was found to support Extraversion as a contributor to task role behaviour from the perspective of communication skill and personal ambition, while no evidence was observed to support the relationship between Extraversion and social role behaviour.

### ***6.2.2 Integrated Results: Cross-Level Moderating Effects***

These integrated findings on the role that team task specificity or team interdependence play in the relationship between personality traits and role behaviour, have answered the research sub-questions 3 and 4:

- (3) How does team task specificity moderate the relationship between individual team member personality traits and their task role behaviours in the team?
- (4) How does team interdependence moderate the relationship between individual team member personality traits and their social role behaviours in the team?

The statistical results provided partial support for the effects that team contextual factors have on the personality-behaviour relationships and this was further explained by the rich qualitative findings. In particular, team task specificity was found to moderate the relationship between Conscientiousness and task role behaviour, in that Conscientiousness was more strongly associated with task role behaviour when team task specificity was low, while this relationship was mitigated when team task specificity was high. However, the hypothesised interplay of team task specificity and other FFM personality dimensions on task role behaviour was not found.

Turning to team interdependence, it was found to moderate the relationship between Agreeableness and social role behaviour for the Australian sample only: Agreeableness became a stronger predictor of social role behaviour when team interdependence was low, while this relationship was mitigated when team interdependence was high. Interestingly, such moderating effects were not found for the Chinese sample. Similarly, it was found that team interdependence moderated the relationship between Neuroticism and social role behaviour: Neuroticism was more negatively associated with social role behaviour when team interdependence was low, while this relationship mitigated when team interdependence was high. However, the hypothesised interplay of team interdependence and other FFM personality dimensions on social role behaviour was not found.

The qualitative findings allowed a more thorough examination of these statistical results regarding team contextual factors as moderators of the relationship between personality (as a broad concept) and role behaviours. Specifically, the moderating effects of team task specificity on the personality-behaviour relationship was felt to be contingent on the job position of the individual team member. For team members who were not in a leadership role, interviewees believed that high team task specificity may reduce the role their personality plays in predicting their engagement of task role behaviour. The reasons for this are threefold: behavioural regulations, consequent incentives and penalties. Low team task specificity, as reported by interviewees, is associated with a lack of task-related information, which would keep team members from engaging in task role behaviour. Thus, when job information was unavailable, team members were reported to behave according to their unique personality traits and only responsible/reliable individuals would engage in task role behaviour, which

explained the amplified relationship between personality and task role behaviour. By contrast, for team members with a leadership role, team task specificity was understood to have no impact on the personality-behaviour relationship, simply because leaders were seen as unlikely to have their tasks clarified, even when the task specificity for their followers was high. The evidence also showed that when team leaders did not have a high level of task specificity but only clearly defined performance targets, they would engage in task role behaviour as a strategy to ensure expected task results.

In terms of team interdependence as another team context, the qualitative data indicated a consensus that team interdependence would influence members' engagement in social role behaviour. According to the interviewees, when team interdependence was high, individuals would engage in more social role behaviour to maintain good interpersonal relationships and gain their co-workers' support to deliver their tasks. Likewise, they said that some team leaders would engage in more social role behaviour when team interdependence was high to build up team cohesion. From a different perspective, individuals were reported to engage in more social role behaviour when team interdependence was high with the aim to reduce the stress or tension that would exist in the workplace when tasks were highly dependent. It is relevant to note that the qualitative data only explained how the personality-behaviour relationship mitigated when team interdependence was high; there was no evidence to show the possible effects that low team interdependence may have on members' engagement in social role behaviour. That noted, a limited amount of evidence was obtained from the Chinese sample, revealing that team interdependence had no impact on members' engagement in social role behaviour.

### ***6.2.3 Integrated Results: Factors Contributing to Team Effectiveness***

These integrated findings on the importance of task role configuration, social role configuration, and team task specificity on team effectiveness indicators, have answered the research sub-questions 5, 6, and 7:

- (5) What is the relationship between team task specificity and team performance?
- (6) What is the relationship between task role configuration and team performance?
- (7) What is the relationship between social role configuration and member satisfaction?

Concerning the team-level relationships, the statistical results showed that task role configuration – the aggregated task role behaviour at the team level – was significantly predictive of team performance. However, the hypothesised relationship between social role configuration and member satisfaction, was not found. In addition, although posited, team task specificity as a predictor of team performance was found to be statistically non-significant.

Accordingly, the qualitative findings have addressed the statistical results in terms of how role configurations and team task specificity contributed to team effectiveness indicators: team performance and member satisfaction. For the statistically supported relationship between task role configuration and team performance, the qualitative data explained why this was the case from the perspective of making the team function more systematically and facilitating the team's task progress.

Although the statistical results showed no significant relationship between social role configuration and member satisfaction, some evidence from the qualitative analysis indicated that social role configuration may create an environment filled with respect and mutual empathy in which team members may feel more satisfied. Nevertheless, there was also evidence showing that social role configuration only contributed to member satisfaction when team performance reached an acceptable level.

Turning to the relationship between team task specificity and team performance, the qualitative findings were distinct from the corresponding statistical results. Whereas team task specificity was found to be a non-significant predictor of team performance, it was an important factor contributing to team performance from the interviewees' point of view; in particular, as reported, high task specificity is associated with clarified workflow, clearly defined tasks, effective cooperation, efficient problem-solving and a reduced chance for member-task mismatch. However, there was also evidence to show that the positive linkage between team task specificity and team performance might have some conditions. According to some interviewees, it was found that team task specificity may operate as a contributor to team performance only when there was minimal social loafing in the team. Likewise, some other interviewees argued that the positive linkage between team task specificity and team performance is not applicable to senior management teams whose tasks are important, but less clear. It was also reported that, in terms of contributing to team performance, team task

specificity as a contextual factor was not as important as individual attributes, such as ability, knowledge or communication skills.

#### ***6.2.4 Emergent Themes Identified in the Qualitative Data***

Lastly, based on the exploratory thematic analysis of the qualitative data, additional themes emerged which are not directly associated with the research questions but are related to the key research topic concerning personality and role behaviour in team contexts. These emergent themes include: a) the counter-productive effects that Neuroticism may have on teamwork; b) personality traits that may be important to members' behaviour and team dynamics but are not covered by the FFM personality dimensions; c) contradiction between team task specificity and job autonomy; d) the effects that leaders' personality and behaviour may have on team members' behaviour; e) the dark side of social role behaviour; f) role behaviours and leadership; g) role behaviours and different team positions; and h) personality and different team positions. These themes are discussed at the end of this chapter.

Taken together, the combined quantitative results and the qualitative findings on the interplay of personality and role behaviour in team contexts and its effect on team effectiveness, as well as the additional qualitative themes, have answered the major research question regarding the relationship between personality and team effectiveness. Next, the researcher discusses the theoretical implications of the integrated findings.

### **6.3 Contributions to the Literature**

#### ***6.3.1 Linking Personality to Role Behaviour***

At the individual level, the relationship between personality and role behaviours comprises the core of investigation. It is associated with the research sub-questions 1 and 2, with an aim to fill the research gap regarding unclear conceptual links between personality and role behaviours. Findings are integrated and discussed in detail in terms of the contributions to the literature.

##### ***6.3.1.1 Contributions of the Statistical Results***

Regarding the personality-behaviour relationship, the statistical results show that some dimensions of the FFM significantly predicted two forms of role behaviour: task role

behaviour and social role behaviour. Specifically, the statistical results indicate that among the five personality traits of the FFM, Conscientiousness was the strongest predictor of task role behaviour, whereas Agreeableness was the strongest predictor of social role behaviour. This result is consistent with the work of Mathieu et al. (2015), who found that Conscientiousness positively related to the dimensions of task-related role behaviour (Organiser, Doer, and Innovator) and Agreeableness positively related to the dimension of social emotional role behaviour (Team Builder). Moreover, this result is also consistent with the work of Tasa, Sears, and Schat (2011), who found that Conscientiousness was positively related to performance-management behaviour and Agreeableness was positively associated with interpersonal team work behaviour. Therefore, the statistical results contribute to the literature of personality and behaviour in work teams by offering further support on the importance of Conscientiousness and Agreeableness on team members' task role behaviour and social role behaviour, respectively.

Turning to Neuroticism, in this study, it was found to be negatively associated with both task role behaviour and social role behaviour. This result is partially consistent with the work of Stewart, Fulmer, and Barrick (2005), who posited that Neuroticism was negatively related to both task roles and social roles but only found a significant relationship between Neuroticism and task roles. As an extension to Stewart, Fulmer, and Barrick (2005), the statistical result of this study shows that the negative relationship between Neuroticism and social role behaviour was significant as well. Therefore, this study contributes to the literature by providing more evidence to support the negative linkage between Neuroticism and social role behaviour which was grounded in the literature but not found in previous studies.

In terms of the relationship between Openness and members' role behaviours, this study has generated results that add to the findings of previous studies. Specifically, Stewart, Fulmer, and Barrick (2005) found that Openness was negatively related to both task roles and social roles. Elsewhere, Mathieu et al. (2015) found that Openness was positively associated with Connector, Innovator, and Challenger, which were considered to be the components of task role behaviour; Openness was also positively associated with Team Builder, which was considered to be a component of social role behaviour. Distinct from Stewart, Fulmer, and Barrick (2005) yet consistent with

Mathieu et al. (2015), the current study demonstrates that Openness was positively associated with task role behaviour. In particular, this finding contributes to the literature by demonstrating the appropriateness of using the TREO role dimensions to operationalise task/social role behaviour when examining the relationship between personality and role behaviours. As an extension to LePine et al. (2011)'s meta-analysis which reported the unclear relationships between Openness and role behaviours, this study shows a possible approach to reconcile the unclear relationships, which is using a more specific role structure (such as the TREO) to reconstruct the dyadic task/social role behaviours.

Turning to Extraversion, although some previous studies have generated significant results regarding the relationships between Extraversion and role behaviours, none of these effects were found significant in this study. For example, Mathieu et al. (2015) found that Extraversion positively predicted the components of task role behaviour (Connector, Innovator, and Challenger) as well as that of social role behaviour (Team Builder). Conversely, Stewart, Fulmer, and Barrick (2005) did not observe any significant relationship between Extraversion and social role behaviour: they also found the relationship between Extraversion and task role behaviour to be negative which was against their assumptions. The results of this study, however, indicate that Extraversion was neither associated with task role behaviour nor social role behaviour. The finding contributes to the literature by indicating that the role Extraversion plays in teamwork may change. Therefore, the results of this study suggest that how Extraversion influences member behaviours becomes a key area in need of further investigation.

The statistical results justified the use of subsequent qualitative investigations for two reasons. Firstly, although the statistical data suggested that some of the FFM traits were significantly related to task/social role behaviour, they were silent on why those relationships were observed. Secondly, some of the current results which challenged previous studies needed to be further investigated; specifically, the role that Neuroticism, Openness and Extraversion play in affecting members' role behaviours. Therefore, in the following section, the researcher discusses how the qualitative findings on the personality-behaviour relationship add more depth to the statistical results and contribute to the literature on personality in teams.

### *6.3.1.2 Contributions of the Qualitative Findings*

Drawing on the individual team members' experience and interpretation, the qualitative findings provided possible explanations as to why Conscientiousness predicts task role behaviour. As suggested by the interviewees' responses, team members who are high in Conscientiousness tend to engage in more task role behaviour because they are more internally driven by task goals and are better at breaking tasks into small, achievable parts so that the tasks can be completed within a given period of time. This finding is consistent with the theory of purposeful work behaviour (Barrick, Mount, and Li 2013), which states that personality traits initiate purposeful goal striving and encourage individuals to engage in purposeful behaviour to achieve a sense of meaningfulness. The qualitative finding contributes to the purposeful work behaviour theory by offering specific empirical evidence that team members who have a high level of Conscientiousness are reported to engage in task role behaviour to fulfil their task goals and thus to experience a sense of meaningfulness.

Moreover, the qualitative findings offer an explanation of why Conscientiousness predicts task role behaviour from the perspective of work skills associated with this personality trait, which is a novel contribution to the literature. Specifically, team members high in Conscientiousness were often seen as having better work skills (e.g., time management, priority setting, and self-management skills) which were reported to enable them to engage in more task role behaviour. Although there are a number of theories accounting for the process by which personality traits affect work behaviour, none of these theories have incorporated the idea that personality traits as individual attributes may be associated with different work skills or capabilities, which enable individuals to engage in certain work behaviours. Recognising work skills as an integrating mechanism that encourages individuals with certain personality traits to engage in relevant role behaviour offers a new theoretical path for personality and behaviour research in work teams.

Turning to Agreeableness, the qualitative phase suggested more diverse evidence than has been identified in previous studies to explain the relationship between Agreeableness and social role behaviour. While there is extensive evidence showing that Agreeableness may be positively associated with social role behaviour (Stewart,



Fulmer, and Barrick 2005, Mumford et al. 2008, LePine et al. 2011, Pindek, Kessler, and Spector 2017) or similar people-focused behaviour (Barrick, Mount, and Li 2013, Gonzalez-Mulé et al. 2014), this study indicates that the relationship between Agreeableness and social role behaviour does not have a fixed form but can be grouped into three categories.

Firstly, some interviewees reported that agreeable people tend to demonstrate more social role behaviour, albeit within limits. In this regard, they suggested that they did not engage in excessive social role behaviour because they were not rewarded for doing it. Secondly, for certain job profiles in a team, such as team coordinator or customer service officer, some interviewees reported that Agreeableness is irrelevant to social role behaviour. It was suggested that, team members in those job engage in social role behaviour in their daily work, not because of their personality traits but rather because it is a requirement of their job. Thirdly, the prevailing viewpoint for team members in the Chinese sample was that they engaged in social role behaviour as much as they could, regardless of their level of Agreeableness. These interviewees emphasised the importance of positive interpersonal relationships in their respective teams and talked about how engaging in social role behaviour would help build the kinds of interpersonal connections they needed.

Thus, the qualitative findings contribute to the literature by suggesting that there are three different dimensions to the Agreeableness to social role behaviour relationship: a) Agreeableness encourages social role behaviour albeit within limits; b) Agreeableness may have no impact on social role behaviour in certain job positions in the team; and c) Agreeableness may have no impact on social role behaviour in certain country contexts.

Regarding Neuroticism, there was a general consensus among all interviewees that this personality trait has detrimental effects on both task role behaviour and social role behaviour: this is partially consistent with previous studies (Stewart, Fulmer, and Barrick 2005). In addition, the qualitative data present potential explanations of why neurotic people tend to engage in less role behaviour, thus providing a deeper understanding of the role that Neuroticism plays in influencing members' role behaviours. Specifically, the evidence from this study reveals that Neuroticism is not only associated with negative emotions (Li, Burch, and Lee 2017), a major determinant

of distress (Swider and Zimmerman 2010), or a feature of self-devaluation (Barrick, Mount, and Li 2013). According to some interviewees, neurotic people might overestimate their own roles and downplay the roles of others in the team. There was also a widespread consensus among the interviewees that neurotic individuals tend to ascribe team achievement to themselves and blame other team members if problems occur in team dynamics or team performance. Interviewees consequently reported that people with high levels of Neuroticism have difficulty in cooperating with other team members and engaging in task role behaviour. In a similar vein, neurotic people were believed to build resentment with their peers in the team rather than engaging in social role behaviour because they were seen to be self-centred, focusing more on their own emotions and becoming more easily irritated compared to their less neurotic team members. Some interviewees mentioned the 'virus effect', suggesting that neurotic people create negative effects that spread quickly across the team and have a detrimental impact on team members. These findings make an important contribution to what we know about the implications of Neuroticism as an individual attribute; specifically, that neurotic people might have conflicting traits where they doubt themselves and are less confident on the one hand (Caprara et al. 2013) and, on the other hand, overestimate the importance of their own roles in the team.

Previous research on the relationship between Openness and work behaviour has furnished ambiguous results (Stewart, Fulmer, and Barrick 2005, Penney, David, and Witt 2011, Li 2012). Neither are the motivational properties of Openness fully understood (Blickle et al. 2013). This study, however, provides a potentially useful approach to explaining Openness as a predictor of task role behaviour and social role behaviour.

Mirroring the statistical results of this study, the qualitative findings demonstrate that Openness may encourage team members' engagement in task role behaviour as evinced by the interpretations of individual team members. According to some interviewees, people with high levels of Openness are better at utilising both internal and external team resources, which enables them to engage in more task role behaviour, especially problem solving. This is in line with previous studies where Openness was associated with utilising existing resources and exploring new methods to solve problems creatively (Li 2012, Blickle et al. 2013). Further evidence from the

qualitative phase reported perceptions that people high in Openness tend to engage in more task role behaviour, especially when facing uncertainty. Individuals perceived as open-minded were also seen as fast learners, who can educate themselves quickly to get tasks done in a context with high levels of uncertainty. This finding echoes that of previous scholars who argued that the epistemic aspect of Openness is similar to the learning approach (Mussel et al. 2011) and that people high in Openness are curious, flexible and willing to learn. This finding also echoes the work of Barrick, Mount, and Li (2013), signalling how individuals high in Openness tend to experiment with alternative methods to accomplish tasks in high-autonomy situations. Other interviewees explained the positive relationship between Openness and task role behaviour from the perspective of within-group communication. Interviewees suggested that people high in Openness tend to engage in task role behaviour by spreading task-related information across the team, which was referred to as team synchronisation.

This finding makes a unique contribution to the literature by indicating that Openness might be associated with an individual's communication strategies. This is a potentially important association because it reveals another property of Openness as a personality trait which relates to information sharing, which goes beyond the findings of previous studies and helps to explain the linkage between Openness and task role behaviour.

In terms of the relationship between Openness and social role behaviour, this study also contributes to the literature by providing qualitative evidence that individuals high in Openness tend to engage in more social role behaviour. Some interviewees pointed to the importance of empathy, perceiving that people high in Openness are more likely to empathise with others' feelings, thoughts and ideas, which triggers a greater expression of social role behaviour. A number of interviewees suggested that people high in Openness know how they want to be treated by others and therefore engage more in social role behaviour when working with others in the team. While only a limited number of interviewees talked about this empathising mechanism associated with Openness, it may extend our understanding of Openness as a contributor to social role behaviour. Other interviewees mentioned that individuals high in Openness tend

to value the collective benefits of the team, which may encourage them to engage in more social role behaviour.

Linking back to the statistical results which did not suggest a significant relationship between Openness and social role behaviour, it is notable that the qualitative findings tell a different story, suggesting that Openness might be a contributor to social role behaviour because it not only enables the individual to empathise with team members, but enables the individual to see the team as a collective, rather than an individual, unit. Previous studies have generated conflicting views regarding the relationship between Openness and interpersonal behaviour and reported that Openness might be negatively associated with interpersonal behaviour (Blickle, Wendel, and Ferris 2010, Neal et al. 2012). However, this study demonstrates that these contrary perspectives can be resolved if one views Openness as related to empathy and a tendency to value collective benefits.

Taken together, it may be assumed that Openness is a personality trait comprising complex sub-dimensions that interact with different aspects of role behaviour. This study extends the work of Mussel et al. (2011) by demonstrating that some aspects of Openness may have interactions with task role behaviour, such as having a tendency to synchronise the team, utilising resources, and self-education, while other aspects of Openness interact with social role behaviour, such as empathising and striving for collective benefits.

The qualitative findings from this study shed some light on the statistically non-significant results of the relationship between Extraversion and role behaviours. While only a limited number of interviewees shared their views on this topic, it suggested that Extraversion might interact with task role behaviour in two ways. Firstly, extraverts may engage in more task role behaviour only when they are in sales roles. People high in Extraversion were perceived to have better communication skills, reflecting the social dominance of this personality trait (Quilty et al. 2014). When engaged in activities such as sales, interviewees reported that extraverts tend to build rapport more quickly with clients, communicate a positive influence on the rest of the team and empower their co-workers; these behaviours move the team toward its task goals. Secondly, extraverts were seen to be more ambitious, which is in line with the “reward responsiveness” aspect of Extraversion (Quilty et al. 2014, 88). When

working in a team, extraverts were seen to help the team achieve task goals so that their personal success could be achieved.

Accordingly, the evidence shows that Extraversion may be associated with task role behaviour within certain boundary conditions, such as the job positions. It demonstrates that extraverts may engage in more task role behaviour and thus extends previous research in which Extraversion was only seen as potentially harmful to team functioning because it may encourage counterproductive behaviour (Lee, Ashton, and Shin 2005, Schmidt, Ogunfowora, and Bourdage 2012, Gaddis and Foster 2015).

The qualitative data did not address the statistically non-significant relationship between the personality trait of Extraversion and social role behaviour, as the interview questions that explicitly discuss Extraversion and social role behaviour were not included. Although regrettable, this omission was mitigated somewhat by the interview method itself: interviewees were encouraged to talk freely about personality traits more generally even though no encouragement was given to speak about the impact of Extraversion specifically. This being the case, perhaps one important finding of this study is that interviewees were more comfortable speaking about Conscientiousness, Agreeableness, Neuroticism, and Openness than they were about Extraversion. Alternatively, of course, it could also mean that they did not think that Extraversion merited further discussion. The extent to which either of these explanations apply may be worth exploring in future research, as suggested in section 6.7 of this chapter.

### ***6.3.2 Personality-Behaviour Relationship in Contexts***

As identified in Chapter 2, another gap in personality and team research was a lack of investigation of team-level situational factors that may affect the personality-behaviour relationships (LePine et al. 2011). To fill this gap, two research sub-questions were formulated, with questions 3 focusing on how team task specificity moderates the relationship between personality and task role behaviour, and question 4 focusing on how team interdependence moderates the relationship between personality and social role behaviour. The statistical results and the qualitative findings regarding the effects that team contexts may have on the personality-behaviour relationships are integrated in the section below, and are discussed in terms of their contributions to the literature.

### *6.3.2.1 Contributions of the Statistical Results*

The statistical results of this study suggest that team task specificity moderated the relationship between Conscientiousness and task role behaviour in that Conscientiousness predicted task role behaviour more strongly when team task specificity was low. Likewise, team interdependence was found to moderate the relationship between Neuroticism and social role behaviour in that Neuroticism predicted social role behaviour more strongly when team interdependence was low. The statistics suggest that team interdependence moderated the relationship between Agreeableness and social role behaviour in that Agreeableness predicted social role behaviour more strongly when team interdependence was low. Taken together, these findings extend the work of Tasa, Sears, and Schat (2011) by showing that in addition to collective efficacy, team task specificity and team interdependence influence the personality-behaviour relationships. Moving beyond the statistical findings, the qualitative findings of this study help to explain how the complexities of team features influence the relationship between an individual's personality traits and role behaviours, thus responding to the research call for investigating how higher-order contextual factors influence the relationship between personality and behaviour in teams (LePine et al. 2011).

The qualitative findings of this study move towards an explanation of how team task specificity limits or aids the task role behaviour expressions of personality traits. These qualitative findings suggest that when asked to reflect on the role of team task specificity in teamwork, the response of team leaders may differ from that of team followers. Specifically, team members who were in leadership roles reported constant reliance on, and engagement with, task role behaviour – regardless of their personality traits. According to these team leaders, it was unlikely for them to have a clear job description specifying what they should do and how to do it. A team leader's role was perceived as complex, changing and full of uncertainties: these perceptions are in line with previous research (Araujo-Cabrera, Suarez-Acosta, and Aguiar-Quintana 2017). Despite the challenges of having low levels of task specificity however, team leaders tended to engage in task role behaviour as a strategy to maintain the teamwork and the progress of task implementation so that team performance targets could be achieved.

Continuing with the theme of team leadership, most of the team leaders who were interviewed in this study reported that engagement in task role behaviour was part of their daily work, although their job tasks were not always clearly defined. Instead, they only had key performance indicators (KPIs) to work towards. Although not hypothesised, this finding offers more empirical evidence to support the job characteristics model (JCM), which explains how complex job roles that involve more skill variety, task significance and autonomy are more likely to encourage employees' motivation (Oldham and Fried 2016). Following the tenets of the JCM, this study shows that team leaders have more responsibilities for outcomes (for example, the KPIs) and, therefore, they are more motivated to engage in task role behaviour in the pursuit of better team performance.

Conversely, interviewees who were not in a leadership role reported that team task specificity is a prerequisite for them to engage in task role behaviour. Some interviewees explained why a high level of team task specificity encouraged the expression of task role behaviour: when roles, jobs and responsibilities were clearly defined, it was perceived as a situation that restrained members from displaying their personality traits. Indeed, this situation was believed to regulate and standardise members' behaviour by forcing them to engage only in task role behaviour that contributed to task goals. Other interviewees echoed this argument but provided different reasons. They suggested that high team task specificity often came with clearly defined punitive consequences for failure to behave in an expected way and, conversely, incentives for collective task achievement. As such, it was suggested that team members tend to engage in more task role behaviour either to avoid penalties or to receive rewards. Accordingly, team members not in leadership roles were believed to get lost easily if their roles were not specified. Nevertheless, people who are reliable and responsible (for example, those high in Conscientiousness) were described as more likely to engage in task role behaviour even if team task specificity is low. These findings echo previous research, which suggests that Conscientiousness is a notable contributor to task-related behaviours (Pindek, Kessler, and Spector 2017).

This finding contributes to the understanding of the cross-level effects in personality and team research in three ways. Firstly, to the researcher's knowledge, it is the first time that team task specificity has been examined as a higher-order moderator of the

relationship between personality and behaviour. Secondly, it has articulated the process by which a strong situation – high team task specificity – regulates team members' behaviour and restrains them from behaving according to their personality traits. That is, the qualitative finding explained why high team task specificity standardises task role behaviour from the perspective of penalties or incentives. Thirdly, the study makes a unique contribution to situational strength theory by suggesting that the effects of team task specificity on the personality-behaviour relationships exist only for non-leadership roles. As such, these findings highlight the conditional moderating effects that team constructs may have on the relationship between personality and behaviour.

Turning to team interdependence, the qualitative findings mirrored the statistical results, suggesting that high levels of team interdependence would mitigate the relationship between personality and social role behaviour. That said, some interviewees reported a different viewpoint; namely, that team interdependence had no impact on team members' engagement in social role behaviour. Overall, the qualitative findings contribute to the literature by showing how team interdependence may limit or aid team members' engagement in social role behaviour in several ways.

Members who perceived team interdependence as a contextual influence on individual behaviour commented on a mix of their own behaviour and their observations of others' behaviour. Firstly, some interviewees reported that tasks are highly dependent across their team and they see their colleagues as valuable resources for task achievement. Therefore, they reported how they engage in more social role behaviour to maintain good interpersonal relationship with their colleagues to ensure continuous support for task implementation. Secondly, there was evidence that leaders were perceived to engage in social role behaviour when the tasks were highly dependent as a strategy to lift team members' morale and build team cohesion. This finding supports the upper echelon theory, which states that group strategy and performance might be a function of a leader's personality traits and behaviour (Hambrick 2007). Thirdly, the evidence revealed that people were perceived to engage in more social role behaviour regardless of their personality traits when tasks are highly dependent, because they want to stay connected with their colleagues to access the updates on important task-related information. Lastly, there was considerable diversity in some accounts about



how team interdependence overrides personality factors to encourage social role behaviour. It was reported by some interviewees that high team task interdependence invariably brings stress to the team and that members engage in more social role behaviour to alleviate that stress.

The findings of this study suggest that a small number of interviewees considered team interdependence to have no impact on social role behaviour. However, it is notable that these interviewees provided distinct explanations for this argument. In particular, some interviewees drew on their own experience by stating that they consistently engage in social role behaviour regardless of the level of team interdependence, simply because they value others' comments about themselves and they believe that positive interpersonal relationship is a symbol of their career success. They also reported that engaging in more social role behaviour may help them to achieve this goal.

The findings reported here not only have important implications for the situational strength theory (Meyer, Dalal, and Hermida 2010) but also add to the empirical evidence on team interdependence as an important factor in teamwork. Firstly, this study provided evidence that supports situational strength theory by showing that team interdependence does encourage the expression of social role behaviour and counteracts the effects of personality. It has also provided evidence on the provenance of these cross-level moderating effects, such as seeking cooperation from colleagues on task implementation, valuing good interpersonal relationships across the team or a pursuit of better team cohesion and member morale. Secondly, this study suggested that team interdependence is an important contextual factor in teams. Although network analysis has been gaining popularity in recent team research, very few scholars have tested the role that team networks plays in influencing team dynamics. To the researcher's knowledge, this study is among the first to do so by investigating the effects that team interdependence may have on the individual level relationship between personality and role behaviours. Extending the work of Hambrick, Humphrey, and Gupta (2015) who found team interdependence to be a significant moderator of upper echelon predictions for top management teams, findings from this study suggested that team interdependence as an important contextual factor may apply to other types of teams as well. Also, extending the work of Li (2012) who did not found any significant effects that team interdependence had on the relationships

between personality and team processes, this study indicated that team interdependence may affect the process by which individual personality traits express as social role behaviour.

### ***6.3.3 Factors Contributing to Team Effectiveness***

As stated in Chapter 2, a key objective of this study was to investigate how the interplay of personality traits, role behaviour, and team contexts ultimately contributes to team effectiveness. Therefore, the core research phenomenon at the team level is the three identified factors that contribute to team effectiveness. The statistical results and the qualitative findings are integrated in the following section and are discussed in terms of how they contribute to the literature.

#### ***6.3.3.1 A Discussion of the Statistical Results***

The statistical findings of the study indicated that task role configuration significantly predicts team performance. However, they did not support the hypothesised relationship between social role configuration and member satisfaction; nor did they support the hypothesised relationship between team task specificity and team performance. Taken together, these findings signal the value of the qualitative findings to further investigate how role configuration and team task specificity might impact on team effectiveness by incorporating individual team members' experiences and interpretations.

#### ***6.3.3.2 Task Role Configuration and Team Performance***

The qualitative findings from the study add to our understanding of how task role configuration might contribute to team performance by suggesting four major processes by which task role configuration enhances team performance, as summarised from the interviewees' perceptions. Specifically, as reported, task role configuration: a) helps the team to operate in a more systematic way; b) matches the interactive nature of team dynamics as a unit of work; c) transmits team members' collective pursuit of task achievement to team result; and d) encourages the quality and punctuality of team task completion. In addition, some interviewees reported that, in the event that team members start to work more slowly and progress is not as expected or as it should be, collective engagement in task role behaviour or task role configuration will get them working more efficiently and effectively.

The qualitative findings of the study not only explained how task role configuration may predict team performance but, significantly, they also extended one of the most important findings in previous research on personality in work teams. According to their recent meta-analysis, Pindek, Kessler, and Spector (2017) reported that personality, performance and job characteristics are among the most frequently studied topics in the field of Human Resource Management (HRM). For those studies seeking to test the effects that individual personality has on job performance, Conscientiousness was found to be the most notable predictor of job performance (Pindek, Kessler, and Spector 2017). The current study extended that finding by providing an explanation for the positive effects that Conscientiousness was found to have on team performance; namely, that task role behaviour and task role configuration may act as mediators and transfer the positive effects of Conscientiousness to team performance.

#### *6.3.3.3 Team Task Specificity and Team Performance*

Contradicting the statistical findings, the qualitative findings of this study suggested a potentially positive relationship between team task specificity and team performance. In particular, the interviewees who perceived team task specificity to be a contributor to team performance reported a number of key roles that task specificity may play in teamwork. As indicated by the interview data, these roles include the following: a) clarifying the workflow, which involves every team member and contributes to team task goals; b) enabling team members to understand each other's roles for better cooperation; c) stimulating members to complete tasks thoroughly and in a timely manner; d) reducing the chance of misfit between people and roles; and e) ensuring that problems can be directed to the correct people in the team. Identifying the role of task specificity and the effects that it has on teams makes an important contribution to the current understanding of teamwork as it explains how team task specificity contributes to team performance.

It is relevant to note that while interviewees reported a positive connection between team task specificity and team performance, they believed that it may only occur in certain conditions. Some interviewees observed that team task specificity contributes to team performance only when individuals do not take advantage of their co-workers' input (by not contributing themselves) but rather share work and perform equitably:

an observation in line with the work of Schippers (2014) who found that social loafing behaviours reduces team performance. Additionally, a number of interviewees stated that the positive connection between team task specificity and team performance does not apply to senior management teams. Team task specificity was additionally described as an external element that was necessary for the team to be successful although it was not seen as important as individual level team inputs, such as personality, knowledge or skills. Taken together, the qualitative findings contribute to the literature by defining the boundary conditions of the relationship between team task specificity and team performance, suggesting that the process by which task specificity contributes to team performance is both complex and dynamic.

#### *6.3.3.4 Social Role Configuration and Member Satisfaction*

Although the statistical results did not suggest a significant relationship between social role configuration and member satisfaction, the qualitative findings shed some light on the non-significant results. Firstly, some interviewees stated that social role configuration might be associated with team cohesion instead of member satisfaction. Specifically, a high level of social role configuration was perceived to make people feel more respected and valued, which may in turn make the team more united. Secondly, there is also evidence suggesting that social role configuration may be associated with team member satisfaction, provided that team performance has reached a minimum acceptable level. Therefore, in comparison to social role configuration, team performance was seen as a more important predictor of member satisfaction: this finding is in line with previous research showing correlations between job performance and satisfaction (Mathieu et al. 2008). According to Li (2012), however, the group-level interpersonal behaviour, which is similar to social role configuration, was tested and showed no relationship with team performance. Therefore, it is difficult in this case to conclude that social role configuration is associated with team performance or member satisfaction in any form. A key concern is that the findings of this study may not have fully addressed the gap in our understanding in how social role configuration contributes to member satisfaction; further research along this path is suggested by the results here.

Focusing specifically on the relationship between role configurations and team effectiveness, the findings of this study contribute to the theoretical framework of team

effectiveness in two key ways. Firstly, they contribute to multilevel behavioural theory (Stewart, Fulmer, and Barrick 2005) by highlighting the appropriateness of using role behaviour as a multilevel linking mechanism to bridge individual personality traits and team effectiveness indicators (team performance and member satisfaction). In particular, it was through individual behaviour and its manifestation at the group level that a micro-dynamic view could be utilised in personality research in work teams. A key finding here is that the effects of individual personality traits may be transmitted by individual role behaviour and group-level role configurations onto team effectiveness indicators. Therefore, this study offers a stronger theoretical understanding of the process through which individual characteristics are linked to team performance and also what type of personality traits predict certain role behaviour, which ultimately contributes to higher team effectiveness. Secondly, although the quantitative phase did not find any significant predictors of member satisfaction, the qualitative findings offer additional evidence that may help to reconcile the mechanisms associated with member satisfaction, from the perspective of performance-satisfaction correlations. This finding is especially significant in its contribution to the literature by expanding the link between performance-satisfaction under team settings.

#### ***6.3.4 Findings Across the Two Countries***

While this study focused on the interplay of personality, role behaviour, and team contexts on team effectiveness rather than engaging in a cross-cultural comparison, it is important to acknowledge a number of findings which were found to be different across the two country samples studied. To begin, the qualitative findings suggested that team members in each of the two countries may have different perceptions of the same personality trait. In the Australian sample, for example, Conscientiousness was more likely to be interpreted as a person's internal drive to finalise tasks and fulfil goals; however, Chinese participants tended to refer to Conscientiousness as associated with better work skills or habits. Moreover, there was some evidence to indicate that the personality to role behaviour relationship may be contingent on broader contextual factors, such as national backgrounds. Participants from the Australian sample stressed that people high in Agreeableness would not display excessive social role behaviour unless a reward is given. By contrast, in the Chinese sample, there was a dominant view that social role behaviour is part of teamwork, and

agreeable people will display more social role behaviour to build rapport or maintain connections.

For the findings on the cross-level moderating effects that team interdependence has on the personality to social role behaviour relationship, it is pertinent to note that participants from each of the two countries provided different reflections. While most Australian interviewees stated that team members engage in more social role behaviour when team tasks are more mutually dependent, some Chinese interviewees reported that the level of team interdependence does not influence team members' engagement in social role behaviour. Rather, Chinese interviewees believed that social role behaviour should be a constant form of work behaviour, which is an integral part of team members' job. This finding makes an important contribution to situational strength theory because it points to the existence of even broader environmental factors that might inhibit the behavioural expression of individual personality traits.

When it came to team-level phenomena, reflections varied greatly across the two samples. The Australian participants were more likely to report their viewpoints on how role configurations and team task specificity contribute to team effectiveness indicators. Chinese participants, however, tended to stress the conditions which apply to the relationships between the team mediators and team effectiveness indicators. Additionally, the evidence from the Australian sample suggested that people feel more satisfied when they are respected and shown empathy, while the Chinese interviewees focused more on situations in which social role configuration does not lead to more member satisfaction. Taken together, these findings point to the need to incorporate higher order effects into our understanding of behaviour as a multilevel linking mechanism theory. They also encourage future researchers to investigate the broader boundary conditions of using role behaviour and role configuration to bridge individual attributes and team outcomes.

To summarise, the findings which are different across the two country samples revealed that personality traits might be understood differently in different cultures, and that the behavioural expression of personality traits are not only influenced by team-level contextual factors, but may also be subject to broader environmental influences.

## 6.4 Practical Implications

The findings from this study suggest a number of practical implications related to the formation and management of teams. Firstly, by linking individual and team-level predictors to role behaviour and team effectiveness, this study shows that managers would be wise to actively develop positive teamwork role behaviour by, for example, tracking progress and proactively solving problems rather than focusing solely on measurable outcomes, such as improved quantity, efficiency or reduced errors. Secondly, the study suggests that Conscientiousness and Agreeableness predict dimensions of task or social role behaviour, respectively, which provides justification for using these personality measures as a standard when recruiting new members into a team. While these relationships are likely to hold in many circumstances, teams can expect that conscientious members will be more task-focused, regardless of how rigid task specificity is. Thirdly, this study suggests that it may be important to identify and avoid recruiting candidates who have high levels of Neuroticism during recruitment given the reported negative impact they may have on team performance and team culture.

Another practical implication suggested by this study is that although strong situations (high team interdependence and high team task specificity) might suppress the expression of a team member's unique personality, it is the manager's role to allocate people with different personality traits to matching roles. High team interdependence may encourage people with limited ability to network and engage in more social role behaviour; however, if they do so against their will, adverse effects may then occur. In this regard, managers should be cautious about putting people in situations where they are expected to behave in ways they find uncomfortable. The findings of this study also highlight the important role that team task specificity plays in teamwork. Clearly defined tasks for each role in the team reduces confusion, conflicts and saves time for members so that they can focus on task implementation more effectively.

Lastly, but equally importantly, the study also suggests that managers should remember that team member satisfaction is a more complex element of team performance outcome. Thus, it would be wise to make members feel more satisfied by

enhancing team performance, creating a friendly work climate and providing smooth communication channels.

## **6.5 Research Outcome Model and Conclusions**

The findings of this study necessitate adjustments to the hypothetical research model which was presented in Chapter 2 and is revisited in Figure 6.1 (page 175). The adjusted model, also known as the research outcome model (ROM) is, therefore, presented as Figure 6.2 (page 175).

The adjusted model is distinct in many ways from the original model, which was developed by the researcher through a literature review. Firstly, in comparison to the original model (the strength of the personality-behaviour relationships remaining unidentified), the adjusted model clearly indicates that three personality-behaviour relationships stand out: these are represented by bold straight lines in Figure 6.2 (page 175): a) Conscientiousness and task role behaviour; b) Agreeableness and social role behaviour; c) Neuroticism and both forms of role behaviour in an adverse way. Openness, however, was found to predict both task and social role behaviour albeit with much weaker predictive power: lighter lines were used to depict these relationships in the adjusted model. One should point out here that Extraversion was changed to a floating concept in the adjusted model as how this personality dimension predicts role behaviours is still unclear: the hypothesised relationship between Extraversion and role behaviour was found to be non-significant. The adjustments made to the research model at the individual level of analysis reflect the contributions of this study to the literature of personality and role behaviours. In particular, by identifying the most significant personality predictors of role behaviour and leaving out the personality traits that are less relevant, this study has helped to reconcile the unclear relationship between personality traits and members' role behaviour. One should also note that, although not shown in the adjusted research model, the rich qualitative data of this study has informed the revision of the model in terms of triangulating the statistically supported relationships between the FFM traits and role behaviours. Furthermore, the qualitative findings have added more value to the extant literature by explaining why specific personality traits predict task/social role behaviour based on the interpretations and experiences of individual team members.

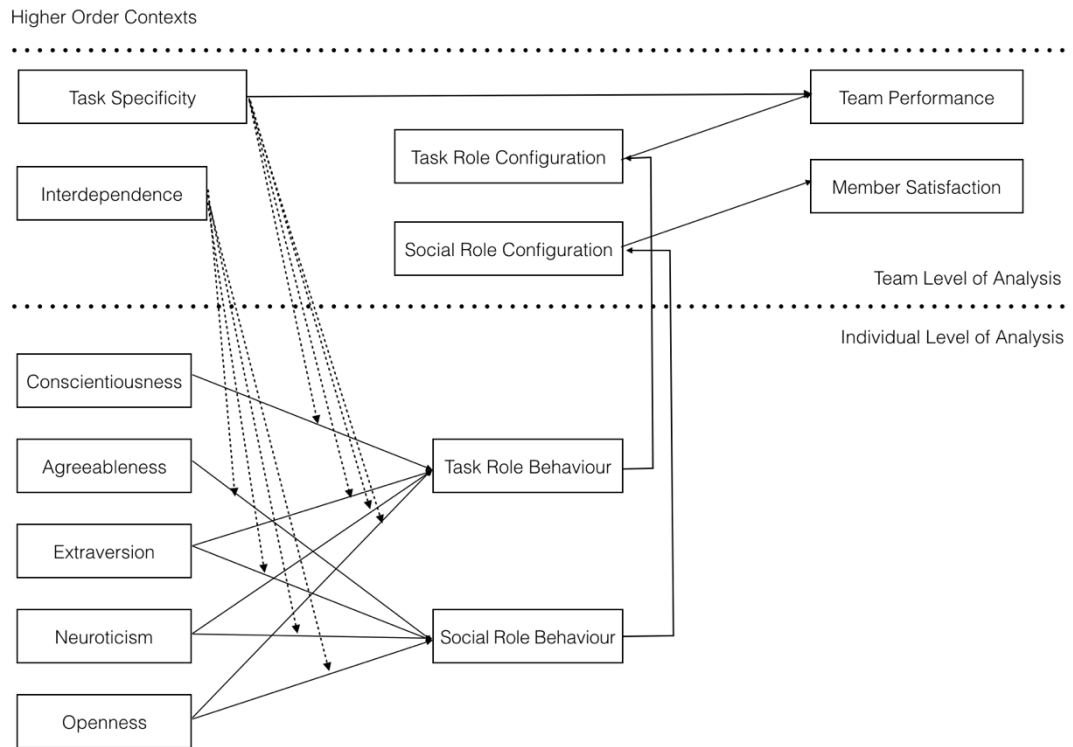


Secondly, the cross-level effects that team contexts may have on the personality-behaviour relationships are also adjusted as informed by both the statistical results and the qualitative findings. Specifically, the statistical results suggested that instead of moderating the relationship between each of the FFM personality trait and role behaviour, team task specificity and team interdependence only influenced certain traits of the FFM – such as Conscientiousness and Neuroticism – to express as relevant role behaviours. By contrast, the qualitative findings not only explained why team task specificity and team interdependence influence the individual level phenomena but also provided possible boundary conditions of the influences. Moreover, the qualitative findings indicated that there are more team contextual factors than the two factors studied here that may affect members' personality and behaviours and these factors might interact with each other. For example, team members' behaviours might be influenced by the team leader's personality and behaviours. Therefore, the hypothesised effects that team task specificity and team interdependence have on each of the FFM trait to role behaviour relationship, as in the original research model, were replaced with a box to describe the team contexts and their top-down effects on the behavioural expressions of personality traits. Thus, the adjustments were conducted to incorporate the complexity of team contexts, indicating that various other team contextual factors and their interactions need to be investigated in future research on personality and behaviour in teams.

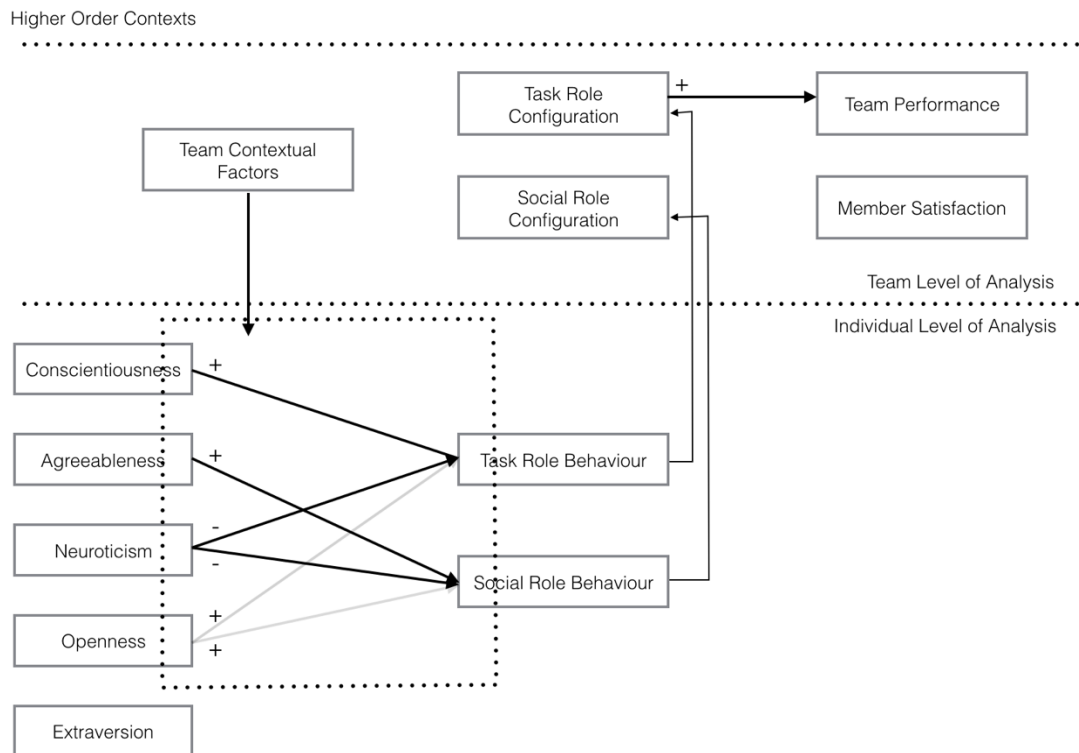
Thirdly, at the team level, the original research model underwent several changes as a consequence of this study's findings. Supported by both the quantitative and the qualitative data, task role configuration was connected to team performance in the adjusted model by a bold straight line as findings indicated that task role configuration is a strong predictor of team performance. In addition, the hypothetical relationship between team task specificity and team performance was removed in the adjusted model, because this relationship was not supported by the quantitative data. Evidence from the qualitative data, however, supported the relationship between team task specificity and team performance, while also indicating that this relationship might be subject to many conditions. Also, member satisfaction was changed to a floating concept as the posited relationship between social role configuration and member satisfaction was not supported: again, leaving an opportunity for further research.

To conclude, the findings of this study suggest a number of important implications. Firstly, they justify the movement from the previously favoured dominant team personality composition approach which ignores individual differences, towards a micro-dynamic approach incorporating differences in individual attributes and behaviours. Secondly, the findings also indicate that different dimensions of the FFM personality traits may influence team members' behaviours differently. These differences may derive from either the traits themselves or from the individuals who possess those traits. For example, Conscientiousness and Agreeableness were found to be more important contributors to individuals' role behaviour than other traits such as Neuroticism and Openness, possibly because these two traits are better understood by individuals who work in teams. Thirdly, the findings also demonstrate that the process by which team contextual factors act on individual level personality-behaviour relationships is more complex than expected. For example, it may be that different contextual factors may have compound effects on how individuals with certain personality traits engage in role behaviours. Finally, the study suggests that team effectiveness indicators can be distinct from one another, with some subjective indicators (e.g., member satisfaction) being more difficult to investigate than objective indicators (e.g., team performance).

Whereas the adjusted model presented again on page 169 makes a number of contributions to extant knowledge, it is important to note that it does not incorporate every aspect of the study's findings. Thus, for example, although the model is an updated version of the original research model and has highlighted the relationships between personality, role behaviours, team contexts and team effectiveness in an abstract way, it does not show the findings from the rich qualitative data that have allowed greater comprehension for understanding personality and behaviour in context and their effects on team effectiveness. To reiterate an important point, it is the integrated findings of this study that have contributed to existing theories and informed management practices.



**Figure 6.1 Hypothetical Research Model Revisited**



**Figure 6.2 Research Outcome Model**

## **6.6 Limitations**

This study has several limitations that could be addressed in future research. Firstly, with a focus on individual members and their teams, factors and mechanisms at higher level of units such as organisations and industries, were beyond the scope of this work. That noted, finding out how organisational or industrial factors may affect personality and team effectiveness may be a fruitful line of inquiry for team scholars. A second limitation concerns a lack of evidence from the data to thoroughly address the role that Extraversion (as a dimension of the FFM personality traits) and member satisfaction play in team dynamics and outcomes. Extraversion was posited to predict members' role behaviours; however, this effect was not supported by the quantitative data. Neither did the qualitative data provide sufficient evidence to explain why the proposed effects of Extraversion were not found. As a result, it was difficult to ascertain the role that Extraversion plays in teamwork. Member satisfaction and its contributing factors, likewise, were not fully addressed due to more complex than expected evidence emerging from the data. Therefore, the role of Extraversion and member satisfaction comprises another potential avenue for further research. Thirdly, due to resource constraints, some interviews had to be conducted over the phone rather than face-to-face, which might have introduced the effects of different modes of communication into the findings. It may be, therefore, that different data collection methods may furnish different results. Lastly, due to the limited interview length, the interplay of personality traits and team contexts on members' role behaviour was not fully explored in the sense that only personality as a broad concept and its interaction with team contexts on role behaviour was discussed. Therefore, future researchers with more time availability may incorporate each dimension of the FFM into their interview agenda to obtain data on how each of the FFM dimensions interacts with team contexts and influences members' behaviour.

## **6.7 Future Research Directions**

While the findings of this study make several important contributions to current understandings of team performance and individual team member dynamics, it has also highlighted areas for further research (some of which have already been mentioned briefly above). Firstly, future researchers might examine the structure of role behaviour to investigate the extent to which some elements have more impact than

others. From a comparison of this study's findings with the work of Mathieu et al. (2015), it may be inferred that, although the dyadic task-social role structure can be distilled from the six TREO dimensions, different dimensions may carry different significance or weight. For example, although Organiser, Doer, Innovator, and Challenger are considered to be the four components of task role behaviour, Organiser and Doer may be more important to task role behaviour than the other two dimensions.

When designing the interview questions, a clear definition for task and social role behaviour was provided while participants were encouraged to talk freely about personality. This had the advantage, on the one hand, that interviewees were given the freedom to discuss the full range of personality traits pertinent to them. The researcher was then able to explore the extent to which a common narrative thread could be incorporated into the framework of the FFM personality traits. The disadvantage, on the other hand – due to the interview questions not being channelled explicitly to Extraversion – was that interviewees did not speak about this personality trait as much as the other dimensions of the FFM personality traits. This clearly presents an opportunity to conduct further research about the potential impact and perceived dynamics of these particular personality traits.

This study has also suggested that the theme of Openness can be understood in different ways by different individuals: team members tended to use words like imaginative, open-minded, innovative, and sympathetic, whereas team leaders or senior managers tended to use words such as creative, resourceful, and insightful. This finding reflects previous studies, which have suggested that Openness is more of a leadership personality trait and is correlated with the effectiveness of leadership (Colbert, Barrick, and Bradley 2014, Araujo-Cabrera, Suarez-Acosta, and Aguiar-Quintana 2017). To explore this line of enquiry further, future research might examine whether the relationship between Openness and role behaviour is contingent on the team position of the individual.

Turning specifically to the theme of Extraversion, future research might explore the extent to which its role in teamwork has changed in relation to the use of different media of communication, such as e-mail, video and teleconference. It may be that while extraverts are reportedly better at building rapport face to face, they may be less

adept at building relationships with team members through new Information Communications and Technologies (ICTs). It might also be useful to investigate whether group-level Extraversion encourages extraverts to engage in more task role behaviour and social role behaviour. This avenue of investigation would also extend the research conducted by Schmidt, Ogunfowora, and Bourdage (2012), who found that the behavioural expression of Extraversion is an internally rewarding experience for team members, which is amplified if it is acknowledged and rewarded by other members who were also high on Extraversion.

Given that the concept of Neuroticism has not yet been clearly defined and validated (Li and Ahlstrom 2016), it may be fruitful for future researchers to examine the paradoxical features identified here: thus moving towards a more robust understanding of what Neuroticism is and how it impacts on individual behaviour and team performance.

Apart from the FFM personality traits, future researchers might also be interested in identifying other important personality traits and examining how they affect individuals' behaviour and team dynamics. Among the additional themes that emerged from the interview data, individual team members reported a number of personality traits that are, interestingly, not associated with the FFM model. For example, one Australian interviewee in this study mentioned the personality trait 'apathy', which has detrimental effects to the team. While this trait is not covered by the FFM, according to this interviewee, apathy displaces work passions and, therefore, apathetic people are avoided by their peers during teamwork. Another personality trait not covered by the FFM personality traits was that of being autocratic: interviewees saw this trait as a tendency to initiate tasks rather than waiting for instructions. Thus, personality traits which do not belong to the FFM need further investigation as well as how the traits contribute to team dynamics and outcomes.

Future researchers might also want to know more about team member role behaviours. For example, although not covered by the research agenda, it was brought to the researcher's attention that leaders' personality traits and behavioural tendencies might have some effect on individual team members' role behaviour engagement. Thus, it would be meaningful to examine whether an individual's behavioural expression of

his or her personality traits is contingent on the team leader's own personal attributes or behaviours. By contrast, some interviewees stated that engaging in social role behaviour distracts team members from performing their job tasks and thus members' engagement in social role behaviour should be limited; hence, the downsides of social role behaviour are also a source for further enquiry.

Another potential avenue of research concerns the team contextual factors. While this study provides evidence that high team task specificity predicts better team performance, conflicting evidence was also observed; specifically, there might be a contradiction between team task specificity and job autonomy. While the majority of interviewees described team task specificity as an important contextual factor that contributes to team performance, other interviewees observed that, instead of defining each role and task, the manager's role is to construct a framework in which members have the autonomy to perform job tasks that may result in better team performance. Therefore, future researchers might want to investigate which is the better option – team task specificity or team task autonomy – for teams to deliver satisfying results.

Although this study did not aim to engage in a cultural comparison even while it has collected data from two different national contexts, data analysis suggests that a cultural comparison may be valuable. Pursuing this line of enquiry further, therefore, may be useful to investigate the impact of culture on team member dynamics and relationships.

## **6.8 Chapter Summary**

This chapter has integrated both the quantitative and the qualitative findings of this study and, drawing on the adjusted research model, it has explained how the integrated findings have answered each of the research questions. The adjusted model thus explains the relationship between individual member personality and team effectiveness in several ways. Firstly, it shows that Conscientiousness is the strongest predictor of task role behaviour and Agreeableness is the strongest predictor of social role behaviour. Conversely, the adjusted model also demonstrates that Neuroticism is negatively related to both task and social role behaviour, whereas Openness, distinctly, is positively associated with both task and social role behaviour. Secondly, the model

suggests the existence of team contextual factors such as team task specificity, team interdependence, and job positions in the team, which may have cross-level effects on the individual level relationships between personality and role behaviour. It also embraces the complexity that these contextual factors interact with each other and cast compound effects to individual level phenomena. Thirdly, and ultimately, the adjusted model identifies the connections between team effectiveness and its contributing factors in terms of collective behaviours. In addition, several key constructs regarding personality traits and team effectiveness indicators are left unconnected to the body of this adjusted model, indicating an opportunity for further research. Beyond the constructs and relationships depicted in the adjusted model, the integrated findings have also provided rich qualitative evidence to address the potential reasons or mechanisms for these conceptual linkages. Thus, not only does the study indicate new relationships and knowledge regarding personality in teams, it has also revealed the importance of qualitative data in obtaining such knowledge and has helped form a new starting point for future personality and team researchers.



## APPENDIX A SURVEY ITEMS

- ☐ I have received information regarding this research and had an opportunity to ask questions. I believe I understand the purpose, extent and possible risks of my involvement in this project and I voluntarily consent to take part.

### Questionnaire

#### 1. Identifier (For matching purposes only)

Code of your organisation: \_\_\_\_\_

Code of your team: \_\_\_\_\_

#### 2. Basic Information

Your gender:

(a) female

(b) male

Your age:

(a) below 20

(e) 36-40

(b) 21-25

(f) 41-45

(c) 26-30

(g) 46-50

(d) 31-35

(h) Above 50

Your team focus (e.g., sales, administration, customer care): \_\_\_\_\_

How long have you been in this work team (please answer in months): \_\_\_\_\_

How long have you been in this organisation: \_\_\_\_\_

#### 3. Personality

Please write in the answer which best describes you in each case.

**SD** = Strongly Disagree    **D** = Disagree    **N** = Neutral    **A** = Agree    **SA** = Strongly Agree

\_\_\_\_ I feel little concern for others.

\_\_\_\_ I have excellent ideas.

\_\_\_\_ I am always prepared.

\_\_\_\_ I have little to say.

\_\_\_\_ I get stressed out easily.

\_\_\_\_ I have a soft heart.

\_\_\_\_ I don't talk a lot.

\_\_\_\_ I often forget to put things back in their proper place.

\_\_\_\_ I am interested in people.

\_\_\_\_ I get upset easily.

\_\_\_\_ I leave my belongings around.

\_\_\_\_ I don't have a good imagination.

\_\_\_\_ I feel comfortable around people.

\_\_\_\_ I talk to a lot of different people at parties.

\_\_\_\_ I insult people.

\_\_\_\_ I am not really interested in others.

\_\_\_\_ I pay attention to details.

\_\_\_\_ I like order.

\_\_\_\_ I have a vivid imagination.

\_\_\_\_ I change my mood a lot.

\_\_\_\_ I keep in the background.

\_\_\_\_ I am quick to understand things.

\_\_\_\_ I sympathise with others' feelings.

\_\_\_\_ I don't like to draw attention to myself.

\_\_\_\_ I make a mess of things.

\_\_\_\_ I shirk my duties.

\_\_\_\_ I seldom feel blue.

\_\_\_\_ I have frequent mood swings.

\_\_\_\_ I am not interested in abstract ideas.

\_\_\_\_ I use difficult words.

\_\_\_\_ I'm not interested in other people's problems

- |  |   |
|--|---|
| <input type="checkbox"/> I don't mind being the centre of attention. | <input type="checkbox"/> I am quiet around strangers. |
| <input type="checkbox"/> I follow a schedule.                        | <input type="checkbox"/> I make people feel at ease.  |
| <input type="checkbox"/> I get irritated easily.                     | <input type="checkbox"/> I often feel blue.           |
| <input type="checkbox"/> I spend time reflecting on things.          | <input type="checkbox"/> I am full of ideas.          |

#### 4. Task Role Behaviours

Please write in the answer which best describes what you do.

**SD** = Strongly Disagree    **D** = Disagree    **N** = Neutral    **A** = Agree    **SA** = Strongly Agree

- ☐ I keep my team on pace and aware of deadlines.
- ☐ I make sure that my teammates are clear about their responsibilities.
- ☐ I structure team activities.
- ☐ I just voice a different opinion to keep my team thinking about what we should be doing.
- ☐ I question what my team should be doing to get the job done.
- ☐ I often point out the potential risks or hazards of a team plan or course of action.
- ☐ I am usually the one who suggests a new idea when the team gets stuck on something.
- ☐ I'm known for thinking creatively and 'outside the box'.
- ☐ My teammates often view my suggestions as creative or innovative.
- ☐ I learn how to get outside resources that our team needs to be successful.
- ☐ I discover and connect with people who can help my team succeed.
- ☐ I often serve as a liaison between my team and outside groups.

#### 5. Social Role Behaviours

Please write in the answer which best describes what you do.

**SD** = Strongly Disagree    **D** = Disagree    **N** = Neutral    **A** = Agree    **SA** = Strongly Agree

- ☐ I calm people down and get them focussed on the task when things get stressful.
- ☐ I often work to maintain good working relationships within my team.
- ☐ I encourage my teammates when I know they have a difficult assignment or challenge.

#### 6. Task Specificity

How do you rate the following descriptions about your jobs?

**SD** = Strongly Disagree    **D** = Disagree    **N** = Neutral    **A** = Agree    **SA** = Strongly Agree

- ☐ All my jobs responsibilities are clear to me.
- ☐ All my job tasks are clear to me.
- ☐ I am certain how to go about getting my job done.
- ☐ I know what is the best way to go about getting my work done.
- ☐ I know to whom in the team my job is related.
- ☐ I know which parts of my job need other members' cooperation to be completed.
- ☐ I am certain about the sequencing of my work activities.
- ☐ My job is such that I know when I should be doing a given work activity.
- ☐ I know what the level of performance is considered acceptable by my supervisor.

\_\_\_ I know what my supervisor considers to be satisfactory work performance.

### 7. Task Interdependence

How do you rate the following descriptions about your jobs?

SD = Strongly Disagree    D = Disagree    N = Neutral    A = Agree    SA = Strongly Agree

- \_\_\_ I cannot accomplish my tasks without information or materials from other members of my team.  
\_\_\_ Other members of my team depend on me for information or materials needed to perform their tasks.  
\_\_\_ Within my team, jobs performed by team members are related to one another.  
\_\_\_ My work goals come directly from the goals of my team.  
\_\_\_ My work activities on any given day are determined by my team's goals for that day.  
\_\_\_ I do very few activities on my job that are not related to the goals of my team.  
\_\_\_ Feedback about how well I am doing my job comes primarily from information about how well the entire team is doing.  
\_\_\_ My performance evaluation is strongly influenced by how well my team performs.  
\_\_\_ Many rewards from my job (e.g., pay, promotion, etc.) are determined in large part by my contributions as a team member.

### 8. Team Performance (Only team leaders or supervisors need to complete this section)

Write in the answer which best describes your team as a whole.

VP = Very Poor    P = Poor    N = Neutral    G = Good    VG = Very Good

#### *Quality of work*

- \_\_\_ Completes work accurately and thoroughly  
\_\_\_ Makes minimum amount of errors  
\_\_\_ Is cost-efficient

#### *Quantity of work*

- \_\_\_ Exceeds the required amount of work

#### *Responding quickly to problems*

- \_\_\_ Is good at locating problems  
\_\_\_ Tackle problems quickly and thoroughly

#### *Completing work on time*

- \_\_\_ Completes work within acceptable time frame

#### *Overall performance*

- \_\_\_ This team meets its work expectations

### 9. Member Satisfaction

Write in the answer which best describes how you feel.

SD = Strongly Disagree    D = Disagree    N = Neutral    A = Agree    SA = Strongly Agree

- \_\_\_ I am satisfied with my present colleagues.  
\_\_\_ I am pleased with the way my colleagues and I work together.  
\_\_\_ I am very satisfied with working in this team

Please provide your email address to enter a prize draw and to receive a short result report of this project:

\_\_\_\_\_

## **APPENDIX B INTERVIEW SCHEDULES**

### **Topic 1: Personality and role behaviours**

With the first few questions I would like to discuss people's personality and behaviours in work teams in which you have worked or are currently working. For personality we look at individual characteristics, such as being talkative or quiet, friendly or unfriendly, careful or careless, open-minded or stubborn. For behaviours, we consider task focused behaviour, which is about achieving team tasks and goals, and people focused behaviour, which is about contributing to good relationship while working with others in team.

Q1 Could you tell me what type of people, in terms of personality, you like working with in teams? What type of people, in terms of personality, do you avoid working with?

Q2 Thinking about personality, what type of people tend to do more task-focused behaviour, such as tracking progress, analysing and solving problems, and keeping deadlines? Why?

Q3 And people with what type of personality tend to do more people-focused behaviour, such as caring for others' feelings, respecting others' opinions and admitting their contributions? Why?

### **Topic 2: Team context, personality and role behaviours**

The next group of questions centre around your experience of working in teams, and explore how team features may influence your behaviour and the team's overall performance.

Q4 Could you tell me what kind of work you are doing in your team?

Q5 Is your team role clear to you? By which I mean, is your team role clearly defined? Is how you should perform your team role clearly defined? Are your team role performance outcomes clearly defined?

Q6 Thinking about job clarity, will it influence your task-focused behaviour, such as helping the team to track progress, analysing and solving problems, and trying to keep deadlines? Why?

Q7 How about other people in your team, are their jobs clearly defined? By which I mean, are their team roles clearly defined? Is how they should perform their team roles clearly defined? Are their team role performance outcomes clearly defined?

Q8 Thinking about the overall job clarity in your team, does it influence your team's performance? Why?

Q9 Is your role dependent on others' roles in the team? By this question I mean, do you need information or support from others in your team to complete your work? Is the completion of your work dependent on other people completing their work?

Q10 If your role highly depends on others' roles in your team, will you involve in more people-focused behaviour, such as caring for others' feelings, respecting others' opinions and admitting their contributions? Why?

### **Topic 3: Role configuration and team effectiveness**

The final group of questions will be focusing on your opinion regarding the relationship between people's role behaviour and team effectiveness.

Q11 Do you agree that the more people involve in task-focused behaviour, the better team performance is? For task-focused behaviour we look at behaviour targeting the completion of tasks and team goals, such as helping to track progress, analysing and solving problems, and keeping deadlines.

Q12 Do you agree that the more people involve in people-focused behaviour, the more satisfied the team will be? For people-focused behaviour, we consider behaviour targeting interpersonal relationships when working in a team, such as showing more respect to others, caring about others' feelings, and admitting others' contributions. Why?

Q13 Is there anything that you would like to add about your experience of working in teams, people's personality and behaviour, team performance and member satisfaction?

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