MEASUREMENT OF IMPLICIT LEADERSHIP THEORIES AND THEIR EFFECT ON LEADERSHIP PROCESSES AND OUTCOMES

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SUMMARY

The leadership categorisation theory suggests that followers rely on a hierarchical cognitive structure in perceiving leaders and the leadership process, which consists of three levels; superordinate, basic and subordinate. The predominant view is that followers rely on Implicit Leadership Theories (ILTs) at the basic level in making judgments about managers. The thesis examines whether this presumption is true by proposing and testing two competing conceptualisations; namely the congruence between the basic level ILTs (general leader) and actual manager perceptions, and subordinate level ILTs (job-specific leader) and actual manager. The conceptualisation at the job-specific level builds on context-related assertions of the ILT explanatory models: leadership categorisation, information processing and connectionist network theories. Further, the thesis addresses the effects of ILT congruence at the group level. The hypothesised model suggests that Leader-Member Exchange (LMX) will act as a mediator between ILT congruence and outcomes.

Three studies examined the proposed model. The first was cross-sectional with 175 students reporting on work experience during a 1-year industrial placement. The second was longitudinal and had a sample of 343 students engaging in a business simulation in groups with formal leadership. The final study was a cross-sectional survey in several organisations with a sample of 178.

A novel approach was taken to congruence analysis; the hypothesised models were tested using Latent Congruence Modelling (LCM), which accounts for measurement error and overcomes the majority of limitations of traditional approaches.

The first two studies confirm the traditional theorised view that employees rely on basic-level ILTs in making judgments about their managers with important implications, and show that LMX mediates the relationship between ILT congruence and work-related outcomes (performance, job satisfaction, well-being, task satisfaction, intragroup conflict, group satisfaction, team realness, team-member exchange, group performance). The third study confirms this with conflict, well-being, self-rated performance and commitment as outcomes.

Keywords: leadership categorisation, leadership context, leader-member exchange (LMX), congruence analysis

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Σα βγεις στον πηγαιμό για την Ιθάκη,
να εύχεσαι νάναι μακρύς ο δρόμος,
γεμάτος περιπέτειες, γεμάτος γνώσεις.

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Κι αν πτωχική την βρεις, η Ιθάκη δεν σε γέλασε.
Έτσι σοφός που έγινες, με τόση πείρα,
ήδη θα το κατάλαβες οι Ιθάκες τι σημαίνουν.

Ithaca (Cavafy, 1911)

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CHAPTER 1 - INTRODUCTION AND OVERVIEW OF LEADERSHIP LITERATURE

The present thesis is concerned with investigating the role of follower perceptions about leaders and leadership, through the lens of the Implicit Leadership Theories (ILTs) concept. The first objective of the research presented here is to investigate the level of abstraction in the cognitive schemas used by followers in making leadership judgments. The second objective is to investigate whether leadership judgments, on the basis of pre-existing cognitive schemas, play an important role in leadership processes and outcomes in group settings. The final objective is to develop and test a theoretical model of the relationship between leadership judgments, leader-follower relationship quality (Leader-Member Exchange; LMX) and important individual- and team-level outcomes, including performance.

Leadership is a broad and much researched topic area in several disciplines. The present chapter provides an overview of the main approaches to understanding and defining the concept of leadership. This is followed by a brief review of the major theoretical paradigms in the study of leadership that have emerged. The second chapter reviews the theoretical frameworks that provide interpretations of what ILTs are and what role do they play in forming follower expectations and judgments with regards to leaders and leadership. The chapter focuses on the level of abstraction of ILTs and discusses the role of the context in shaping ILTs and influencing their activation as benchmarks when judging real-life leaders. Additionally, the role of follower cognitive schemas in group settings is discussed; the discussion builds theoretical arguments on the effect of follower cognitive functioning on leadership processes and outcomes in group settings and identifies a major gap in the literature, since no empirical research addresses this issue thus far. This is followed by a theoretical model development in Chapter 3, whereby it is proposed that leader-follower relationship quality (LMX) will mediate the relationships between ILT congruence (i.e., the match between followers' ILTs and ratings of their actual manager), and individual and group outcomes, including performance. Chapter 4 focuses on methodological concerns regarding the measurement and analysis of congruence scores; it provides an overview of existing approaches to congruence analysis in order to unveil the optimum method to be employed in the data analysis of the present research programme. The hypothesised model is tested in a series of three studies (Chapters 5, 6 and 7), that additionally address the issue of ILTs abstraction and their role in group settings. Finally, the findings are discussed in Chapter 8 with regards to their theoretical, research and practical implications. The chapter is also concerned with the limitations of the presented research and with ethical considerations.

Defining Leadership

Leadership is a much discussed topic in the area or management research in recent years, yet it has been central to human existence since ancient times. Pierce and Newstrom (2006) note that there is reference to leadership in the classic writings of Latin, Greek, Roman and Chinese writers, as well as in the Old and New Testament. In the twentieth century leadership has become one of the central concepts in organisational research and several contemporary authors have provided various definitions that describe leaders and the leadership process. These definitions evolve around the notions of traits, behaviours, influence, interaction patterns, role relationships, and occupation of administrative positions (Yukl, 2010). Yukl explains that the wide variation and differences in the foci of the definitions comes as no surprise considering the complexity of the concept which results in purpose-specific definitions; i.e., scholars tend to propose or adopt operational definitions that closely relate to the aspects of leadership they are primarily interested in.

One of the early definitions acknowledging that the purpose of leadership is to influence people in organisations to act above and beyond their contractual obligations, states that leadership is: “the influential increment over and above mechanical compliance with the routine directives of the organization” (Katz & Kahn, 1978, p. 258). A more recent definition of leadership, provided by Bass and Stogdill (1990), reads: “Leadership is an interaction between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions and expectations of the members” (p. 19). Pierce and Newstrom (2006) propose a definition of leadership that loosely builds on Katz and Kahn’s (1978) definition. They view leadership as “a sociological phenomenon (a process) involving the intentional exercise of influence exercised by one person over one or more individuals, in an effort to guide activities toward the attainment of some mutual goal, a goal that requires independent action among members of a group” (p. 10).

B. M. Bass and R. Bass (2008) provide us with a comprehensive and systematic taxonomy of the definitions and meanings assigned to the concept of leadership, under three broad categories. The first category captures definitions that focus on the traits and behaviours of the leader relating to the capacity to influence others towards a specific objective – the ‘leader centric’ definitions. Within this school of thought Bass and Bass (2008) identify several types of definitions.

The *Leader as a Personality* definitions focus on the personality characteristics of individuals that enable them to act as leaders. Although this is a traditional approach to leadership and was the focus of early definitions (e.g. Bowden, 1926; Bingham, 1927), there is still much

interest in leaders' personality traits (e.g. Bradley, Nicol, Charbonneau, & Meyer, 2002; Judge & Bono, 2000; Lim & Ployhart, 2004). More recent studies on leadership as a personality focus on reviewing, drawing conclusions and generalising relationships based on the vast amount of empirical research and theoretical developments (e.g., Judge, Bono, Ilies, & Gerhardt, 2002; Lord, De Vader, & Alliger, 1986).

The *Leadership as an Attribution* approach views leadership as an unseen phenomenon that explains the success of individuals or groups of followers as the only observable cause behind outcomes. Bass and Bass (2008) suggest that the reality is a combination of these two explanations with leadership being attributed to certain individuals on the basis of the followers' expectations, prototypes or implicit theories on what traits and behaviours characterise effective leaders (e.g. Kenney, Blascovich, & Shaver, 1994; Kouzes & Posner, 2002; Lord, De Vader, & Alliger, 1986; Offermann, Kennedy, & Wirtz, 1994). According to this approach followers engage in a matching process between their implicit schemas and the leader in order to acknowledge or attribute leadership in their direct manager.

The *Leaders as the Foci of Group Processes* approach views the leader as the central figure in a group context and the focus of group activities, processes and change. The leader connects and integrates the members to the group (Redl, 1942; Smith, 1937), is the key decision maker and initiator, and plays a central role even in situations where decision-making is diffused (Bass & Bass, 2008). Bass and Bass (2008) propose that under this view "[t]he leader embodies the collective will" (p. 16). The leader defines certain group parameters that are key to the group's success, and as Krech and Crutchfield (1948, p. 417) observe the leader "serves as a primary agent for the determination of group structure, group atmosphere, group goals, group ideology, and group activities". The understanding of leadership as a central factor in group success triggered the study of group processes and structure in the field of leadership.

The definitions that fall under the *Leadership as a Symbol* category view leaders as the boundary spanners and representatives of their group of followers, serving this function by virtue of their position as leaders (Bass & Bass, 2008). They filter the information from the outside environment and translate it for the group in simpler and more meaningful terms (Katz & Khan, 1978). Further, they call upon symbols to emphasise the importance of certain events and situations (Gronn, 1995).

In line with the role of leaders as the link between the group and its environment, the category of definitions termed by Bass and Bass (2008) as *Leadership as the Making of Meaning* refers to the role of the leader as the person who clarifies, gives meaning and establishes

understanding of uncertain and ambiguous situations. That is, the leader provides meaning to important events of the past and the present, as well as those that will happen in the future. In this manner they are able to promote the interpretation of situations in a way that is acceptable to the followers and in line with their values (Gronn, 1995). Much of the contemporary thinking on leadership is based on this understanding, and views leaders and leadership as providing meaning and shared understanding within groups and organisations (e.g., Gioia & Chittipeddi, 1991; Foldy, Goldman, & Ospina, 2008; Smircich & Morgan, 1982).

The *Leadership of Thought* approach to understanding leadership is based on intellectual superiority and is exercised through communicative actions, such as lectures and writing, or it could be based on discovery (Clark & Clark, 1994). This category focuses on leaders who have influence on the collective thinking, such as Einstein and Darwin (Bass & Bass, 2008). Clark and Clark (1994) posit that leadership is not limited to influencing a group of people toward taking action with specific objectives; it can also be enacted through ideas, values, beliefs etc.

The *Leadership as Purposive Behaviour approach* refers to the group of definitions that view leadership as particular behaviours which aim at directing and coordinating groups of individuals (Bass & Bass, 2008). These behaviours have been conceptualised as anything that researchers deem as leadership-related behaviour (Carter, 1953), or any behaviours to do with directing groups (Hemphill, 1949). Shartle (1956, as cited in Bass & Bass, 2008, p.17) proposes that an act of leadership is "one that results in others acting or responding in a shared direction"; it therefore has the purpose of producing a shared reaction among followers.

In a similar manner, *Leadership as Persuasive Behaviour* refers to leader behaviours that are directed towards convincing others to do something, by generating the will for such action rather than coercing followers (Bass & Bass, 2008). Such definitions evolve around the notions of rhetoric and argumentation, persuasion, inspiration, interpersonal relations and emotional appeal (e.g., Neustadt, 1960; Schenk, 1928; Mason, 1937).

Leadership as the Initiation of Structure includes the group of definitions that view leadership as providing structure by defining and integrating roles and relationships within a group, and thus organising members and their interactions (Bass & Bass 2008). Bass and Bass (2008) suggest that initiating structure is not an inclusive enough definition of leadership, as maintenance of structure is equally important and further leadership acts take place within structures.

A vast number of definitions fall in the category of *Leadership as the Exercise of Influence*, focusing on leader communication and behaviours that aim at influencing individuals to act towards achieving specific objectives (Bass & Bass, 2008). Stogdill (1950, as cited in Bass & Bass, 2008, p.18) defines leadership as "the process of influencing the activities of an organized group in its efforts towards goal setting and goal achievement". Leadership as influence can be viewed as leading individuals to behave above and beyond the organisational routine embedded in one's role, with leaders being those individuals able to promote such behaviours irrespective of their formal position and power (Katz & Kahn, 1966). This school of thought recognises the reciprocal relationships between individuals, with the person exerting more influence on another or a group emerging as the leader (Bass, 1960).

Following on the previous category, *Leadership as Discretionary Influence* recognises that true leaders influence followers beyond routine behaviours (Katz & Kahn, 1966) to extra-role behaviours, where elements of organisational structure and processes are missing (Miller, 1973), or in the case of events that are novel and unanticipated (Jacobs & Jaques, 1987). Overall, discretionary influence aims at promoting behaviours outside the contractual role of the followers.

The final category of leader centric definitions is *Leadership as the Art of Inducing Compliance* that views leadership as a downward practice of control with the aim of inducing followers to act in accordance to the leader's will, irrespective of their own wishes, interests, values, needs and so on (Bass & Bass, 2008). For example, Allport (1924, as cited in Bass & Bass, 2008, p.19) views leadership as "personal social control". Although this approach is criticised by behavioural scholars, it is still a valid explanation of leadership, as leadership can be directive, authoritarian and coercive (Bass and Bass, 2008).

Another broad categorisation of leadership definitions according to Bass and Bass (2008) is leadership as an effect, in either causing goal achievement or as an effect of group interactions. The *Leader as an Instrument of Goal Achievement* refers to a stream of definitions that view leaders in terms of their role in achieving groups' goals and satisfying followers' needs (Bass & Bass, 2008). According to Bellows (1959) leadership is the process of minimising effort and resources in the achievement of goals that are shared among the group members and the leader. According to Pfeffer (1977) leadership is an influence and can be attributed to an individual subsequently to goal achievement. Under this approach leadership involves providing a vision, transforming followers and providing clear direction on how the goals can be achieved (e.g., Burns, 1978; Bass, 1985).

The *Leadership as an Effect of Interaction* stream of definitions focuses primarily on emergent leadership (Bass & Bass, 2008), and views leadership as the process of stimulating interaction among group members (Bogardus, 1929), building on individual differences (Pigors, 1935), and enabling a group to define its shared purpose (Anderson, 1940).

The final broad category of leadership definitions covers explanations of leadership as an interaction between the leader and the followers (Bass and Bass, 2008), acknowledging the important role played by followers in the leadership process. Definitions under the *Leadership as a Process* approach are concerned with "the cognitions, interpersonal behaviors, and attributions of both the leaders and the followers as they affect each others' pursuit of their mutual goals" (Bass & Bass, 2008, p.21). These definitions recognise the interactive nature of leadership, that involves an exchange between the two parties (e.g., Dansereau, Graen, & Haga, 1975), and suggest that leadership is not confined to the person formally in a position of leadership, but can be shared or held by another member of the group.

The *Leadership as a Power Relationship* group of definitions are popular both in terms of political, as well as organisational leadership. Raven and French (1958) suggest distinct sources of power the leader could have in order to exert influence on followers; namely referent, expert, reward, coercive or legitimate power. Although this way of viewing leadership does not comply with idealist ideologies, recognising the important role of power relationships between the leader and the follower is inevitable.

The *Leadership as a Differentiated Role* perspective is based on role theory and the notion that everyone has a distinct role in a collective. It suggests that leadership emerges from interaction among team members (Gibb, 1954), and the leader is the individual who influences the members of the group towards goal achievement (Gordon, 1955). According to M. Sherif and C. W. Sherif (1956), the mutual expectations of the leader and the follower will define their roles.

The *Recognition of the Leader by the Led* approach suggests that on the basis of social exchanges the followers match the leader to their leadership prototype following controlled cognitive processes (Lord & Maher, 1991). Lord and Maher (1991) showed that there is variation in leadership prototypes depending on profession, i.e. prototypes of ideal business leaders differ to prototypes of ideal sports leaders.

Another stream of definitions views leadership through the process of identification, and is termed *Identification with the Leader*. The leader is viewed by the follower as an example to

be followed, there is emotional connection between the two, and the follower shares the leader's aspirations (Bass & Bass, 2008; Shamir, 1991).

Finally, the definitions that encompass more than one meaning of leadership fall under the category of *Leadership as a Combination of Elements*. For example, in his definition of leadership Bogardus (1934) encompasses the notions of personality, group-level phenomenon, process, interaction, influence, and dominance. Similarly, Jago (1982) bases his definition of leadership on group-level influence, goal attainment and attributed characteristics.

Overall, the systematic classification provided by Bass and Bass (2008) unveils the complexity and multi-faceted nature of the concept of leadership, suggesting that scholars need to select the appropriate definition in terms of the focus of their investigation and their methodological perspective. It is evident that the understanding and study of leadership is expanding into the role of the context and the followers as salient factors in leadership attribution and effectiveness. Yukl (2010) offers a rather comprehensive definition of leadership which suggests that "[l]eadership is a process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (p. 26). In relation to Bass and Bass' (2008) classification of definitions, Yukl's (2010) definition is inclusive of several conceptualisations, namely leadership as influence, the making of meaning, persuasion, providing direction and goal achievement. This definition is adopted for the purpose of the present thesis.

Approaches to Leadership Study

The concept of leadership has received a great amount of attention in the literature throughout the years, resulting in a plethora of approaches and theoretical models. The present thesis will briefly review the major paradigms, using Yukl's (2010) classification which roughly follows a chronological path of the order of emergence of the different approaches. According to Yukl (2006) there have been traditionally five major paradigms in the development of leadership theories, namely trait, behaviour, power-influence, situational and integrative approaches. The trait theories are discussed in more detail, as they are the predominant paradigm that informs the conceptualisation and research of Implicit Leadership Theories, which is the primary construct of interest in the present thesis.

Trait Approaches

The earliest theories were focused on identifying leaders' characteristics, skills, values and personality; hence describing leaders and associating their attributes to outcomes which measure leadership success. This approach emerged in the early 1930s with the chief objective of identifying the individual characteristics that distinguish leaders from nonleaders (Zaccaro, 2007), and was the predominant paradigm in leadership studies throughout the 1930s, 1940s and 1950s (House & Aditya, 1997).

The early trait studies aimed at linking particular traits to measures of leadership success, such as career advancement or performance. Based on an extensive literature review of leader trait studies, Derue, Nahrgang, Wellman, and Humphrey (2011) conclude that leader traits can be classified into the following categories: demographic characteristics, traits linked to task competence, and interpersonal attributes. Yukl (2010) proposes a similar categorisation of traits into technical skills, interpersonal skills and conceptual skills.

The most influential methodical review of early studies on leadership traits was conducted by Stogdill (1948) covering 124 published studies conducted between 1904 and 1948. He focused his review on traits and characteristics that were addressed in at least three studies, and unveiled several contradictions and inconsistencies among research findings. For example, he observed that the reported age at which children are capable of leadership differed significantly among studies, while others found that leadership capacity in children is not dependent on age. Similarly, Stogdill found that in studies of leaders' age with adult participants, some reported that leaders tend to be older than their followers, others younger, while yet others found differences between the two genders or no significant differences associated with the age of leaders and followers. Stogdill reported the average correlation between age and leadership among the early studies to be .21. He concluded that the relationship between age and leadership depends on situational factors, such as the nature of the organisation. In a similar fashion, Stogdill compared, contrasted, and drew conclusions on a wide range of traits, such as stature, height, physique, energy, health, appearance, fluency of speech, intelligence, academic performance self-sufficiency, dominance, initiative, persistence, ambition, industry, responsibility, integrity, conviction, liberalism or conservatism, self-confidence, mood, humour, emotional control, socioeconomic status, social activity and mobility, and so on. The conclusions from this review of early trait studies are that the required traits for leaders will depend on situational factors, but that generally there is some evidence that certain traits are consistently linked to leadership in a number of studies. Such traits are intelligence, scholarship, dependability, and activity and social participation.

Physical characteristics were found to have a weak link to being a leader. Stogdill also highlighted that there was insufficient evidence in support of leadership transferability in individuals from one situation to another. Overall, Stogdill failed to show that a specific set of traits would universally account for leadership status, but he pointed out that leadership is based on a relationship between leaders and followers and will be affected by contextual and situational factors.

Although Stogdill's (1948) review appeared to show that there is a weak and inconsistent link between traits and leadership, later reviews showed that in fact there is some evidence in support of the trait paradigm. House and Baetz (1979) revisited Stogdill's (1948) review and concluded that when the selection of studies was refined to include only those with samples of adults, the correlations between some traits and leadership were substantially larger than those reported by Stogdill. In 1974 Stogdill published another review covering studies completed between 1949 and 1970 to conclude that in fact some traits consistently predicted leadership behaviour and outcomes, and could be considered as universal. In their meta-analysis, Lord, DeVader and Alliger (1986) also found consistency in the predictive capacity of intelligence, dominance and masculinity in leadership situations.

The early research on traits received much criticism in the literature. Zaccaro (2007) points out that the early body of research fails to distinguish between leaders and nonleaders on the basis of traits, and that it fails to take into account situational factors. Although this argument is true and early studies largely ignored the context, it is the results of these studies that informed thinking on leadership and pointed in the direction of contextual factors, which later became the focus of leadership research. Another valid criticism is that there was large variation in the leadership outcome measures between these studies, in search of universal traits that would predict leadership success (Yukl, 2010). This was a weakness in that different traits might be linked to different aspects and measures of leadership success. Moreover, House and Aditya (1997) point out that a problem with traditional trait studies is that personality theories had not been well developed and could therefore not inform the leadership research to a great degree, which resulted in inconsistencies in the traits being investigated in the various studies. They further argue that since measurement theory was also not well developed, there was much variation in the operationalisation of traits as well as potential lack of validity of the instruments used. The samples used were also criticised for not being representative of the wide range of situations where leadership is present, as they included primarily adolescents, supervisors and managers at lower levels of the hierarchy, while largely omitting senior and executive level managers. Finally, and possibly the most important of the weaknesses of the earlier studies is that they were atheoretical; researchers

did not provide theoretical and conceptual arguments as to why certain characteristics and traits would be associated with leadership effectiveness (Zaccaro, 2007; House & Aditya, 1997).

With the aid of several theoretical advancements, a new interest in leaders' traits emerged (House & Aditya, 1997). Theories emerged that explained the link between traits and behaviours (e.g., Bem & Allen, 1974; Schneider, 1983; House, Shane, & Herold, 1996), in addition to the finding that the traits predicted behaviour in varying degrees based on individual differences (Bem & Allen, 1974; Snyder, 1974). Mischel (1973) suggested that certain situations favour the expression of traits and dispositions more than others. The issue of the stability of traits over time was also clarified, with House, Shane and Herold (1996) proposing that traits are relatively stable, but could change over long periods of time, and are therefore better predictors of short- rather than long-term behaviours and outcomes. Finally, Schneider (1983) pointed out that traits might predict behaviour in some situations, but not in all. The later wave of trait studies was therefore theoretically and methodologically more robust (e.g., Bono & Judge, 2004; De Hoogh & Den Hartog, 2009; Judge et al., 2002, Lord et al., 1986).

The issue of context and situation became prominent in later research. Miner (1967, 1978, 1985) reached similar conclusions to Stogdill's (1948) by conducting a series of studies looking at leaders' managerial motivation in relation to advancement to higher levels of the organisational hierarchy. He found consistent links between motivation to manage and advancement in large bureaucratic organisations, while his findings in smaller organisations were inconsistent and inconclusive. This indicates that the context plays an important role in the trait requirements for successful leadership.

McClelland (1965, 1985) conducted a series of studies as well looking at the link between managerial motivation and leadership effectiveness. Their technique for determining an individual's need strength is the Thematic Appreciation Test, which requires from participants to come up with stories to correspond to ambiguous images. These stories are then coded with the purpose of determining the participants' need for power, achievement and affiliation. Need for power is further broken down into socialised and personalised power orientation. They found that in large organisations managers tend to be most effective when they have a socialised power orientation, moderately high need for achievement and a low need for affiliation (e.g. McClelland & Boyatzis, 1982). The importance of situational factors again becomes evident, as further studies show that in smaller organisations where the manager is

the owner success is more likely when he or she have a high need for achievement (e.g. McClelland & Winter, 1969).

Personality traits in general have been the focus of numerous studies both under the trait paradigm, as well as in research that integrates several approaches to the study of leadership (e.g., Bernerth, Armenakis, Feild, Giles, & Walker, 2008; Bono & Judge, 2004; Giberson, Resick & Dickson, 2005; Judge & Bono, 2000; Judge et al., 2002; Lord et al., 1986; Ng, Ang & Chan, 2008; Shao & Webber, 2006). The vast number of studies investigating the relationship between personality and leadership has triggered several meta-analyses that aimed at finding patterns and generalising the results of previous research. The most notable such overviews were conducted by Lord, De Vader and Aliger (1986), and Bono and Judge (2004). Lord and his colleagues (1986) found that many of the inconsistencies in previous research findings regarding the relationships of traits with leadership perceptions and emergence were due to methodological errors and that when sampling error is taken into account there is in fact remarkable consistency across studies of traits, rendering the investigation of contextual and situational moderators largely unnecessary. Later findings by Bono and Judge (2004) partly contradict the conclusions reached by Lord and his colleagues (1986). In their meta-analytic investigation of the relationship between personality traits and transactional and transformational leadership they found that although there are some consistent patterns in research findings, in general the associations between personality traits and transactional and transformational leadership behaviours are weak and inconsistent.

Overall, research on traits and leadership has evolved over the years, resulting in informative and applicable findings. Nevertheless, as Yukl (2010) points out, there are still some problematic aspects in using traits for understanding leadership effectiveness. Particularly, he proposes that due to the abstract nature of traits and the lack of theoretical rationale linking traits to leadership effectiveness, it is more meaningful to use behavioural measures alongside trait measures in studies of leadership effectiveness. Further, he encourages researchers to investigate a wider range of traits in each study in order to account for the correlations among those traits, and to unveil the combined effects of traits on leadership and managerial effectiveness. Finally, he urges researchers to consider trait balance in their studies; that is, not only to investigate which traits are associated to leadership, but also to what degree – it is likely that a moderate rather than excessive amount of a trait is more desirable in some cases. Thus, though trait research has contributed much to our understanding of leadership perceptions, emergence and effectiveness, this approach has its weakness and further studies and theoretical developments are needed to more fully explain the link between traits and leadership. Lard and Maher (1991) suggest that traits should not

be considered as causes of leaders' behaviour. They postulate a more complex mechanism, by which traits have value when they are perceived by followers as matching their conceptions of leadership, and that research in the area needs to focus on traits as perceived by followers, rather than in absolute terms.

Leader Behaviour Approaches

Later, research focused on the behaviours of leaders, the correlation with leadership effectiveness, and on differentiating among the behaviours of effective and ineffective leaders. According to Yukl (2010), the leader behaviour approaches can be divided into two further paradigms – the studies investigating what managers do in their role and those that focus on the behaviours of effective leaders.

The body of research concerned with managerial activities is primarily descriptive in nature, using methods such as observation, diaries and interviews (Yukl, 2010). Mintzberg (1973) conducted a milestone study under this approach using observation of executive managers. He concluded with a ten-category taxonomy of managerial roles, with each managerial activity involving at least one, and often more, roles. These include the following roles: leader, liaison, figurehead, monitor, disseminator, spokesperson, entrepreneur, disturbance handler, resource allocator and negotiator. Another representative group of studies falling into the category of managerial work descriptions was conducted by Stewart (1967, 1976, 1982). His work resulted in the description of managerial jobs on the basis of three core components; namely, demands, constraints and choices. Demands refer to obligations or duties, such as those imposed by bureaucratic systems. Constraints are factors that relate to organisational and external boundaries, such as legislation. Finally, choices refer to any activities that are at the discretion of the manager, such as prioritising objectives and identifying opportunities.

The two major studies that dominate the leader behaviour paradigm are the Ohio State Leadership Studies and the Michigan Leadership Studies. The Ohio State Leadership Studies (Fleishman, 1953; Halpin & Winer, 1957; Hemphill & Coons, 1957) aimed at identifying and developing a measurement tool of leader behaviours. The initial studies resulted in a scale of 150 items and the analysis of the data showed that managerial behaviours can be divided into two broad categories, consideration and initiating structure, which are relatively independent of each other. Consideration behaviours are those that are person- and relationship-oriented, while initiating structure are task-oriented. The initial body of research into consideration and initiating structure resulted in the development of four questionnaires; namely, the Leader Behaviour Description Questionnaire, the Supervisory Behaviour

Description, the Leader Opinion Questionnaire, and the Leader Behaviour Description Questionnaire Form XII. A recent meta-analysis showed that both consideration and initiating structure behaviours are significantly related to leadership outcomes, such as satisfaction and performance (Judge, Piccolo, Ilies, 2004). At the same time of the Ohio State Studies, another series of studies was conducted at the University of Michigan on the behaviours that distinguish effective from ineffective managers (Katz & Kahn, 1952; Katz, Maccoby, Gurin, & Floor, 1951; Katz, Maccoby, & Morse, 1950; Likert, 1961, 1967). The findings of these studies indicate that effective managers engage in task-oriented behaviours (e.g., coordinating and scheduling), relations-oriented behaviours (e.g., helping and supporting subordinates), and participative leadership (e.g., management of groups rather than individuals).

Power Influence Approaches

Another approach that also focuses on the leader as the single cause of outcomes is the power-influence approach. This stream of research centres on the notion of power and how it is used in influencing followers as a rationalization of effective leadership. The most influential researchers under this paradigm are Raven and French (1958) (see also French & Raven, 1959), whose work focuses on the sources of power and leaders' influence techniques. They identified five sources of power, upon which much of the subsequent research in the field was based. Compliance based on reward power stems from the rewards that the manager controls, and are valued by the subordinates. Coercive power leads to compliance due to fear of punishment. Legitimate power causes compliance when the subordinate feels obliged to comply due to the power associated with the manager's position in the organisation. Expert power is based on the subordinates' belief that the manager possesses specialised knowledge regarding the optimal way of going about a task. Finally, referent power stems from the subordinates' liking of their manager, admiration and identification with him or her. Another influential classification of power sources is the distinction between position and personal power (Bass, 1960; Etzioni, 1961), which differentiates power that is due to organisation-related factors from power that is due to person-related factors.

With regards to influence processes, Kelman (1958) proposes three distinct, but not mutually exclusive, categories of processes, namely instrumental compliance, internalisation, and personal identification. Instrumental compliance occurs when the subordinate executes the required task in order to avoid punishment or gain rewards. Internalisation refers to the acceptance of and compliance to requirements due to the subordinate's perception that it is desirable, correct and in agreement with their values and beliefs. The third process, personal identification, refers to compliance that is motivated by a need for acceptance by the manager

and is targeted at pleasing them. Influence tactics have also been a topic of theoretical and empirical work, and are summarised by Yukl (2010) into four types of tactics. According to Yukl, impression management tactics aim at making the target like the person exercising influence, political tactics aim at influencing decisions at the organisational level, proactive tactics have the objective of task accomplishment, and reactive tactics are usually exercised in resistance by the person who is the target of influence attempts.

Situational Leadership Approach

The situational or contingency approach moves away from the leader-centred research into recognising the significance of the context as an influence in the process of leadership. The major premise here is that different situations call for leaders with different characteristics. Yukl (2010) identifies the following among the key theories within the situational approach: the path-goal model, the situational leadership theory, the leader substitutes theory, the multiple-linkage model, the Least Preferred Co-worker (LPC) contingency theory and the cognitive resources theory. These are briefly described below.

The path-goal theory (Evans, 1970, 1974; House, 1971; House & Dessler, 1974; House & Mitchell, 1974) links leader behaviour to follower satisfaction and performance, by proposing that leaders are able to clarify the path between goals and task achievement and adding value to the rewards associated with successful task completion. The path-goal theory draws heavily on expectancy theory (Georgopoulos, Mahoney, & Jones, 1957; Vroom, 1964) to interpret how leaders affect follower reactions and behaviour. According to expectancy theory, subordinates' motivation will be higher when they perceive a high value in the outcomes of achieving a task successfully (valence) and when they believe that the probability of achieving that outcome is high (expectancy), with leaders being able to influence subordinates' perceptions on these factors. The path-goal theory further proposes that leader behaviours can be classified into four categories (supportive, directive, participative and achievement-oriented leadership), and that these will be successful to varying degrees depending on task and follower characteristics. The theory has been criticised for both lack of consistency in empirical findings (Podsakoff, MacKenzie, Ahearne, & Bommer, 1995; Wofford & Liska, 1993) and for conceptual limitations, such as the separate rather than simultaneous consideration of leader behaviours (Yukl, 2010) and over-reliance on expectance theory which is complex and somewhat unrealistic in its interpretation of behaviour (e.g., Mitchel, 1974; Schriesheim & Kerr, 1977).

Hersey and Blanchard (1977) proposed the situational leadership theory, according to which leaders' should adjust their behaviour to correspond to their subordinates' maturity levels. Follower maturity is defined as the extent to which the individual has the skill and self-confidence related to completing a task. Hersey and Blanchard propose that as the subordinates' maturity increases, leaders' task-behaviour should decrease in order to optimise performance, while leaders' relationship-oriented behaviour needs to be high for subordinates of moderate maturity and low for those of high or low maturity. They further suggest that it is possible to increase the maturity level of subordinates through developmental interventions. The main criticisms of the theory evolve around issues of lack of empirical support, unclear definitions of leadership behaviours and limited consideration of contextual and situational factors (Yukl, 2010).

The leadership substitutes theory (Kerr & Jermier, 1978) proposes that certain situational factors reduce or entirely remove the need for leadership. These are termed substitutes and neutralisers, with substitutes referring to factors that render leadership unnecessary and neutralisers referring to such organisational and task characteristics that act as obstacles to leader effectiveness, or that diminish the effects of the leader's efforts. Kerr and Jermier propose that certain subordinate, task and organisational factors can substitute or neutralise supportive leadership, instrumental leadership or both. For instance, subordinates' experience and high ability could substitute the need for supportive leadership, clear organisational procedures and rules could substitute instrumental leadership, and the leader's position power could neutralise the effects of both types of leader behaviours. The theory has been criticized for the lack of research that tests the theory in its entirety, for the ambiguity in the interpretations of causal links between leader behaviours, substitutes, neutralisers and outcomes, or the overly generalised categories of leader behaviours (Yukl, 2010).

The multiple-linkage model (Yukl, 1981, 1989) relies heavily on earlier situational leadership models to propose a comprehensive interpretive framework of leader and situational factors and their effects on group performance. According to the model leader behaviour has an effect on performance through a range of intervening variables. The intervening variables identified by Yukl (1981, 1989) are the amount of effort invested by the subordinates, role clarity and subordinates' skills, the way work is organised, the extent to which the group is cohesive and its members cooperative, the availability of resources and support services, and external coordination. According to the model, situational variables moderate both the leader's effect on the intervening variables, and the effect of the intervening variables on performance. Further situational variables have a direct effect on the intervening variables that determine performance. The leader's effectiveness can be improved by correcting

problems and deficiencies in the intervening variables in the short-term, or by modifying situational factors in the long-term. The multiple-linkage model has two main weaknesses; first, it is rather ambiguous (e.g., it does not link specific leader behaviours to intervening variables and performance, it does not specify how intervening and situational variables can be modified, it does not specify the nature of the interactions between leader behaviours and situational variables), and second, it has not been empirically tested in its entirety due to its high complexity (Yukl, 2010).

The LPC contingency theory was introduced by Fielder (1964, 1967, 1978) and it proposes a link between the leader's trait termed 'least preferred co-worker', situational variables and leadership effectiveness. Leaders high on LPC are individuals who rate their least preferred co-worker highly, while those low on LPC are harsher in rating their least preferred co-worker. Fiedler (1978) proposes that the distinction between high and low LPC leaders lies in their motives; high LPC leaders are motivated to build successful relationships with their subordinates, while low LPC leaders are motivated to achieve task success. Another plausible interpretation is the value-attitude approach, proposed by Rice (1978). According to Rice, high LPC leaders value success in their interpersonal relationships, while low LPC leaders place value on achieving a task successfully. The LPC theory further proposes that three situational factors will determine whether a leader is successful; namely, leader-member relations, the leader's position power and the task structure. This results in eight octants of situational favourability, with low LPC leaders being more successful in very favourable or very unfavourable situations and high LPC leaders more successful in situations of medium favourability. The LPC theory has been criticised for the lack of empirical evidence, with relationships generally found to be in the right direction but not statistically significant (e.g., McMahon, 1972; Vecchio, 1983). Further problems are identified with the theory regarding the lack of interpretations of the effectiveness of medium LPC leaders in different situations, and regarding the limited practical usefulness of the theory, since it assumes that leader training would not improve their effectiveness, as this depends on a trait rather than a skill.

Finally, the cognitive resources theory (Fiedler, 1986; Fiedler & Garcia, 1987) proposes that leaders' intelligence and experience have an effect on their performance outcomes, which is moderated by the social stress they experience and mediated by the extent to which they are directive in their behaviour. According to the theory, leader intelligence will cause positive outcomes in situations of low stress, and will have no or negative effect when the leader is under high stress. The opposite effects are proposed for leader experience, with social stress increasing the positive effect of leader experience on outcomes, while low stress resulting in

leader experience having no effect on outcomes. The theory further explains that intelligence and experience have a positive effect of outcomes when the leader is directive and guidance is needed for the effective completion of tasks by the subordinates. Yukl (2010) explains that is difficult to conclude on the validity and generalisability of the cognitive resources theory due to the mixed results reported in studies that test the model and the methodological limitations of research in the area. From a conceptual perspective, the theory is criticized for using general intelligence as the key leader trait affecting performance, without consideration of other more specific cognitive skills, and for addressing the effects of only one leadership behaviour on outcomes, namely directive leadership (Yukl, 2010).

In summary, situational leadership theories provide valuable insights on the role of contextual variables in the leadership processes, and on how is the effect of leader traits and behaviours on outcomes influenced by the situation. Their main weaknesses are that empirical studies have not provided conclusive evidence in support of the theories, and, as McCall (1977) postulates, it is difficult for managers to apply such theories due to their high complexity.

Integrative Approach

Finally, the integrative approach combines the previous approaches in order to create a more comprehensive and holistic picture of the determinants, processes and outcomes of leadership. According to Yukl (2010), only a few attempts have been made to combine all of the previously described approaches into a single theoretical framework and empirical investigation. Therefore, there is a need for further effort at integrating the existing knowledge in the domain of leadership.

Moving away from the traditional paradigms, contemporary researches are starting to recognise the importance of the *followers* in the effectiveness of the leadership process (see Meindl, 1998). Pierce and Newstrom (2006) note that “follower attributes in part influence the effectiveness of a leader’s influence attempts” (p. 260), due to the fact that followers personality (skills/abilities, motives, biases and personal histories) is as well an input to the leadership process. The present thesis has a focus on follower-related factors, and particularly follower perceptions, as determinants of leadership effectiveness.

CHAPTER 2 - IMPLICIT LEADERSHIP THEORIES: THEORETICAL OVERVIEW AND LEVELS OF CATEGORISATION

This chapter focuses on the primary theoretical framework for the thesis, Implicit Leadership Theories (ILTs). The theoretical overview of ILTs is concerned with the conceptualisation and the explanatory frameworks of ILTs. It discusses early research in the area and theoretical interpretations of cognitive processes that form the basis of our understanding of ILTs. In particular, it reviews four theoretical approaches that inform our current understanding of ILTs, namely the role of ILTs in the leader rating process as a measurement error, the Leadership Categorisation Theory, the Information Processing Approach, and the Connectionist Network Approach. It then provides an overview of the key advancements in empirical research and theoretical developments of ILTs, which have refined and extended our understanding of the concept. Since the issue of abstraction in ILT conceptualisation and measurement is of central interest in the present thesis, it is discussed throughout the overview and finally summarised to form the basic research question of the thesis. Abstraction of ILT conceptualisation and measurement is discussed with reference to the role of context in cognitive processes and schema activation, as well as in relation to levels of leadership categorisation, and their interpretation and utilisation in relevant research. The final issue that the chapter addresses is that of the role of follower perceptions and ILTs in group settings, as a factor affecting leadership processes and outcomes in teams.

ILTs are a follower-centred approach to studying and understanding leadership, by taking into consideration followers' cognition and perception as a salient factor in the leaders' recognition and in the leadership process in general. As such, van Gils, van Quaquebeke and van Knippenberg (2010) explain that ILTs serve in our interpretation of leadership as a socially constructed subjective reality, the construction of which is a combination of environmental inputs and followers' cognitive models. Varying terminologies have been employed to refer to mental models of leadership; apart from ILTs, these include schemas, prototypes, exemplars, and so on. Eden and Leviatan (1975) initially described ILTs as "conceptual factors that the respondents brought with them to the measurement situation" (p. 738) or "preconceptions about the patterning of leadership variables" (p. 736). The most inclusive and general definition of ILTs is provided by Schyns and Meindl (2005) who developed a definition which reflects the bulk of existing studies and definitions. They define ILTs as "the image that a person has of a leader in general, or of an effective leader" (p. 21). Epitropaki and Martin (2005) refer to leadership schemas as "the dynamic, cognitive knowledge structures used by individuals to encode and represent incoming information regarding managerial leadership"

(p. 659), thus acknowledging their dynamic, rather than static, nature. A more recent interpretation is provided by Shondrick and Lord (2010), who regard schemas as cognitive shortcuts that are "knowledge structures that develop through experience (e.g., categories, scripts, plans, implicit theories, and heuristics)" (p. 3). Van Gils et al. (2010) view ILTs as "cognitive schemas which specify the traits and behaviours that followers expect of leaders" (p. 339). Probably the most influential definition of leadership which takes into account the cognitive schemas of followers is provided by Offermann, Kennedy and Wirtz (1994) who see leadership as "a cognitive category in memory, organized hierarchically, like all other categories, into three levels" (p. 44). In the present thesis ILTs are viewed in line with the definition provided by Epitropaki and Martin (2005), since this definition recognises the dynamic nature of ILTs as cognitive structures and the focus of the thesis is to investigate the dynamic schema activation processes of followers, and the effects of this process of leadership and its outcomes. Additionally, this definition is viewed as the most consistent with the recent development in ILT conceptualisations, as will be described below.

Theoretical overview of Implicit Leadership Theories

Four distinct, yet interrelated theoretical interpretations of ILTs are discussed in this section. Early understanding of ILTs was based on the idea that leadership prototypes and pre-conceptions are a source of bias and error in follower ratings of leadership. They were also found to have an effect of attribution of performance.

ILTs as Leadership Measurement Bias and Attribution of Leadership

The first research to address the topic of ILTs was by Eden and Leviatan (1975), who based their conceptualisation of pre-conceptions that raters brought to the process of leadership measurement on the principles of Implicit Personality Theory (Schneider, 1973). The measurement problem that was identified in personality research was, that irrespective of the level of acquaintance of the rater with the person being rated there was remarkable consistency in the factor structure of the personality traits that were being rated (e.g., Passini & Norman, 1966). This was interpreted as problematic in organisational research as well, since it was assumed that the ratings were reflecting previous conceptions of the respondents and were not accurate and realistic representations of the organisational factors under study. Particularly, Eden and Leviatan (1975) argued that similar to personality ratings, ratings of leaders in organisations were contaminated by the raters' ILTs. In order to investigate whether respondents' pre-conceptions contaminated the measurement process in the area of organisational leadership Eden and Leviatan (1975) conducted an empirical study with a

sample of 235 students in Israel. They provided the respondents with a limited description of a fictional organisation and asked them to provide ratings on a scale measuring four leadership behaviour factors, namely support, interaction facilitation, goal emphasis and work facilitation (Bowers & Seashore, 1966). Eden and Leviatan (1975) conducted exploratory factor analysis on the data and found factors that are consistent with previous research in real organisations; these findings supported their thesis that ratings of organisational factors are largely based on implicit beliefs rather than true representations of reality. They went further in their analysis to test the factor structure on subsamples on the basis of past organisational experience and of the factors the respondents based their answers on (e.g., descriptions read about work in factories, random responding) to find further support for the stability of the item factor structure. Their findings led them to describe ILTs as "conceptual factors that the respondents brought with them to the measurement situation" (p. 738) or "preconceptions about the patterning of leadership variables" (p. 736). Apart from identifying the 'problem' of respondents' implicit theories affecting their ratings of leaders, Eden and Leviatan (1975) suggested certain remedies, such as validating findings using non-questionnaire methods.

The problem of internal validity in leadership questionnaires was soon revisited by Rush, Thomas and Lord (1977), who identified two potential difficulties in using questionnaires. They propose that the factor structure of leadership measures might be determined by ILTs, and that actual leader ratings might be affected by contextual cues. In order to investigate the effect of ILTs on the factor structure and factor level of existing measures the authors conducted a study with a sample of 168 students in the USA using the Leader Behaviour Description Questionnaire (Stogdill, 1963) to measure consideration and initiation of structure. Similar to Eden and Leviatan's (1975) design, they provided the respondents with limited information regarding the organisation and person they were asked to rate. They went further in their study to provide cues regarding three factors, the supervisor's performance, gender and accomplishment. Findings showed the same factor structure in the limited condition study as that reported in previous research studies under normal organisational conditions, as well as similarities in the items that did load highly on the anticipated factors. Of the three cues, they found that the leader performance cue had a significant effect on ratings, gender had a marginal effect, and accomplishment did not have an effect. Overall, they showed that the factor structure of leadership ratings is similar in different studies, regardless of contextual information (i.e., limited information experimental condition vs. field data), thus providing support for the argument that respondents' ILTs contaminate their ratings of leaders. To further investigate the effect of familiarity with the leader on leader ratings Rush et al. (1977) looked at five samples of respondents who had a distinctly different

degree of familiarity with the leader they were required to rate. A comparison of the five samples confirmed the similarities in the structure of the initiation and consideration factors regardless of the level of familiarity with the leader, leading the authors to conclude that ILTs could have an important effect on leader ratings in real-life situations, rather than solely under the limited information condition. Finally, analysis of variance revealed that the contextual cues under study did have an effect on the level of the ratings, with the most consistent and largest effect coming from performance cues. Rush et al. (1977) provide an important theoretical contribution to the understanding of the mechanisms behind the use of implicit theories in leader ratings. They propose that implicit schemas are used as a shortcut to the complex perception-memory process of information regarding leaders' behaviour, by providing heuristics for the possible effect of implicit theories on all stages of information processing, which are the exposure to leader behaviour, selective attention to facets of the behaviour, the encoding and storage in memory of these behaviours, and finally the retrieval of the behaviours from the memory.

Weiss and Adler (1981) investigated further the mechanisms behind the effect of implicit theories on leadership ratings by looking at the effect of respondents' cognitive complexity. They start by proposing a method for distinguishing whether similarities in factor structures are in fact due to respondents' perceptual schemas or due to accurate representations of reality. The authors propose that they could be cognitive constructs in the minds of the respondents as suggested by Rush et al. (1977), in which case individual differences, such as interpersonal construct systems, would have an effect on peoples' ILTs. Alternatively, they might be true representations of patterns in leaders' behaviours, in which case respondents' individual differences would not have an effect on leaders' ratings. Weiss and Adler (1981) tested the idea of differences in cognitive complexity affecting leadership ratings on a sample of 254 students by closely replicating the Eden and Leviatan's (1975) method, with the addition of a cognitive complexity measure. They found the same factor structure of leadership ratings as reported by Eden and Leviatan (1975). Further, they report consistency in the factor structure across subsamples with differing levels of cognitive complexity, to conclude that individual differences in cognitive complexity have no effect on the factor structure of measures of leadership behaviours. This therefore provides support for the argument that leadership ratings are not mere reflections of prior conceptions of leadership behaviour, but are likely to be representations of behavioural patterns in actual leaders.

In an effort to better understand the confounding effect of ILTs on leadership ratings and find ways of optimising the rating process, Larson (1982) conducted an experiment where he manipulated performance as well as the timing of the performance cue in relation to the

leader behaviour observation and leader rating. The aim of this experiment was to identify the time and circumstances under which the implicit leadership schemas were activated. Subjects were divided into four groups and provided with either a success or a failure response stimulus, either before or after watching a video of a problem-solving group. Participants then provided ratings of the leader's consideration and initiation of structure behaviours on the Leader Behaviour Description Questionnaire (Stogdill, 1963). Larson (1982) found that the performance manipulation had a significant effect on subsequent leader ratings and the observation-time variable did not affect the leader ratings, meaning that it did not matter whether the performance cue was provided before or after the subjects observed the leader's behaviour, suggesting that ILTs were activated during the leader rating process. He concluded that further research was needed into the automatic information processing mechanisms in order to unveil the conditions under which individuals' implicit theories affect their leader rating and thus to determine appropriate strategies to minimise the confounding effect of ILTs. Overall, early studies of ILTs reveal that follower ratings of leaders are affected by the followers pre-existing cognitive structures of leadership. Early studies however dealt mostly with the error and bias introduced to the leader rating process, and did not attempt to investigate the effects of ILT on follower perceptions, judgments and reactions to leaders.

Important theoretical advances in the late seventies and early eighties resulted in a shift in the conceptualisation of ILTs; they were no longer viewed merely as biases that the respondents brought to the leader rating process. Followers' perception and cognitive processes were recognised as important factors of the leadership process (e.g., Calder, 1977; Lord, Foti & Phillips 1982; Lord, Foti & De Vader, 1984; Phillips, 1984; Phillips & Lord, 1981). This shift was triggered by scholars such as Calder (1977) who posited that leadership is not a theoretical construct and should not be studied as such, as it is subjective and it exists only to the extent that it is attributed by followers. Developments in the areas of leadership attribution (e.g., Calder, 1977; Lord & Smith, 1983; Pfeffer, 1977; Staw & Ross, 1980) and leadership categorisation (e.g., Lord et al., 1982; Lord et al., 1984; Phillips, 1984) provided new theoretical frameworks for the interpretation of ILTs.

Calder (1977) explained leadership attribution as a complex four stage process. Based on attribution theory (e.g., Heider, 1958), Calder (1977) proposed that initially individuals tend to observe the behaviour of others as well as its effects and outcomes, making further inferences about potential behaviours that have not been directly observed. This is then compared with observations of behaviours of other people in the group and leadership is inferred if the target person's behaviour is judged to be significantly different to the behaviour of the other group members and stems from particular attributes of the target person. A

further comparison is made to pre-existing prototypes or perceptions of what typically constitutes leadership behaviours or person characteristics. The final stage is an assessment of biases, such as social desirability, that could have had an effect on making accurate attributions of leadership. The interpretation of leadership as socially constructed, and as an outcome of followers' attributional processes is further supported by Pfeffer (1977), who conceptualises leadership as "a process of attributing causation to individual social actors" (p. 104), thus acknowledging that followers' perceptions are a fundamental factor of leadership. He further proposes that causes are more likely to be attributed to leaders in uncertain and ambiguous situations, when in fact the leader has less control over outcomes, in an effort to feel personal control and reduce uncertainty.

Phillips and Lord (1981) paint a different picture on the explanatory power of complex attribution models in the case of leadership recognition and causal attribution. Based on models of leadership attribution they tested whether the salience of the leader and the existence of alternative plausible causes of performance (e.g., group member ability and motivation) would affect the extent to which leadership behaviours were attributed to the target individual. Using an experimental design they tested their propositions on a sample of 128 students and found that leadership behaviours were attributed to, or recognised in, the target person irrespective of their perceived salience and alternative causes of poor or good performance. Since causal leadership perceptions were found to be largely independent of causal ascriptions, they propose that categorisation processes could be a more useful framework for the explanation of leadership perceptions. As will be discussed, categorisation is a much simpler cognitive mechanism whereby individuals are classified on the basis of behavioural and contextual factors.

Leadership Categorisation as Interpretation of ILTs

Lord and colleagues (Lord et al., 1982) first applied the categorisation theory (Rosch, 1978; Rosch & Mervis, 1975; Cantor & Mischel, 1979) to the study of leadership in order to explain followers' perceptions of leaders and leadership and the role of ILTs, and articulated the structure of these categories in the mind of the observers. They justify the appropriateness of the categorisation theory as an interpretive framework of leadership with the argument that person categorisation is shown to be very similar to basic object categorisation processes and structures (Cantor & Mischel, 1979). Lord et al. (1982) further suggest that functional differentiation can be applied in the distinction between leaders and non-leaders, or leaders and followers, and is used to provide the cues on the role of the target person, much like

Miller's (1978) explanation of object distinction into categories on the basis of functional information.

Since leadership categorisation is the most prominent explanatory framework in contemporary conceptualisations and research on ILTs (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2004, 2005; Hall & Lord, 1995; Offermann, Kennedy & Wirtz, 1994; Shondrick, Dinh, & Lord, 2010), and is the approach guiding ILTs understanding in the present thesis, it is important to consider its origins and rationale. Rosch and her colleagues (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976; Rosch, 1978) developed a comprehensive theoretical framework for the interpretation of cognitive processes involved in object categorisation. According to the theory each object is assigned into a category on the basis of stimuli regarding the object. Similar stimuli are considered as equivalent and different objects are grouped together into categories, in an effort to achieve *cognitive economy* and invest less effort in retaining a large amount of information. Rosch (1978) also suggests the principle of *perceived world structure*, according to which people expect certain attributes to exist simultaneously; for instance, feathered creatures are generally expected to be able to fly. She further defines the principles of *vertical and horizontal dimensions* of categorisation. The vertical dimension refers to the number of different kinds of objects that can be categorised together. This categorisation happens at three hierarchical levels, with the superordinate being the most inclusive, followed by the basic and subordinate levels. The horizontal dimension on the other hand refers to the differentiation of the categories within each of the three levels. Rosch (1978) also introduces the notion of *family resemblance*, which is the idea that all the objects that are classified horizontally into the same category will share one or more common attributes. She proposes that the basic level of categorisation is the one that most accurately represents the bases for the differentiation of the objects into categories and that using the most prototypical attributes within each category to define it will increase its distinctiveness. Finally, based on Reed's work (1972), Rosch (1978) concludes that *cue validity* is the ability of an attribute to distinguish one category from another. An attribute increases in cue validity if it is strongly associated with a particular category and less so with others.

Lord and his colleagues (Lord et al., 1982; Lord et al., 1984) first applied these principles to the categorisation of leaders. According to this approach leadership perception is also hierarchical, with the distinction between leaders and non-leaders taking place at the *superordinate level* on the basis of attributes that apply to all leaders and distinguish them from non leaders. Lord and his colleagues acknowledge that there will be some overlap between the attributes of leaders and non-leaders at this level, but it should be small. Based

on early research in the area of traits (e.g., Stogdill, 1948) they conclude that it is possible to differentiate among the categories on the basis of specific attributes on the basic, but not on the superordinate level. At the superordinate level the labelling of leaders vs. non-leaders is based on family resemblance and the categories are not as clearly distinguished. Although Rosch (1978) asserts that in such cases the distinction is based on categorisation learned through culture, Lord et al. (1982) propose that a clear distinction is still possible if conceived as a distinction between best or prototypical leaders and non-leaders. At the *basic level* of categorisation contextual factors and functional information are taken into account to distinguish between different types of leaders. These categories are more distinct and specific, can be a better basis for distinction between leaders and non-leaders than the superordinate categories, and enable perceivers to describe or predict the behaviour of leaders. The *subordinate level* of categorisation is more abstract and less inclusive. According to Lord and his colleagues the nature of the categories at the subordinate level is not as clear as at the basic level and there might be differences in the way different people perceive these categories based on their differences in cognitive capacity. They suggest that at the subordinate level the classification could be based on either abstract (i.e., on the basis of a general distinguishing attribute) or exemplar representations (i.e., on the basis of existing typical members of the category). Though there is a lack of empirical support on the primary level of categorisation used by followers to infer leadership, Lord and his colleagues make the conceptual argument that:

> *Regardless of which classification scheme is used, based on Rosch's work we would expect members of one subordinate category to be quite similar to members of other subordinate categories under the same basic level categorisation. Thus the detail gained by using more specific categories at the subordinate level, thereby enabling a more vivid description of typical members, would be gained at the expense of reduced category distinctiveness.*
>
> (Lord, Foti, & Phillips, 1982, p.110)

They make a clear inference that categorisation of leaders is most meaningful at the basic level of categorisation. This is the level that was adopted by leadership researchers in the study of ILTs, as will be discussed in the final section of this chapter that deals with the role of context and the levels of leadership categorisation.

Lord et al. (1982) go further in interpreting the mechanisms employed in person categorisation. Building on Cantor and Mischel's (1979), work they propose the *exemplar* and *prototype* approaches. According to the exemplar view, perceivers categorise a target individual based on the extent to which stimuli concerning this person are similar to those of a person most representative of the category. Similarly, using the prototype approach

perceivers compare stimuli from the target individual to attributes of the category, only in this case the attributes are not derived from an existing member of the category, but rather from an abstract leadership prototype. Recent research on ILTs has utilised the prototype approach, as will be discussed in the overview of empirical studies of ILTs (e.g., Gerstner & Day, 1994; Engle & Lord, 1997; Epitropaki & Martin, 2004). Nevertheless, more recent empirical and theoretical developments suggest that the exemplar categorisation as well needs to be considered in ILTs research. Based on empirical research by Smith and Zárate (1990, 1992), Shondrick and Lord (2010) propose that leadership perceptions are formed to different degrees by both a comparison to leadership prototypes as well as experiences with exemplar individuals associated to leadership.

Finally, Lord et al. (1982) apply the principles of prototype-based categorisation to the concept of ILTs. As discussed earlier, previous research in the area revealed that under conditions of limited information the factor structure of leadership ratings was the same as the one produced when real leaders were rated (e.g., Eden & Leviatan, 1975). Lord and his colleagues (Lord et al., 1982) suggest that this is due to the raters' use of existing leadership prototypes in inferring leader behaviour, especially since the availability of prototypical traits and behaviours is higher than that of non-prototypical ones, making it easier for raters to base their judgments on such traits and behaviours. By revisiting past research on leadership traits and behaviours (Rush, Phillips & Lord, 1981; Foti, Fraser & Lord, 1982), Lord and his colleagues (Lord et al. 1982) provide some preliminary evidence to demonstrate that the prototypicality of traits and behaviours determines whether these will be associated to the notion of leadership, at least in the superordinate and some basic level categories.

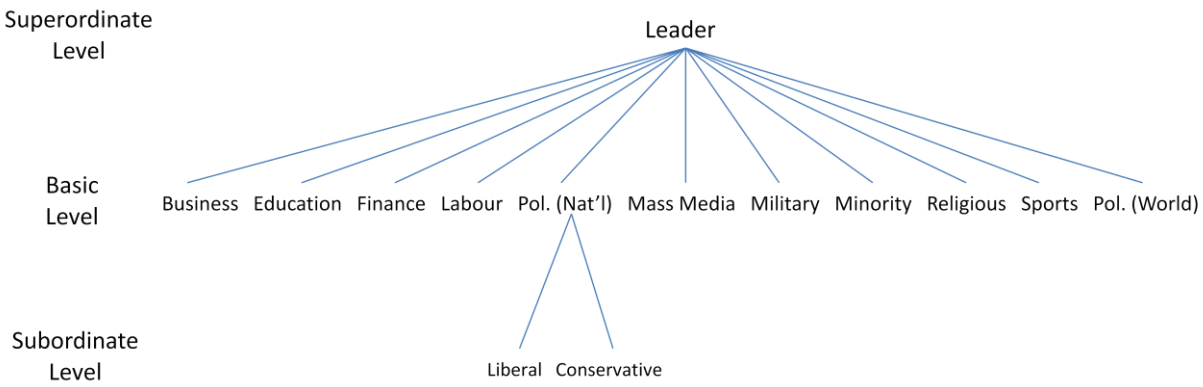
It is worth mentioning here two of the potential implications of leadership categorisation identified by Lord and colleagues (1982). Firstly, they caution that over-reliance on prototypes in making judgments on the ability of individuals to lead in specific situations could lead to overlooking salient contextual factors and requirements that are key to success in a specific role. And secondly, they recognise that the attributes associated with specific categories can be widely shared and used as standards of acceptable behaviour. Based on this assertion we can infer that leadership categories and ILTs exist on multiple levels, rather than merely on the individual level. For example, we can expect that the attributes associated with the superordinate category that distinguishes leaders from non-leaders in general will be largely shared universally. Similarly, attributes that define and distinguish basic level categories will be largely shared, especially among individuals who are exposed to similar stimuli and have shared value systems (e.g., same cultural background), as their prototypes will have been built on similar fundamental principles and experiences. Finally, one would expect that at the

subordinate level, individuals who belong to a certain group that is associated with specific leadership categories will exhibit commonalities in what they consider prototypical traits and behaviours within these categories. For instance, if we assume that under the basic category of 'business leader' a subordinate level category could be that of retail store manager, people who work in retail stores will have a shared view of attributes that distinguish a successful retail store manager from a non-successful one and from a person who is not a retail store manager. This argument is a contradiction to the notion proposed by Lord et al. (1982) that distinction among leaders is primarily done at the basic level of categorisation, as discussed above.

In order to understand the specifics of how leadership schemas exist at different levels we can look more closely at the framework developed by Lord et al. (1984) and the empirical evidence they provide in support of the basic principles of categorisation. The authors published a series of three studies, all testing the social categorisation theory (Rosch, 1978) of leadership attribution. As discussed, the social categorisation theory suggests that individuals group different stimuli into categories based on similar attributes of the stimuli, as part of a sense-making process of the world's complexity surrounding them. Drawing on this theory and building on Lord et al. (1982), Lord et al. (1984) developed a model of the internal structure of ILTs (see Figure 2.01). According to this model, and based on the leadership categorisation conceptualisation by Lord et al. (1982), leadership categorisation takes place at three levels and can graphically be represented by a family-tree shaped diagram for three generations. As described earlier, at the top level of the tree we find the general category, which defines the general notion of leadership at a superior/abstract level. Thus, this level contains attributes which distinguish a leader from a non-leader and allow categorisation of stimuli at this level. These attributes are defined by the authors as the most common attributes of the members of this category, the leaders.

The diagram proposed by Lord et al. (1984) then branches out downwards into the basic level of categorisation of leaders. This level includes the attributes for specific types of leaders, such as political, religious, or business leaders. The definition of this level of categorisation is quite inclusive, therefore any possible type of leader can be included and investigated at this level, though the authors refer to only 11 categories of leaders. The bottom level of the three includes an even more detailed distinguishing of leadership. For example, business leadership can be divided into CEO leadership, senior management leadership, and line-management leadership. Another way to divide leadership at the organisational level would be between leadership attributes suitable for for-profit and not-for-profit organisations.

Figure 2.01: The hierarchy of leadership categories (adapted from Lord et al., 1984, p.347)



The study conducted by Lord, Foti and De Vader (1984) was concerned with the applicability of the general principles of categorisation to the proposed leadership categorisation model. Particularly, they focused on the relationships of the constructs of family resemblance and cue validity introduced by Rosch (1978), diagnosticity introduced by McCauley, Stitt and Segal (1980), and prototypicality by Cantor and Mischel (1979). Using a sample of 263 students they measured these constructs for the eleven basic level leadership categories. One hundred and ten participants provided lists of attributes for leaders in each category (ten participants per category), and an equal number of participants provided attributes of non-leader members of the same category (e.g., for the category of education they were providing attributes of teachers). The remaining 43 participants rated the extent to which a subset of these attributes is prototypical of leaders and non-leaders. In order to compute family resemblance (the extent to which an attribute is shared among several basic categories), after identifying the most frequent attributes under each category, they computed the proportion of categories out of the total eleven that had each attribute. If, for example, an attribute appeared under three categories it would have a family resemblance score of 3/11=.27. Therefore, higher scores indicated that the attribute had a lower potential to differentiate between the members of different categories. They found that, with a few exceptions, there was little overall overlap in the attributes listed under each category. Cue validity (i.e., to what extent a category is distinctive) was computed by dividing the family resemblance score of each attribute by the average family resemblance of all attributes and then by the number of attributes. Diagnosticity was computed by subtracting non-leader family resemblance from leader family resemblance, this indicating the extent to which a trait distinguishes leaders from non-leaders in a specific category. Finally prototypicality was defined as the average rating of each attribute as being characteristic of a leader or a non-leader in each category. Their results show significant positive relationships among leader family resemblance and leader cue validity, and both were found to be positively related to

leader prototypicality. Negative relationships were found between non-leader family resemblance, and leader cue validity and diagnosticity. A positive relationship was found between leader and non-leader family resemblance, which the authors interpreted as general contextual category characteristics (e.g., characteristics that are prototypical of both leaders in education and teachers). With this study Lord and his colleagues (Lord et al., 1984) demonstrate the structure of leadership categories at the basic level and provide some interesting insights into the concepts of family resemblance, cue validity, diagnosticity and prototypicality. Nevertheless, it must be noted that cue validity and diagnosticity were computed using the family resemblance score of each attribute; the correlations of these three should therefore be interpreted with caution, since a score will invariably be related to the score it was computed from, in this case the family resemblance values.

Lord, Foti and De Vader (1984) conducted two further studies in order to refine our understanding of leadership categorisation in relation to information processing and leadership perceptions. In the second study they measured reaction time of leadership prototypicality ratings of 25 behaviours by 62 students, and found that the more prototypical a behaviour the faster its rating time was. They concluded that behaviours that were considered as more prototypical of a category were more easily accessible and faster to process than neutral or non-prototypical behaviours. The third study was an experiment with 61 participants and it assessed the effect of the prototypicality of leader behaviour on leadership perceptions. They found positive relationships between the extent to which a behaviour was prototypical of business leadership and leadership ratings, behavioural expectations, and causal ascriptions. The findings of Lord et al. (1984) were supported in the experimental studies by Cronshaw and Lord (1987) and Fraser and Lord (1988), both concluding that stimulus protoypicality affects leadership perceptions.

Overall, the three studies are of key importance as they are the first systematic investigation of leadership categories structure and provided initial insights on the processes relating to leadership judgment as a process of comparison to leadership prototypes. Though their importance is undeniable, and they apply advanced methodological techniques for the time they were conducted, they still need to be interpreted with caution due to methodological weaknesses, such as small sample sizes, use of exclusively student samples, and correlations among variables that were computed using the same base values. Furthermore, the underlying theoretical model, social categorisation, though useful in framing our understanding of how ILTs are structured and utilised in cognitive process, is rather simplistic. That is, it does not fully capture the complexity of cognitive processing, the role of contextual factors in forming leadership prototypes and in their retrieval in memory for the purpose of

leadership judgments and attribution, and finally it does not address the effect of complex dyadic and group-level interactions on prototypes, schemas, ILTs and their role in making leadership inferences. The value of categorisation theory is not undermined by these weaknesses; the overall framework remains a useful guiding framework, but it needs to be extended and other theoretical frameworks need to be considered, that will provide a more detailed understanding of leadership perceptions and their role in the leadership process. To that end, it is useful to consider the principles of information processing and connectionist networks in the interpretation of ILTs, as well as further theoretical and empirical advancements that followed the early leadership categorisation conceptualisation.

Information Processing as Interpretation of ILTs

From the very early stages of ILT research the principles of information processing were introduced to the explanation of leadership perception and attribution. For instance, Eden and Leviatan (1975) found that the ratings of their respondents were greatly affected by the information they were provided, particularly when it comes to information on performance. The extent to which employees attribute the company's performance to leadership was also discussed by Meindl (1995), under the label 'Romance of Leadership'. He emphasises that the importance of leadership is a variable of the followers' perceptions of leadership's significance and of their particular contexts. Information processing can therefore help us better understand how follower perceptions are formed and utilised, and what is the role of implicit theories in this process.

Lord and Maher (1991) propose four competing models of information processing that can be used in interpreting leadership perceptions. The *rational* model assumes that individuals have access to all relevant information and unlimited capacity in processing this information, that they deliberately engage in processing this information, and that they are able to reach optimal solutions. This model is often not representative of the kind of processing that takes place, but is valuable when used as a benchmark model of optimal information processing. The more applicable model of *limited-capacity* relies on the principles of cognitive simplification. Perceivers are able to effectively respond to limited information situations by using pre-existing schemas and limiting information processing resources to a satisfactory, rather than an optimal level. This process therefore involves the use of both short- and long-term memory and is susceptible to biases and systematic errors. The *expert* model differentiates between experts and novices in terms of cognitive processes. Experts are assumed to reply on elaborate knowledge structures that are organised in a way the facilitates easy access and response to stimuli due to their extensive experience in a context,

while novices lack such advantage and need to engage in a more demanding and complex cognitive processes. Finally, *cybernetic* models are dynamic, as they assume simultaneous processing of past information, current behaviour and future planning. They rely on knowledge structures related to specific contexts, feedback and the ability to adjust initial judgments on the basis of feedback. Their successful application therefore assumes situations that present opportunities for feedback and modification of actors' behaviour.

Lord and Maher (1991) postulate that, even though the various models of information processing have their respective advantages, the one that is most applicable in interpreting the perception and recognition of leadership is the limited-capacity model. Their model of recognition-based and inferential processes of leadership perception formation draws on the principles of the limited-capacity model and provides a comprehensive framework of the information processing involved in leadership perception, inference and attribution. According to the model it is possible to either *recognise* or *infer* leadership using both *controlled* and *automatic* information processing. Recognition of leadership is the outcome of daily interactions between leaders and followers, while inference is based on the attribution of outcomes to an individual's leadership ability. The distinction between controlled and automatic processes (e.g. Hasher & Zacks, 1979) is based on the amount of awareness and effort involved in information processing; controlled is processing that is deliberate and conscious, while automatic processing does not involve awareness and deliberate effort.

Lord and Maher (1991) reason that recognition of leadership, as either a controlled or automatic process, is based on the principle of prototype matching with information regarding the traits and behaviours of the target individual. When automatic cognitive processes occur, the prototype matching is based on personal interactions with the leader, while for controlled processing this matching is based on information that is socially communicated. In either case, there is a reliance on the match between pre-existing prototypes or implicit leadership theories, in order to simplify information processing and sensemaking. Lord and Maher (1991) explain that this process is based on the principles of both the limited-capacity and expert models of information processing. The expert model applies because there is a reliance on pre-existing knowledge structures about leadership that are acquired over time through experience in particular contexts. Hall and Lord (1995) extend that discussion to propose that automatic and controlled cognitive processes exist on a continuum, and suggest that automaticity of processing will vary over time and contexts within individuals.

Though this interpretation of the role of ILTs in leadership recognition acknowledges that context and contextual knowledge play a role in the development and utilisation of cognitive

structures that are associated to leadership, it does not provide an interpretive framework that takes into account these contextual factors. In other words, it suggests that different cognitive structures are formed and utilised in the prototype matching process in different contexts, but it does not provide an interpretation of the implications of contextually determined prototypes in prototype matching. Like categorisation theory, the information processing interpretation is relatively vague when it comes to determining the level of specificity or abstraction of the prototypes or implicit leadership theories utilised in leadership perception and recognition, and their sensitivity to contextual factors. This will be discussed in more detail later in the chapter.

Connectionist Networks as Interpretation of ILTs

Lord, Brown, Harvey and Hall (2001) developed a theoretical model of leadership prototypes and perceptions that acknowledges the dynamic nature of prototypes and implicit theories and takes into account contextual factors that influence the development and utilisation of such mental representations. They base their model on leadership categorisation theory and the principle of prototype matching; i.e., the process whereby a schema is activated and a matching takes place of stimuli regarding the target person and the activated schema. Their model is an advancement to previous theoretical interpretations of ILTs due to its particular focus on the schema activation process. It is based on connectionist models that "are dynamic, flexible, sensitive to contexts, and capable of operating within the real-time constraints of social interactions" (Lord et al., 2001, p. 312). The model is generally based around the argument that leadership categories are sensitive to context and they vary both within and between individuals, and are thus generated in real-time as a response to contextual, task-related, and person- and organisation-influenced factors.

Building on existing theoretical models of cognitive networks (e.g., Hanges, Lord, Godfrey, & Raver, 2001), Lord et al. (2001) describe connectionist networks as "networks of neuron-like processing units that continuously integrate information from input sources and pass on the resulting activation (or inhibition) to connected (output) units" (p. 314). Representations are considered as *localised* when meaning lies in the units themselves, and *distributed* when meaning is derived from a collection or network of units. The authors regard leadership as a distributed representation; that is, its meaning lies in a network of units. When units fit together activation occurs and *positive constraints* are created among the units, while when they are conflicting inhibition occurs and *negative constraints* are created. The paths connecting the units have certain *weights* that are learned and determine the extent of activation or inhibition during transmission from one unit to another. Translating this process

to the perceptual process of leadership suggests that stimulus and contextual factors contribute to automatic processes in the development of leadership prototypes, and that the contextual constraints will have varying effects of these prototypes depending on the weights assigned to them. As contextual features vary from situation to situation and change over time, so will the prototypes change in response to this variation. This is in line with the principle of *settling-in*, which assumes that very quickly units will interact until they reach an interpretation or prototype that is informed by contextual features and satisfies constraints to a maximum level. Meaning is derived from either *feedforward*, *feedback*, or both processes. Feedforward occurs when nodes are combined to create a meaning input (e.g., letters combined to form a word), while feedback occurs when outputs feed into inputs to create meaning (e.g., sentence provides contextualised meaning to a word). Therefore, feedforward networks facilitate implicit learning in a relatively simple manner, while feedback networks are used when external stimuli are encoded on the basis of existing prototypes or categories. This process facilitates *gap-filling* to occur when there are insufficient inputs in order to create meaning, by using recurrent networks and prototypes for consistency in interpretations. Since weighs are learned, it is possible to have relative stability in the created networks, as the weights will change slowly with further learning taking place. On the other hand, the connectionist networks are also flexible as they are activated instantaneously as a response to patterns of perceived stimuli. Leadership prototypes will therefore be relatively stable, but flexible in the sense that inputs and constraints will be activated as a response to contextual factors.

Figure 2.02 is the representation provided by Lord et al. (2001) of a connectionist network with the units comprising the leadership prototype connected with lines representing the weights of the paths. Inputs into the network are both bottom-up and top down, and activation of one or some units will result in further units becoming activated (traits inferred), depending on the strength of the weights assigned to the paths connecting the units. Further, the activation of the units will be subject to contextual constraints, which in this example fall under the general categories of culture, leader-related factors, follower-related factors, and task-related factors. The prototypes that are used by followers in perceiving leadership are therefore constrained by (or their activation is dependent upon) contextual factors.

Figure 2.02: Schematic representation of a connectionist network of leadership perceptions

Source: Lord, R. G., Brown, D. J., Harvey, J. L., & Hall, R. J. (2001). Contextual constraints on prototype generation and their multilevel consequences for leadership perceptions. *Leadership Quarterly*, *12*, 311-338, p. 319

To summarise, the connectionist network model of leadership perceptions provides a more comprehensive understanding of information processing involved in creating the meaning of leadership and its recognition. The model explains how leadership prototypes are dynamic flexible networks which, though relatively stable, are activated and adjusted as a response to individual, social and contextual factors and inputs. Shondrick and Lord (2010) explain that, based on the connectionist network approach, the use of prototypes is context-contingent, and when a prototype is activated prototype-consistent inferences are made regarding leadership perceptions, performance and behaviour simultaneously. This is a valuable extension to the leadership categorisation theory, as it accounts for the complexity involved in implicit theory activation and utilisation. In a way, it contradicts the basic argument by Lord et al. (1982) that leadership prototypes are most meaningful at the basic level of categorisation in the process of matching individuals to prototypes and making leadership inferences. Though the basic level categories of leadership do distinguish between different types of leaders, the connectionist model proposes that prototype activation is much more sensitive to social and contextual cues and allows activation of prototypes that is adjusted to much narrower, specific and complex contextual inputs than the simple distinction in the basic-level categories implies.

Empirical and Theoretical Advancements in the Area of Implicit Leadership Theories

Implications of ILTs for Leadership Measurement

As discussed in the theoretical overview, early research on ILTs recognised that these preconceptions of leadership had negative implications on the accuracy of the measurement of leader traits, behaviours and effectiveness (e.g., Eden & Leviatan, 1975; Lord, Binning, Rush, & Thomas, 1978; Mitchell, Larson, & Green, 1977; Phillips & Lord, 1982; Rush et al., 1977). Calder (1977) argued that the development of theories was relying much on common sense and insufficiently on scientifically derived constructs. This resulted in theories of leadership that were developed based on implicit theories, and were therefore inevitably supported in empirical investigation due to the implicit, common-sense responses of study participants. The implications of the systematic biases introduced to the measurement of leadership go beyond academic research. Managerial decisions regarding compensation, promotion, and training needs among others, are often based on results of employee surveys that measure leadership-related factors. It is therefore critical that managers are aware of the limitations of these measures when interpreting their findings (Phillips & Lord, 1986). The general recognition that implicit leadership theories account for systematic bias in leadership ratings prompted researchers to investigate the issues of accuracy in measurement and methods that can improve leadership measurement by accounting for the effects of respondents' implicit theories. Phillips and Lord (1986) identify some problematic issues regarding the effect of ILTs on leadership measurement. They suggest that, since ILTs are a systematic source of variance in leadership ratings, the reliability and factor structure of measures will reflect this and are therefore not adequate indicators of measure accuracy. These factor structures will be replicable due to the consistency of the effects of ILTs. Finally, they acknowledge that the effects of ILTs on leadership measurement have been mainly investigated in experimental studies, which most likely do not capture the extent to which ILTs affect leadership ratings in actual organisational settings.

Lord (1985a) addressed the issue of accuracy in behavioural measurement and distinguished accuracy into two types; classification accuracy and behavioural accuracy. Classification accuracy refers to the capacity of a measure to accurately categorise the individual that is being rated, while behavioural accuracy is a measure's ability to accurately measure the presence of particular behaviours. Depending on the construct that a measure is designed to capture it is important to determine which type of accuracy needs to be established, and the measure should be evaluated on the basis of the appropriate accuracy type; for behavioural

measures for instance it is not necessary to assess its classification accuracy. Phillips and Lord (1986) stress the critical effect ILTs have on leadership measurement, and provide suggestions on how these can be accounted for in leadership measurement in order to obtain more accurate measures of leaders' traits and behaviours. They stress that it is crucial to determine the level of accuracy that is needed for the specific purposes of a measurement and to assess the chosen measure in terms of that type of accuracy. As a rule of thumb they explain that when leadership is a dependent variable behavioural accuracy is of importance, but when it is the independent variable behavioural accuracy is required. To assure the behavioural type of measure accuracy they advise prior training of respondents in unbiased encoding of behaviours. That is, training raters on techniques that will reduce their reliance on the ILTs when perceiving and rating the target-person's behaviour. Additionally, they advise the assessment of the study setting with regards to the biases that it might impose on the leadership measurement process. A final technique they propose is to routinely measure global leadership perceptions and raters' leniency alongside any other measure of leadership and control for the effect of these when conducting analysis, thus partialling out any systematic error that is attributable to ILTs.

ILTs and Culture

Since ILTs are considered to be cognitive structures that are learned and shaped over time and through experience, it is of interest to specify whether members of the same national culture will have a shared leadership prototype or not. Early conceptualisation of ILTs suggests that they are learned and transferred within and through cultures (Lord et al., 1982), suggesting that similarities within cultures and differences between cultures in ILTs exist.

Bryman (1987) conducted the first study to explicitly address the issue of cultural differences in leadership prototypes, as a response to the largely homogeneous samples that were used in early experimental studies of ILTs. The purpose of his study was to assess whether leadership prototypes in the United Kingdom would be the same as those identified in earlier research in the US. In an experiment where performance was the manipulated factor, he measured participants recognition of leadership behaviours; namely, consideration, initiating structure, and tolerance of freedom. Similar to previous findings, he found that all three measured leader behaviours were affected by the performance cue. He also compared the factor structure of the consideration and initiating structure variables to past findings of studies conducted in the US by Rush et al. (1977) and Schriesheim and Stogdill (1975). His findings indicate that there is remarkable similarity in the factor structure of the leadership prototypes in the two cultures, indicating that culture did not have a great effect on individual's

prototypes. Though this is evidence that ILTs are a universal construct, Bryman (1987) notes that it could be also due to general similarities in the two investigated cultures.

A milestone study was conducted by Gerstner and Day (1994) that had the same purpose – to identify differences and similarities in leadership prototypes across cultures. Their sample consisted of 142 individuals from eight different cultures and their findings contradicted those of Bryman (1975). They concluded that there are significant differences in the prototypicality of leader traits across the cultures they investigated.

The ambiguity regarding the effect of culture on leadership prototypes was largely resolved with the Global Leadership and Organisational Behaviour Effectiveness study (GLOBE; den Hartog, House, Hanges, Ruiz-Quintanilla, 1999; House, Hanges, Javidan, Dorfman, & Gupta, 2004, Javidan, Dorfman, de Luque, & House, 2006). This large scale research project investigated culturally endorsed ILTs (CLTs) across 62 cultures. The questionnaire they used was identical in all countries and consisted of 112 items describing leader traits and behaviours. This questionnaire was designed to measure factors that inhibit or facilitate effective leadership. Analysis of the measurement tool resulted in 21 first-order factors and 6 second order factors of CLTs. The six dimensions of culture are labelled as follows: charismatic/value based, team-oriented, participative, humane-oriented, autonomous, and self-protective. The study's findings indicate that some leadership prototypes are universal, as they were associated with effective leadership across cultures, while others are culture specific. Of the six leadership dimensions identified in the study, two proved to be universal, namely Charismatic/Value-Based and Team-Oriented leadership, and four were found to have statistically significant differences among cultures, namely Self-Protective, Participative, Autonomous, and Humane-Oriented leadership, with the latter one also showing some universality as a contributor to what participants considered to be effective leadership.

To conclude, from cross-cultural investigations of ILTs it is evident that prototypes exist at different levels. The findings that there are both commonalities and differences in ILTs across culture indicate that there is a universally shared idea of ideal leadership, which is likely a rather abstract conceptualisation of general leadership attributes. On the other hand, culturally specific prototypes and leadership schemas have developed that reflect the specific cultural context and value system that are shared among the members of societies. If considered in light of leadership categorisation theory, a possible interpretation of the cross-cultural research findings is that the superordinate categories of what distinguishes a leader from a non-leader are to a large extent shared, while cultural differences might have a more profound effect on the more specific, yet still rather general, basic level categories (e.g.,

religious leader, business leader, sports leader). The specificity of the subordinate level categories is probably so great, that cultural comparisons of this level would not be meaningful, as these are expected to be very sensitive to contextual cues and individual differences.

The Role of Memory and Knowledge in ILTs

Recent advancements in the conceptualisations of ILTs take into consideration the role of memory and knowledge in the use of prototypes when making leadership judgments. Shondrick and Lord (2010) use the distinction between *semantic* and *episodic* memory to explain the role memory plays in leadership ratings. Semantic memory is acquired through experience and contains general information, while episodic is context-specific memory that contains information of particular events. Shondrick and Lord (2010) argue that ILTs are knowledge structures that are acquired over time and stored in individuals' semantic memory. Reliance on semantic rather than episodic memory therefore leads to more extensive use of prototypes and increased bias in leadership ratings. Lord (1985b) proposed that two parameters can be used to evaluate the reliance on semantic and episodic memory in leadership ratings. *Memory sensitivity* is the parameter that assesses the extent to which an individual is able to distinguish between observed behaviours that are stored in episodic memory from behaviour that is inferred from reliance on pre-existing knowledge structures. *Bias* on the other hand is the degree to which individuals have the tendency to report identifying behaviours that have not occurred. A critical analysis by Shondrick and Lord (2010) of research dealing with memory and the two parameters led them to conclude that improved leadership ratings can be obtained by training raters to rely more on their episodic memory, which would effectively reduce bias in ratings, but not necessarily improve the accuracy of behavioural ratings. The accuracy of ratings on the other hand is increased when raters consider a behaviour to be vivid and when they have a strong emotional reaction to it.

Shondrick and Lord (2010) applied the principles of Adaptive Resonance Theory (Grossberg, 1999) in their interpretation of the interaction between knowledge and stimuli in making leadership inferences. According to this approach when external stimuli are perceived they are automatically compared to categories in the long-term memory in a process that they describe as "bidirectional feedback loops" (p. 24). If a match to a leader category is unsuccessful the perceiver then matches the observed actor to a different category (e.g., non-leader) or creates a new category on the basis of the perceived stimuli. When resonance occurs (i.e., a successful match with a category) in the patterns of observed behaviour and a leadership prototype, it becomes difficult to make a distinction between implicit theories and

observed behaviour. Shondrick and Lord (2010) propose that this process is equivalent to the gap filling processes described in the connectionist network approach, and is more prominent for abstract than for specific features. They further explain that the process of matching stimuli to prototypes will be monitored by the *vigilance parameter*, which is an individual difference that reflects the degree of strictness in prototype matching. Some people require a much closer match between observed stimuli and prototype attributes than others before categorising the target actor. Once resonance is achieved, reliance on ILTs increases and their effect on the inaccuracy of leadership perception becomes more prominent. According to the of Adaptive Resonance Theory, not only are new categories created by unsuccessful matches, but existing categories are constantly modified and refined on the basis of inputs from the environment and interactions with categorised target actors. This implies that ILTs are dynamic in nature and that they continuously interact with contextual and environmental factors, being modified by them and modifying the interpretation of them.

Measurement of ILTs: Content and structure

Several measures of ILTs have been utilised by researchers thus far, with the most commonly cited Lord et al.'s (1984) 59-item scale, Kenney, Schwartz-Kenney and Blascovich's (1994) scale of Leaders Described as Worthy of Influence; the Campbell Leadership Indicator (Campbell, 1991), the Schein Descriptive Index (Schein, 1973), and Offermann et al.'s (1994) ILT scale. Additionally, a scale was developed with the specific purpose of identifying culturally contingent and cross-culturally generalisable ILTs for the purpose of the GLOBE project (House et al., 1999).

The Offermann et al.'s (1994) scale is the most advanced measure of individual-level ILTs due to the thorough scale development procedure followed and the further investigations regarding the generalisability of the construct. They first conducted a study to identify appropriate items for the measurement of ILTs. Subsequently, they investigated the factor structure of these items, and the item content validity. Finally, since the scale was developed using samples of undergraduate students, they validated it on a working sample. This procedure resulted in the identification of two first-order (leader prototype and antiprotoype), and eight second-order factors (sensitivity, dedication, charisma, attractiveness, intelligence, strength, masculinity, and tyranny), derived from a total of 62 items. They found that the factor structure of ILTs was the same for the student and working sample, and that they were relatively stable across genders and leader stimuli (leader, effective leader, and supervisor). This scale was further examined and refined by Epitropaki and Martin (2004), who found a six-factor structure (sensitivity, intelligence, dedication, dynamism, tyranny, and masculinity)

consisting of 21 items to be the most representative of ILTs on a working sample. Further, they found that ILTs were consistent across employee groups, and relatively stable over time. Though these findings suggest that ILTs are generalisable, some of their findings indicate that ILTs are also context-specific; for instance, in male dominated industries, antiprototypic leadership attributes were rated higher than in female dominated industries. Similarly, Den Hartog and Koopman (2005) found that there are differences in leadership prototypes between men and women, with female participants rating the importance of people orientation, long-term orientation and diplomacy higher than male participants, and male participants rating inspirational, rational and persuasive characteristics higher than females.

Extensions of ILT understanding

Several studies and theoretical discussions have contributed to furthering our understanding of ILTs. For example, Kenney, Schwartz-Kenney and Blascovich (1996) identified a specific implicit leadership category that applied to leaders worthy of influence, as opposed to a general leader category. Keller (1999) found that ILTs are affected by self-perceptions (personality) and parental traits. She subsequently provided theoretical interpretations of the effect of caregivers and early childhood experiences based on attachment theory (Keller, 2003). Further evidence on the effect of self-perceptions on leadership perceptions is provided by the findings of Müller and Schyns (2005). Self-perceptions were also found to moderate the relationship between ILTs and followers' respect for the leader and their ratings of the leader's effectiveness (van Quaquebeke, van Knippenberg, & Brodbeck, 2011).

On the extent to which individuals rely on their ILTs for making leadership judgments, Ritter and Lord (2007) found that when a perceived leader is similar to a previous leader, ratings of the attributes and characteristics of the current leader were affected by the rater's past experience. When the current leader is not similar to a previous leader, raters' responses were more influenced by general leadership prototypes. Further differences in ILT utilisation by raters were found by Nye and Forsynth (1991) whose study showed that male raters relied more on their prototypes in rating leaders than female did. They further found that for some ratings there was more reliance on prototypes when raters were rating a female as compared to a male leader. Maurer and Lord's (1991) findings yielded that there was a higher reliance on prototypes in leadership judgments when cognitive demands on the rater were higher. Additionally, Martin and Epitropaki (2001) found that when followers reported high levels of organisational identification they relied less on ILTs in judgments of leadership behaviour.

Developments in the field have also expanded our understanding of the effects of leader prototype match (or mismatch) on work-related factors. For example, Schyns (2006) suggests

that when a leader's leader perceives the target-person as a good match to his or her ILTs they are more likely to give better performance appraisals of this person and promote them, and that followers' ratings of the leader's performance will also be affected by the extent to which the leader matches the follower's ILTs. Van Gils et al. (2010) propose that the match of a target person to the prototype, both within and between leaders and followers, will affect leader-follower agreement in ratings of their relationship quality (LMX). Engle and Lord (1997) found that the similarity in leaders' and followers' ILTs in not related to follower-rated LMX and leader liking, while Epitropaki and Martin (2005) found that similarity in followers' ILTs and their recognition of these traits in managers predict followers' organisational commitment, job satisfaction and well-being, and that this relationship is mediated by LMX.

Implicit Followership Theories

A final development to be considered in the area of ILTs and leader categorisation are the Implicit Followership Theories (IFTs) and follower categorisation. Shondrick and Lord (2010) propose that the same interpretive framework that is used for ILTs can be applied to our understanding of IFTs. They base their arguments on recent developments in the understanding of followers' role in the leadership process which suggests that followers are active contributors to this process, and that they are able to change the leader's perceptions through their interactions. With regards to followership inference, they theorise that followership can be inferred on the basis of performance cues, such as valuable contribution to the performance of a work group. Followership can also be recognised. For instance, in a group situation Shondrick and Lord (2010) found that follower identity can be activated by the context and interactions, by perceiving someone as the group leader, or by an individual behaving in a manner that is consistent to the leader role. Finally, they outline some important potential implications of IFTs. Based on the idea that once a category match is achieved the perceptions regarding the target individual are difficult to change, they propose that the follower label might "outlive its usefulness" (p. 11). Additionally, the categorisation of an individual as a follower can rightly or wrongly invoke the categorisation of another individual as a leader, or the opposite.

Van Gils, van Quaquebeke and van Knippenberg (2010) suggest that just as leaders will adjust their behaviour according to their own ILTs and followers will perceive and judge their leader's behaviour through the lens of their own ILTs, followers will as well adjust their behaviour to match their own perception of ideal followership while leaders will use their preconceptions of followers to interpret and judge the behaviour of followers. They theorise that IFT agreement (leader and follower IFTs and observed or perceived behaviour)

alongside ILT agreement will have an effect on both leaders' and followers' contributions and effort towards the development of a high quality exchange relationship between the two, and that their agreement on the quality of the relationship will depend on these matches.

The first study to provide some initial evidence of the existence of IFTs and their potential impact on leadership perceptions was conducted by de Vries and van Gelder (2005). Later, Sy (2010) revisited the issue of IFTs in more detail in an empirical investigation, across five studies, seven samples and a total of 1362 participants. He defines IFTs as "individuals' personal assumptions about the traits and behaviors that characterize followers" (p. 74). He developed a scale and examined the content and structure of IFTs. He identified two first order factors of IFTs (followership prototype and antiprototype) and six second order factors (industry, enthusiasm, good citizen, insubordination and incompetence). Finally, he demonstrated that IFTs have important implications for work-related perceptions and outcomes, by establishing a link between IFTs and liking, relationship quality, trust and job satisfaction.

Implicit Leadership Theories, Context and Levels of Leadership Categorisation

The overview of extant literature on ILTs revealed certain contradictions in the interpretation of the construct, as well as its utilisation. Questions arise regarding the level of leadership categorisation at which ILTs are most meaningful and relied upon in making leadership judgments. Lord et al. (1984) maintain that it is the basic level of categorisation that individuals rely upon in making leadership judgments. Later theoretical advancements suggest that this might not be the case. The information processing principles (e.g., cybernetic model), the connectionist approach to ILTs, and the developments in the areas of memory and knowledge with regards to ILT content and utilisation, suggest that these cognitive structures are sensitive to context. Schema activation is dependent on several contextual factors (Lord et al., 2001) and its utilisation is contingent on follower-specific factors, such as self-image (Keller, 1999; van Quaquebeke et al., 2011), organisational identification (Martin & Epitropaki, 2001), and parental images, (Keller, 1999; Keller, 2003). Nevertheless, experimental and empirical studies conducted thus far are all based on the assumption that ILTs are mostly meaningful at the basic level of categorisation, and are measured as such.

The purpose of the present research is not just to identify leadership categorisation on the basis of general categorisation, but to look at the narrowest possible category of managerial

leadership, that is the job-specific leadership. This reasoning is based on the notion that individuals take into account information from several contextual sources, as discussed earlier in the conceptualisation provided by Lord and Maher (1993), in order to define the attributes which constitute a leader (or successful leader) for the specific job they are doing. The information used to structure the attributes which define the category could come from previous experiences of leadership in general, or leadership in organisations, from cultural influences, from family influences, and so on. Nevertheless, it could also come from more job specific sources, such as the organisational culture, norms, processes, the nature of the company's operations, the sector, or the specific demands of a job. For example, in a military setting a superordinate's directiveness could contribute to their labelling as a good leader in the perceptions of the followers, whereas in an advertising company with a flat hierarchy and an emphasis on participation, directiveness could be considered as inhibitive of good leadership. Hereafter, the schemas of successful leadership for one's particular job - that is at the subordinate level of Lord et al.'s (1984) model - will be referred to as job-related ILTs.

By looking at the three levels of leadership schemas suggested by Lord et al (1984) it is evident that the studies on ILTs in business settings conducted thus far focus on the *general ILTs* at the middle or basic level of the categorisation hierarchy (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2004). Therefore, they look at the schemas that are used by individuals in order to distinguish between a manager as being a business leader and as not being a business leader. At this level, and based on research by Epitropaki and Martin (2004) and Keller (1999), it can be argued that ILTs are relatively stable in time. Nevertheless, as discussed earlier, contextual factors have also been linked to the development and activation of leadership schemas; this leads to the assumption that in particular contexts different categorisation schemas are activated. This notion is further supported by the findings of the empirical study by Epitropaki and Martin (2004) which yielded that ILTs are context-specific; for instance, in male dominated industries, antiprototypic leadership attributes were rated higher than in female dominated industries. Similarly, Den Hartog and Koopman (2005) showed that leadership prototypes differ depending on the hierarchical level of management that is being rated, strengthening the argument that different ILT profiles are activated and utilised in forming leader perceptions according to contextual information.

This reasoning points toward a new way of conceptualising and measuring ILTs in organisational research. Each job, with its own characteristics and demands, might lead an employee to form a schema of ideal leadership for that particular job, based on all the job-related factors that the employee sees as relevant. These schemas and their congruence with the leaders' traits and behaviours as perceived by the followers (recognised leadership),

can be argued to have a greater predictive value of individual work-related outcomes, than schemas which distinguish leadership on the basic level. Therefore, it is the aim of this thesis to investigate whether it is more beneficial for research to include *job-specific ILTs* (i.e., an ideal leader for the follower's job) rather than *general* ILTs (i.e., an ideal business leader) in the measurement of leadership-related factors in relation to important psychological and work outcomes. The following is therefore the first research question or objective of the present thesis:

Are ILTs at the basic level of categorisation more extensively utilised in making leadership judgments, and more predictive of work-related outcomes, as compared to the contextually contingent job-specific (subordinate) level of categorisation?

Implicit Leadership Theories and Work Groups

Although ILTs have not as yet been investigated at the work group level of conceptualisation and analysis, several arguments suggests that the group level should be considered in our understanding and study of ILTs. Teams and work-groups are becoming more and more salient in organisational functioning and performance as flatter organisational structures are becoming more widespread. Teams in organisations commonly have a formal leader or supervisor, whose functions generally entail information search and structuring, information use in problem solving, managing personnel resources, and managing material resources (Zaccaro, Rittman and Marks, 2001). Leadership has been identified as a key feature of teams accounting for a considerable proportion of their performance, though the mechanism through which leadership affects team-related factors is still not well understood and there is a need for further investigation of the leadership process in team settings (Stewart, 2006).

With regards to the issue of levels of analysis in the leadership literature, Yammarino and his colleagues (Yammarino, Dionne, Chun, & Dansereau, 2005) have noted the majority of studies have not appropriately acknowledged the level of analysis that corresponds to their topic (individual, dyad, group, or organisation). They point out that the level of analysis needs not only be taken into consideration in the data analysis stage of research; rather it should also be addressed in theory development, measurement and inference drawing. Additionally, it is likely that reconsidering the appropriate level of analysis adopted in previous research might help resolve the issue of mixed, inconsistent or contradictory findings, where these are observed. In their meta-analysis they report that the majority of theoretical conceptualisations in the area of information processing and implicit leadership theories take into account the appropriate level of analysis (e.g., Day, 1998; Hall & Lord, 1995, 1998a, 1998b; Lord &

Emrich, 2000), with only a few exceptions (e.g., Keller, 2003; Lord & Brown, 2001). On the other hand, with regards to the empirical studies in the field, they note that none of the publications that are included in their meta-analysis addresses issues of levels of analysis appropriately. The present thesis aims to address this conceptual and methodological issue by accounting for the group level in the conceptualisation and analysis of ILTs.

The relevance of teams in ILT conceptualisations and research is twofold. First, since leadership can be a group-level phenomenon, the group's performance and group-members' psychological reactions will depend in part on its leadership. A leader who is perceived as prototypical by the group members will therefore have more influence on salient group parameters and processes. The role of perceptions of team members regarding leadership is generally an understudied topic, although there is some initial evidence that differences and consensus in perceptions regarding leadership have important implications for group processes (Sanders & Schyns, 2006). Second, members of teams with the same formal leader will inevitably interact, and some of these interactions will be focused on the leaders' traits, behaviours and performance. The theoretical overview of ILTs indicated that these are dynamic structures that are shaped by contextual cues. It is therefore reasonable to assume that group-member interactions will affect the members' prototypes of what constitutes ideal leadership for the particular group they are members of, and for the particular tasks and objectives that the group is trying to accomplish. Further, if one or more individuals in a group achieve resonance and perceive their leader as prototypical or antiprototypical, they will infer traits and behaviours of the leader that have in fact not been observed. This inference will contaminate leader-related stimuli of other group-members through leader-related interactions among the members to increase the bias in those members' perceptions of the leader. Therefore, it can be concluded that team interactions will have an effect on both ILTs and environmental stimuli regarding leader behaviour, which might ultimately create a team-level convergence on both aspects. That is, the contextually specific, active ILTs will be shared among team members, with the likelihood of more permanent cognitive structures regarding leadership being modified over time, as suggested in the discussion of the role of memory and knowledge in ILTs (Shondrick & Lord, 2010). Similarly, the perception of stimuli regarding the target person (i.e., the leader) will be affected by the group-members' information processing, since the information and perceptions regarding the stimuli will be shared through social interactions among the team members. These arguments effectively suggest that the role of ILTs needs to be considered at the team-level of conceptualisation and analysis as well. In addition to the above arguments it is reasonable to assume that the more the team members have a shared perception of the extent to which leader match their

ILTs, the more likely the leader is to positively affect factors regarding team climate, team-members' affective reactions, and the team's performance. The second general research question of the present thesis therefore reads:

Does the congruence between group-members' ILTs and the recognition of these prototypes in their leader have positive effects on team processes and outcomes?

CHAPTER 3 - HYPOTHESISED MODEL: LEADER-MEMBER EXCHANGE AS THE MEDIATOR IN THE RELATIONSHIP BETWEEN ILT CONGRUENCE AND OUTCOMES

A theoretical model of the relationship of ILT congruence to outcomes is proposed in the present chapter. ILT congruence here refers to the similarity or fit between followers' ILTs and the recognition of these 'ideal' traits in their leader. The proposed model builds heavily on causal models already addressed in the literature (Engle & Lord, 1997; Epitropaki & Martin, 2005) and further extends them by looking at both followers' reactions to their work experience and leader, as well as their performance. The reason for relying heavily on existing causal models is twofold. First, as will be discussed, there is some inconsistency in the findings reported by previous research and it is therefore difficult to rely and build on these models before replicating and validating them. The studies comprising this thesis will therefore utilise recent methodological and statistical advances to more conclusively provide evidence regarding the nature of the effects of ILT congruence on outcomes. They will also further our understanding of the role of ILT congruence on outcomes by expanding the range of outcomes considered. Second, since the research questions of interest in this thesis are aiming at refining the conceptualisation of ILTs by considering the level of categorisation utilised in making leadership judgments and by investigating the effect ILTs have on outcomes in a group context, it is important to identify a theoretically robust model with some support in the extant literature that can be used to test the proposed ideas.

In particular, as will be discussed, the primary feature of the proposed theoretical model is that leader-member relationship quality (LMX) will mediate the relationships between ILT congruence and outcomes, both for individuals and for groups. At the individual level the outcomes that are proposed to be affected by ILT congruence through LMX are job satisfaction, well-being, job satisfaction, organisational commitment and individual performance, while at the group level the proposed outcomes are intragroup conflict, Team-Member Exchange (TMX), team satisfaction, team realness, and team performance.

Implicit Leadership Theories and Leader-Member Exchange

Overview of Leader-Member Exchange

The LMX theory was originally developed by Graen and colleagues (see Dansereau, Graen, & Haga, 1975; Graen & Cashman, 1975), who through an experiment identified a classification of the quality of exchanges between leaders and followers into higher and lower

categories. The in-group members received more support and resources on behalf of the managers, whereas the out-group members had less freedom in role development and less decision making influence, and thus were more reluctant to become involved and communicate with respect to their activities. Graen and Cashman (1975) also reported some differences in terms of outcomes between in-group and out-group members, such as more consistency in in-group members' behaviours in accord to leaders' expectations. The theory was initially termed "vertical dyad linkage" (VDL) and was later renamed to leader-member exchange (LMX). The main difference in the two is that the vertical dyad linkage was consistently conceptualised and measured as a construct of leader-follower dyads as they differentiate within groups, while LMX research is not as specific in terms of the level of analysis and has been employed to dyadic interactions, to groups or to organisations (Schriesheim, Castro & Coglister, 1999). The conceptualisation of LMX has moved from a distinction of followers as in-group and out-group members, to regarding relationships on a continuum ranging from low to high in terms of the relationship quality (Martin, Epitropaki, Thomas & Topakas, 2010). Either conceptualisation though is based around the idea that leaders adopt different leadership and behavioural approaches to individual followers and thus develop different quality relationships. Relationships are considered to develop through two-way exchanges between the leaders and their followers, and these exchanges are both tangible and intangible in nature (*ibid*). The value of LMX is highlighted by the finding that LMX is consistently significantly related to job performance, satisfaction with supervision, overall satisfaction, commitment, role conflict, role clarity, member competence and turnover intentions (Gerstner & Day, 1997).

The Leader-Member Exchange (LMX) theory has received a great amount of attention in the leadership research, which is thoroughly reviewed by Gerstner and Day (1997) in a comprehensive meta-analytic study and by Martin et al. (2010) in a theoretical overview of the field. Gerstner and Day (1997) point out that the uniqueness of the LMX theory lies in the fact that it investigates the leadership relationship as a dyadic exchange process; hence it does not limit the level of analysis to either the leader or the follower. Further, they highlight the predictive role of the LMX on outcomes not only at the individual level, but also at the group and organisational levels. In their review of the relevant literature, Boies and Howell (2006) acknowledge the central role of the quality of relationships as the essence of the LMX theory; in particular the differences in the quality which are responsible for the distinction of the followers into in-group and out-group members. Several topics have drawn researchers' attention with regards to LMX, among them are measurement and dimensionality issues,

levels of analysis, LMX differentiation, outcomes of LMX, and antecedents of LMX. These are briefly reviewed here before establishing a link between ILT congruence and LMX.

With the overview of leadership research approaches and LMX in particular, Graen and Uhl-Bien (1995) made the first classification of LMX within the domains of leadership study; they classified it in the relationship-based approach to leadership and introduced a new scale for its measurement. This is the most popular measure of LMX, commonly referred to as the LMX-7 scale (Graen & Uhl-Bien, 1995). The measure treats LMX as a unidimensional construct, since the dimensions that have been proposed and studied are very highly correlated. Further support for the unidimensionality of LMX was found in a study by Keller and Dansereau (2001), who found significant correlations with known outcomes of LMX using a single item from the LMX-7 scale – a question that refers to the overall quality of the leader-follower relationship. The 7-item scale introduced by Graen and Uhl-Bien (1995) was derived from existing measures of LMX, primarily from the 7-item scale by Graen et al., 1982), and the authors therefore did not conduct investigations to ascertain the validity and reliability of the measure. Such evidence comes from a meta-analysis conducted by Gerstner and Day (1997) who evaluated the psychometric properties of the LMX-7 scale against a wide range of other LMX measures. Their findings show that LMX-7 had a higher average Cronbach's alpha and higher correlations to outcomes as compared to the other LMX measures. The scale can be adapted to measure leader-follower relationship quality from both the leader's and the follower's perspective. The seven items read (adaptation of leader responses in brackets) (Graen & Uhl-Bien, 1995, p.237):

Do you know where you stand with your leader... do you know how satisfied your leader is with what you do? (Does your member usually know)

How well does your leader understand your job problems and needs? (How well do you understand)

How well does your leader recognize your potential? (How well do you recognize)

Regardless of how much formal authority he/she has built into his/ her position, what are the chances that your leader would use his/ her power to help you solve problems in your work? (What are the changes that you would)

Again, regardless of the amount of formal authority your leader has, what are the chances that he/she would "bail you out," at his/ her expense? (What are the chances that you would)

I have enough confidence in my leader that I would defend and justify his/ her decision if he/she were not present to do so? (Your member would)

How would you characterize your working relationship with your leader? (Your member)

Of the multi-dimensional measures of LMX the most commonly used is the LMX Multi-Dimensional Measure (LMX-MDM) which was developed by Liden and Maslyn (1998) and consists of four dimensions; namely, affect, loyalty, contribution, and professional respect. Support for these dimensions was found in a study by Greguras and Ford (2006) who developed a scale equivalent to LMX-MDM, which was specifically designed so that it can be used to measure both leaders' and followers' evaluations of the relationship quality, as opposed to previous measures that were commonly designed to measure LMX from the follower's perspective. Another measure of LMX that takes into account the social exchange aspect of the construct is the Leader-Member Social Exchange scale (LMSX; Bernerth, Armenakis, Feild, Giles, & Walker, 2007). A general problem that has been identified with the measurement of LMX is that of lack of agreement between leaders and followers in their assessments of the relationship's quality (Gerstner & Day, 1997). Sin, Nahrgang and Morgenson (2009) conducted a meta-analysis in order to shed further light on the issue of leader-follower LMX agreement and found that overall there was only moderate agreement, and that the level of agreement was dependent on the length of the relationship tenure, affect, and sampling techniques.

The issue of levels of analysis is also a concern regarding LMX research. Yammarino et al. (2005) note that the majority of conceptualisations of LMX theory in the literature either do not explicitly address the level of the constructs under study (e.g., Elkins & Keller, 2003; Erdogan & Liden, 2002; Scandura, 1999; Varma, Farias, & Stroh, 1999) or that in some cases it is not possible to even infer the level of conceptualisation from the theory (e.g., Brower, Schoorman, & Tan, 2000; Coleman, 1998; Hui & Graen, 1997). Similarly, they observe that the vast majority of empirical publications in the LMX area do not address the issue of levels of analysis appropriately (e.g., Ashkanasy & O'Connor, 1997; Bauer & Green, 1996; Dunegan, Uhl-Bien, & Duchon, 2002; Gerstner & Day, 1997; Maslyn & Uhl-Bien, 2001; Murphy, Wayne, Liden, & Erdogan, 2003) with only a few exceptions that do (e.g., Coglister & Schriesheim, 2000, Schriesheim, Casto, & Yammarino, 2000; Schriesheim, Castro, Zhou, & Yammarino, 2001; Schriesheim, Neider, & Scandura, 1998). The majority of constructs operate at multiple levels (Antonakis, Schriesheim, Donovan, Gopalakrishna-Pillai, Pellegrini, & Rossomme, 2004), and LMX falls in this category in many cases, especially where followers are organised into work groups under a single leader. Although the theory proposes

that leaders differentiate in the way they treat followers and develop relationships of varying quality, it is inevitable that some components of leader behaviour and style are consistent and determined by leader-specific factors, and that situational factors will also play a role. Coglister and Schriesheim (2000) argue that LMX should not be studied only at the leader-, follower-, or group-level, but a combination of these, as a construct of "the individual within the group" (p.489). They showed that both theoretically and empirically LMX does operate at the level of the work group, and that the ideas that leaders differentiate in their treatment of followers and that leaders adopt a homogeneous leadership style across followers, though theoretically mutually exclusive, can exist simultaneously, with some dimensions of behaviour being homogenous and others individualised. Further, as Lord and Maher (1991) point out, leader-follower dyads do not exist in a vacuum. The quality of the dyadic relationships within a work group and their perceptions by the group members will affect group factors and have implications for group-level outcomes, including group performance. Generally, there is a need to expand our study of LMX beyond the individual, and consider the effects of leader-follower relationships on group outcomes (e.g., Gerstner & Day, 1997; Schriesheim et al., 1998, 2001). As will be discussed, for the relationships that are hypothesised and tested in the present thesis, LMX will be considered both at the individual and the group level. The group level will be investigated where the study participants are nested in clearly identifiable groups and the hypothesised outcomes of the leadership process are at the group-level.

Another issue that has recently drawn the interest of research in the LMX field is that of within-group LMX differentiation. Graen and Uhl-Bien (1995) highlighted the importance of investigating the effects of the variation in leader-follower relationship quality on group processes and outcomes. Martin et al. (2010) argue that high differentiation of LMX among team members is likely to lead to negative individual and team outcomes, since it can lead to perceptions of injustice and of the lack of fairness, neutrality in the leader's treatment of their followers, and trust. Indeed, findings of recent studies provide support for this argument, with high differentiation being associated with lower team potency and higher team conflict (Boies & Howell, 2006), lower job satisfaction (Hooper & Martin, 2008), higher turnover (Nishii & Mayer, 2009), and lower group performance (Liden, Erdogan, Wayne, & Sparrowe, 2006). Nevertheless, the majority of these studies report that the relationships between LMX differentiation and outcomes are complex and often moderated or mediated by other relevant factors. The most common interactive effect investigated in the extant literature is that of LMX differentiation with LMX, but the findings are inconsistent across the studies (e.g., Boies & Howell, 2006; Henderson, Wayne, Shore, Bommer, & Tetrick, 2008; Liden et al., 2006). This

is therefore an area that warrants further investigation before any conclusive inferences can be drawn.

LMX in general has been associated with several outcomes and based on the findings one could confidently conclude that higher quality exchange relationships among leaders and followers will lead to positive work reactions and performance. In their meta-analysis Gerstner and Day (1997) found that LMX is associated with performance on the job (with stronger relationships found with leader-rated performance than with objective performance), satisfaction with one's supervisor, overall satisfaction, organisational commitment, role conflict and clarity, follower competence level and turnover intention (the same findings were not confirmed for actual turnover). Other positive attitudinal outcomes were found with regards to work-related employee well-being (e.g., Bernas & Major, 2000; Epitropaki & Martin, 1999, 2005), follower's stress levels (e.g., Bernas & Major, 2000), self-efficacy (e.g., Murphy & Ensher, 1999), empowerment (e.g., Keller & Dansereau, 1995), the amount of support from the leader as perceived by the followers (e.g., Bauer & Green, 1996), the level of delegation and consultation of the leader (e.g., Yukl & Fu, 1999), justice (e.g., Erdogan, 2002) and perceptions of transformational leadership style (e.g., Howell & Hall-Merenda, 1999). LMX is also consistently related to followers behaviours, such as organisational citizenship behaviour (e.g., Ilies, Nahrgang, & Morgeson, 2007), innovation (e.g., Tierney, Farmer, & Graen, 1999), and time and effort invested in the job (e.g., Liden & Graen, 1980).

Similarly, a vast number of studies looked at potential antecedents of LMX. Martin et al. (2010) classify these into four general categories; namely, subordinate characteristics, leader characteristics, interactional variables and contextual factors. Regarding subordinate characteristics several studies found a link between followers' personality and LMX (e.g., Bernerth et al., 2008; Lapierre & Hacket, 2007; Phillips & Bedeian, 1994), their locus of control (e.g., Kinicki & Vecchio, 1994; Martin, Thomas, Charles, Epitropaki & McNamara, 2005), their self-efficacy (Murphy & Ensher, 1999), and ILTs (Engle & Lord, 1997; Epitropaki & Martin, 2005), among others. Leader personality was also found to predict LMX (Nahrgang, Morgeson, & Ilies, 2009), as well as their control over important rewards (e.g., Aryee & Chen, 2006), influence strategies (e.g., Sparrowe, Soetjipto, & Kraimer, 2009), affectivity (e.g., Day & Crain, 1992), and power strategies (e.g., Borchgrevink & Boster, 1997). Variables of similarity between leaders and followers fall in the interactional variables category. Studies have looked at demographic similarity (e.g., Duchon, Green, & Taber, 1986; Epitropaki & Martin, 1999; Varma & Stroh, 2001), personality similarity (e.g., Bauer & Green, 1996; McClane, 1991), and value similarity (e.g., Ashkanasy & O'Connor, 1997), as well as liking (e.g., Engle & Lord, 1997; Wayne & Ferris, 1990; Wayne, Shore & Liden, 1997). The results

of the studies regarding interactional variables have yielded rather inconsistent findings, apart from the case of liking where the evidence shows that there is a positive link between leader and subordinate liking and LMX (Martin et al., 2010). Finally, of the contextual variables, associations have been found between the workload of the leader and LMX (e.g., Graen, Scandura, & Graen, 1986), their span of supervision (e.g., Schriesheim, Castro, & Coglister, 1999; Schyns, Paul, Mohr, & Blank, 2005), and climate (e.g., Tordera, González-Romá, & Peiró, 2008; Tse, Dasborough, & Ashkanasy, 2008).

ILT Congruence as an Antecedent of Leader-Member Exchange.

LMX theory acknowledges the active role followers play in the leadership process, and from the theory it can be inferred that leadership effectiveness and success is, at least in part, dependent on follower-related factors. Nevertheless, from the above discussion it is evident that although there are a vast number of studies that have been conducted looking at several aspects of LMX, there is generally a lack of investigations looking at followers' cognitive processes as antecedents of their perceptions and quality of relationship with their leader. This section discusses the link between ILTs and LMX in light of the information processing approach (Lord & Maher, 1991) and empirical studies that have been conducted thus far (Engle & Lord, 1997; Epitropaki & Martin, 2005).

Lord and Maher (1991) provide a theoretical framework for the interpretation of the effects of both followers' and leaders' perceptual processes on the dyadic relationship between the two. They move away from the simplistic conceptualisations that assume leaders' behaviours affect followers' behaviours and vice versa, to propose that these effects are affected by, and in a way filtered through, the perceptions of both actors. The followers' perceptions regarding the leader are affected by the leader's behaviour and in turn affect the follower's behaviour. The equivalent process takes place on the leader's side as well, with his/her perceptions of the follower being informed by the follower's behaviour and consequently affecting the leader's behaviour. Thus, according to Lord and Maher (1991) the reciprocal influence of leaders' and followers' behaviours is mediated by both parties' perceptions. Therefore, we can infer that subordinates' perceptions of their leaders will ultimately influence the subordinates' performance.

According to Lord and Maher (1991), due to frequent supervisor-subordinate interactions in the work context it is likely that subordinates use primarily recognition-based processes in forming their perceptions of managers. In these processes they rely heavily on their ILTs. Since it is generally recognised that ILTs are dynamic, they will therefore be influenced by contextual and situational factors, such as national and organisational culture, experience in

specific organisations and industries, organisational policies and procedures, and so on. With regards to the dyadic exchanges between leaders and followers, Lord and Maher (1991) postulate that leaders differentiate in their behaviour toward different subordinates on the basis of their recognition-based processing and categorisation of each follower. They provide arguments regarding the role of individuals' cognitive processes in the formation and development of leader-follower relationships. For instance, they highlight that "cognitive inertia" (Lord & Maher, 1991, p. 123) in information processing is equivalent to the idea proposed by Dansereau, Graen and Haga (1975) that the initial negotiating latitude offered to the follower in the early stages of relationship formation will affect the leader's behavioural choices throughout the relationship. Further, Lord and Maher (1991) observe that controlled cognitive processes are also involved in the role making process in leader-member exchange, since leaders intentionally communicate role expectations to the followers, and followers also intentionally adjust their behaviour at work accordingly. Based on work by Dienesch and Liden (1986) they extend their explanation to include automatic categorisation processes, since interactions in the early stages of LMX development will affect later attributions and behaviours of both parties in the exchange. Leaders' attribution of followers' performance is also highly dependent on the initial categorisation of followers into in- and out-group members.

Drawing on work by Darley and Fazio (1980), Lord and Maher (1991) propose a six-stage circular cybernetic model of information processing as an interpretive framework of the effects leader and follower perceptions have on their relationship and its development, based on the principles of behaviour confirmation. The first stage involves both leaders and followers developing expectations about the other member on the basis of categorisation and prior experience. The two then adjust their behaviours according to their own expectancies. In the third stage followers engage in an interpretation of the leaders' behaviour, which was earlier affected by the leaders' expectancies of the follower (e.g., if the leader expected high performance from the follower, he or she would have encouraged and facilitated high performance). In the fourth stage the followers use their interpretation of the leaders' actions to respond accordingly. In the fifth stage the behaviours are again interpreted by the other member of the dyad. In the final stage, the two actors interpret and evaluate their own behaviour against their pre-existing cognitive structures.

The first attempt to empirically demonstrate the link between ILTs and LMX was by Engle and Lord (1997), in a study of the effects of several metrics of leader-follower cognitive similarities on LMX. They particularly focused on ILTs, implicit performance theories, perceived attitudes and linking. Based on Lord and Maher's (1991) interpretation of the effects of cognitive

processes on dyadic relationships, they propose that the level of congruence in leaders' and followers' ILTs will have a significant effect on LMX as perceived by the follower, and that this relationship will be mediated by followers' liking of their leader. According to the authors, ILTs are salient determinants of LMX because initial perceptions are commonly based on automatic cognitive processes, whereby followers utilise their ILTs in categorising the leader, and future perceptions and behaviours are likely to be based on the initial categorisation due to the lack of cognitive resources for re-evaluation of initial perceptions and reliance on impressions rather than memory when evaluating the leader and reacting accordingly. The authors propose that similarity in leaders' and followers' ILTs provide a common ground that facilitates mutual understanding, identification, adjustment of behaviour to expectations, communication and similarity in interpretations of behaviours. They extend their model to include self-schemas (both followers' and leaders' judgments of themselves on ILTs and implicit performance prototypes) as a moderator of the relationship between leader-follower ILT congruence and liking, based on the argument that individuals will rely more on ILTs in making judgments and ILT congruence will be perceived as more important by individuals who have developed a self-schema that complies with the ILTs.

Engle and Lord (1997) tested the proposed relationships on a sample of 76 followers and 18 leaders in an organisational setting. ILT congruence was operationalised as the square root of the mean of square differences in leaders and followers ratings of the prototypicality of 23 traits that were identified as prototypical in previous research. Contrary to their hypotheses, their analysis did not reveal significant relationships between leader-follower ILT congruence and liking and LMX. What they did find is that leader-follower implicit performance theories congruence is related to LMX, and this relationship is mediated by liking. Self-schema was not found to moderate the relationships of the proposed implicit schema congruence and liking. In conclusion, although Engle and Lord (1997) provide further theoretical arguments that link ILTs to LMX, their study failed to demonstrate this link. Nevertheless, it must be noted that they conceptualised ILT congruence as the similarity in leaders' and followers' ILTs, without assessing the extent to which there is a match in the followers' perceptions of their leader and their ILTs.

This latter issue was addressed by Epitropaki and Martin (2005), who explain that followers might not be able to directly perceive and be influenced by ILT congruence as conceptualised by Engle and Lord (1997), since they are more likely to base their judgments on their own perceptions rather than actual distance of their ILTs to those of their leader. To that end, and building on categorisation and information processing theories, they propose that it is the match between one's ILTs and the recognition of those prototypical attributes in the leader

(implicit-explicit ILT congruence) that will affect follower perceptions of relationship quality and reactions to the leader. Based on the argument that when a manager is perceived as prototypical by the subordinate he or she will be also perceived as having more influence and power over resources and rewards, they extend their model beyond the dyadic perceptions and interactions to consider the effects such congruence might have on followers' affective reactions in the workplace. Since LMX provides the basis for exchanges between leaders and followers, they propose that it is through followers' perceptions of LMX that ILT congruence will influence followers' affect reactions.

They tested their hypotheses in a longitudinal study with a sample of 436 employees, 271 of whom participated in the second wave of the study one year later. They measured both ILT prototypes and antiprototypes using a 21-item scale (Epitropaki &Martin 2004), and operationalised implicit-explicit ILT congruence as the absolute difference of the followers' ILTs minus their ratings on their manager on the ILT traits. Using structural equation modelling they demonstrated that implicit-explicit ILT congruence predicts organisational commitment, job satisfaction and well-being, and that these relationships were fully mediated by LMX. This relationship was found only for prototypical traits, while antiprototype congruence was not significantly related to LMX and outcomes. They conducted further analyses to shed more light on the nature of these relationships. Cross-lagged modelling was used to demonstrate that the link between ILT congruence and LMX is a causal link, and multi-group analysis revealed that the relationships between ILT congruence, LMX and outcomes did not differ across followers on the basis of difference in job demands and relationship tenure with the manager. Interestingly, they found that ILT congruence had a stronger effect on LMX for employees lower in intrinsic motivation as compared to those that were highly intrinsically motivated.

Overall, the above discussion of the link between ILTs and LMX suggests that followers' perceptual processes, and particularly the extent to which their perception of their manager matches their ideal leadership prototypes will have an important effect on employees reactions to their work experience, and that this relationship will be mediated by their perceptions of the quality of their relationship with their manager. The proposed model will therefore test these relationships on several outcomes in order to shed further light on the link between ILTs and outcomes, and extend our understanding of the level of ILT categorisation at which the match between leader and prototypes takes place, and of the role of implicit-explicit ILT congruence in work groups. Further reference to ILT congruence in the present thesis therefore reflects the similarity between the followers' ILTs and ILT recognition in their manager. Building on the conceptualisation and findings of Epitropaki and Martin (2005), ILT

congruence is conceptualised as the fit between follower's ILTs and the recognition of the ILT traits in their current manager. In order to replicate and extend Epitropaki and Martin's (2005) model, in addition to the affective outcomes they investigated, further affective and performance outcomes will be incorporated to the model to reflect both individual and group affective and performance outcomes.

Affective and Performance Outcomes of Leadership

This section discusses several affective and performance outcomes that are considered to be related to the leadership process, at both the individual and the group level. At the individual level the outcomes that will be considered are: job satisfaction, task satisfaction, well-being, and organisational commitment. At the group level the following will be considered: intragroup conflict, team-member exchange (TMX), team satisfaction, and team realness. Although leadership has been identified as a key component affecting teamworking and its outcomes (e.g., Avolio, Jung, Murry, & Sivasubramaniam, 1996; Gladstein, 1984), the effects of the leadership process on team outcomes are largely neglected in team research. Considering outcomes at the team level will therefore expand our understanding of the effects leadership perceptions and processes have when work in organisations is organised in teams. Performance will be discussed as both and individual- and a group-level outcome.

Job Satisfaction

One of the most popular topics of study in organisational psychology and organisational behaviour is job satisfaction (Cranny, Smith, & Stone, 1992). Locke (1976) views job satisfaction as the extent to which an individual's needs are met at work. He defines job satisfaction as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (p.1300). Job satisfaction is of high importance since organisational performance is potentially greatly influenced by how satisfied the company's employees are with their jobs. Various studies have found the job satisfaction is positively linked to performance at the individual level (Carr, Schmidt, Ford, & DeShanon, 2003; Judge, Thoresen, Bono, & Patton, 2001; Iaffaldano & Muchinsky, 1985), as well as safety in the workplace for blue-collar workers (Michael, Guo, Widenbeck, Ray, 2006), well-being (Carr et al., 2003), and intention to leave (Harris, Kacmar, & Witt, 2005). Studies have also investigated the effects of job satisfaction on unit-level performance, and found effects with customer satisfaction, unit productivity, profit, employee turnover and number of accidents (Harter, Schmidt, & Hayes; 2002). From a general well-being perspective job satisfaction was

found to have a reciprocal influence with family life satisfaction (Ford, Heinen, & Langkamer, 2007).

Several studies have been conducted investigating the antecedents of job satisfaction, looking at employee-, organisation- and leader-related factors. For instance, Janssen and van Yparen (2004) found that follower mastery orientation predicts job satisfaction, mediated my LMX. Other employee-related predictors of job satisfaction are psychological empowerment (Liden, Wayne, & Sparrow, 2000; Seibert, Wang, & Courtright, 2011), self-esteem, self efficacy, locus of control, and neuroticism (Judge & Bono, 2001), and emotional intelligence (Wong & Law, 2002). Of the organisationally related factors, job satisfaction was found to be predicted by constructs such as job characteristics (Baltes, Briggs, Huff, Wright, Neuman, 1999; Fried, 1991; Liden et al., 2000), and organisational climate (Carr et al., 2003). Finally, a plethora of studies have linked leadership-related factors to job satisfaction. For instance, Meglino, Ravlin and Adkins (1989) found that supervisor-subordinate value congruence positively predicts job satisfaction, Pierro, Cicero, Bonaiuto, van Knippenberg and Kruglanski (2005) report a link between leader group prototypicality and effectiveness and job satisfaction, Treadway et al. (2004) found that leaders' political skill predicts job satisfaction, Vankatamarani, Green, and Schleicher (2010) found links with leaders' social network, Yang and Mossholder (2010) report a link to trust in the supervisor; while Wong and Law (2002) report a link between leader's emotional intelligence and job satisfaction. A wide range of studies also shows that transformational leadership is positively linked to employees' job satisfaction (e.g., Bass & Avolio 1989; Seltzer and Bass, 1990; Yammarino and Bass, 1990). As discussed previously, Epitropaki and Martin (2005) have additionally demonstrated that there is a link between implicit-explicit ILT congruence and job satisfaction. Finally, a vast number of studies investigated the relationship between LMX and job satisfaction, with LMX being either the predictor (e.g., Coglister, Schriesheim, Scandura, & Gardner, 2009; Erdogan & Enders, 2007; Gerstner & Day, 1997; Golden & Veiga, 2008; Harris, Wheeler, Kacmar, 2009; Scandura & Graen, 1984;) or the mediator in the tested hypotheses (e.g., Epitropaki and Martin, 2005; Janssen & van Yparen, 2004; Li, Liang, & Crant, 2010; Liden et al., 2000; Venkatamarani et al., 2010).

Well-being

Well-being is a general construct of physical and emotional state. Warr (1990) distinguishes well-being into general context-free well-being and work-related well being, with work-related well being referring to specific emotions that are experienced and associated with individuals' work context. According to Warr (1990; 1999), a key component of work-related well-being is

affective well-being, which consists of both positive and negative emotions (anxiety-contentment and depression-enthusiasm).

Although a relatively small volume of research investigates work-related well-being, the general findings indicate that it is an important factor of employees' experience at work with important implications. Bryce & Haworth (2003) conducted a study based on a Warr's (1987, 1994) Vitamin Model, and found that principal environmental influences (opportunity for control, environmental clarity, opportunity for skill use, externally generated goals, opportunity for interpersonal contact, values social position, and availability of money) ad a significant effect on employees well-being. Warr's (1987, 1994) Vitamin Model was also tested by De Jonge and Schaufeli (1998), who also report that job characteristics (demands, autonomy, and social support at work) predict well-being. Warr (1990) found further predictors of workplace well-being to be age, occupational level, task variety, opportunity for skill utilisation at work, workload, and uncertainty. More recently, Karimi, Karimi and Nouri (2011) conducted a study that showed that work hours, strain-based work that interferes with family life, and job characteristics (supervisor support, job demands, and job control) also predict work-related well-being. Another study that looks at predictors of well-being was conducted by Wegge, Van Dick, Fisher, Wecking and Moltzen (2006), who found that organisational identification is also an antecedent of well-being. As a predictor, work-related well-being has been linked to stress, job satisfaction and physical health (Van Latwyk, Fox, Spector, & Kelloway, 2000).

Although a modest number of studies have investigated the link between leadership-related factors to employee well-being, the findings that are reported demonstrate that leaders can have a significant effect on the work-related well-being of their followers. For instance, Liu, Siu, and Shi (2010) found that transformational leadership predicts well-being, mediated by trust in the leader and self-efficacy. Further, it was found that LMX mediates the effects of leader-follower tenure similarity (Epitropaki and Martin, 1999), followers' locus of control (Martin et al. 2005), and perceived fairness of supervisors' feedback (Sparr & Sonnentag, 2008) on followers' well-being. Authentic leadership has also been theoretically linked to follower well-being (Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Ilies, Morgeson, & Nahrgang, 2005). Finally, two studies have found significant relationships between ILTs and well-being. The first study by Martin and Epitropaki (2001) found that organisational identification, ILTs and ILT recognition in the manager, and transactional and transformational leadership predict follower well-being, while the second study established that implicit-explcit ILT congruence predicted well-being, mediated by LMX (Epitropaki & Martin, 2005).

Organisational Commitment

Organisational commitment is a much studied construct in the fields of organisational behaviour and applied psychology (Matheu & Zajac, 1990). Reichers (1985) views organisational commitment as "a process of identification with the goals of an organization's multiple constituencies" (p.465). By constituencies, Reichers means a wide range of organisational stakeholders, such as senior management, employee groups, customers, the community and so on. Another general definition of organisational commitment states that it is "a bond or linking of the individual to the organisation" (Matheu & Zajac, 1990, p. 171). Although these definitions provide a good basis for the understanding of organisational commitment, they are rather general and do not reflect the multiple facets of the construct. This led several authors to attempt to refine the concept by identifying its components. For instance, Matheu and Zajac (1990) propose that the two most representative categories of conceptualisations of commitment are *attitudinal* and *calculated* commitment. According to Mowday, Steers, and Porter (1979) attitudinal commitment is the extent to which an individual identifies with their organisation and in turn accepts its goals and values, exudes effort toward achieving the organisational goals and wishes to remain employed by the organisation. Calculated commitment on the other hand is conceptualised as a person's continuing attachment to an organisation due to particular transactions that will provide benefits over time, such as pension plans (e.g., Hrebiniak & Aluto, 1972; Matheu & Zajac, 1990). A more recent classification of commitment aspects is proposed by Allen and Meyer (1990); this classification has dominated in subsequent conceptualisations and studies of commitment (Solinger, van Olffen, & Roe, 2008). Allen and Meyer (1990) proposed a three-component model of attitudinal commitment; namely, affective, continuance and normative commitment. *Affective* is the component of commitment that links a person to an organisation on the basis of their identification, involvement and attachment with their organisation. *Continuance* commitment is the equivalent of calculated commitment, and reflects individuals attachment to the organisation on the basis of the potential loss of benefits associated with leaving the organisation. Finally, the *normative* component refers to individuals feelings of obligation to contribute their contribution to the organisation. Although Allen and Meyer's (1990) model is still the dominant paradigm of organisational commitment components in organisational research, it is heavily criticized for the lack of empirical support (e.g., Allen & Meyer, 1996; Ko, Price, & Mueller, 1997; Meyer, Stanley, Herscovich, & Topolnytsksy, 2002).

Research has linked organisational commitment to several important work-related outcomes. Such outcomes include employee turnover (e.g., Angle & Perry, 1981; Fukami & Larson, 1984; Mowday, Steers, & Porter, 1979), absenteeism (e.g., Koch & Steers, 1978; Fukami &

Larson, 1984), job satisfaction (e.g., Bateman & Strasser, 1984), and performance (e.g., van Maanen, 1975). In a recent meta-analysis Meyer and his colleagues (Meyer et al., 2002) found that of the three components of commitment proposed by Allen and Meyer (1990), the one that most strongly and positively predicted work related outcomes (withdrawal, turnover, attendance, performance, organisational citizenship behaviour, stress and work-family conflict) is affective commitment, with continuance commitment generally having a negative impact on outcomes. Finally, Riketta (2002) conducted a meta-analysis that revealed a true correlation of .20 between attitudinal commitment and performance.

In terms of antecedents of commitment, Meyer et al. (2002) report that employees' locus of control and self-efficacy, role ambiguity and role conflict, and organisational support are all significantly related to their level of affective commitment. Further, they found tenure, education and transferability of skills predict all three types of commitment. Cohen-Charash and Spector (2001) found that organisational commitment was also predicted by organisational justice. Additionally, Spector (1986) found in his meta-analysis that employees' perceptions of control were related to organisational commitment. Finally, several studies have linked leadership-related factors to organisational commitment. For instance, transformational leadership has been consistently linked to higher levels of commitment (Graen & Uhl-Bien, 1995; Yammarino, Spangler, & Dubinsky, 1998; Lee, 2008). Leader-member exchange has also been found to predict organisational commitment (Lee, 2005; Golden & Veiga, 2008). Coglister and her colleagues (2009) further found that agreement in ratings of LMX between leaders and followers is also associated with higher employee organisational commitment. Finally, trust in one's leader (Yang & Massholder, 2010), spiritual leadership (Fry, Hannah, Noel, & Walumbwa, 2011), leader-follower demographic similarity (Pelled & Xin, 1997), leader trait negativity (Schaubroeck, Walumbwa, Ganster, & Kepes, 2007), ethical leadership (Kalshoven, Den Hartog, & De Hoogh, 2011), implicit-explicit ILT congruence (Epitropaki &Martin, 2005), and servant leadership (Liden, Wayne, Zhao, & Henderson, 2008) have all been found to be associated with organisational commitment.

Task Satisfaction

Task satisfaction is a relatively under-studied construct in organisational research, with only few studies. One of the earliest studies of task satisfaction were several laboratory experiments conducted by Locke (1965) that demonstrated a consistent link between task success and satisfaction with the task. Weiss and Sherman (1973) conducted another experimental study, the results of which indicate that surprisingly higher ability and motivation are associated with lower task satisfaction. Contrary to their findings, Calder and Staw (1975)

reported a positive link between motivation and task satisfaction. Early research of the construct also suggests that task satisfaction is predicted by the mood of the employee and the task's design (Kraiger, Billings, & Isen, 1989). More recent studies have shown a link between task satisfaction and personal control (Stanton & Barnes-Farrell, 1996), personal control (*ibid*), participation in the task (Douthitt & Aiello, 2001), job satisfaction (Mason & Griffin, 2003), group performance (*ibid*), task situation, and intention (Roberson, Korsgaard, & Diddams, 1990). The only study to report links between leadership-factors and task satisfaction is an experimental study by Howell and Frost (1989), who found that structuring and considerate leadership styles have a stronger positive effect on task satisfaction when a group had high productivity norms, than when the productivity norm was low. The general lack of research linking leadership to task satisfaction does not permit for generalised conclusions regarding the effects of the followers' perceptions regarding leaders and the leadership process on task satisfaction. It is therefore important to extend leadership research by investigating such effects.

Intragroup Conflict

De Dreu and Weingart (2003) view conflict as one of the challenges faced by work groups. They define it as "the process resulting from the tension between team members because of real or perceived differences" (p. 741). Jehn (1995) describes intragroup conflict as incompatibilities that reside in the perceptions of the group members, which could regard either perceptions of differing opinions or interpersonal differences. Several types of conflict have been identified in the literature, with the most common distinction being made between relationship and task conflict (e.g., Guetzkow & Gyr, 1954; Jehn, 1995; Pinkley, 1990; Priem and Price, 1991; Wall & Nolan, 1986). According to Jehn (1995) relationship conflict in groups is the result of interpersonal differences among the members, which lead to feelings of annoyance, tension and hostility, while task conflict is based on differences in opinions and views regarding the task at hand. Other classifications of conflict include the addition of process conflict to the above mentioned categories (e.g., Jehn, 1997; Jehn & Mannix, 2001; Jehn, Northcraft, & Neale, 1999). Process conflict refers to disagreements regarding how the task at hand is to be completed, how the work should be distributed, who carries responsibility for which aspects of the task, and so on. Finally, Pelled (1996) proposes two types of conflict; namely substantive and affective conflict, which are similar in their definitions to task and relationship conflict respectively.

The effect of intragroup conflict on group outcomes is the topic of continuous debate, not only due to the multifaceted nature of the construct, but also due to the temporal factors in group

development and the complexities involved in collaborative tasks. For instance, Jehn (1995) found that both relationship and task conflict had a negative effect on group members' satisfaction, their liking of the other members of the group, and their desire to remain in the group. She also found that the nature of the task is an important factor in determining the effect of conflict on outcomes; for routine tasks conflict is an inhibitor to group functioning and performance, while for non-routine tasks conflict about the task can potentially be beneficial to group functioning. This pattern of effects was consistent in early research on conflict, with findings generally indicating that relationship conflict has a negative effect on both affective and performance outcomes (e.g., Kelley, 1979; Roseman, Wiest, & Swartz, 1994; Staw, Sandelands, & Dutton, 1981; Wilson, Butler, Cray, Hickson, & Mallory, 1986), moderate levels of task conflict have positive effects on performance when the task is of some complexity (e.g., Jehn, 1995; Jehn & Shah, 1997; Schwenk, 1990), and process conflict has generally negative effects on group functionality, productivity and performance due to the feelings of uncertainty that it creates among group members (e.g., Jehn, 1997; Jehn, Northcraft, & Neale, 1999).

More recently, Jehn and Mannix (2001) showed that the effects of conflict are dependent not only on the nature of the task and the type of conflict, but also on the timing of conflict. They found that the "ideal conflict profile" (p. 236) that facilitated group performance was found in groups that had process conflict that was relatively low but increasing over time, task conflict that was moderate in the middle stages of the groups' collaboration, and overall low relationship conflict. Additionally, they report that the best performing groups were those where members had similar values, trusted and respected each other, and were open in their discussions regarding conflict during the middle period of their collaboration. A somewhat different picture is drawn by a meta-analysis conducted by De Dreu and Weingart (2003), who found that both relationship and task conflict have a negative effect on group performance and member satisfaction. With regards to task complexity, they report that the negative effects of conflict were even stronger for highly complex tasks. Finally, they report that the presence of relationship conflict accentuates the negative effect of task conflict on performance.

Although it is widely recognised that leader characteristics and behaviours can have an effect on team conflict and how it is managed (e.g., De Dreu, Weingart, 2003; Dew, 1995; Dionne, Yammarino, Atwater, & Spangler, 2004; Jehn & Mannix, 2001), the effect of leadership on team conflict is largely neglected in both the leadership and conflict fields of study. Nevertheless, the limited evidence available indicates that team leaders do have an effect on team conflict. Boies and Howell (2006) found that teams with higher mean LMX experienced

less conflict, and that this relationship was moderated by LMX differentiation within the group, such that in teams with higher LMX differentiation the effect of mean LMX on conflict is accentuated, that is, the relationship between the two is stronger. With regards to leadership styles, Doucet, Poitras, and Chênevert (2009) found that cognitive conflict is negatively affected by leaders exhibiting inspirational motivation, and positively by those adopting intellectual stimulation or passive management by exception styles. With regards to relationship conflict they found that management by exception, both passive and active, affect it positively, while inspirational motivation and individualised consideration had a negative effect. Leaders' informal network ties have also been associated with team conflict, with lower levels of conflict reported by teams with prestigious leaders Balkundi, Barsness, & Michael, 2009). Finally, Kotlyar, Karakowsky and Ng (2011) found in a laboratory study that between charismatic, pragmatic and shared leadership, pragmatic is the leadership style that is associated to lower conflict and improved member commitment to the team.

Overall, recent studies in the area suggest that leaders play an important role in team conflict. It is clearly an area that warrants further research, since conflict is consistently identified as an antecedent of team performance. In the present thesis therefore, intragroup conflict will be investigated as an outcome of the leadership process, influenced by ILT congruence through team-level LMX.

Team-Member Exchange

The team-member exchange (TMX) construct was introduced by Seers (1989) on the basis of the role and social exchanges theory. It refers to the quality of reciprocal exchanges among co-workers with regards to helping, feedback, idea and information sharing, recognition, and so on. Seers (1989) summarises that TMX "indicates the effectiveness of the member's working relationship to the peer group" (p.119), and differs from LMX in that it is not a dyadic construct, rather it reflect a group-level phenomenon of the relationships among the team members. He developed a 10-item scale for the measurement of TMX and conducted a longitudinal study to show that TMX is a distinct construct to other team-related variables, such as cohesiveness and co-worker satisfaction. He also demonstrated that TMX predicts employees' attitudes beyond the effect of LMX, and that it is significantly related to performance, moderated by peer motivation.

Since the introduction of the TMX concept, several studies have looked at the role of TMX and work groups. Predictors of TMX include LMX (e.g., Tse, Dasborough, & Ashkanasy, 2007, workplace friendship (Tse et al., 2007), actual (but not perceived) value similarity (Dose, 1999), and interactional (but not distributive) justice (Murphy, Wayne, Liden, &

Erdogan, 2003). Additionally, it was found that TMX is higher in self-managing teams as compared to traditional teams (Seers, Petty, & Cashman, 1995). Several studies have reported that TMX predicts affective and performance outcomes, such as department performance (Seers et al., 1995), individual performance (Liden, Wayne, & Sparrowe, 2000), turnover intention (Major, Kozlowski, Chao, & Gardner, 1995), organisational commitment (Liden et al., 2000; Major et al., 1995), job satisfaction (Major et al., 1995), within group agreement on climate (Ford & Seers, 2006), and helping one's co-workers (Kamdar & Van Dyne, 2007). Research also shows that workplace friendship mediates the relationship between LMX and TMX (Tse et al., 2007), TMX buffers the negative effects of newcomer unmet expectations on outcomes (Major et al., 1995), and weakens the effect of personality characteristics on performance (Kamdar & Van Dyne, 2003).

Team Satisfaction

Team satisfaction refers to the affective reactions of team members regarding their team, i.e., to what extent are they satisfied with their team, the team members and the way they work together. Team satisfaction is typically studied as an outcome of team processes. Team-member satisfaction, along with team performance, is a key component of team effectiveness (e.g., Gladstein, 1984; Hackman & Morris, 1975). Gladstein (1984) proposes that satisfaction with the team is a component of general team-member satisfaction, along with satisfaction with the job and with meeting customers' needs. In her study she found that team effectiveness is influenced by team processes, such as leadership, communication, and training. Stark and Bierly (2009) found that team satisfaction is predicted by relationship conflict, member familiarity, goal clarity, and preference for working in a team, and that with conflict and preference for work group these relationships are moderated by the extent to which the team is virtual, versus traditional, in nature. Task interdependence and job complexity were also identified as predictors of team satisfaction (Van Der Vegt & Van De Vliert, 2000), with highest levels of satisfaction observed when group members had high interdependence both in terms of tasks and outcomes. Similarly, task interdependence leads to higher team satisfaction only when goal interdependence is also high (Van Der Vegt, Emans & Van De Vliert, 2001). Further, trust among the team members is positively linked to team satisfaction (Costa, 2003), while conflict in the team is negatively related to satisfaction (De Dreu & Weingart, 2003). Interestingly, it was found that predictors of team satisfaction do not always predict team performance (e.g., Gladstein, 1984; Ancona, 1990). With regards to leadership the available evidence linking leadership and team satisfaction is limited, though the findings do indicate that leadership does have an effect on team satisfaction, with Kumpfer, Turner, Hopkins and Libert (1993) finding that empowering leadership style is

associated with higher team satisfaction, and Gil, Rico, Alcover and Barasa (2005) reporting change-oriented leadership as beneficial for team satisfaction.

Team Realness

Team realness is a newly introduced concept (Richardson, 2010) that was developed in order to address the conceptual and practical difficulties associated with defining and measuring team work. According to Richardson (2010), due to the potential of teams to outperform individuals, organisations in recent years have shifted towards this way of structure and work. In many cases, though, team working fails to produce the desired outcomes and can actually have a negative impact on performance and employee affective reactions, especially in cases where groups are merely teams by name, rather than real teams. Richardson (2010) therefore extended the conceptualisation of teams to include a comprehensive and rigorous construct that reflects a continuum of team realness. She defines a real team as "*[a] group of people working together in an organisation who are recognised as a team; who are committed to achieving clear team-level objectives upon which they agree; who have to work closely and interdependently in order to achieve these objectives; whose members are clear about their specified roles within the team and have the necessary autonomy to decide how to carry out team tasks; and who communicate regularly as a team in order to regulate team processes*" (p. 86). In a series of studies, Richardson (2010) developed a scale for the measurement of team realness and conducted extensive investigations of the scale's convergent, discriminant, and predictive validity. The scale consists of twelve items, and measures six dimensions or criteria of team realness. These are interdependence, shared objectives, autonomy, reflexivity, boundedness, and specified roles. Richardson (2010) found that team realness is associated with both affective and performance outcomes in varying contexts.

Topakas, Richardson, Martin and West (2011) conducted a small scale study with the aim of investigating whether team leadership affects the extent to which a team is more a 'real' and less a 'pseudo' team. Based on social identity theory extensions, that suggest that leaders can shape the identity of groups through the development of high quality relationships with the group members (Hogg, Martin, Epitropaki, Mankad, Svensson, & Weeden, 2005), Topakas et al. (2011), they proposed and tested a model according to which team realness is the mediating mechanism through which leaders have impact on positive group outcomes. That is, they showed that through the development of high quality leader-member exchanges, leaders influence important parameters that distinguish real- from pseudo-teams, which in turn leads to higher quality team-member exchanges, team performance and team-member

well-being. Preliminary empirical evidence therefore shows that team realness is an important factor in effective teamworking, and that leadership plays an important role in shaping teams to become real.

Performance

Performance is an outcome variable of much interest because it is linked to explicit benefits for the organisations. A plethora of studies have investigated the impact of various constructs on performance, with numerous meta-analyses bringing together past research findings and painting a more comprehensive picture of the antecedents of work performance at the individual, group, unit, and organisational level. Such meta-analyses have shown that performance is dependent, among other factors, on the employee's personality characteristics (Barrick & Mount, 1991), their self-efficacy (Stajkovic & Luthans, 1998; Judge & Bono, 2001), integrity (Ones, Viswesvaran, & Schmidt, 1993), self-esteem, internal locus of control, emotional stability (Judge & Bono, 2001), age (Waldman & Avolio, 1986), goal orientation (Utman, 1997), job satisfaction (Harter, Schmidt, & Hayes, 2002; Iaffaldano & Muchinsky, 1985; Petty, McGee, & Cavender, 1984), employee engagement (Harter et al., 2002), organisational commitment (Riketta, 2002), role ambiguity (Tubre & Collins, 2000), feedback interventions (Kluger & DeNisi, 1996), and high performance work practices (Combs, Liu, Hall, & Ketchen, 2006). Several meta-analyses have focused specifically on group performance, and found that it is predicted by task interdependence (Gully, Devine, & Whitney, 1995), team efficacy and potency (Gully, Incalcaterra, Joshi, & Beaubien, 2002), and team conflict (De Dreu & Weingart, 2003). Finally, there is evidence in the literature that leadership-related factors also have an impact on the performance of followers. For example, LMX is significantly linked to performance (e.g., Gerstner & Day, 1997, Howell & Hall-Merenda, 1999; Hui, Law, & Chen, 1999, Janssen & Van Yperen, 2004), and so is transformational and transactional leadership (e.g., Hui et al., 1999), with transformational leadership positively affecting performance and transactional negatively (Howell & Avolio, 1993).

Hypotheses: Leader-Member Exchange as the Mediator in the Relationship between ILT congruence and outcomes

The following hypotheses at the individual level are derived from the relationships proposed above:

H_1: ILT congruence will have a positive effect on followers' job satisfaction. This relationship will be mediated by LMX.

H_2: ILT congruence will have a positive effect on followers' task satisfaction. This relationship will be mediated by LMX.

H_3: ILT congruence will have a positive effect on followers' well-being. This relationship will be mediated by LMX.

H_4: ILT congruence will have a positive effect on followers' organisational commitment. This relationship will be mediated by LMX.

H_5: ILT congruence will have a positive effect followers' performance. This relationship will be mediated by LMX.

At the group level the following hypotheses reflect the proposed relationships:

H_6: ILT congruence will have a negative effect on the level of intragroup conflict. This relationship will be mediated by LMX.

H_7: ILT congruence will have a positive effect on the quality of the relationships among the group members (TMX). This relationship will be mediated by LMX.

H_8: ILT congruence will have a positive effect on the overall group satisfaction in the group. This relationship will be mediated by LMX.

H_9: ILT congruence will have a positive effect on extent to which the team is a real team (team realness). This relationship will be mediated by LMX.

H_{10}: ILT congruence will have a positive effect on the work group's performance. This relationship will be mediated by LMX.

The chapters five, six and seven provide evidence from three empirical studies that were conducted with the objectives of (1) investigating the level of categorisation that followers rely upon in making leadership judgments, and (2) testing the proposed hypothesised model at the individual and group level. The first study addresses hypotheses H_1, H_3, and H_5, the

second one H_1, H_2, H_3, H_5, H_6, H_7, H_8, H_9, and H_{10}, and the third study is concerned with H_3, H_4, H_5, and H_6. The first study is a cross-sectional study using a sample of 175 final-year students with reference to the one-year internships they completed soon before the data was collected. In this study ILTs were measured at both the basic (general ILTs) and the subordinate (job-specific ILTs) levels of categorisation. Recognition of prototypical traits in the leader was measured using the same items found in the ILT scale. The difference in the ILTs and ILT recognition was used to form the ILT congruence factor. Two competing models were then constructed and tested in order to investigate whether ILT congruence at the basic level of categorisation is a more strongly associated with outcomes than at the subordinate level ILT congruence. The second study is a longitudinal investigation of both the levels of categorisation in ILT schema activation and the effects of ILT congruence on both individual and group level outcomes. The participants are students taking a business module based around a computer simulation that is conducted for the duration of one academic year and the students complete a wide range of tasks in groups under the direction of a leader. In total 343 participants completed the questionnaire in the first wave, and 325 in the second wave, with 235 matched responses over the two waves. Wave one data was used to test and compare two competing models of ILT congruence, the general and job-specific, in order to validate the findings of the first study on a different sample and at both the individual and group levels of analysis. Data was then analysed longitudinally in order to investigate whether the causal direction of the relationships among the variables is as hypothesised. The third study is a cross-sectional study and was conducted in organisational settings with a sample of 178 employees. The method of data analysis used was the same as in the first two studies and aims at replicating the findings of the first two studies in an organisational setting.

CHAPTER 4 - CONGRUENCE MEASURES IN ORGANISATIONAL RESEARCH

The present thesis is concerned with the implicit evaluation of leaders compared to pre-existing leadership prototypes in the minds of their followers. From a methodological perspective this means that it is necessary to measure and analyse congruence, which is also commonly referred to as similarity, fit or match. The study of congruence is not new in social and organisational research and several approaches have been utilised. All approaches have their strengths and weaknesses, and in spite of major statistical advancements in the study of congruence, it remains a heavily debated topic. The purpose of the present chapter is to provide a critical overview of the most prominent statistical approaches in congruence research, and conclude with the most appropriate approach for addressing the research questions of the present thesis. The approaches to be discussed are Bivariate Congruence Indices, Profile Similarity Indices, Polynomial Regression and Latent Congruence Model.

The first two capture a wide range of approaches which are traditionally the most commonly used approaches in congruence research in social and organisational studies, and involve combining the components of the congruence measures into one single index (see e.g., Edwards, 1994). Though these approaches have been heavily criticized in the literature (e.g., Cronbach & Furby, 1970; Edwards, 1993, 1994; Evans, 1991, Johns, 1981), their use was still wide until recent methodological developments came to offer viable alternatives. The key problems associated with these two approaches include ambiguity of interpretation, confounding of the component measures' effects, low reliability and the reduction of three dimensional relationships into two dimensions by combining the two components of congruence into a single measure (e.g. Edwards, 1993, 1994; Fleenor, Smither, Atwater, Braddy, & Sturm, 2010). Polynomial regression was introduced by Edwards (1993, 1994, 2007) in order to address the problems commonly found in the traditional approaches mentioned above, while the Latent Congruence Model approach was developed by Cheung (2009) in order to refine the traditional approaches by means of controlling for measurement error and incorporating other methodological advancements.

Bivariate Congruence Indices

Edwards (1994) provides a detailed overview of Bivariate Congruence Indices in which he addresses the following methods of constructing the congruence indices: algebraic difference, absolute difference, and squared difference.

Algebraic difference is computed by subtracting the score of one of the components of congruence from the other. Several examples of such practice can be found in the organisational research literature (e.g., Caplan, Cobb, French, Harrison, & Pinneau 1980; Ivancevich, 1979; Kernan & Lord, 1990; Locke, 1976). For instance, Major and her colleagues (Major, Kozlowski, Chao & Gardner, 1995) investigated the effect of the extent to which newcomer expectations are met on organisational commitment, turnover intention and job satisfaction, as well as the moderating effects of LMX and TMX on these relationships. They measured role expectations prior to the commencement of the employment and actual job experiences four weeks later in terms of conflict, clarity and acceptance. To assess the extent to which newcomers' expectations were met, the authors computed the algebraic differences of the two congruence components (expectations and experience) on the three indicators. These scores were then used in hierarchical regression analyses to investigate the proposed relationships. In a similar manner, Robinson and O'Leary-Kelly (1998) investigated the effect of self and co-worker antisocial behaviour on dissatisfaction with co-workers. They computed the algebraic difference of each individual's score on the antisocial behaviour measure and the average antisocial behaviour score of all other co-workers and used the resulting scores in hierarchical regression analyses to test their hypotheses. Thau, Aquino and Poortvliet (2007) took a more advanced approach to the use of algebraic difference scores. They investigated the effect of the difference in desired and actual belonging with reference to one's co-workers on interpersonally harmful and helpful behaviours. They tested if their congruence constructs meet the criteria, as discussed below, for use of algebraic difference suggested by Edwards (2002), and combined the analysis of difference scores with polynomial regression analysis. The later analysis was possible, and relatively uncomplicated, due to the relative simplicity of their proposed model which required the test of only direct effects, thus did not include mediating or moderating variables. This approach addressed or accounted for many of the problems with the use of algebraic differences leading to more robust and reliable findings.

In spite of the wide use of algebraic differences in organisational and social research, it is still a heavily criticised approach. The interpretation of the results can be ambiguous due to the fact that the component with the larger variance will have a higher contribution to the

congruence variable (Edwards, 1994; Wolins, 1982). Further, it is not possible to evaluate the direct effect of each of the components of congruence on the outcome measure – in some cases the effect of the congruence on the outcomes could be due to the effect of only one of the components on the outcome (Edwards, 1994). Although the congruence score might explain more variance in the outcome than each individual component, when the components are both entered to the regression they will invariably explain a larger proportion of the variance in the outcome than their algebraic difference (Edwards, 1994). Finally, when using a difference score as a predictor, researchers are testing if the shared coefficient of the congruence components is different from zero, under the constraint that they are opposite in direction (i.e., one coefficient is positive and the other is negative) and similar in magnitude. Edwards (1994) suggests that in assuring that the imposed constraints are appropriate, researchers need to regress the outcome on both components of congruence simultaneously, in order to show that the increase in the variance explained by each component is significant, that the coefficients of each component are opposite in direction and that they are equal in strength.

Absolute difference indices are a transformation of the algebraic difference that removes the direction of the difference; i.e., it disregards information on which component's scores are larger. This is a commonly used technique for analysing congruence in research (e.g., Dansereau, Graen, & Haga, 1975; Swaney & Prediger, 1985, Toffler, 1981; Zalezny & Kirsch, 1989; Zenter, 2005), and is computed by taking the absolute difference of the mean scores on the two scales of interest (congruence components) for each respondent. A representative example of the use of absolute difference as indices of congruence is the study conducted by Dose (1999), who used absolute difference scores as indicators of actual value similarity between employees and leaders and co-workers. In her study she found that only perceived similarity in values between an employee and a manager is related to LMX, while both perceived and actual similarity between individuals and co-workers are linked to TMX. Epitropaki and Martin (2005) used absolute difference scores as indicators of congruence in followers' ILTs and ILT recognition in their manager. They report a positive relationship between ILT congruence and outcomes, mediated by LMX. Somech (2003) on the other hand used absolute difference scores as indicators of demographic dissimilarity to find that such dissimilarity was negatively related to participative decision making in the leadership process, and that this effect was stronger for leader-follower dyads with shorter relationship tenure.

The problems with the use of absolute differences as congruence indices parallel those identified for algebraic differences (Edwards, 1994). Since absolute differences treat differences without accounting for their direction, the underlying assumption of these

regarding the data is that there is an equal number of positive and negative scores. In cases where there is high skewness in the scores, absolute differences are in fact equivalent to algebraic differences. Another assumption is that the distribution and variances of the two components of congruence are equal. When this assumption is not met the components are not represented equally in the congruence score. Further, the effect of the absolute difference score is likely to confound the effects of the individual components, and the effect attributed to congruence might be due to only one of the components having an effect on the outcome, rather than the composite indicator. Similarly, when using absolute differences it is not possible to demonstrate that the congruence score explains variance in the outcome above and beyond that attributable to the individual components, as the absolute difference results in multiplicative composites of the component measures with coefficients that are constrained to be equal in strength and opposite in sign. Finally, testing the effects of absolute differences indices is essentially testing whether the coefficients of the index are different from zero or not, without consideration of the constraints that are imposed on the coefficients of the composite measures by transforming them into difference scores. Edwards (1994) suggests a series of steps that can be taken prior to using absolute differences in assuring that the constraints imposed on the composite measure are appropriate. These include showing that the coefficients of the composite measures (*X* and *Y*), and the product of each composite measure and *W* (*W* = term that takes the value of 0 when $X \geq Y$, and 1 when $X < Y$) are significant, while the coefficient of *W* is not. Additionally, it is essential to show that the coefficients of the composite measures are equal in strength and opposite in sign, while the coefficients of *WX* and *WY* are opposite in sign while not different in strength. Finally, it needs to be demonstrated that the coefficient on *WX* is not significantly different than twice the negative coefficient on *X*. Recent studies using this approach have taken Edwards' (1994) suggestions on board and tested whether the proposed constraints are appropriate for their sample (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2005).

The *squared difference* is a final divariate index of congruence and is the least popular method of the three (e.g., see Caplan *et al.*, 1980; Dougherty & Pritchard, 1985). It differs from the algebraic and absolute difference indices in that it is used in the study of curvilinear effects of congruence variables on outcomes. Zenter (2005), for example, used squared differences in addition to absolute difference to demonstrate that his findings were replicable using alternative congruence indices. He showed that the similarity of one's partner's personality traits and one's ideal mate personality concepts predicts relationship outcomes, both when partner personality is measured as a self-rating and as partner rated. Tsui and O'Reilly (1989) used squared differences to operationalise several indicators of relational

demography; namely, age, gender, race, education, company tenure and job tenure. Their study showed that higher demographic dissimilarity between supervisors and subordinates is associated with lower subordinate effectiveness as reported by the supervisor, lower liking of the subordinate by the supervisor and higher role ambiguity as reported by subordinates.

Similar to algebraic and absolute differences indices, the interpretation of effects associated with squared differences is ambiguous, the index is based on the assumption that the scores of the congruence variable are equally distributed on both sides of the line where component measures are equal, it assumes same variances of the component measures, and it confounds the effects of the squared scores of the measures used in computing the squared difference score (Edwards, 1994). Edwards (1994) explains that the effects of the squared difference scores represent the combined effects of the two component measures and of their product, without allowing for the individual coefficients of these to be considered. He further highlights that the variance explained by the squared difference indices when controlling for the component measures is in fact not additional variance explained, since the index is composed of the two components squared and their product, rather than the two components. Finally, he cautions research to refrain from using squared difference indices unless their data meets the constraints imposed by the equations derived from squared difference scores. These constraints include that the coefficients on the squared terms of the components are equal, that the product of the two component measures is twice the magnitude of the coefficient of one of the squared components and opposite in direction, and that the coefficients of the two components are equal to zero. Edwards (1994) proposes an equation that avoids the use of squared differences and testing whether it explains variance in the outcome is significantly reduced when using the squared differences index. The terms in the proposed equation include the two component measures, their squared terms and their product. In order to show that the results are consistent with that yielded when using squared differences the coefficients of the squared terms and the product need to be significant, while those of the non-squared components should be non-significant. Additionally, the coefficients of the squared terms should not be significantly different from each other and the coefficient of the product terms should be opposite in sign and not significantly different than the negative coefficient of either of the squared terms.

Overall, although bivariate congruence indices make intuitive sense and their interpretation seems relatively uncomplicated, there are a number of problems that have been identified with regards to the constraints that they pose on the regression equations and limitations in terms of interpretation. Though it is possible to address some of the identified issues, such as

the appropriateness of the constraints that such indices impose on the regression equations, the use of these indices remains largely problematic.

Profile Similarity Indices

Another category of congruence measures that are commonly used in organisational and social research are Profile Similarity Indices. These include the sum of absolute differences, the sum of squared differences, the squared root of the sum of squared differences and profile correlations.

The *sum of absolute differences* |*D*| is obtained by computing the absolute difference on each item (or dimension) of the two congruence measures separately and then summing this discrepancy across all the items (e.g. Bernardin & Alvares, 1975; Healy, 1973; Pervin, 1967). In a 1978 study, Lopez and Greenhouse used |*D*| to operationalise need satisfaction by computing the absolute differences of each item of a job satisfaction scale measured as a 'would like' and as an 'is now' construct, and adding the discrepancies together. They report that need satisfaction is related to job satisfaction and that this relationship is stronger for individuals with high self-esteem as compared to those with low self-esteem. Another representative example of the use of |*D*| as a congruence index is the operationalisation of value dissimilarity by Lankau and her colleagues (Lankau, Ward, Amason, Ng, Sonnenfield, & Agle, 2007). They used the sum of absolute differences as indicators of value dissimilarity both among members of the board of directors, as well as between the CEO and the board members of an organisation. Perceived value similarity with the CEO was computed as the |*D*| of each member's value scores and their rating of the CEO's values. Actual value dissimilarity with the CEO was the |*D*| of the value scores of each members and their CEO. Similarly, perceived value dissimilarity with other board members was the |*D*| of each member's value scores and their rating of the importance of the same values to the board, and actual value dissimilarity with other board members was the |*D*| of each member's values and each other member's ratings, summed and divided by the number of members on the board. Their findings indicate that perceived value dissimilarity from both the CEO and the board is positively related to relationship conflict and that value dissimilarity from the CEO is also related to task conflict. They also found that conflict mediated the relationship between value dissimilarity and outcomes (satisfaction with the board, organisational commitment and evaluations of the CEOs leadership effectiveness).

Edwards (1994) posits that in addition to the problems that are found with the absolute difference scores, the |*D*| index has further limitations. Firstly, when scores on several

dimensions measuring a higher-order construct are combined into a sum, the effects of each dimension are confounded in the generalised profile of congruence. Similarly, it is not possible to take into account the role the shape and level of the congruence profiles with regards to their relationship to the outcomes. In addition to the constraints imposed by the absolute difference scores, the |*D*| profile presumes that the coefficients of each dimension of a construct are equal. Edwards (1994) therefore suggests that all constraints imposed by the absolute difference index are tested on the sample at hand and that each dimension composing a general construct is treated separately in a regression equation. This, of course, greatly increases the number of terms in the regression equation resulting in the need for a very large sample. He also suggests that it is possible to construct separate regression equations for each dimension, but this does not allow for controlling of the effects of other dimensions when estimating the effect of one on the outcome of interest.

The *sum of squared differences* D^2 was introduced as a measure of congruence by Cronbach and Gleser (1953) and is obtained by computing the square differences of the two congruence measures on each item (or dimension) and summing them across items (see e.g., Greenhaus, 1971; Pfeffer & Salancik, 1975; Rounds, Dawis, & Lofquist, 1987; Sparrow, 1989; Tom, 1971). An example of the use of D^2 in organisational research is the operationalisation of the match between needs and rewards of individuals by Scarpello and Campbell (1983) in a study that demonstrated that individuals' levels of aspiration and career progression orientation explained job satisfaction levels beyond that attributed to the match between needs and rewards in their jobs. Another example is the study conducted by Harris and Mossholder (1996), who operationalised the congruence in actual-ideal organisational culture using the D^2 profile. They computed a separate profile for each of the four dimensions in the measure of organisational culture that they used and found that, although not always uniformly, these relate to organisational commitment, optimism about the organisation's future, job satisfaction, job involvement and job turnover intentions. By using separate profiles for each dimension of organisational culture they managed to overcome some of the problems associated with the use of the D^2 profile, as discussed below.

Edwards (1994) points out that the D^2 profile has the same limitations as the squared difference index, along with some further problems associated with the use of sums of indices. For example, when using D^2 profiles it is not possible to evaluate the effect of each squared term since they are summed together to produce the profile. Similarly, the shape and level of the profile cannot be taken into account in the analysis. In addition to the constraints imposed by the use of squared differences, using their sum further assumes that the coefficients associated with each component of the sum are equal. Further, the regression

equation consists of curvilinear and interactive terms without controlling for their lower-order constructs. Edwards' (1994) suggestions for dealing with these limitations are similar to those proposed for the |*D*| profile; the construction of a regression equation that consists of both the lower-order, as well as the squared and interactive terms for each dimension of the construct of interest. He acknowledges the high demands of this practice in terms of sample size and proposes separate regression equations for each dimension, while acknowledging that this does not allow for controlling for the effects of the other dimensions when assessing the effects of each of them on the outcome separately.

The *square root of the sum of squared difference D* is simply the square root of the above described profile, and is a commonly used index of congruence (e.g., Hatfield & Huseman, 1982; Jackson, Brett, Sessa, Cooper, Julin, & Peyronnin, 1991; Wexley & Pulakos, 1983; White, Crino, & Hatfield, 1985). Church and Waclawski (1999) used *D* to operationalise managers' self-awareness as the congruence between self-ratings and ratings of managers' direct reports. Their analysis showed that transformational leaders tended to be more self-aware of their leadership and management behaviours. Vancouver and Schmitt (1991) used the *D* profile as a measure of goal congruence between employees and their supervisors, and between employees and other members of their constituency (employees in the same hierarchical level in the organisation). For the latter congruence index the authors computed the *D* score for the congruence among each participant and all other members of their constituency separately for each member and averaged the resulting congruence indices to produce a single score of employee-constituency congruence. They found that goal congruence at both levels (between and within hierarchical levels in the organisation) was positively related to job satisfaction and organisational commitment, and negatively to intention to quit, with the member-constituency congruence having a comparatively stronger effect on the outcomes.

The *D* profile has the same limitations as the D^2 profile and is additionally especially problematic as compared to other congruence indices as it is not possible to transform this index into a regression equation without constraints that can be used to test the appropriateness of the constraints imposed by the profile formula (Edwards, 1994). Edwards (1994) proposes that conceptually, *D* is more similar to |*D*|, though again the same constraints do not apply because the two profiles could be either equal of linearly related depending on whether a single dimension is responsible for the whole difference between two profiles. For these reasons, Edwards (1994) suggests that instead of using the *D* profile as an indicator of congruence researchers should |*D*| or D^2, and the alternative equations proposed as solutions regarding these profile similarity indices.

The last profile similarity index to be discussed is the *profile correlation* or *Q* (Cronbach & Gleser, 1953; Stephenson, 1953), which is the Pearson coefficient of the correlation among the component measures (items or dimensions). A variation of this profile is the *Q*-sort, which is the correlation of the items of measures that require the raters to order the items on the basis of a given criterion. It is apparent that this index of congruence differs from those discussed thus far in that it is not based on the subtraction of the components of congruence. Nevertheless, it is still a traditionally popular index in the study of congruence (e.g., Amerikaner, Elliot, & Swank, 1988; Caldwell & O'Reilly, 1990; Hammer & Dachler, 1975; Suar & Khuntia, 2010). For example, London and Wohlers (1991) correlated supervisor and subordinate (the average of responses from a number of subordinates) ratings of 48 items comprising a feedback measure. This was used as a measure of agreement between subordinate- and self-ratings in manager feedback, and it was found that agreement was higher among female (vs. male) and line (vs. staff) managers, and that the profile agreement generally increased one year later. Graen and Schiemann (1978) used profile correlations in a longitudinal study as indictors of leader-follower agreement on three constructs; namely, leader-member relationship quality, job problems and leader-member relational measures. They found that for leader-follower dyads that enjoy a high- and intermediate-quality relationships there was high agreement between leaders' and followers' ratings of job- and relationship-related factors, while the agreement was low for those dyads that reported low-quality relationships. In another longitudinal study, O'Reilly, Chatman and Caldwell (1991) used the *Q*-sort correlation profile to assess person-organisation fit in terms of organisational culture. In one of their studies, they asked newly employed members of an organisation to rank 54 values in their order of preference for organisational culture, and correlated these to the rankings of senior members of the organisation, who ordered the items on the basis of how descriptive they were of the organisation. Their findings indicate that person-organisation agreement on organisational culture is related to job satisfaction, organisational commitment and turnover.

Edwards (1994) summarises the problems associated with the use of *Q* profiles as ambiguity in interpretation of the individual effects of the components or dimensions that are correlated, as well as the effects of the two components of congruence. He further explains that the surface that relates the component measures of the profile to the outcome cannot be easily inferred and compared to other more general surfaces. Additionally, the *Q* index is an indication of the shape of the profiles of congruence, and does not provide information on the size of the discrepancies among the components of congruence, and highlights that low values on the index could be in some cases attributed solely to measurement error, rather

than congruence. As a solution to these problems Edwards (1994) proposes that researchers use the proposed alternatives to the use of the D^2 index, as the two indices have some similarities. With regards to congruence indices of *Q*-sorts, Edwards (1994) cautions researcher against their use, as they are ordinal measures (therefore inappropriate for use in regression analysis), they are ipsative (therefore not complying with basic statistical assumptions) and they do not provide information on the actual distances between the components of the measures used.

Polynomial Regression and Response Surface Methodology

As a response to the numerous problems associated with the above congruence measures and their widely inappropriate use and interpretation by researchers, Edwards (1991, 1993, 1994, 2002, 2007; Edwards & Cooper, 1990) developed an alternative approach to analysing congruence in research – the polynomial regression. Polynomial regression is based on the response surface methodology (Box & Draper, 1987; Khuri & Cornell, 1987) and involves the analysis of three-dimensional surfaces of polynomial regression equations. It avoids the problems of reliability of congruence indices and allows the examination of the effects of the individual components of congruence on the outcomes. Polynomial regressions can take several forms, and should correspond on the propositions of the theoretical framework that is being tested.

A polynomial regression, that is equivalent to testing algebraic difference indices, would contain the two components of congruence without the constraints that their coefficients are equal and opposite in sign. The equation with algebraic differences as predictors would have the following form:

$Z = b_0 + b_1(X – Y) + e$, or transformed $Z = b_0 + b_1X – b_1Y + e$,

while the equivalent polynomial regression equation would have the following form:

$Z = b_0 + b_1X + b_2Y + e$.

As can be seen in the polynomial regression equation, no constraints are imposed on the coefficients of the components of congruence, X and Y. It therefore avoids the problems associated with the use algebraic difference scores.

Accordingly, the equation corresponding to the squared difference index can be replaced by its equivalent equation without the constraints inherent to the original index. The equation containing the squared difference term in its traditional form would be as follows:

$Z = b_0 + b_1(X - Y)^2 + e$, or transformed $Z = b_0 + b_1X^2 - 2b_1XY + b_1Y^2 + e$,

while its equivalent polynomial regression equation would have the same terms without the constraints on their coefficients, and would have the following form:

$Z = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e$.

Here we can see that apart from the quadratic terms included in the squared differences equation, the equivalent polynomial equation contains the lower-order terms as well. Also, instead of constraining the coefficients of the quadratic terms to be equal in magnitude and same in direction and the coefficient of their product to be double and opposite in sign, the polynomial regression equation allows for all coefficients to be estimated in a way that maximises the variance explained in the outcome Z.

Edwards (e.g. 2007) explains that in a similar manner it is also possible to construct polynomial regression equations that correspond to profile similarity indices by including multiple pairs of congruence measures in the same equation. Nevertheless, and with regard to all forms of polynomial regressions but especially those including quadratic or higher-order terms, Edwards (1993) acknowledges that the interpretation of the coefficients as indicators of the effects of congruence can be difficult. This is especially evident when the coefficients do not correspond to the constraints implied by the similarity indices, which is often the case.

Edwards (2007) proposes that the difficulties with the interpretations of polynomial regression findings can be addressed with the use of response surface methodology (Edwards & Parry, 1993). This entails the analysis and interpretation of three-dimensional surfaces with axes corresponding to the two components of congruence and their outcome. In the case of quadratic equations for example, Edwards (2007) explains that the corresponding surface can take one of three forms: concave, convex of saddle, and each of these can be analysed with regards to their stationary point, principal axes and the surface's shape along the lines of the plane of the two components of congruence. The stationary point refers to the point where the three-dimensional surface is flat, while principal axes are the lines that correspond to the orientation of the surface of the two congruence components, are angled at 90° and go through the stationary point.

Several researchers have adopted the polynomial regression approach to the analysis of congruence in order to avoid the problems associated with similarity indices, in spite of the complexities with the interpretation of coefficients. For instance, Vecchio and Anderson (2009) used polynomial regression and response surface methodology to examine the congruence in self-other agreement in 360° feedback of managers. They found that

agreement in ratings was related to the managers' gender, social sensitivity and social dominance. Vandenberghe and Peiró (1999) used polynomial regression to investigate the effects of personal and organisational values, and their congruence, on organisational commitment, perceived organisational support and procedural justice. They found that that the outcomes were predicted primarily by the individual and organisational values, rather than their congruence. A final example of the use of polynomial regression combined with response surface methodology, is a study by Edwards and Cable (2009) that investigated a mediation model with individual-organisational value congruence as predictor of intention to remain in the organisation, job satisfaction and organisational identification, mediated by communication, predictability, personal attraction, and trust, while controlling for psychological need fulfilment. They found that the effects of individual and organisational values are mediated mainly by trust in the organisation, then by communication, and less by attraction. They also found that there are direct links between individual and organisational values, and job satisfaction and identification.

Latent Congruence Model

The most recent advancement in approaches to congruence analysis is the Latent Congruence Model (LCM) (Cheung, 2009). This method uses Structural Equation Modeling (SEM) in operationalising and analysing congruence. SEM as a general data analysis technique has several well documented benefits (see e.g. Byrne, 2008; Maruyama, 1997; Schumacker & Lomax, 2004) and can be used in both an exploratory and a confirmatory way. The method entails constructing latent factors of the constructs under study that are estimated using the observed variables, it allows for the estimation of all paths in a proposed theoretical model simultaneously, and it produces indices that evaluate the model fit between the proposed theoretical model and the data. Furthermore, this method accounts for measurement error and it takes into consideration the correlations among all the residual and disturbance terms in the observed variables and latent factors.

Cheung (2009) developed the LCM technique so that congruence research can benefit from all the advantages associated with SEM as compared to path analysis with single dependent variables. He highlights four major benefits in the use of the proposed technique: the estimation and controlling of measurement error; the ability for evaluating measurement equivalence of the congruence components; the capacity of the technique to analyse simultaneously several congruence constructs as either a dependent variable, a mediator or an outcome; and its capacity to examine antecedents and outcomes of both congruence and its components. Due to the valuable benefits of both SEM and LCM, this is the approach to

congruence analysis followed in all the studies that comprise the present thesis. Since it is a novel approach, there are no published examples of its application in research thus far, other than those used by Cheung (2009) to demonstrate the utility of the method.

LCM involves the construction of two latent factors representing the components of congruence – the level (mean of congruence components) and the congruence (the difference of the congruence components). The two indicators of congruence (Y_1 and Y_2) are allowed to covary. In the model the two congruence indicators load onto the level latent factor with factor loadings restricted to 1, and the same constructs load onto the congruence latent factor with factor loadings restricted to 0.5 and -0.5. Cheung (2009) demonstrates the operationalisation of the two latent factors, using only observed indicators of congruence for simplicity, with the following equations:

Y_1=Level−0.5Congruence

Y_2=Level+0.5Congruence

Level= ——

The level and congruence factors are used in testing the proposed models as indicators of congruence and of its components. In applying the proposed model to congruence research it is of course recommended that first-order latent factors are used as indicators of the two congruence components in the model, rather than the observed variables, in order to partial out measurement error associated with the observed variables.

Cheung (2009) highlights the importance of establishing measurement equivalence among the measures constituting the congruence factor prior to constructing the structural model to be tested, which will show that the same constructs are measures by the two congruence measures and that they use the same metric. In order to compare the latent factors of each congruence component between them, there is a need to address three forms of equivalence – configural, metric and scalar (Vandenberg & Lance, 2000). Configural equivalence is established by showing that the latent factors of the two congruence components measure conceptually the same construct using the same items or subsets of items. Metric equivalence can be showed by comparing the fit of two models, one where the factor loadings of the items measuring the congruence constructs are estimated freely and another where the loadings are constrained to be equal for each pair of identical items each measuring one of the components of congruence. Demonstrating that the factor loadings are not significantly different among the two measures of congruence would show that the two

latent factors are manifested in a similar manner, and that would be evidence of metric equivalence. Finally, in order to demonstrate scalar equivalence, researchers need to show that the intercepts of the two latent factors that for congruence are not significantly different. It must be noted here that the measurement equivalence is of importance only in cases where the components of congruence are theoretically measuring the same thing (e.g. self-other rating of the same individual's personality traits).

Cheung (2009) demonstrates how LCM can be used when both the predictor and the outcome in a model are congruence constructs. In his example he examines the relationship between ratings of customer service by managers and their supervisors and ratings of a range of behaviours (leadership, communication, and planning and organising). He found that the level of the latent factors of communication and of planning and organising were linked to the level of customer satisfaction, while congruence in the ratings of customer satisfaction was predicted by the congruence in the ratings of the focal manager's communication behaviour. Cheung (2009) also investigated the effects of the individual components of the congruence predictor in the individual components of the outcome predictor and found that self ratings of leadership and communication behaviours predicted self ratings of customer service, and supervisor ratings of the focal manager's communication behaviour predicted supervisor ratings of customer service.

CHAPTER 5 - STUDY 1: LEVEL OF ABSTRACTION IN ILT MEASUREMENT, PSYCHOMETRIC PROPERTIES AND PRELIMINARY TEST OF THEORETICAL MODEL

The first study aims to investigate whether employees rely on their basic or subordinate level leadership categories in making judgments about their immediate managers. In other words, do employees activate ILTs that reflect a job-specific leader or a general leader in order to assesses their actual manager and distinguish between managers who are successful leaders versus poor or non-leaders. To this end, data was collected at both levels of ILT categorisation (job specific and general), in addition to actual manager ratings. Follower work-related reactions and ratings of their relationship quality (LMX) with their leader were also assessed as outcomes of the congruence between leader characteristics and follower ILTs. Direct comparison of the relationship between ILT congruence and outcomes for general ILT and job-specific ILT ratings is conducted to establish the level of categorisation employed by the followers, and subsequently, the appropriate level of ILT measurement in organisational leadership research.

Method

Sample and Procedure

The sample included 175 final-year students enrolled on one of the business degrees at Aston University. The students were approached at the end of the lecture of an elective module in the first academic term and asked whether they would volunteer to participate in this study by filling in a questionnaire (Appendix 1). The questionnaire was constructed in such a way that the items of each scale were grouped together, but their order was random, which is especially important for scales that measure both positive and negative aspects of a construct. All of the partcipants who were present responded to the request, yielding a 100% response rate. There were 78 male (44.6%) and 95 female (54.3%) respondents, with two respondents not providing information on their gender. The average age of the study participants was 21.96 years old.

The participants had recently spent one year in industry doing a placement. The participants worked in a wide range of organisations across several industries. They were told by the researcher to refer to their working experience during their placement year when completing the questionnaire. Therefore, their responses refer to their recent real work experience and

each person was rating a different manager. Overall, a wide range of job roles was held by the members of the sample during their placement, such as HR assistants, project managers, telephone banking, marketing assistants, recruitment consultants, and business decisions analysts.

Measures

In this section the study's measures are described and information on their psychometric properties is provided. Apart from the Cronbach's alpha internal consistency reliability measure, confirmatory factor analyses were conducted for the ILTs scales as they comprise of several dimensions and second-order factors. Confirmatory factor analysis is a technique that assesses the extent to which there is shared variance-covariance among groups of observed variables that comprise a factor or theoretical construct (Schumacker & Lomax, 2004). Confirmatory factor analysis assesses how well the proposed factor structure fits the data, and similar to structural equation modelling, several indices are produced that can be used to assess model fit. In the present study such analyses were conducted using the software EQS (Bentler, 1995), and the model fit indices reported are those most commonly cited in published studies. In general, it is advised that several measures and indices are taken into account when assessing model fit (e.g., Bentler, 1995; Hoe, 2008), and this combination of criteria needs to assess model fit, model comparison and model parsimony (Hair, Anderson, Tatham, & Black, 1998).

The chi-square (χ^2) value is the first measure of interest, with lower values that are not statistically significant indicating better fit. This measure assesses the hypothesised theoretical model against the data; that is, it evaluates the difference between the covariance matrix of the sample and the implied covariance matrix of the hypothesised model (Schumacker & Lomax, 2004). A non-significant χ^2 value indicates that the two covariance matrices are not significantly different. Theoretically, its value can range from zero, indicating perfect fit in the case of models where all paths are included (saturated models) to a maximum value in the case of the model with no paths between variables (independence model) (Schumacker & Lomax, 2004). This measure can be especially problematic and should not be relied upon, as it can falsely indicate poor fit for models with a large number of estimated parameters and a large sample size (e.g., Jöreskog & Sörborn, 1993), or large correlations among variables (Bollen & Long, 1993). In the present study χ^2 values are reported for consistency with the convention in reporting model fit, but are not greatly relied on in assessing how well models fit the data. For a more parsimonious measure of goodness-

of-fit the χ^2 value can be adjusted by the degrees of freedom (χ^2/df) (Jöreskog & Sörborn, 1993), with a value between 1 and 5 indicating adequate model fit.

The most commonly used comparative (or relative) fit indices are the Normed Fit Index (NFI; Bentler & Bonett, 1980), the Non-Normed Fit Index (NNFI) and the Comparative Fit Index (CFI; Bentler, 1990). Comparative fit indices are especially useful in comparing nested models or a hypothesised model to the independence model (also known as baseline model or null model) (Bentler, 1990), as they are based on the models' chi-squares and degrees of freedom. In the independence model the variables under study are uncorrelated, thus independent. The NFI is not reported in the present study as it is known to perform poorly in the case of small sample sizes by underestimating the model fit (Bentler, 1992). For all three indices a value that is higher than .9 indicates adequate model fit (Bentler, 1992).

Finally, an absolute fit index and an incremental fit index –also known as noncentrality-based index- are reported; the Standardised Root Mean Square Residual (SRMR; Hu & Bentler, 1995) and the Root Mean Square of Approximation (RMSEA; Steiger & Lind, 1980). The SRMR is the standardised value of the square root of the mean squared differences between the hypothesised and observed models (Maruyama, 1998). The RMSEA is based on the noncentral distribution of χ^2, and thus assesses how poor the model is. Values on these two indices that fall under .05 indicate a close fit of the model to the data, under .08 a fair fit, under .10 mediocre fit and above .10 unacceptable fit (Byrne, 2008; MacCallum, Browne, & Sugawara, 1996; Wall, Jackson, & Mullarkey, 1995).

As discussed in Chapter 5 Cheung (2009) suggests that prior to testing theoretical models using the latent congruence model technique, it is important to establish measurement equivalence, and particularly configural, metric and scalar equivalence. This is recommended in order to assure that the two components of the congruence latent factor indeed measure the same construct. Though in most cases of congruence research it would be imperative to assure that there is measurement equivalence among the scales used in the two congruence constructs, this is not the case for the studies in the present thesis. In fact, measurement equivalence in congruence measures is only meaningful when the two measures require the rating of the same focal point by more than one raters (e.g., a customer and a manager rating the same employee's performance). In the present thesis congruence is of primary interest, but not in the form of congruence in rating agreements among raters of the same person or construct. Congruence in the present thesis is measured as the similarity in the ratings of three different references (general ILTs, job-specific ILTs, and actual manager ratings) by the same rater (i.e. the followers). This renders measurement equivalence issues inapplicable,

and raises a different issue – whether the scales actually measure theoretically and statistically different constructs. That is, since the same pool of items was used for the measurement of general ILTs, job specific ILTs and ILT recognition, it is imperative that these are assessed to show that they measure different constructs. This issue is addressed for each measure by comparing models that combine the items of the ILT measures with models that do not combine them (e.g., Epitropaki & Martin, 2004). Poorer fit on the combined models indicates that the scales measure distinct constructs.

A final issue that was addressed is that of *response order*. Due to the way in which the data was collected for ratings of the three ILT foci, it is possible that participants might have employed differing completion strategies. While some of the respondents rated the ideal general manager on *all* the traits of the scale before moving on to rate the ideal manager for their job and finally their actual manager, others on the other hand rated each reference-person on an individual trait before moving on to the next trait. After completion of the questionnaire the respondents were asked to provide information on the manner in which they responded to the ILT scales. Of the 175 participants 86 provided this information, with 63 indicating that they rated all the traits for one reference-person before rating the next one (reference focus), and 23 indicating that they rated all reference-persons on a trait before moving to the next trait (trait focus). Independent sample t-tests were conducted on all ILT items in order to assess whether the mean scores of the respondents using different response techniques (reference- vs. trait-focus) are significantly different. The t-tests suggest that the order in which the responses are provided does not affect significantly the response, with the majority of t-tests being statistically not significant. For means, standard deviations, t-test values, and significance levels of the two groups please see Appendix 2.

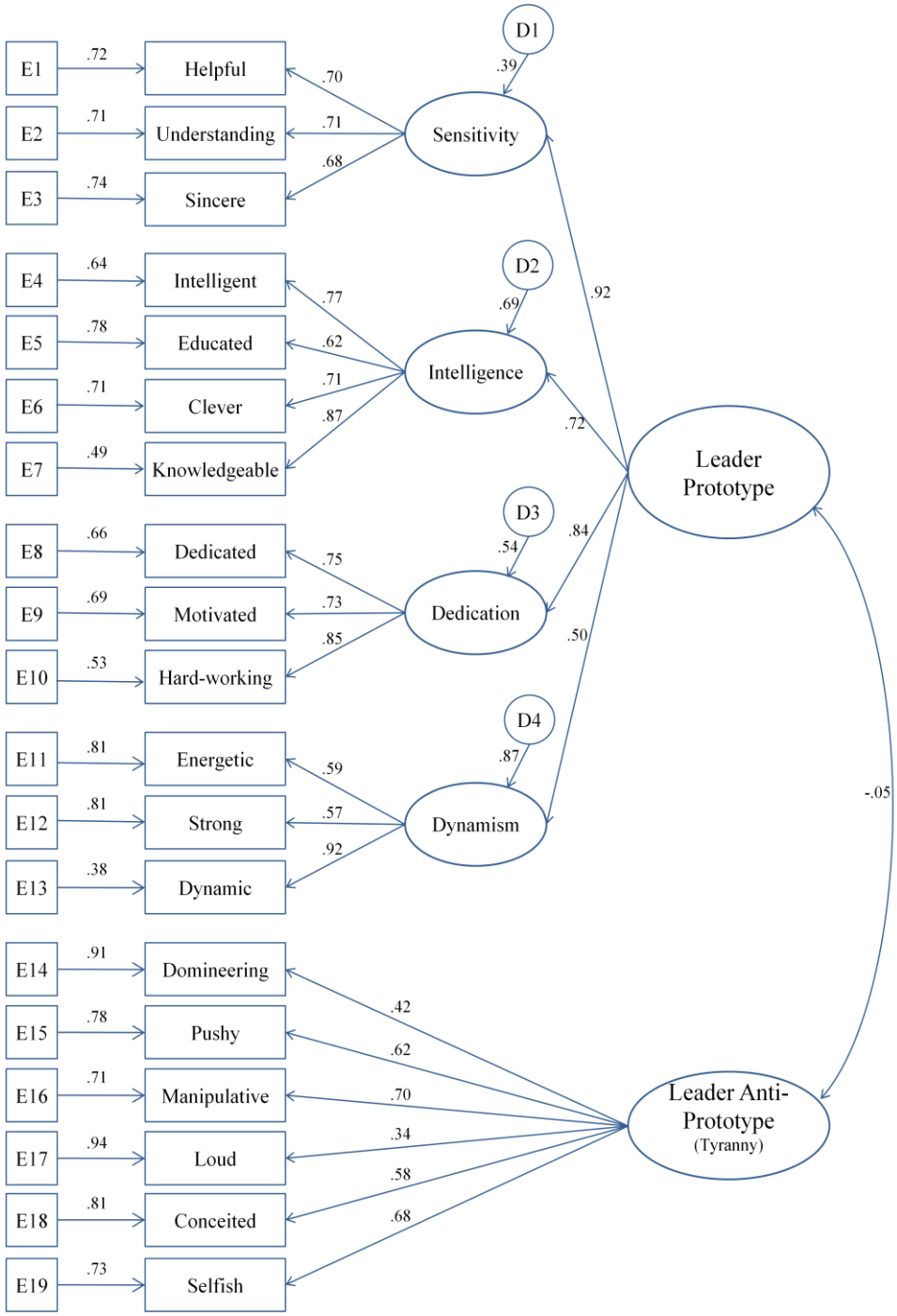
General ILTs. Offermann, Kennedy and Witz (1994) developed a 41-item scale measuring ILTs. A reduced 21-item version of this scale was used in the present study, as modified by Epitropaki and Martin (2004), following the scale reduction procedure proposed by Gerstner and Day (1994). The scale comprises of 21 single-worded items, each representing a trait. Respondents were asked to rate an ideal manager generally on a 9-point likert response scale, with 1 = *not at all characteristic* and 9 = *very characteristic*. Of the 21 items, 13 measure prototypical (α = .88) and 8 antiprototypical (α = .79) traits. Prototypical traits are further divided into four dimensions, namely *sensitivity* (3 items: helpful, understanding, sincere; α = .73), *intelligence* (4 items: intelligent, educated, clever, knowledgeable; α = .83), *dedication* (3 items: dedicated, motivated, hard-working; α = .83), and *dynamism* (3 items: energetic, strong, dynamic; α = .70). The antiprototypical traits are divided into two

dimensions, namely *tyranny* (6 items: domineering, pushy, manipulative, loud, conceited, selfish; α = .73), and *masculinity* (2 items: male, masculine; α = .83).

Confirmatory factor analysis of the data in the present sample confirmed the six-factor structure found by Epitropaki and Martin (2004), with model fit indices of $\chi^2(174, N = 175) = 283.63$, $p < .001$; $\chi^2/df = 1.63$; comparative fit index (CFI) = .95; non-normed fit index (NNFI) = .94; standardised root mean-square residual (SRMR) = .09; and root-mean-square error of approximation (RMSEA) = .06. A further second-order confirmatory factor model was built to confirm that the latent factors of prototype and antiprototype fit the data in the present study. Although the model fit the two factor structure well ($\chi^2(182, N = 175) = 295.82$, $p < .001$; $\chi^2/df = 1.63$; CFI = .95; NNFI = .94; SRMR = .08; RMSEA = .06), inspection of the factor loadings showed that masculinity did not load significantly onto the antiprototype factor. A second order CFA model was then tested, omitting the masculinity dimension from the analysis, with all tyranny items loading onto the antiprototype factor. The model yielded good fit indices similar to the first model, with $\chi^2(147, N = 175) = 240.31$, $p < .001$; $\chi^2/df = 1.63$; CFI = .95; NNFI = .94; SRMR = .10; and RMSEA = .06. A comparison of the two models provided sufficient evidence to indicate that omitting masculinity results in a better fitting model, with $\Delta\chi^2 = 55.51$ ($df = 35$, $p < .01$). A significant $\Delta\chi^2$ indicates that the model with the higher number of estimated parameters has a better fit to the data, which in this case is the model not including masculinity as an indicator of antiprototypical leader traits. Another measure of comparison was also taken into account, the Akaike Information Criterion (AIC) measure (Akaike, 1987) which provided further evidence that omitting masculinity produces a better fitting model. The AIC for the full model was -68.18 and for the model omitting masculinity -53.69, with values closer to zero indicating better fit. Figure 5.01 shows the factor structure and factor loadings for the final second-order factor model of ILTs at the general level of categorisation (i.e., for a general business leader).

The confirmatory factor analysis indicates that on the basis of the study participants' responses, masculinity may not be an appropriate measure of ILTs. This is not a surprising finding, since the meaning of the masculinity items do not refer purely to personality traits; they rather encompass a physical aspect as well. Further, studies looking at masculinity have yielded mixed findings, with positive associations between masculinity and leadership (e.g., Kent & Moss, 1994; Marongiu & Ekehammar, 1999), as well as negative ones (e.g., Gurman & Long, 1992), rendering unclear whether masculinity is a prototypical or antiptotypical trait. On the basis of the statistical evidence in the present sample, and the inconclusive research findings regarding masculinity, this dimension was omitted from any further analysis in this sample. This leaves the antiprototype factor with only one indicator – tyranny.

Figure 5.01: Second-order factor structure for the General ILTs scale (standardised solution)

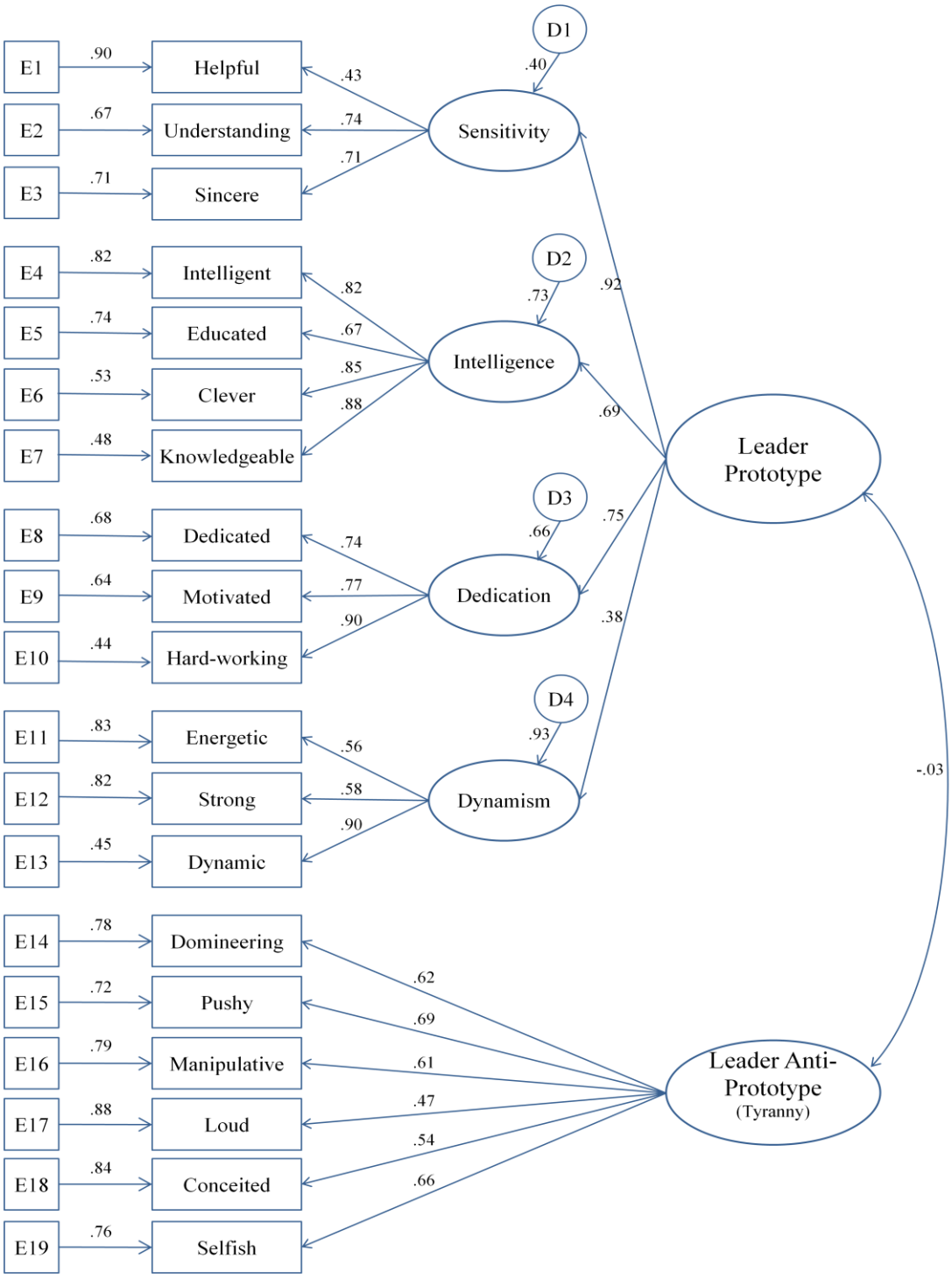


Note. All factor loadings and the correlations coefficient between prototype and antiprototype are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(147, N = 175) = 240.31$, $p < .001$, $\chi^2/df = 1.63$, CFI = .95, NNFI = .94, SRMR = .10, RMSEA = .06.

Job-specific ILTs. ILTs at the subordinate level of categorisation, termed job specific ILTs, were measured using the same 21-item scale used for the ILTs basic level measurement (Epitropaki & Martin, 2004). The respondents were asked to indicate how characteristic the 21 traits are of an ideal manager for their job on the same 1 to 9 response scale. For the subordinate level ILTs the same six dimensions were initially hypothesised; namely, *sensitivity* (α = .65), *intelligence* (α = .88), *dedication* (α = .87), *dynamism* (α = .74), *tyranny* (α = .77), and *masculinity* (α = .83). The reliabilities for the higher order dimensions were α = .86 for prototype and α = .81 for antiprototype.

Confirmatory factor analysis of the subordinate level ILTs showed good fit of the data to the hypothesised six dimensions: $\chi^2(174, N = 175) = 237.31$, $p < .001$; $\chi^2/df = 1.36$; CFI = .97; NNFI = .96; SRMR = .07; RMSEA = .05. The two-factor latent model (prototype and antiprototype) as well adequately fits the data in the present sample, with fit indices of $\chi^2(182, N = 175) = 350.14$, $p < .001$, $\chi^2/df = 1.92$, CFI = .96, NNFI = .96, SRMR = .08, and RMSEA = .05. Similar to the general ILT second order factor analysis, masculinity did not load significantly onto the antiprototype latent factor. The alternative model tested did not include masculinity, and again it produced adequate fit indices, with $\chi^2(147, N = 175) = 202.96$, $p < .01$; $\chi^2/df = 1.38$; CFI = .97; NNFI = .96; SRMR = .09; and RMSEA = .05. A comparison of the two models indicates that masculinity should be omitted from further analysis, with $\Delta\chi^2 = 147.18$ (*df = 35, p<.001*), and a larger absolute AIC measure for the first model (initial model AIC = -111.34; final model AIC = -91.03). Figure 5.02 shows the factor loadings for the final second-order job-specific ILT measure.

Figure 5.02: Second-order factor structure for the Job-Specific ILTs scale (standardised solution)



Note. All factor loadings and the correlations coefficient between prototype and antiprototype are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(147, N = 175) = 202.96$; $p < .01$, $\chi^2/df = 1.38$; CFI = .97; NNFI = .96; SRMR = .09; RMSEA = .05

Since the same items were used for the measurement of ILTs at both the basic (general) and the subordinate (job-specific) level of categorisation, it is necessary to show that they indeed measure different constructs. In order to establish this, two methods were used. First, paired-sample t-tests were conducted for each individual dimension and for the prototype and antiprototype constructs in order to test whether the means on the general ILTs scale were significantly different than those on the job-specific ILTs scale. The dimensions were computed by averaging each participant's responses on the items corresponding to each dimension. The results of the t-tests indicate that for the intelligence dimension the mean scores are significantly different for the general and job-specific constructs (m_g = 7.82, m_j = 7.55, t = 3.33, df = 173, p < .01). The remaining means of the three prototype dimensions were not significantly different; sensitivity (m_g = 7.93, m_j = 7.83, t = 1.86, df = 173, p = .04), dedication (m_g = 8.31, m_j = 8.21, t = 1.66, df = 173, p = .10), and dynamism (m_g = 7.33, m_j = 7.26, t = .92, df = 174, p = .36). The overall prototype scale means were significantly different among the general and job-specific measures (m_g = 7.85, m_j = 7.70, t = 3.39, df = 174, p < .001), while the antiprototype (tyranny) means were not (m_g = 3.74, m_j = 3.77, t = -.31, df = 173, p = .76). Overall, the t-test statistic indicates a statistically significant difference in the two mean scores that are being compared. In the present data it is not possible to conclusively decide whether general and job-specific ILT scales measure distinct constructs using the t-test technique.

Second, following a procedure outlined by Epitropaki and Martin (2004), two different confirmatory factor models were run; one including ten factors of all the individual dimensions of the two measures (apart from masculinity), and the other including five factors combining the equivalent dimensions of the two scales into single factors. Although none of the two models fit the data well, the 10-factor model was closer to fitting the data than the 5-factor model, indicating that the general ILT and job-specific ILT scales indeed measure different constructs. The fit indices for the 5-factor model are χ^2(660, N = 175) = 1957.29, p < .001; χ^2 /df = 2.96; CFI = .82; NNFI = .81; SRMR = .11; and RMSEA = .11 and for the 10-factor model χ^2(645, N = 175) = 1841.89, p < .001; χ^2 /df = 2.86; CFI = .83; NNFI = .82; SRMR = .20; and RMSEA = .11. Since the two models are not nested, it is inappropriate to use the $\Delta\chi^2$ test to evaluate which model fits the data better (see e.g., Cheung & Rensvolt, 2009). Nested are considered models that are equivalent, with the only difference being that in one model some of the parameters are constrained rather than free (see e.g., Maruyama, 1998). The more appropriate alternative for the present case is the Akaike Information Criterion (AIC) measure (Akaike, 1987), which has the capacity for comparing models with an unequal number of latent variables; with lower absolute AIC values indicating a more parsimonious model

(Schumacker & Lomax, 2004). Using this measure the 10-factor model is assessed as the more appropriate with an AIC equal to 551.89, as compared to the AIC of the 5-factor model which was 637.30.

On the basis of the above evidence it can be concluded that the general ILT and the job-specific ILT scales measure two distinct constructs.

Recognised ILTs. Respondents were asked to rate the extent to which the 21 traits used for the measurement of ILTs were characteristic of their manager in their placement job. The response scale again ranged from 1 to 9, with one defined as *not at all characteristic* and 9 *very characteristic*. Chronbach's alpha coefficients were: *sensitivity* (α = .87), *intelligence* (α = .94), *dedication* (α = .87), *dynamism* (α = .80), *tyranny* (α = .81), and *masculinity* (α = .80), prototype (α =.93), and antiprototype (α = .71).

The data again showed good fit on the 6-dimensional model; $\chi^2(174, N = 175) = 323.10$, $p < .001$; $\chi^2/df = 1.86$, CFI = .96; NNFI = .95; SRMR = .08; RMSEA = .07. The second-order model including the prototype and antiprototype latent factors as well produced adequate fit indices; $\chi^2(182, N = 175) = 371.21$, $p < .001$; $\chi^2/df = 2.04$, CFI = .95; NNFI = .94; SRMR = .11; RMSEA = .08. Again, the masculinity items did not load significantly onto the antiprototype latent factor and an alternative second-order model was run without the masculinity dimension. The model fit was at an acceptable level, with fit indices of $\chi^2(146, N = 175) = 310.87$, $p < .001$, $\chi^2/df = 2.13$, CFI = .95, NNFI = .95, SRMR = .10, and RMSEA = .08. A comparison of the two models indicates that masculinity should be omitted from further analysis using the $\Delta\chi^2 = 147.18$ ($df = 35, p < .001$) measure, while the AIC measure indicates the opposite with a lower value for the initial model (7.21) as compared to the final model (18.87). Nevertheless, it was decided to omit masculinity from the analysis in order to have consistency with the general and job-specific ILT measures. Figure 5.03 shows the factor loadings for the final second-order job-specific ILT measure.

Again, since the same items were used for recognised ILTs measurement as those for the general and job-specific ILTs, it is important to establish that the construct being measured is different than the previous two. This is less of an issue in the measurement of ILT recognition as the reference person is not an ideal manager (as is the case in the previous two measures), but rather a specific person – the respondents' actual manager. The methods used to establish this were the same as described in the above section.

All of the paired-sample t-tests comparing the means between the recognised ILTs with the general ILTs means, indicating that the two scales are measuring different constructs;

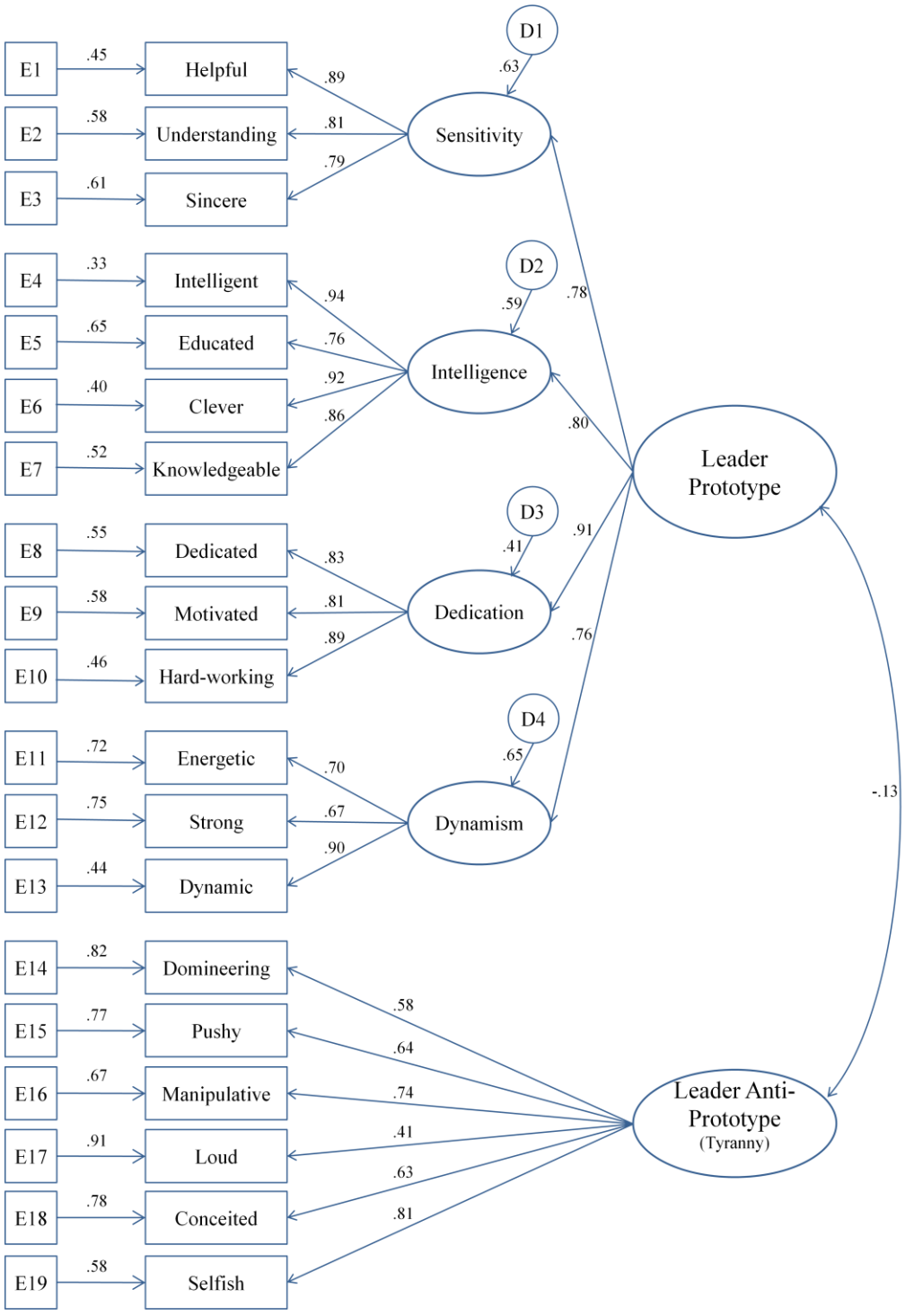
sensitivity (m_g = 7.94, m_r = 6.70, t = 8.27, df = 171, p < .001), intelligence (m_g = 7.82, m_r = 6.98, t = 6.83, df = 171, p < .001), dedication (m_g = 8.32, m_r = 7.30, t = 8.16, df = 171, p < .001), dynamism (m_g = 7.34, m_r = 6.30, t = 8.77, df = 172, p < .001), prototype (m_g = 7.85, m_r = 6.84, t = 10.02, df = 172, p < .001), and antiprototype (m_g = 3.72, m_r = 4.28, t = -4.61, df = 171, p < .001). Similarly, the paired-sample t-tests show that the recognised ILTs scale is measuring a different construct than the job-specific ILTs scale; sensitivity (m_j = 7.84, m_r = 6.70, t = 7.58, df = 171, p < .001), intelligence (m_j = 7.56, m_r = 6.98, t = 5.14, df = 171, p < .001), dedication (m_j = 8.22, m_r = 7.30, t = 7.38, df = 171, p < .001), dynamism (m_j = 7.27, m_r = 6.30, t = 8.11, df = 172, p < .001), prototype (m_j = 7.71, m_r = 6.84, t = 8.74, df = 172, p < .001), and antiprototype (m_j = 3.75, m_r = 4.28, t = -4.64, df = 171, p < .001).

The 5-factor and 10-factor confirmatory models combining the items of the recognised ILTs and general ILTs did not fit well the data, but again the 10-factor model fit was markedly better than the 5-factor one, providing evidence that the recognised ILTs is a separate construct that the ILTs at the basic level of categorisation. The model fit indices for the 5-factor model are χ^2(660, N = 175) = 3022.01, p < .001; χ^2/df = 4.58; CFI = .65; NNFI = .63; SRMR = .16; and RMSEA = .15, and for the 10-factor model χ^2(626, N = 175) = 1197.35, p < .001; χ^2/df = 1.91; CFI = .92; NNFI = .91; SRMR = .13; and RMSEA = .07. The AIC measure confirms that the 10-factor model has a better fit to the data than the 5-factor model (5-factor model AIC = 1702.01; 10-factor model AIC = -54.65).

Similarly, when the 5- and 10-factor models were constructed using the items of the recognised ILTs and the job-specific ILTs scales the 10-factor model fits the data better than the 6-factor model. The model fit indices for the 5-factor model are χ^2(660, N = 175) = 2927.40, p < .001; χ^2/df = 4.34; CFI = .67; NNFI = .65; SRMR = .15; and RMSEA = .15, and for the 10-factor model χ^2(645, N = 175) = 1240.96, p < .001; χ^2/df = 1.92; CFI = .91; NNFI = .91; SRMR = .14; and RMSEA = .08. The AIC measure confirms that the 10-factor model has a better fit to the data, with AIC = -49.04 for the 10-factor model and AIC = 1607.40 for the 5-factor model.

On the basis of the above model comparison it can be concluded that the recognised ILTs scale measures a construct that is statistically distinct as compared to the general and job-specific ILT measures.

Figure 5.03: Second-order factor structure for the Job-Specific ILTs scale (standardised solution)



Note. All factor loadings and the correlations coefficient between prototype and antiprototype are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(146, N = 175) = 310.87$, $p < .001$; $\chi^2/df = 2.13$, CFI = .95; NNFI = .95, SRMR = .10; RMSEA = .08

LMX: Leader-member exchange quality was assessed using the LMX-7 scale originally developed by Scandura and Graen (1984) and later modified by Graen and Uhl-Bien (1995). A 5-point Likert response scale was used ranging from 1 = *strongly disagree* to 5 = *strongly agree* with higher scores reflecting higher quality leader-follower relationships. A sample item from the scale reads “I have enough confidence in my immediate supervisor that I would defend and justify his/her decisions if he/she were not present to do so” (α = .90).

Well-being: Well-being was measured using a 12-item scale developed by Warr (1990), with responses ranging from 1 = *never* to 6 = *all of the time*. The items are single worded and combine the job-related anxiety-comfort and job-related depression-enthusiasm scales. The items refer to specific feelings that the employee might experience as a reaction to work related issues, measuring both positive (6 items: optimistic, motivated, calm, enthusiastic, relaxed, comfortable) and negative (6 items: tense, depressed, worried, anxious, gloomy, miserable) aspects. The negative items have been reverse-coded and a composite well-being scale was computed by averaging the twelve items, with a reliability of α = .89.

Job Satisfaction: A 16-item scale was used to measure job satisfaction, developed by Warr, Cook and Wall (1979). This measure was selected due to its reasonable length and wide usage in organisational research, as well as due to the fact that it reflects both intrinsic and extrinsic employee satisfaction. The respondents were asked to rate the extent to which they were satisfied with several aspects of their work experience, such as the physical conditions, their co-workers, their supervisor and their pay. The items are worded in the form of statements; a sample item reads “Your opportunity to use your abilities”. The response scale ranged from 1 = *extremely dissatisfied* to 7 = *extremely satisfied*, with higher scores reflecting higher satisfaction. The scale has an acceptable internal consistency reliability of α = .91.

Self-rated performance: This was measured using an 11-item self-report scale developed by Viswesvaran, Scmidt and Ones (2005). The respondents were asked to rate their work standard on several aspects of performance (e.g., quality of work, quantity of work, ability to do the work, amount of effort devoted, knowledge to do the work) on a scale ranging from 1 = *poor* to 5 = *excellent*, with higher scores indicating a higher standard of performance. A sample item reads “Your ability to inspire work colleagues to perform well”. The internal consistency reliability of the scale is α = .75.

Results

In the present study ILTs were measured in the form of leader traits at two levels of categorisation – the basic (i.e., general leader) and the subordinate (i.e., job-specific leader). Further, actual manager ratings on the same traits were obtained with the aim of identifying the level of categorisation against which individuals judge real managers. In the methods section it was established that the three scales measure distinct constructs, it is therefore possible to compare the congruence between the ILT measures and the actual manager ratings. The means, standard deviations and Pearson correlation coefficients of the main variables in the study are presented on Table 5.01.

In order to analyse the congruence scores (general – recognised and job-specific – recognised) the Latent Congruence Modelling approach (Cheung, 2009) was used. This is the most recent methodological advancement in the analysis of congruence, it uses the structural equation modelling approach and it overcomes many of the problems of traditional analysis methods (for a discussion of the available approaches to the analysis of congruence see Chapter 4). According to this method two latent factors are created, one representing the congruence and the other the level (mean) of the two variables under study. The congruence factor has two indicators, the ILT and the ILT recognition latent factors. Their paths to the congruence factor are restricted to .50 and -.50; that is, the congruence factor is constructed as the difference of the two components of congruence. Essentially, it does not matter which of the two paths is constrained positively and which negatively, as long as this is taken into account when interpreting the findings. In the present thesis the ideal ILT prototypes' paths are consistently constrained to .50 and the recognised ILTs to -.50. For prototypical ILTs this means that a high score on the congruence latent factor indicates high incongruence with the ideal ILT score exceeding the recognised ILT score, low scores indicate high congruence with the recognised ILT falling close to the respondents' ideal expectations, while negative scores indicate that the recognised prototypical traits exceed the ideal expectations of the respondents. The opposite interpretation is given to antiprototypical ILTs. The loadings of the two indicators onto the level latent factor are both restricted to 1, in accordance with the LCM technique. The congruence and level factors are then used as the variables representing the similarity as well as the actual constructs that are being studied. They can be studied as dependent, independent or mediating variables. In the present study the congruence between ideal and actual manager is of interest as a predictor of the leader-follower relationship quality and other work related outcomes.

Table 5.01: Means, standard deviation and intercorrelations among the study's main variables (N = 175)

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. GILT prototype	7.85	.77	-								
2. GILT antiprototype	3.75	1.32	-.08	-							
3. JILTs prototype	7.70	.86	.76**	.02	-						
4. JILTs antiprotoype	3.77	1.40	-.06	.78**	.01	-					
5. RILT prototype	6.84	1.35	.31**	.09	.36**	.16*	-				
6. RILT antiprototype	2.28	1.66	.06	.45**	.10	.53**	-.24**	-			
7. LMX	3.76	.83	.05	.05	.02	.08	.59**	-.39**	-		
8. Job Satisfaction	4.89	.95	.10	.04	.10	.08	.43**	-.32**	.70**	-	
9. Well Being	4.24	.80	.10	-.07	.06	-.11	.26	-.29**	.56**	.67**	-
10. Self-rated perf.	3.92	.42	.22**	-.10	.17*	-.03	.16*	-.07	.32**	.33**	.24**

*p<.05; **p<0.01; *** p<0.001 (2-tailed)
Note. GILT = General ILT; JILT = Job-specific ILT; RILT = Recognised ILT

When constructing the latent variables for the tested model, the ILT constructs are represented by multiple indicators, namely their subdimensions as discussed in the measures sections. The remaining latent constructs are represented by a single indictor which is the mean score of the relevant items for each latent factor. This practice reduces the number of paths in the structural model, thus allowing the estimation of the model without increasing the demands in terms of sample size. Nevertheless, such practice introduces a bias to the model, due to the measurement error of the single indictors (see e.g., Epitropaki & Martin, 2005). In order to account for the measurement error of the single-indicator constructs the path from the latent construct to its indictor is restricted to the square root of the scale's reliability, while the error variance is restricted to one minus the scale reliability multiplied by the variance of the scale (e.g., Hair, Anderson, Tatham, & Black, 1998).

In order to establish if the general/recognised congruence predicts work-related outcomes better than the job/recognised the same structural models were built and compared in terms of their fit and the Akaike measure (AIC; Akaike, 1987). The AIC measure represents the Kullback-Leibler distance of the estimated model to the truth (i.e., the population), taking into account both the goodness of fit and the number of parameters in the model (Burnham & Anderson, 2002), with lower absolute values indicating a better model. The measure is computed using the formula:

AIC = -2(ln(likelihood))+2K

with likelihood being the probability of the data given the model, that is the likelihood of a model given the data, and K being the number of free parameters in the model. This measure is more appropriate than the chi-square difference ($\Delta\chi^2$) for comparing models that are not nested. As such, the AIC index does not have a range of acceptable values by which a model can be judged in terms of its fit. The AIC index is meaningful when used to compare models in terms of their relative fit to the same dataset (Maruyama, 1998) and has the capacity for comparing models with different latent factors. Thus it is the most appropriate model comparison index for the present analysis. The primary drawback of this measure is that it is descriptive and does not allow for significance testing.

Before the models can be compared it is important to establish that they have the most appropriate structure that represents the data, and that the model is not over-fitted to the data, as suggested by Kelloway (1998). Several alternative nested models that are theoretically coherent are built and compared in terms of their fit as compared to the hypothesised models. Once it is established which model best represents the data

(hypothesised or alternative), it is possible to compare them with general/recognised congruence as predictor in one instance and job-specific/recognised in the other.

Testing Hypothesised versus Alternative Models for General/Recognised and Job-specific/Recognised ILT Congruence

The method of estimation of the following models was the maximum likelihood robust, which produces the robust χ^2 statistic (S-B χ^2; Sattora & Bentler, 1994), and the robust standard errors (Bentler & Dijkstra, 1985), thus correcting for possible non-normality in the sample. The maximum likelihood estimation was used in estimating missing values as well, thus producing the Yuan-Bentler scaled test statistic (Yuan & Bentler, 1998), which is the equivalent of the S-B χ^2.

The antiprototype factors for both the general and job-specific, and the recognised ILTs congruence did not load significantly onto the congruence factors (congruence and level) in any of the tested models. These were therefore omitted and the models were constructed using only prototype congruence and level as the predictors. Additionally, five cases were identified as contributing greatly to the models' multivariate kurtosis, and were therefore omitted from the analysis.

General / Recognised ILT Congruence

In the hypothesised model (Model 1) the independent variables are the congruence and level of the general ILT and recognised ILT variables, the mediator is LMX and the outcomes are job-satisfaction, well-being and self-rated performance. The results show that the hypothesised model fits the data well, with $\chi^2(44, N = 170) = 110.34$, $p < .001$; $\chi^2/df = 2.51$; CFI = .98; NNFI = .97; SRMR = .08; and RMSEA = .09.

Table 5.02: Fit indices for nested model comparisons with general/recognised ILT predictors (N=170)

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	110.34***	44	**2.51**	-	-	**.98**	**.97**	**.08**	**.09**
Alternative models									
Model 2	61.33**	38	**1.61**	49.01***	6	**.98**	**.96**	**.07**	**.06**
Model 3	109.69***	41	**2.67**	.66	3	**.98**	**.97**	**.07**	.10
Model 4	186.64***	46	**4.06**	76.3***	2	**.94**	**.91**	.17	.14
Model 5	1661.66***	66	25.18	1551.42***	12	.07	-.09	.38	.38

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model.

Table 5.02 shows the comparison of the hypothesised model with General/Recognised congruence to the alternative ones. The reported chi-square is the Yuan-Bentler χ^2, and the RMSEA index is based on this χ^2. Most of the fit indices for the hypothesised model fall within the acceptable ranges, indicating that the model fits the data well. Model 2 tests partial mediation, with direct paths added between the congruence and level factors, and the outcome measures. Although the model fit indices indicate a better fit than the hypothesised model ($\chi^2(38, N = 170) = 61.33$, $p < .01$; $\chi^2/df = 1.61$; CFI = .98; NNFI = .96; SRMR = .07; RMSEA = .06), the significant $\Delta\chi^2$ indicates that the model with the higher number of freely estimated parameters is overall better, in this case the alternative Model 2 ($\Delta\chi^2 = 49.01$, $\Delta df = 6$, $p < .001$). Nevertheless, inspection of the factor loadings in Model 2 indicated that none of the direct paths between the independent variables and outcomes was significant.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, job satisfaction, well-being and self-rated performance. This model fits the data reasonably well ($\chi^2(41, N = 170) = 109.69$, $p < .001$; $\chi^2/df = 2.67$; CFI = .98; NNFI = .97; SRMR = .07; RMSEA = .10). The non-significant $\Delta\chi^2$ indicates that the hypothesised model fits the data better than the Model 3, since Model 3 has fewer degrees of freedom and more freely estimated parameters ($\Delta\chi^2 = .66$, $\Delta df = 3$, n.s.). Although Model 3 has a higher RMSEA than the hypothesised model, it is still very plausible as compared to the hypothesised model. Nevertheless, all the paths between ILT congruence and outcomes were not significant. From

a theoretical perspective this is of much interest, since it confirms that ILT congruence does not have a direct effect on outcomes and that the process through which it affects outcomes is the quality of the relationship between the leader and the follower. The model is therefore rejected on both a statistical and theoretical basis.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(46, N = 170) = 186.64$, $p < .001$; $\chi^2/df = 4.06$; CFI = .94; NNFI = .91; SRMR = .17; and RMSEA = .14. The SRMR and RMSEA indices are in fact well outside the acceptable range. The significant change in χ^2 as compared to the larger hypothesised model with fewer degrees of freedom provides further support for the hypothesised model ($\Delta\chi^2 = -76.3$, $\Delta df = 2$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(66, N = 170) = 1661.66$, $p < .001$; $\chi^2/df = 25.18$; CFI = .07; NNFI = -.09; SRMR = .38; and RMSEA = .38. With all fit indices falling outside the acceptable ranges this model is rejected and the change in χ^2 indicating that the hypothesised model fits the data better ($\Delta\chi^2 = -1551.42$, $\Delta df = 12$, $p < .001$), Model 5 is rejected.

Job-specific / Recognised ILT Congruence

The same procedure was followed in assessing the job-specific/recognised ILT congruence model. In the hypothesised model (Model 1) the independent variables are the congruence and level of the job-specific ILT and recognised ILT variables, the mediator is LMX and the outcomes are job-satisfaction, well-being and self-rated performance. The results show that the hypothesised model fits the data well, with $\chi^2(44, N = 170) = 129.78$, $p < .001$; $\chi^2/df = 2.95$; CFI = .97; NNFI = .96; SRMR = .08; and RMSEA = .08, with only RMSEA falling outside the acceptable range of below .10. The hypothesised model was compared to four alternative models, with the same structures as those described above, and the only difference was that one of the components of congruence was job-specific rather than general. Table 5.03 shows the model fit indices and $\Delta\chi^2$ values for the five models.

Table 5.03: Fit indices for nested model comparisons with job-specific/recognised ILT predictors (N=170)

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	129.78***	44	**2.95**	-	-	**.97**	**.96**	**.08**	.11
Alternative models									
Model 2	93.18***	38	**2.45**	36.60***	6	**.95**	**.97**	**.07**	**.09**
Model 3	124.96***	41	**3.05**	4.82	3	**.97**	**.96**	**.07**	.11
Model 4	289.82***	46	6.30	160.04***	2	**.91**	**.94**	.18	.18
Model 5	1632.54***	66	24.74	1502.76***	12	.09	-.08	.36	.38

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model.

Model 2 is a partial mediation model, with direct paths added from the job-specific ILT congruence and level to the outcomes; namely, job satisfaction, well-being and self-rated performance. All of the fit indices of Model 2 fall within acceptable ranges, with $\chi^2(44, N = 170) = 93.18$, $p < .001$; $\chi^2/df = 2.45$; CFI = .95; NNFI = .97, SRMR = .07; and RMSEA = .09. Judging on the basis of fit indices it is evident that Model 2 fits the data better than Model 1. This is further supported by the significant $\Delta\chi^2$ which indicates that the partially mediated model with a larger number of freely estimated parameters fits the data better than the hypothesised model ($\Delta\chi^2 = 76.3$, $\Delta df = 2$, $p < .001$). Nevertheless, inspection of the factor loadings in Model 2 indicate the majority of paths between the congruence and mean latent factors and the outcomes are not significant. This model is therefore rejected.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, job satisfaction, well-being and self-rated performance. This model fits the data as well as the hypothesised model with $\chi^2(41, N = 170) = 124.96$, $p < .001$; $\chi^2/df = 3.05$; CFI = .97; NNFI = .96; SRMR = .07; RMSEA = .11), but the non-significant $\Delta\chi^2$ indicates that overall the hypothesised model fits the data better, since Model 3 has fewer degrees of freedom ($\Delta\chi^2 = 4.82$, $\Delta df = 3$, n.s.) and a larger number of freely estimated parameters. Although Model 3 has a higher RMSEA than the hypothesised model, it is still very plausible as compared to the hypothesised model. Nevertheless, all the paths between ILT congruence and outcomes

were not significant. Similar to the case of the general/recognised ILTs congruence model comparisons, Model 3 is rejected purely on both statistical and theoretical grounds.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the job-specific/recognised ILT congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(46, N = 170) = 289.82$, $p < .001$; $\chi^2/df = 6.30$; CFI = .91; NNFI = .94; SRMR = .18; and RMSEA = .18. The SRMR and RMSEA indices are in fact well outside the acceptable range. Additionally the significant change in χ^2 indicates that the hypothesised model fits the data better ($\Delta\chi^2 = 160.04$, $\Delta df = 2$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(66, N = 170) = 1632.54$, $p < .001$; $\chi^2/df = 24.74$; CFI = .09; NNFI = -.08; SRMR = .36; and RMSEA = .38. With all fit indices falling outside the acceptable ranges and a significant change in χ^2 ($\Delta\chi^2 = 1502.76$, $\Delta df = 12$, $p < .001$) this model is rejected.

Comparing the General and Job-specific hypothesised models

The two hypothesised models are compared in terms of their fit to the data on Table 5.04. Overall, the fit indices indicate that the general/recognised ILT congruence (Model 1) fits the data better than the job-specific/recognised ILT congruence (Model 2), with $CFI_g > CFI_j$, $NNFI_g > NNFI_j$, $RMSEA_g < RMSEA_j$, and most importantly $|AIC_g| < |AIC_j|$ (22.06<41.47). The AIC measure is the primary measure for comparison of non-nested models, and a value closer to zero indicates better fit. In the case of the two hypothesised models the AIC measure clearly indicates that the general/recognised ILT congruence better predicts LMX, which in turn predicts outcomes, than the job-specific/recognised ILTs congruence and outcomes. This finding is further strengthened by the fact that the overall fit indices are better for the general/recognised congruence model as compared with the job-specific/recognised, especially the RMSEA which in the case of the job-specific/recognised congruence model falls outside the acceptable range of lower than .1.

Table 5.04: Model fit indices for General/Recognised and Job-specific/Recognised ILT congruence (N=170)

Model	χ^2	*df*	χ^2/df	CFI	NNFI	SRMR	RMSEA	AIC
General/Recognised								
Model 1	110.34***	44	2.51	.98	.97	.08	.09	**22.06**
Job-specific/Recognised								
Model 2	129.78***	44	2.95	.97	.96	.08	.11	**41.47**

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the main measure of comparison with AIC values closer to zero indicating better overall fit.
Model 1 = General/Recognised congruence and level as predictors; LMX as mediator; job satisfaction, well-being, self-rated performance as outcomes. Model 2 = Job-specific/Recognised congruence and level as predictors; LMX as mediator; job satisfaction, well-being, self-rated performance as outcomes.

Figure 5.04 shows the factor loadings for the structural equation model of the general/recognised latent congruence. The path coefficient between the general ILT prototype and the congruence factor is positive (.56, p < .05), while between the recognised ILT prototype and the congruence factor it is negative (-.43, *p* < .05), showing that the congruence factor is conceptualised as the difference between the two. The path coefficient between the general/recognised ILT congruence and LMX (-.81. *p* < .05) shows a strong negative relationship, indicating that higher similarity between the general ILTs and the actual manager rating is related to higher LMX, since high values on the congruence factor mean larger differences between general ILTs and recognised ILTs. The relationships between LMX and the three outcomes are all positive, indicating that better quality relationships between a leader and a follower are linked to higher job satisfaction (.78, *p* < .05), higher follower well-being (.63, *p* < .05), and higher self-rated performance (.36, *p* <.05).

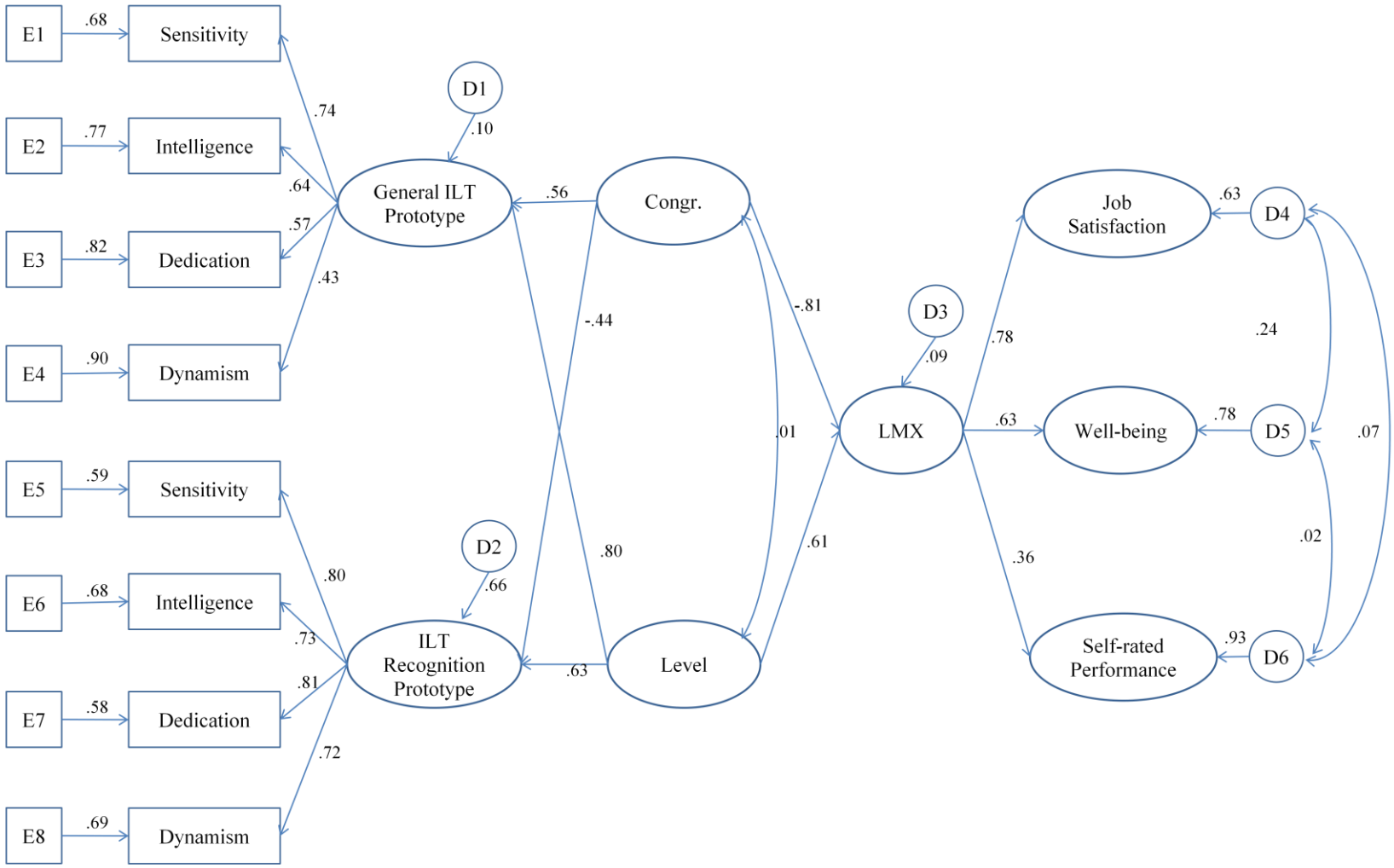
Figure 5.05 shows the factor loadings for the structural equation model of the job-specific/recognised latent congruence, with factor loadings similar to the general/recognised model. Specifically, the relationship between the job-specific ILT prototype and the congruence latent factor is positive (.48, *p* < .05), while the relationship between the recognised ILT prototype and congruence is negative (-.38, *p* < .05). These factor loadings are higher as compared to the general/recognised congruence model (Model 1). There is a strong negative relationship between job-specific/recognised ILT congruence and LMX (-.82, *p* < .05), again indicating that higher congruence is linked to higher LMX. The magnitude of the relationship between the congruence factor and LMX is very similar in the two models

under comparison. LMX in turn is positively related to job satisfaction (.78, $p < .05$), well-being (.63, $p < .05$), and self-rated performance (.36, $p < .05$). This part of the model is identical for the two models under comparison.

Summary of findings

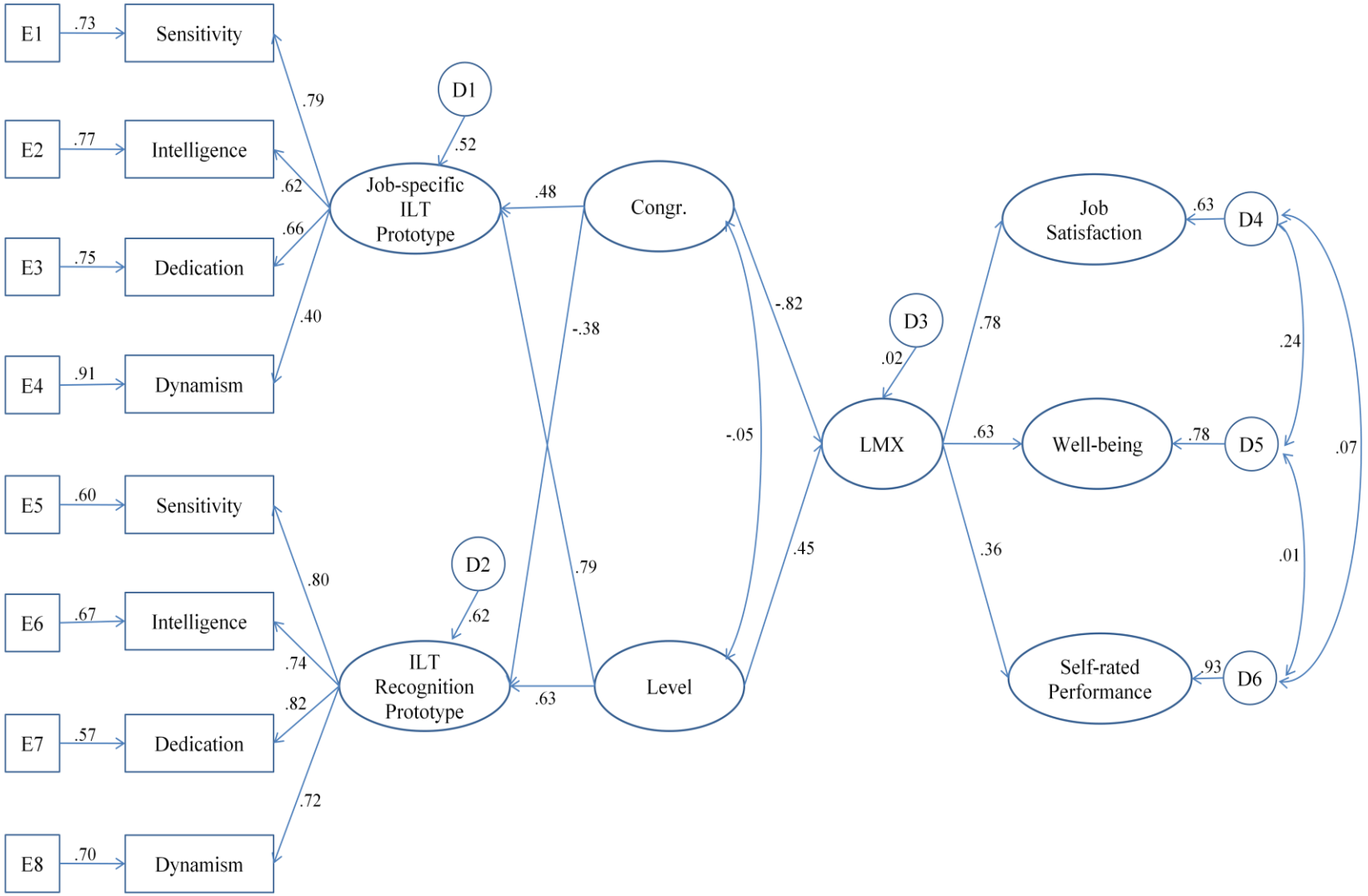
Overall, the results provide support for both hypothesised models; that is, both general/recognised and job-specific/recognised ILT congruence are related to LMX, which in turn is related to follower job satisfaction, well-being and self-rated performance. A comparison of the two models indicates that though both models are plausible and fit the data reasonably well, the model that conceptualises congruence as a general notion at the basic level of categorisation fits the data in the present study better.

Figure 5.04: Maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. All factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(44, N = 170) = 110.34$, $p < .001$; $\chi^2/df = 2.51$; CFI = .98; NNFI = .97; SRMR = .08; RMSEA = .09

Figure 5.05: Maximum likelihood parameter estimates for the hypothesised Job-specific/Recognised ILT model (standardised solution)



Note. All factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(44, N = 170) = 129.78$, $p < .001$; $\chi^2/df = 2.95$; CFI = .97; NNFI = .96; SRMR = .08; RMSEA = .11

CHAPTER 6 – STUDY 2: ILT LEVEL OF CATEGORISATION AND LONGITUDINAL TEST OF THEROETICAL MODEL

The second study has two primary objectives. It aims to further explore the issue of ILT categorisation levels and establish whether followers make judgments regarding their leaders using their basic or subordinate level leadership schemas. This has been tested in the first study reported in Chapter 5 and the results indicated that the match between ILTs and actual manager is more salient at the basic level of categorisation, rather than subordinate. Since these findings are somewhat counterintuitive, the second study aims to test their replicability and generalisability on a larger sample and in the context of work-groups. Further after establishing the appropriate level of categorisation to be considered, it aims to test the hypothesised theoretical model both cross-sectionally and longitudinally, in order to provide evidence regarding causality. A particular strength of the present study is that it investigates the effect if ILT congruence on a series of objective performance indicators, in addition to self-report measures of work-related psychological and performance outcomes. Moreover, it investigates the applicability and generalisability of the hypothesised models to the context of leadership in work-groups.

The chapter describes the study setting and sample characteristics, followed by a discussion of the study's measures and scale properties. The analysis is conducted in four parts due to the multi-level longitudinal nature of the data. The first part covers the individual-level analysis of the first wave of the study with the purpose of establishing the appropriate level at which ILTs need to be conceptualised and measured. Two theoretical models are tested and compared using the Structural Equation Modeling method; one with ILTs measured at the basic level of categorisation and one at the subordinate level. The procedure followed in this analysis is the same as that described in the first study. Since the followers in the present study are nested in groups with the same group leader, the second part of the analysis investigates the proposed theoretical model using group level outcomes of the leadership process. The third part of the analysis looks at the data longitudinally at the appropriate level of categorisation as established by the first study and the cross-sectional analysis of the present study's data. In order to provide evidence of causality data of ILTs and leader ratings are taken from the first wave of data collection, while the proposed mediator (leader-member exchange) and outcomes are measured five months later. The fourth part follows the same procedure for the group-level variables in the study.

Method

Study Setting

The present study was conducted in the course of the second-year undergraduate module *Foundations of Management II: Business Game* at Aston University. The module is compulsory for all students studying toward a Business Degree, as well as Combined Honours students having business as one of their degree programmes. The module is structured around a highly complex computer-based simulation software (Eurocar, 2008) of a virtual market, with companies operating in the car manufacturing and marketing industry. Students are required to work in teams for the duration of three academic terms (25 weeks) and engage in a wide range of assessed and developmental activities.

The use of business game simulations is not new in organisational research and there are certain unique benefits to such a setting. It provides a relatively stable and controlled environment while at the same time simulating real-world conditions. In such settings it is possible to access a large number of study participants who engage in a homogeneous task across individuals and groups, with a wide range of external factors remaining constant. Wolf and Box (1987) provide an extensive discussion on the use of business game simulations in study settings, and report on a study they conducted in such settings. Their participants were students doing business degrees, who were randomly assigned to teams of four to five members and engaged in ten decision-making rounds of a business game. They found that group cohesion is positively related to the group's economic performance in the game. Chatman and Barsade (1995) also used a business simulation to assess the relationship between individuals' disposition to cooperate and an individualistic or collectivistic culture. More recently studies have been conducted on the effect of locus of control and leadership structure on teams' performance (Boone, van Olffen, & van Witteloostijn, 2005), and on the effects of team charters and performance strategies on actual performance (Mathieu & Rapp, 2009) in computer-based business simulations. Boone et al. (2005) conducted their study around the Dutch computer-based business simulation 'International Management Competition', which features a complex multi-product multi-market virtual environment, and is used for managerial training purposes. Mathieu and Rapp's (2009) study had MBA students as participants, and was conducted around the 'Business Strategy Game' computer-based simulation. The software simulated an international market in the footwear industry where students were competing in teams and were required to make decisions on all key aspects of a company's operations (e.g., plant operations, sales and marketing, financial resources).

There are three main components to the business game simulation module that was used for the present study. Firstly, during the first term the students attend a series of eight lectures, covering the general aspects of the module, such as module learning outcomes, module assessment requirements, issues regarding teamworking, information on the sources and availability of data necessary for coursework completion, information regarding the software and so on. The lectures last one hour each and are delivered on a weekly basis by the module leader and other guest lecturers in the first eight weeks of the term.

Another component of the module is the tutorial sessions. The teams are divided into 24 tutorial groups of five to seven teams each. These are delivered by a total of 10 tutors. In total the students attend 10 tutorials in the course of the three academic terms. The tutorials cover a wide range of topics and activities such as: introduction to the module, the managerial roles and requirements, the specifics of the software, introduction to the written materials and user guides associated with the software, guidance for coursework and presentations, feedback on the companies' performance in the simulated market, advice on strategic choices, feedback on coursework and presentations, team mentoring and so on. Tutors dedicate some time of each tutorial for group interaction, to give students the opportunity discuss issues such as their strategy, make specific decisions regarding their company and their software inputs in the forthcoming practical session, organise their meetings, work on their presentations and group-based coursework, and other issues related to their company. The first four tutorials are delivered before any practical sessions, while the remaining six alternate week-on-week with the practical sessions.

The final component of the module is the practical sessions that are facilitated by two individuals; the tutors and the umpires. The umpires are academic staff members of the Economics and Strategy Group at Aston Business School, and they are familiar with both the software and the economic models that underlie the virtual financial market where the car companies compete. The module includes a total of seven practical sessions in a dedicated computer lab, with the first one being a practice where the students can test their initial strategy and familiarise themselves with the software. The labs are set in such a way that students sit in their teams and each team uses one computer; usually one team member is responsible for inputting the decisions into the software. The software simulation requires the students to make decisions and input them in the options provided by the software on several primary business aspects: marketing (e.g., marketing budget, distribution of budget across different media and countries, product pricing), purchases (e.g., raw materials, storing compound, robots), production (e.g., allocation of production lines to products, production targets, allocation of robots to production lines, allocation of workers to production lines),

capital investment (e.g., purchasing of production facilities, decisions on the location of production facilities), sales (e.g., countries where each product will be sold, selling price for each product in each market), human resources (e.g., recruitment, salaries, bonuses, training), research and development (e.g., new product development selection of R&D projects, budget allocation to projects, collaboration with competitors on R&D projects), product specifications (e.g., car category, model specifications, name) etc. The simulation runs in rounds of weeks, each virtual week lasting a few minutes during which time the teams can input or alter their decisions. Further functions include negotiating with the umpire on contracts for purchasing steel, possibility for investing in shares of competing companies, and collaborating with competitors on R&D projects. The simulation lasts a total of at least three virtual years, during which time the teams have access to various measures of their performance and their position in the market, in both graphical and tabular format. Such outputs include balance sheets, profit and loss accounts, production reports, product quality, employee morale, comparisons with competitors, and share price. The outputs are produced on either a monthly, quarterly or yearly basis. These are used by the teams to monitor their company's performance, to assess the position of their competitors and to inform future strategic decisions.

The tutorial groups and student teams are assigned on the basis of certain criteria prior to the commencement of the module. Tutorial group allocation is mainly based on the students' timetable, but care is taken that each tutorial group has a minimum of 24 and a maximum of 32 students, so that each tutorial group has between five and seven teams of four to five members, and some flexibility for the preferred team composition to be accomplished. Effort is also put toward assuring that each tutorial group has a mix of genders, home and international students, students of different degree programmes and varying past academic performance. The tutorial groups are then divided into student teams or companies of four or five members. The process of assigning students to teams is conducted by the university's administrative staff; students therefore do not have the option of choosing their teams and team members, and in the majority of cases they do not know each other beforehand. In both the tutorial and practical sessions the students are seated in their teams.

During their first tutorial the students are instructed to exchange contact details, select their roles and decide on a company name. The company name is then registered with the undergraduate office by the team's Managing Director, thus giving the teams their official 'company' status. The students have much freedom in the way they select their roles. The available roles are that of Managing Director, Finance Director, Marketing Director, Operations Director, and Human Resources Director. The student in each role is responsible

for the corresponding function of the company, not only in terms of the numerical details concerning their function but also in assuring that their decisions are aligned with the companies' overall strategic goals and financial status. Commonly students discuss their preferences and expertise in order to decide on the allocation of the roles. Quite often they need to compromise when more than one individual is interested in the same role, especially in the case of Managing Director. Since this is the official leader role students tend to resort to voting when none or more than one of them are keen on taking the role. Finally, it is possible for one group member to take two roles, especially when the team has four members. Usually tutors recommend that in such cases the Operations and HR roles are combined as they are closely related and are the roles with the least complexity and requirements in terms of decision making. In five person teams these two roles are sometimes also combined and the remaining person takes the role of a floating director or a second finance director, as this is the most demanding function in the simulation.

The role of the Managing Director is the official leader role. Apart from managing the company and the directors, this person is responsible for representing the company to external stakeholders, such as the tutors, umpires, module leader and undergraduate office. For example, they are responsible for registering the company with the undergraduate office and arranging the team's meetings with the tutor outside the tutorial hours. They are also responsible for managing the company's activities and tasks, as well as relationships and conflict within the team. The tutors offer support and advice on team-related issues only when the problems are seriously inhibiting the team's ability to perform and the Managing Director has taken action to resolve the issues without success.

Apart from selecting a company name and general strategic direction (e.g., competing on the basis of costs and price, targeting a niche luxury market segment, diversifying into many country-markets or product-markets), some teams go further in giving the team a shared sense of purpose and direction. For example, they might draft a team charter, thus putting in writing their agreed purpose, objectives, ways of operating, and intended performance outcomes. Some teams design a company logo early in the process, which they use in their internal and external communication and documentation. Additionally, all team members are instructed by their tutors to inform their Managing Director and other members in case they are unable to attend a tutorial or a practical session and ideally provide the input concerning their function before the session, since their responsibility is toward their team. When one team member is absent, inevitably the other directors will have to cover the functions of the absent director, especially in the practical sessions as they take place in real time. Finally, since most aspects of the module are team-based, and due to the module's high demands in

terms of preparation for the practical sessions and team-based coursework and presentations, the teams meet regularly outside the official session times. All these factors regarding teams' autonomy, responsibility, shared deliverables etc. contribute toward creating a true team-working environment that reflects real-world conditions rather than a university setting.

There are five components to the students' assessment on the business game module. Four components are based on groupwork and account for a total 65% of the students' final mark on the module, with the remaining 35% allocated to individual coursework. In the present study these are used as measures of group and individual performance, and will be discussed in the order they are submitted (or delivered in the case of presentations) in the course of the academic year.

The first assessed activity is a *15-minute presentation* (15% of final mark) that takes place in the first term, after the third tutorial and after all the lectures have been delivered. The students are required to present a 3-year business plan covering all aspects of their company with the purpose of attracting potential investors. It is therefore required that all directors have an input in the preparation of the presentation. It is not compulsory for all team members to present, but more often than not the presentations are divided in such a manner that each director covers their respective business function, while the Managing Director is responsible for topics such as introduction, general business strategy and objectives, mission and vision statement, and conclusion. The presentation accounts for 15% of the students' final mark and is assessed by a committee of four to five members: two to three external assessors (working in local offices of companies such as Procter & Gamble, Enterprise Rent-A-Car, Unilever, Accenture, PriceWaterhouseCoopers etc.), one tutor (not necessarily the tutor of the team presenting), and one member of university staff who is the chair (keeps time, coordinates the examiners, keeps a record of marks, and can contribute opinions to the decision on the teams' marks). All examiners are provided with a list of general criteria regarding presentation skills and content (see Appendix 3). The presentations are conducted in a formal environment, with the students often coming in coordinated professional attire, producing handouts, business cards, or marketing materials. Each examiner provides written comments on the performance of the team that is later fed back to the teams by the tutors.

A week later the teams submit their written *3-year business plan* (25% of final mark), which accounts for 25% of the module's mark and is 2500 words in length. This is assessed by the tutors and 20% of them are moderated by the module leader and an external examiner, like all other coursework. The business plan covers general business strategy, as well as

strategies for each function, sales forecasts, financial forecasts etc. The students are instructed to make extensive use of techniques to summarise information in visually attractive and reader-friendly ways, and to invest effort in the professional presentation of their business plan.

At the end of the module the students submit their individual essays, accounting for 35% of the mark. The guideline length is 3000 words, but the students are given the freedom to write as long or as short an essay as they see fit. The requirement is that the essay is academic, based on personal reflection and supported by relevant theories. Students often draw from the Organisational Behaviour first year module and apply these theories to their experience. The general instructions for the essay state that it should be an active reflection on working in teams, individual and team performance, discussing whether the module learning outcomes have been achieved, how has the module contributed to their personal development and how can it be improved in the future. Students often keep diaries and minutes from their meetings as an aid for their individual assignments. The essays are marked by their tutors and moderated by the module leader and an external examiner.

The final piece of coursework is a *group report* (15% of final mark) which is submitted after the individual essay and has a word limit of 1500 words. This is a challenge as students need to skilfully summarise their company's performance and critically evaluate it, while at the same time providing enough detailed information and data to draw a clear picture of the company's progression. The report covers all business functions and is based on the outputs of the computer simulation. It is marked by the tutors and moderated by the module leader and an external examiner.

The remaining proportion of the mark is allocated by the tutors on the basis of each company's *performance on the simulation* (10% of final mark). This is based primarily on the final share price of each company, as this is a representative composite measure of the company's performance. Other metrics are also taken into account, such as employee morale levels, product quality, number of outstanding orders or stock and so on.

Finally, during the course of the module the teams are regularly required to deliver presentations in their tutorials. These are not formally assessed, but the students receive feedback from their tutors and peers. They are usually presentations of current financial performance and position or overall business performance and future strategy.

Procedure

The data for the present study was collected in two waves by means of questionnaire. A detailed timeline of the module activities, assessment and data collection is provided in Appendix 4. The wave one and wave two questionnaires are provided in Appendix 5 and 6 respectively. These include the covers letter and consent forms signed by the students. The both surveys were completed during tutorial time, with the first wave taking place during the students' third tutorial, while the second one was administered approximately four months later, during their eighth tutorial. The participation in the study was voluntary and a prize draw was used as an incentive for questionnaire completion.

Sample

A total of 687 students were registered for the *Foundations of Management II: Business Game* module for the academic year during which the present study took part. Of these 142 were leaders (Managing Directors) while 545 were followers (Directors). The students were divided into a total of 142 groups (companies). All followers were invited to take part in the study on both occasions, with 343 followers participating in the wave one survey (51.2% female, average age = 20.55 years) and 325 participating in wave two (46.6% female, average age = 20.94). Of these, 235 respondents answered both questionnaires (45.9% female, average age at time of second wave = 20.91 years).

For the group level analysis only those groups with at least two follower responses are included (each group had three or four followers), resulting in a total of 116 groups for the cross-sectional (Time 1) analysis and 78 for the longitudinal analysis.

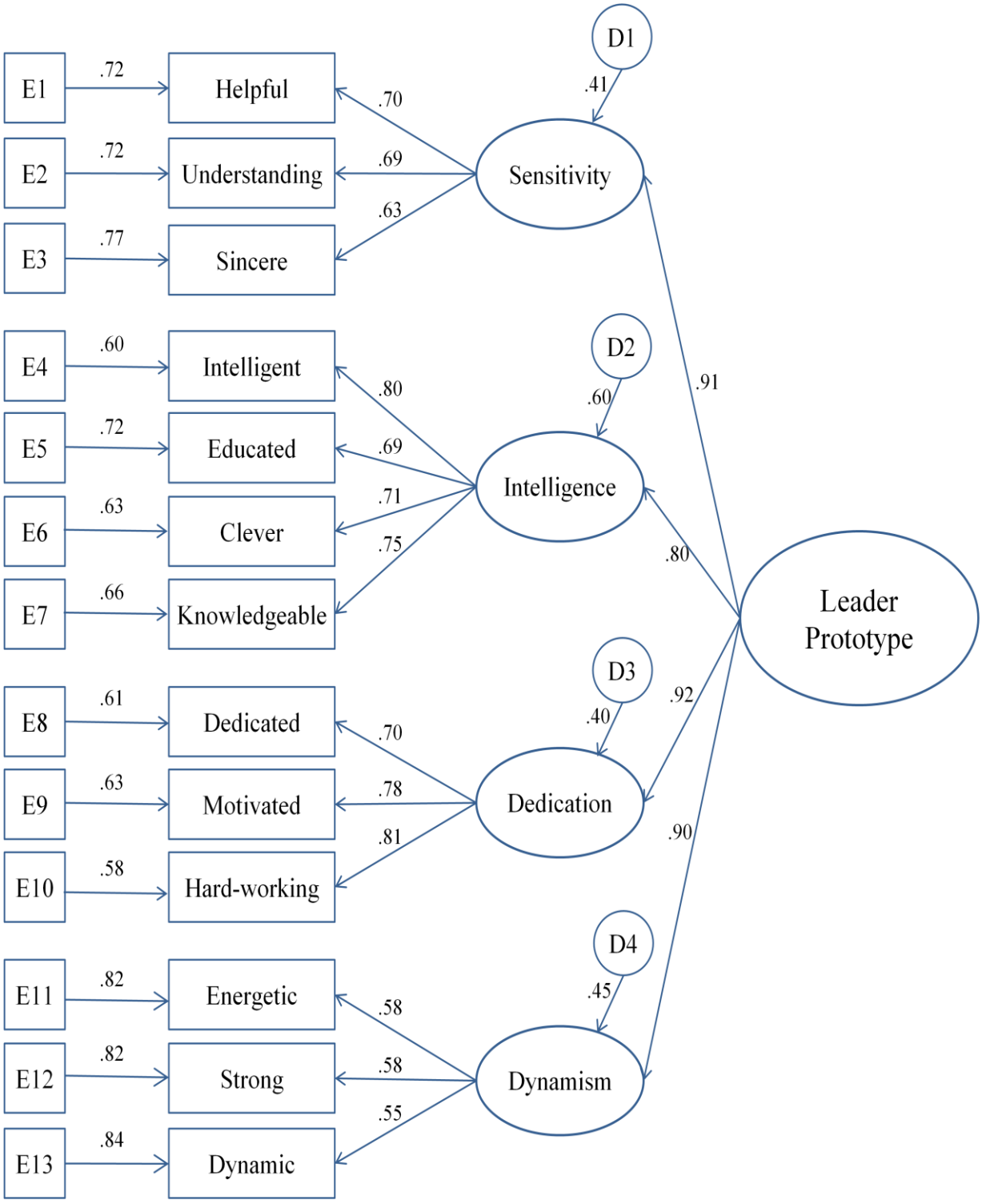
Measures

General ILTs. ILTs at the basic level of categorisation, termed general ILTs, were measured using the Offermann, Kennedy and Witz (1994) scale, as modified by Epitropaki and Martin (2004). They shortened the 41-item scale to 21 items following the scale reduction procedure outlined by Gerstner and Day (1994). The respondents were asked to rate how characteristic the 21 traits were of an ideal manager generally (for all types of jobs) on a nine-point response scale, with *1 = not at all characteristic* and *9 = very characteristic*. The 21 items measure both prototypic and antiprototypic attributes on six dimensions. The four prototypic dimensions are *sensitivity* (3 items: helpful, understanding, sincere; α = .70), *intelligence* (4 items: intelligent, educated, clever, knowledgeable; α = .84), *dedication* (3 items: dedicated,

motivated, hard-working; α = .79), and *dynamism* (3 items: energetic, strong, dynamic; α = .59). The antiprototypic dimensions are *tyranny* (6 items: domineering, pushy, manipulative, loud, conceited, selfish; α = .77), and *masculinity* (2 items: male, masculine; α = .75).

Confirmatory factor analysis of the data in the present study confirms the six-factor structure found by Epitropaki and Martin (2004) with good model fit, $\chi^2(174, N = 343) = 352.30$, $p < .001$; $\chi^2/df = 2.02$; comparative fit index (CFI) = .96; non-normed fit index (NNFI) = .95; standardised root mean-square residual (SRMR) = .07; root-mean-square error of approximation (RMSEA) = .06. A further second-order confirmatory factor model was built to confirm that the latent factors of prototype and antiprototype fit the data in the present study. Again, the model fits adequately the two latent factor structure with a fit of $\chi^2(182, N = 343) = 382.31$, $p < .001$; $\chi^2/df = 2.10$; CFI = .95; NNFI = .94; SRMR = .08; RMSEA = .06, but inspection of the factor loadings indicates that the antiprototype dimensions of tyranny and masculinity do not load significantly on the antiprototype latent factor (with either tyranny's coefficient restricted to 1 and masculinity's allowed to freely estimate, or the opposite, the freely estimated parameter remains non-significant). Therefore, these were omitted from the analysis and another second order CFA was conducted to confirm the 1-factor second order structure of the data. The single factor fitted the data well, with fit nieces of $\chi^2(60, N = 343) = 116.11$, $p < .001$; $\chi^2/df = 1.94$; CFI = .98; NNFI = .97; SRMR = .05; RMSEA = .05. Figure 6.01 shows the standardised factor loadings for each of the dimensions of the ILT prototype factor.

Figure 6.01: Second-order factor structure for the General ILTs scale (standardised solution)



Note. All factor loadings are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(60, N = 343) = 116.11$, $p < .001$; $\chi^2/df = 1.94$; CFI = .98; NNFI = .97; SRMR = .05; RMSEA = .05.

Job-specific ILTs. Job specific ILTs were measured using the same 21-item scale used for the ILTs basic level measurement (Epitropaki & Martin, 2004). The respondents were asked to indicate how characteristic the 21 traits are of an ideal manager for their business game company on the same 1-9 response scale. For the subordinate level ILTs the same six dimensions were hypothesised; namely *sensitivity* (α = .70), *intelligence* (α = .86), *dedication* (α = .74), *dynamism* (α = .59), *tyranny* (α = .76), and *masculinity* (α = .75).

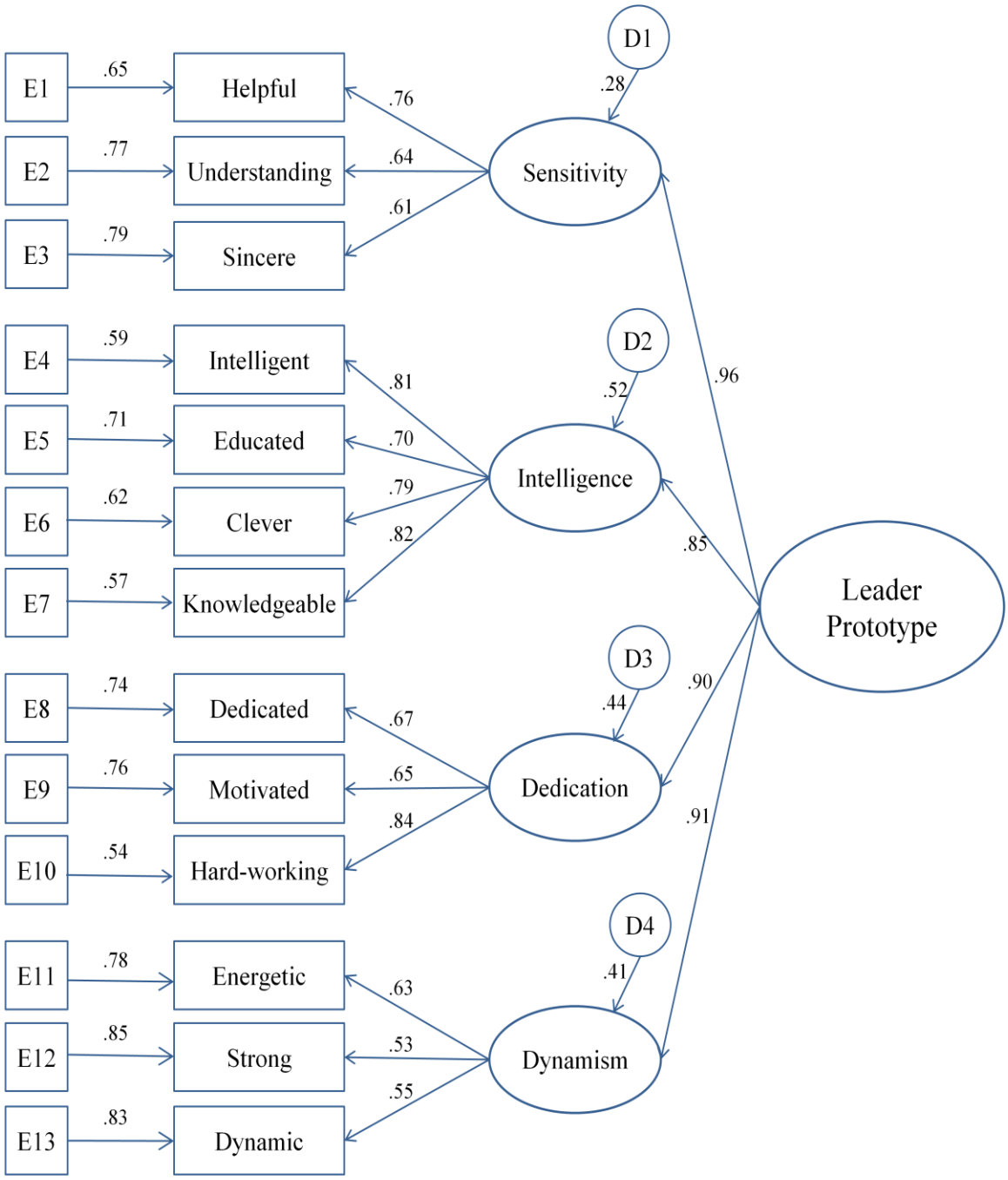
Confirmatory factor analysis of the subordinate level ILTs showed good fit of the data to the hypothesised six dimensions; $\chi^2(174, N = 343) = 315.89$, $p < .001$; $\chi^2/df = 1.81$; CFI = .97; NNFI = .96; SRMR = .08; RMSEA = .05. The two factor latent model (prototype and antiprototype) as well fits adequately the data in the present study, with fit indices of $\chi^2(182, N = 343) = 350.14$, $p < .001$; $\chi^2/df = 1.92$; CFI = .96; NNFI = .95; SRMR = .08; RMSEA = .06. Similar to the general ILT second order factor analysis, the factor loadings of tyranny and masculinity on the antiprototype factor were not significant. Another second order CFA was thus conducted with only one second-order factor – the prototype. The model fit to the data is very good, with fit indices of $\chi^2(60, N = 343) = 96.06$, $p < .001$; $\chi^2/df = 1.60$; CFI = .99; NNFI = .98; SRMR = .04; RMSEA = .04. Figure 6.02 shows the standardised factor loadings of the second-order CFA for the job-specific ILTs.

Since the same items were used for the measurement of ILTs at both the basic (general) and the subordinate (job-specific) level of categorisation, it is necessary to show that they indeed measure a different construct. In order to establish this, two methods were used. Firstly, paired-sample t-tests were conducted for each dimension and for the prototype and antiprototype constructs to test whether the means on the general ILTs scale were significantly different than those on the job-specific ILTs scale. The dimensions were computed by averaging each participant's responses on the items corresponding to each dimension. The results of the t-tests indicate that for the majority of the dimensions the mean scores are significantly different for the two constructs; intelligence ($m_g = 7.78$, $m_j = 6.66$, $t = 2.82$, $df = 328$, $p < .01$), dedication ($m_g = 8.15$, $m_j = 8.03$, $t = 3.28$, $df = 328$, $p < .01$), dynamism ($m_g = 7.34$, $m_j = 7.20$, $t = 3.10$, $df = 329$, $p < .01$), and tyranny ($m_g = 4.35$, $m_j = 4.16$, $t = 5.11$, $df = 323$, $p < .001$). The two dimensions of which the means are not significantly different were sensitivity ($m_g = 7.45$, $m_j = 7.70$, $t = 1.31$, $df = 328$, $p = .191$) and masculinity ($m_g = 3.79$, $m_j = 6.66$, $t = 3.70$, $df = 323$, $p < .10$). The means of both higher-order constructs for the two measures were significantly different; prototype ($m_g = 7.45$, $m_j = 7.65$, $t = 3.82$, $df = 323$, $p < .001$), and antiprototype ($m_g = 4.51$, $m_j = 3.92$, $t = 7.07$, $df = 324$, $p < .001$), since a significant t-test statistic indicates a statistically significant difference in the two mean scores that are being compared.

Secondly, following a procedure outlined by Epitropaki and Martin (2004), two different confirmatory factor models were run; one including 12 factors of all the individual dimensions of the two measures, and the other including six factors combining the equivalent dimensions of the two scales into single factors. Although none of the two models fit the data well, the 12-factor model was closer to fitting the data than the 6-factor model, indicating that the two scales indeed measure different constructs. The fit indices for the 6-factor model are χ^2(804, N = 343) = 3377.01, p < .001; χ^2/df = 4.20; CFI = .85; NNFI = .84; SRMR = .10; RMSEA = .11 and for the 12 factor model χ^2(753, N = 343) = 2851.24, p < .001; χ^2/df = 3.79; CFI = .88; NNFI = .86; SRMR = .09; RMSEA = .10. Since the two models are not nested, it is inappropriate to use the $\Delta\chi^2$ test to evaluate which model fits the data better (see e.g, Cheung & Rensvolt, 2009). The more appropriate alternative is the Akaike Information Criterion (AIC) measure (Akaike, 1987), which has the capacity for comparing models with an unequal number of latent variables; with lower AIC values indicating a more parsimonious model (Schumacker & Lomax, 2004). Again, the 12-factor model is assessed as the more appropriate with an AIC equal to 1345.24, as compared to the AIC of the 6-factor model which was 1769.01.

Overall, both procedures provide evidence that the ILTs at the subordinate level are a different construct than those at the basic level of categorisation.

Figure 6.02: Second-order factor structure for the Job-specific ILTs scale (standardised solution)



Note. All factor loadings are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(60, N = 343) = 96.06$, $p < .001$; $\chi^2/df = 1.60$; CFI = .99; NNFI = .98; SRMR = .04; RMSEA = .04.

Recognised ILTs. Respondents were asked to rate the extent to which the 21 traits used for the measurement of ILTs are characteristic of their current managing director in the business game, that is, their actual manager. The response scale again ranged from 1 to 9, with one defined as *not at all characteristic* and 9 *very characteristic*. Chronbach's alpha coefficients were markedly higher for all 6 dimensions in the actual manager rating; sensitivity (α = .81), intelligence (α = .89), dedication (α = .89), dynamism (α = .75), tyranny (α = .80), and masculinity (α = .72).

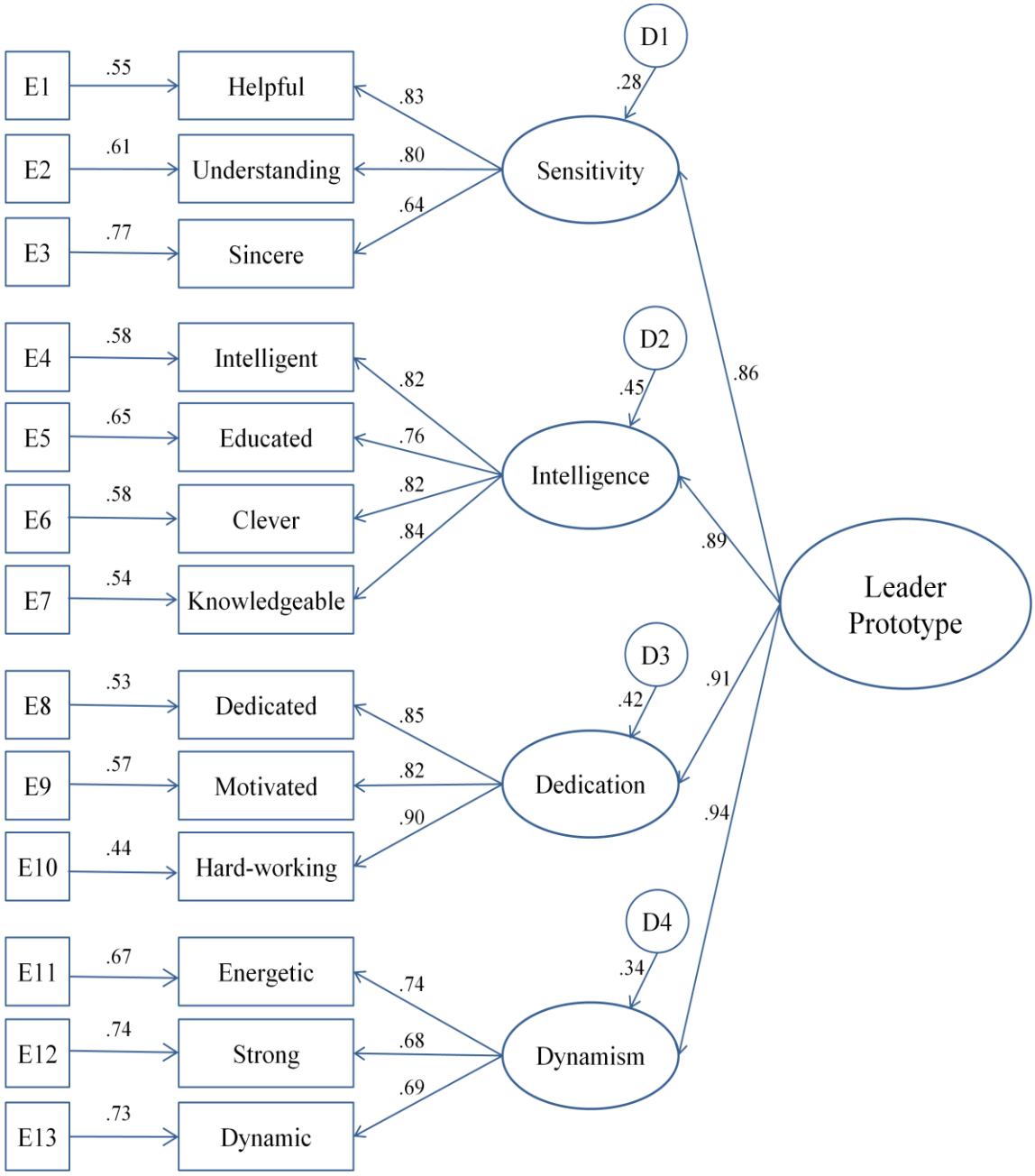
The data again showed good fit on the 6-dimensional model; $\chi^2(174, N = 343) = 347.48$, $p < .001$; $\chi^2/df = 2.00$; CFI = .98; NNFI = .97; SRMR = .09; RMSEA = .06. The model including the prototype and antiprototype latent factors as well produced adequate fit indices; $\chi^2(182, N = 343) = 402.38$, $p < .001$; $\chi^2/df = 2.20$, CFI = .97; NNFI = .96; SRMR = .09; RMSEA = .06. As with the general and job-specific scales, tyranny and masculinity did not load significantly on the second-order factor of antiprototype. These were therefore omitted and another second-order factor structure was constructed, producing significant factor loadings and adequate fit indices: $\chi^2(60, N = 343) = 93.84$, $p < .01$; $\chi^2/df = 1.56$; CFI = .99; NNFI = .99; SRMR = .04; RMSEA = .04. Figure 6.03 shows the standardised factor loadings for the single factor second-order CFA.

Again, since the same items were used for the recognised ILTs measurement as those for the general and job-specific ILTs, it is important to establish that the construct being measured is different than the previous two. The methods used to establish this are the same as described in the above section.

All of the paired-sample t-tests comparing the means between the recognised ILTs with the general ILTs means, indicating that the two scales are measuring different constructs; sensitivity ($m_g = 7.75$, $m_r = 7.08$, $t = 8.48$, $df = 329$, $p < .001$), intelligence ($m_g = 7.79$, $m_r = 7.03$, $t = 9.98$, $df = 329$, $p < .001$), dedication ($m_g = 8.15$, $m_r = 7.10$, $t = 11.85$, $df = 329$, $p < .001$), dynamism ($m_g = 7.36$, $m_r = 6.29$, $t = 12.80$, $df = 329$, $p < .001$), tyranny ($m_g = 4.34$, $m_r = 3.86$, $t = 7.92$, $df = 325$, $p < .001$), masculinity ($m_g = 3.79$, $m_r = 5.20$, $t = -9.19$, $df = 323$, $p < .001$), prototype ($m_g = 7.75$, $m_r = 6.87$, $t = 12.48$, $df = 3.30$, $p < .001$), and antiprototype ($m_g = 4.05$, $m_r = 4.52$, $t = -5.61$, $df = 326$, $p < .001$). Similarly, the paired-sample t-tests show that the recognised ILTs scale is measuring a different construct than the job-specific ILTs scale; sensitivity ($m_j = 7.70$, $m_r = 7.08$, $t = 8.09$, $df = 329$, $p < .001$), intelligence ($m_j = 7.67$, $m_r = 7.02$, $t = 8.90$, $df = 329$, $p < .001$), dedication ($m_j = 8.03$, $m_r = 7.10$, $t = 10.52$, $df = 329$, $p < .001$), dynamism ($m_j = 7.21$, $m_r = 6.28$, $t = 11.12$, $df = 328$, $p < .001$), tyranny ($m_j = 4.16$, $m_r = 3.85$, $t = 5.52$, $df = 324$, $p < .001$), masculinity ($m_j = 3.70$, $m_r = 5.18$, $t = -9.68$, $df = 323$, $p <$

.001), prototype (m_j = 7.65, m_r = 7.87, *t* = 11.60, *df* = 329, *p* < .001), and antiprototype (m_j = 3.92, m_r = 4.51, *t* = -7.07, *df* = 324, *p* < .001).

Figure 6.03: Second-order factor structure for the Recognised ILTs scale (standardised solution)



Note. All factor loadings are significant at *p* < .05 level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices: $\chi^2(60, N = 343) = 93.84$, *p* < .01; χ^2/df = 1.56; CFI = .99; NNFI = .99; SRMR = .04; RMSEA = .04.

The 6-factor and 12-factor confirmatory models combining the items of the recognised ILTs and general ILTs did not fit well the data, but again the 12-factor model fit was markedly better than the 6-factor one, providing evidence that the recognised ILTs is a separate construct that the ILTs at the basic level of categorisation. The model fit indices for the 6-factor model are $\chi^2(804, N = 343) = 4561.12$, $p < .001$; $\chi^2/df = 5.67$; CFI = .76; NNFI = .75; SRMR = .16; RMSEA = .13 and for the 12-factor model $\chi^2(753, N = 343) = 2061.33$, $p < .001$; $\chi^2/df = 2.74$; CFI = .92; NNFI = .91; SRMR = .08; RMSEA = .08. The AIC measure confirms that the 12-factor model has a better fit to the data than the 6-factor model (6-factor model AIC = 2953.20; 12-factor model AIC = 555.33). Similarly, when the 6- and 12-factors models are constructed using the items of the recognised ILTs and the job-specific ILTs scales the 12-factor model fits the data better than the 6-factor model. The model fit indices for the 6-factor model are $\chi^2(804, N = 343) = 4377.17$, $p < .001$; $\chi^2/df = 5.44$; CFI = .78; NNFI = .77; SRMR = .11; RMSEA = .12 and for the 12-factor model $\chi^2(753, N = 343) = 2156.50$, $p < .001$; $\chi^2/df = 2.86$; CFI = .91; NNFI = .90; SRMR = .09; RMSEA = .08. The AIC measure confirms that the 12-factor model has a better fit to the data, with AIC = 650.50 for the 12-factor model and AIC = 2769.17 for the 6-factor model.

LMX: Leader-member exchange quality was assessed using the LMX-7 scale originally developed by Scandura and Graen (1984), as was later modified by Graen and Uhl-Bien (1995). A 5-point Likert response scale was used ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) with higher scores reflecting higher quality leader-member relationships. LMX was measured in both waves of the study. A sample item from the scale reads “My immediate supervisor recognises my potential” ($\alpha_1 = .89$, $\alpha_2 = .89$).

Task Satisfaction: Two questions were used to measure task satisfaction: “All things considered, how satisfying do you find this activity (Business Game)?”, and “In general, to what extent do you enjoy performing this activity (Business Game)?” ($\alpha_1 = .89$, $\alpha_2 = .89$). Responses ranged from 1 = *very dissatisfied* to 5 = *very satisfied.*

Well-being: Well-being was measured using a 12-item scale developed by Warr (1990) with responses ranging from 1 = *never* to 6 = *all of the time*. The items are single worded and combine the job-related anxiety-comfort and job-related depression enthusiasm scales. The items refer to specific feelings that the employee might experience as a reaction to work related issues, measuring both positive (6 items: optimistic, motivated, calm, enthusiastic, relaxed, comfortable) and negative (6 items: tense, depressed, worried, anxious, gloomy, miserable) aspects. The negative items have been reverse-coded and a composite well-being scale was computer with a reliability of .86 in wave one and .88 in wave two.

Self-rated performance: This was measured using an 11-item self-report scale developed by Viswesvaran, Schmidt and Ones (2005). The respondents were asked to rate their work standard on several aspects of performance (e.g., quality of work, quantity of work, ability to do the work, amount of effort devoted, knowledge to do the work) on as scale ranging from 1 = *poor* to 5 = *excellent*, with higher scores indicating higher standard of performance. The internal consistency reliability of the scale is .89 in wave one and .88 in wave two.

TMX: Team-member exchange was also measured in both waves using the 10-item scale developed by Seers (1989). The questions asked the respondents to rate several group interactions on a 5-point response scale ranging from *never* to *always*, *not at all* to *very much*, or *not at all* to *very well*, depending on the phrasing of the question. A sample question reads "In busy situations, how often do other team members ask you to help out?" The reliability of the scale was .81 in wave one and .84 in wave two.

Team Satisfaction: Team satisfaction was measured with three items (Gladstein, 1984), that read: "I am pleased with the way my colleagues and I work together," "I am very satisfied with working in this team," and "I am satisfied with my present colleagues in my team." The response scale consisted of 5 options ranging from 1 = *strongly disagree* to 5 = *strongly agree.* The scale exhibits an acceptable level of reliability at α_1 = .92 and α_2 = .92.

Intragroup Conflict: An 8-item scale was used to measure intragroup conflict (Jehn, 1995) encompassing both the amount and type of conflict in the work-group. Four items are referring to task-conflict (sample item: How frequently are there conflicts about ideas in your work team?), and four items are measuring relationship conflict (sample item: How much personality conflict is evident in your work team?). Responses ranged from 1 = *never* to 5 = *a lot*. Confirmatory factor analysis did not provide support for the two-factor model considering that $\chi^2/df < 1$ ($\chi^2(19, N = 343) = 13.64$, $p < .001$; $\chi^2/df = .72$, CFI = 1.00; NNFI = 1.01; SRMR = .02; RMSEA = .00) relative to the one-factor model ($\chi^2(20, N = 343) = 142.95$, $p < .001$; $\chi^2/df = 7.15$, CFI = .92; NNFI = .89; SRMR = .06; RMSEA = .14). This is consistent with past research which shows that the dimensions of conflict are highly correlated and could be collapsed into a single indicator (e.g., Boies & Howell, 2006). Therefore, a composite conflict variable was computed combining all 8 items. The reliability of the composite measure was .91 in wave one and .91 in wave two.

Team realness: The scale measuring the extent to which a team is a real team is a newly developed measure (Richardson, 2010) and was therefore measured only during the second wave of the study. A real team defined as '[a] group of people working together in an

organisation who are recognised as a team; who are committed to achieving clear team-level objectives upon which they agree; who have to work closely and interdependently in order to achieve these objectives; whose members are clear about their specified roles within the team and have the necessary autonomy to decide how to carry out team tasks; and who communicate regularly as a team in order to regulate team processes' (Richardson, 2010, p. 86). In the present study team realness is measured using a 12-item scale developed by Richardson (2010) that captures the six concepts that are identified in the definition as those factors distinguishing real teams from pseudo teams. These are interdependence, shared objectives, autonomy, reflexivity, boundedness and specified roles. Each factor is represented by two questions in the scale. A sample item reads that is linked to the reflexivity factor reads: 'We regularly discuss whether the team is working effectively together'. The scale's reliability in the present sample is rendered as acceptable ($\alpha_2 = .92$).

Individual Performance (Essay mark): The students' mark on their individual essay is the indicator of individual performance. The essay was submitted at the end of the third term, two days before the submission of the final assessed group project. As described in the 'Study Setting' section, the essay required of the students to actively reflect on their experience working in their groups and on the Business Game Module overall and was marked by the tutors, and moderated by the module leader and an external examiner. For the overall cohort taking the module the mean mark on the individual essay was 63.05 and SD = 14.19.

Group performance: Several objective measures of group performance were obtained as described in the Study Setting section. After the first wave of survey data collection the students delivered an assessed presentation of their business plan (15% of final mark, m = 62.98, SD = 7.15) and submitted a written business plan (15% of final mark, m = 65.20, SD = 7.01). After the second wave of data collection the groups submitted a final report on their company's performance (15% of final mark, m = 63.63, SD = 12.53). Additionally, they were assessed by their tutors on their performance on the business simulation (10% of final mark, m = 72.32, SD = 17.8) and the virtual companies' share prices were obtained from the software outputs as another indicator of performance in the simulated market (m = 7.93, SD = 8.30).

Results

In the present study ILTs were measured at two conceptual levels of abstraction, as traits of an ideal business leader in general, and as traits of an ideal manager for a particular job/task - in this case a business game virtual company run by undergraduate students for the course of an academic year. The particulars of the two measures are discussed in the methods sections, where it is established that the two scales, though containing the same items, measure two distinct constructs. As described in the Sample and Study Setting the participants were nested in teams, with Managing Directors leading them throughout the module. Therefore, the outcomes of the leadership processes were measured at both the individual and the group level. These are analysed separately in the following sections, with the purpose of investigating whether the findings of the first study (Chapter 5) are replicated in the present sample and whether they hold true at the group level. This section therefore tests the proposed hypothesised models for general/recognised and job-specific/recognised ILT congruence separately, with LMX mediating the relationship between congruence and outcomes. It also compares the two hypothesised models in order to provide further evidence regarding the appropriate level of ILT schema activation and measurement.

Time 1: Individual Level of Analysis

Table 6.01 presents the means, standard deviations and Pearson correlation coefficients of the variables in the present study that are measured at the individual level and refer to individual-level constructs.

Table 6.01: Means, standard deviations and intercorrelations among the study's main variables (N = 343)

Variables	M	SD	1	2	3	4	5	6
1. GILT prototype	7.75	.94	-					
2. JILTs prototype	7.65	1.01	.86**	-				
3. RILT prototype	6.88	1.35	.42**	.50**	-			
4. LMX	3.72	.69	.14*	.18**	.61**	-		
5. Well-being	4.45	1.74	.13*	.17**	.32**	.40**	-	
6. Self-rated perf.	3.63	.52	.17**	.20**	.19**	.32**	.45**	-
7. Task satisf.	3.71	.85	-.01	-.01	.20**	.32**	.43**	.38**

Note. *p<.05; **p<0.01; *** p<0.001 (2-tailed); GILT = General ILT; JILT = Job-specific ILT; RILT = Recognised ILT

Testing Hypothesised versus Alternative Models for General/Recognised and Job-specific/Recognised ILT Congruence at the Individual Level

In order to establish whether the hypothesised models fit the data well it is necessary to compare them to plausible alternative models, as suggested by Kelloway (1998). To that end, a similar procedure was followed as that described in Chapter 5. All the models were estimated using the maximum likelihood robust method, which produces the robust χ^2 statistic (S-B χ^2; Sattora & Bentler, 1994), and the robust standard errors (Bentler & Dijkstra, 1985), thus correcting for possible non-normality in the sample. The reported χ^2 values are the Sattora-Bentler scaled ones for all models, and the reported RMSEA is based on this robust statistic. Five cases were identified as contributing greatly to the models' multivariate kurtosis, and were therefore omitted from the analysis. The models are evaluated on the basis of their overall model fit using several indicators, as well the significance levels of the change in χ^2. Any suggested model modification is treated with caution, since this would be a more exploratory rather than confirmatory approach (see e.g., Epitropaki & Martin, 2005; Kelloway, 1998).

The general and recognised ILT latent factors are constructed with their respective four prototype dimensions as indicators, while the remaining latent factors have a single indicator, the mean score of the items comprising each scale. In this way it was possible to reduce the number of estimated paths, and thus large sample size requirements for model estimation. In order to account for measurement error in these single-indicator latent factors the paths from the latent constructs to their indictors are restricted to the square root of the scale's reliability, while the error variance is restricted to one minus the scale reliability multiplied by the variance of the scale (e.g., Hair, Anderson, Tatham, & Black, 1998).

General / Recognised ILT Congruence

In the hypothesised model (Model 1) the independent variables are the congruence and level of the general ILT and recognised ILT variables, the mediator is LMX and the outcomes are well-being, task satisfaction and self-rated performance. The results show that the hypothesised model fits the data well, with $\chi^2(48, N = 338) = 156.85$, $p < .001$; $\chi^2/df = 3.27$; CFI = .97; NNFI = .95; SRMR = .04; and RMSEA = .08. Table 6.02 shows the comparison of the hypothesised model with General/Recognised congruence to the alternative ones. The fit indices for the hypothesised model fall within the acceptable ranges, indicating that the model fits the data well.

Table 6.02: Fit indices for nested model comparisons with general/recognised ILT predictors (N=338)

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	156.85***	48	**3.27**	-	-	**.97**	**.95**	**.04**	**.08**
Alternative models									
Model 2	191.40***	42	**4.56**	34.55***	6	**.97**	**.95**	**.04**	.11
Model 3	241.18***	45	5.36	84.33***	3	**.96**	**.94**	**.05**	.12
Model 4	230.30***	47	4.90	73.45***	1	**.94**	**.91**	.15	.11
Model 5	355.16***	57	6.23	198.31***	9	**.91**	.88	.20	.13

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 tests partial mediation, with direct paths added between the congruence and level factors, and the outcome measures. Although the majority of the fit indices for Model 2 are within the acceptable ranges, RMSEA falls outside acceptable model fit ($\chi^2(42, N = 338) = 191.40$, $p < .001$; $\chi^2/df = 4.56$; CFI = .97; NNFI = .95; SRMR = .04; RMSEA = .11). The significant $\Delta\chi^2$ indicates that the model with the higher number of freely estimated parameters is overall better, in this case the alternative model ($\Delta\chi^2 = 34.55$, $\Delta df = 6$, $p < .001$). Nevertheless, inspection of the factor loadings in Model 2 indicated that none of the direct paths between the independent variables and outcomes was significant, this model is therefore rejected.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, well-being, task satisfaction and self-rated performance. This model does not fit the data well with several fit indices falling outside the acceptable ranges ($\chi^2(45, N = 338) = 241.18$, $p < .001$; $\chi^2/df = 5.36$; CFI = .96; NNFI = .94; SRMR = .05; RMSEA = .12). The significant $\Delta\chi^2$ indicates that it fits the data better than the hypothesised model, since Model 3 has fewer degrees of freedom and more freely estimated parameters ($\Delta\chi^2 = 84.33$, $\Delta df = 3$, $p < .001$). Nevertheless, with poorer fit indices and non-significant factor loadings between the predictors and outcomes, this model is rejected as compared to the hypothesised model.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse

than that for the hypothesised model, with $\chi^2(47, N = 338) = 230.30$, $p < .001$; $\chi^2/df = 4.90$; CFI = .94; NNFI = .91; SRMR = .15; and RMSEA = .11. The SRMR and RMSEA indices are in fact well outside the acceptable range. Model 4 is therefore rejected in spite of the significant change in χ^2 as compared to the smaller hypothesised model ($\Delta\chi^2 = 73.45$, $\Delta df = 1$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(57, N = 338) = 355.16$, $p < .001$; $\chi^2/df = 6.23$; CFI = .91; NNFI = .88; SRMR = .20; and RMSEA = .13. Additionally, the change in χ^2 is significant ($\Delta\chi^2 = 198.31$, $\Delta df = 9$, $p < .001$) indicating that the model with a higher number of freely estimated parameters is more plausible, in this case that is the hypothesised model. Alternative Model 5 is therefore rejected.

Job-specific / Recognised ILT Congruence

The same procedure was followed in assessing the job-specific/recognised ILT congruence model. In the hypothesised model (Model 1) the independent variables are the congruence and level of the job-specific ILT and recognised ILT variables, the mediator is LMX and the outcomes are well-being, task satisfaction and self-rated performance. The results show that the hypothesised model fits the data well, with $\chi^2(48, N = 338) = 169.50$, $p < .001$; $\chi^2/df = 3.53$; CFI = .96; NNFI = .94; SRMR = .05; and RMSEA = .09, with all fit indices falling within acceptable ranges, apart from RMSEA which is marginal. The hypothesised model was compared to four alternative models, with the same structures as those described above, and the only difference was that one of the components of congruence was job-specific rather than general. Table 6.03 shows the model fit indices and $\Delta\chi^2$ values for the five models.

Table 6.03: Fit indices for nested model comparisons with job-specific/recognised ILT predictors (N=338)

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	169.50***	48	**3.53**	-	-	**.96**	**.94**	**.05**	.09
Alternative models									
Model 2	145.78***	42	**3.47**	23.72***	6	**.96**	**.94**	**.04**	.09
Model 3	236.96***	45	5.26	67.46***	3	**.96**	**.94**	**.05**	.12
Model 4	275.16***	47	5.85	105.66***	1	**.93**	**.90**	.15	.12
Model 5	454.31***	57	7.97	284.81***	9	**.90**	.88	.20	.15

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 is a partial mediation model, with direct paths added from the job-specific ILT congruence and level to the outcomes; namely, well-being, task satisfaction and self-rated performance. The model fits the data reasonably well, with $\chi^2(42, N = 338) = 145.78$, $p < .001$; $\chi^2/df = 3.47$; CFI = .96; NNFI = .94; SRMR = .04; and RMSEA = .09. Judging solely on the basis of fit indices it is evident that Model 1 fits the data better than Model 2. The $\Delta\chi^2$ on the other hand indicates the opposite, with the statistically significant test suggesting that the alternative model has a better fit since it has a greater number of freely estimated parameters ($\Delta\chi^2 = 23.72$, $\Delta df = 6$, $p < .001$). Nevertheless, on the basis of the overall fit indices and the non-significant paths between the independent variables and outcomes, the alternative Model 2 is rejected.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, well-being, task satisfaction and self-rated performance. This model fits the data as poorly with $\chi^2(45, N = 338) = 236.96$, $p < .001$; $\chi^2/df = 5.26$; CFI = .96; NNFI = .94; SRMR = .05; RMSEA = .12. Both the χ^2 and RMSEA indices fall outside the acceptable ranges. The significant $\Delta\chi^2$ indicates that Model 3 is a plausible alternative to the hypothesised model, since it has a greater number of freely estimated parameters ($\Delta\chi^2 = 67.46$, $\Delta df = 3$, $p > .001$). Nevertheless, all the paths between ILT congruence and outcomes were not significant. Similar to the case of the general/recognised ILTs congruence model comparisons, Model 3 is rejected on both statistical and theoretical grounds.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the job-specific/recognised ILT congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(47, N = 338) = 275.16$, $p < .001$; $\chi^2/df = 5.85$; CFI = .93; NNFI = .90; SRMR = .15; and RMSEA = .12. The χ^2, SRMR and RMSEA indices are in fact well outside the acceptable range. Model 4 is therefore rejected in spite of the significant change in χ^2 as compared to the smaller hypothesised model ($\Delta\chi^2 = 105.66$, $\Delta df = 1$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(57, N = 338) = 454.31$, $p < .001$; $\chi^2/df = 7.97$; CFI = .90; NNFI = .88; SRMR = .20; and RMSEA = .15. Additionally, the change in χ^2 is significant indicating ($\Delta\chi^2 = 284.81$, $\Delta df = 9$, $p < .001$) that the model with a higher number of freely estimated parameters is more plausible, in this case that is the hypothesised model. Alternative Model 5 is therefore rejected.

On the basis of the above model comparison it is confirmed that the fully mediated models are the most appropriate representations of the structure of the data in this study, for both general/recognised and job-specific/recognised ILT congruence. This supports the findings of the first study covered in Chapter 5, and provides further evidence for the hypothesised models which propose that the congruence between ILTs and real manager ratings will predict outcomes, mediated by LMX at both the basic and subordinate level of categorisation.

Comparing the General and Job-specific Hypothesised Models at the Individual Level

The analysis reported here aims at investigating whether followers rely more on their job-specific ILTs when assessing their current manager, or on their general ILTs of an ideal business leader. To that end, the two fully mediated hypothesised models are compared in terms of their fit to the data and their factor coefficients are discussed and evaluated. The model comparison procedure is the same as that described and applied in Chapter 5. Therefore, congruence is again constructed as a latent factor of the similarity between respondents' ratings of their ILTs and their ratings of their current manager on the same traits, with the ILTs loading onto the congruence factor set to .5, and the recognised ILTs loading onto the congruence factor set to -.5. The latent congruence variables were constructed using the 'Latent Congruence Model' method (Cheung, 2009) described in Chapter 4. Since the compared models are not nested the most appropriate index for comparing which model better fits the data is the AIC measure (Akaike, 1987).

Table 6.04 shows the fit indices for the two models, as well as the AIC measure used for the comparison of the two models. In Model 1 the congruence and level factors are constructed using the general and recognised ILT scales, while in Model 2 using the job-specific and recognised ILT scales. In both models LMX fully mediates the relationships between the level and congruence and outcomes. On the basis of the fit indices both models fit the data well, with Model 1 showing slightly better fit across all indices. Specifically, $\chi^2/df_g < \chi^2/df_j$, $CFI_g > CFI_j$, $NNFI_g > NNFI_j$, $SRMR_g < SRMR_j$, $RMSEA_g < RMSEA_j$, and most importantly $|AIC_g| < |AIC_j|$ (60.86<73.50). The AIC measure is the primary measure of comparison of the two models as this is the appropriate measure to consult when comparing non-nested models, as is the case here. The model having general/recognised ILT congruence as the predictor has a lower positive AIC than the model with the job-specific/recognised ILT congruence as predictor. AIC values closer to zero indicate better model fit, leading to the conclusion the ILTs are more appropriately measured at the basic level of categorisation, termed as general ILTs in the present thesis.

Table 6.04: Model fit indices for General/Recognised and Job-specific/Recognised ILT congruence (N=338)

Model	χ^2	df	χ^2/df	CFI	NNFI	SRMR	RMSEA	AIC
General/Recognised								
Model 1	156.85***	48	3.27	.97	.95	.04	.08	**60.85**
Job-specific/Recognised								
Model 2	169.50***	48	3.53	.96	.94	.05	.09	**73.50**

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates the main measure of comparison with AIC values closer to zero indicating better overall fit.
Model 1 = General/Recognised congruence and level as predictors; LMX as mediator; well-being, task satisfaction and self-rated performance as outcomes. Model 2 = Job-specific/Recognised congruence and level as predictors; LMX as mediator; well-being, task satisfaction and self-rated performance as outcomes.

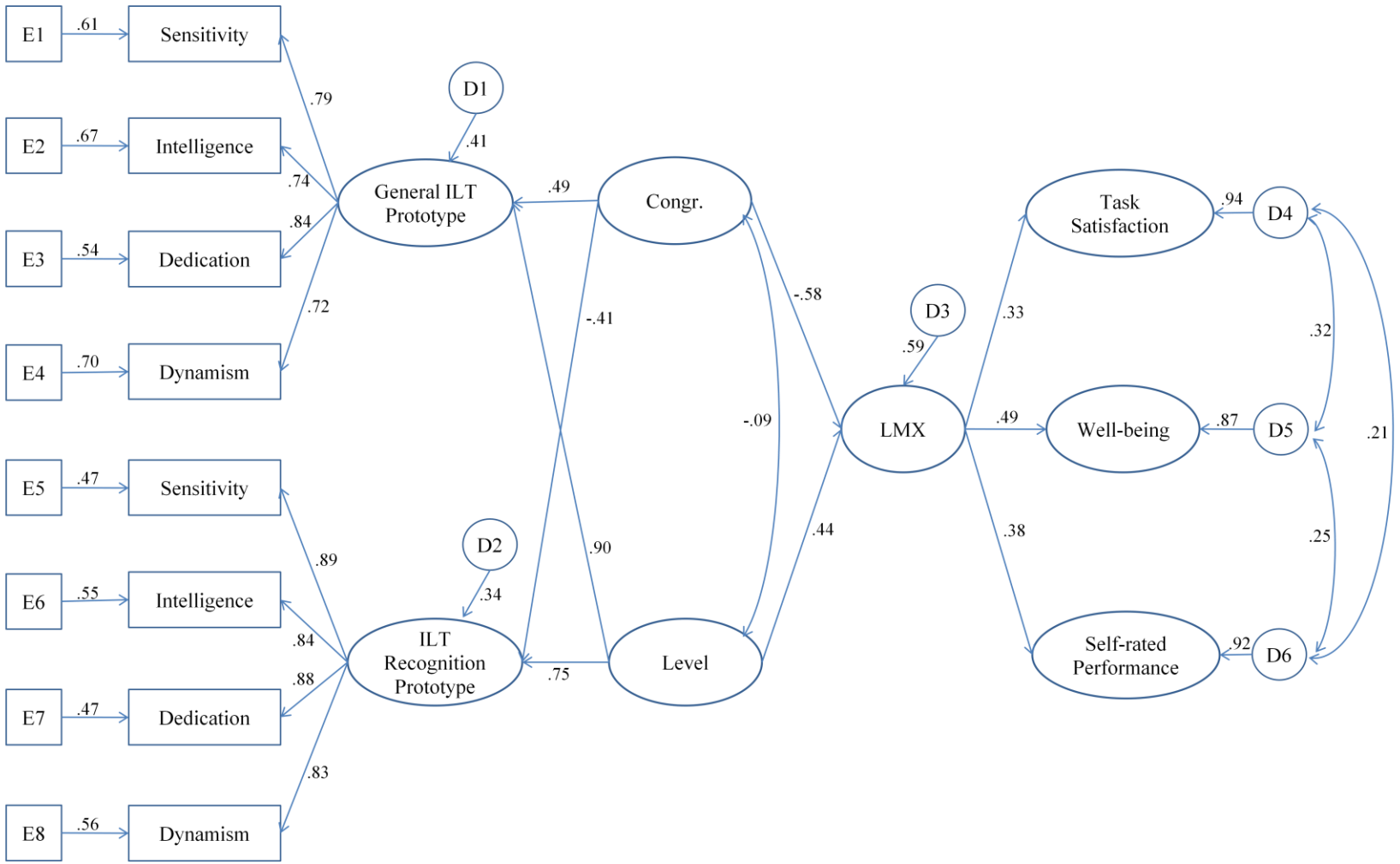
The standardised path coefficients for Model 1 are shown in Figure 6.04. Overall, the model confirms the findings of the first study, with LMX fully mediating the relationship between general/recognised ILT congruence and outcomes. Particularly, there is negative significant relationship between the ILT congruence factor and LMX (-.58, $p < .05$), indicating that higher incongruence is associated with lower LMX. LMX in turn has consistently significant positive associations with the outcomes of task satisfaction (.33, $p < .05$), well-being (.49, $p < .05$), and self-rated performance (.38, $p < .05$). The general ILT prototype factors is positively

related to the congruence factor (.49, $p < .05$), while the recognised ILT has a negative significant relationship with congruence (-.41, $p < .05$), showing that the congruence factor is in fact the difference between the two.

Figure 6.05 shows the standardised path coefficients for Model 2, with job-specific/recognised ILT congruence being the predictor of interest. In this model again LMX fully mediates the relationship between the congruence factor and outcomes. The significant negative relationship between the congruence factor and LMX (-.80, $p < .05$) indicates that higher incongruence is associated with lower LMX. Compared to Model 1 the relationship between the congruence factor and LMX is markedly stronger in Model 2, though it must be noted that the overall model fit is better for Model 1. In Model 2, LMX is linked to the outcomes in exactly the same way as in model one, with positive relationships to task satisfaction (.33, $p < .05$), well-being (.49, $p < .05$), and self-rated performance (.38, $p < .05$). Finally, the factor loadings of the indicators of the congruence factor are somewhat lower in Model 2 as compared to Model 1, with congruence having a positive loading onto the job-specific ILTs factor (.32, $p < .05$), and a negative one onto the recognised ILTs factor (-.28, $p < .05$).

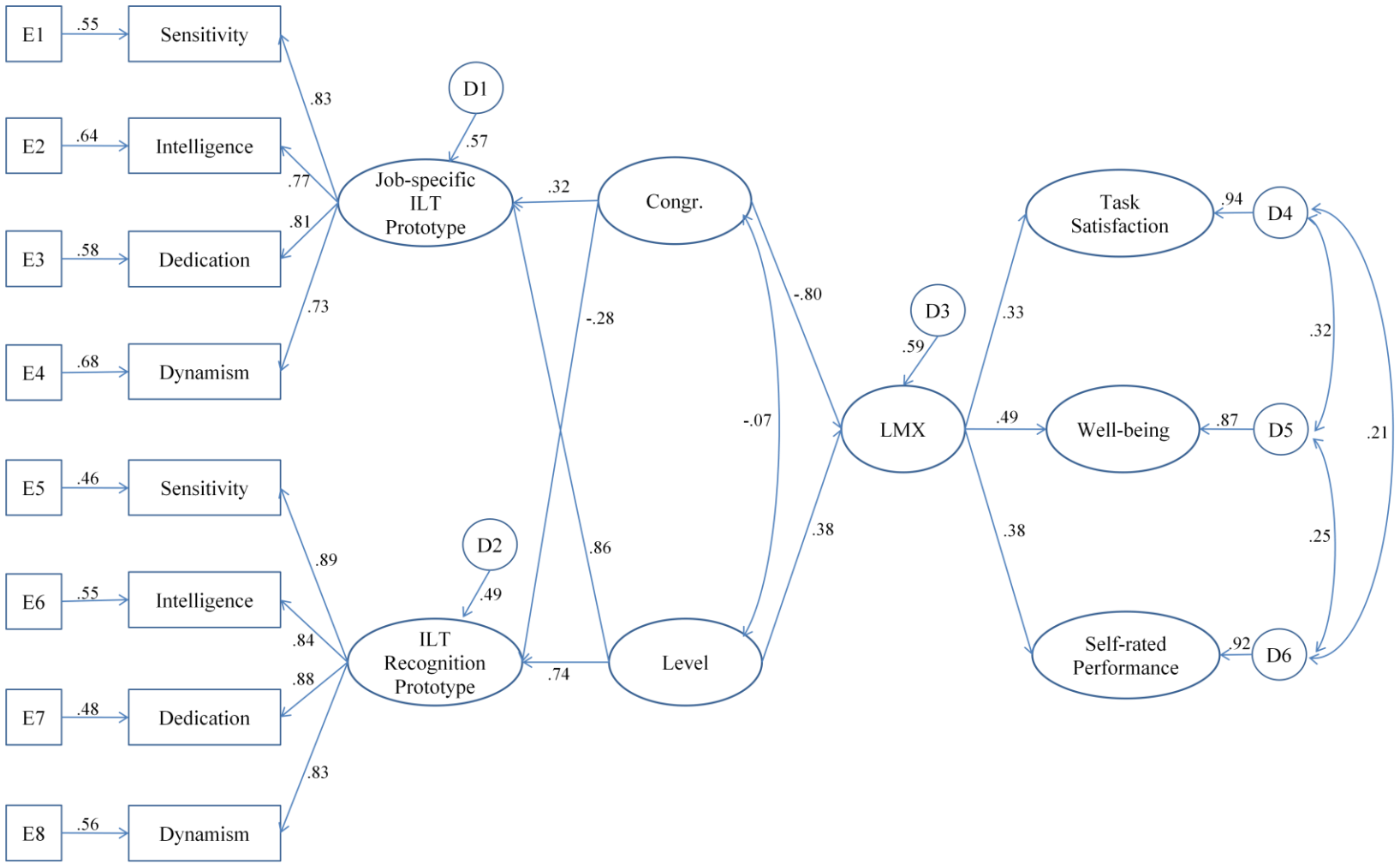
In general, the present analysis provides further support for the two hypothesised models, indicating the higher similarity between followers' ILTs and their perception of their manager is related to better quality relationships with their manager and more positive work-related outcomes – task satisfaction, well-being, and self-rated performance. The direct comparison of the fit to the data of the two models revealed that ILTs as measured on the basic level of categorisation (general ILTs) represents the data better in the tested models.

Figure 6.04: Maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. All factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(48, N = 338) = 156.85$, $p < .001$; $\chi^2/df = 3.27$; CFI = .97; NNFI = .95; SRMR = .04; RMSEA = .08

Figure 6.05: Maximum likelihood parameter estimates for the hypothesised Job-specific/Recognised ILT model (standardised solution)



Note. All factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(48, N = 338) = 169.50$, $p < .001$; $\chi^2/df = 3.53$; CFI = .96; NNFI = .94; SRMR = .05; RMSEA = .09

Time 1: Group Level of Analysis

Since the participants in the present study are nested in groups, with the leader functioning as the group leader, the analysis of those variables that refer to the group is conducted at the group level. Martin et al. (2010) caution that the issue of levels of analysis can be problematic due to difficulties in identifying the particular individuals that belong to each unit (e.g., the specific members of each group), as often respondents tend to report differences in group sizes and membership on the basis of their perception and active member participation, which is often different from the official group size and membership in the organisation's structure. A particular strength of the sample in the present study is that group membership is clearly defined, and the fact that each individual has a formal distinct role in the group further helps in avoiding the problem of membership ambiguity.

A peculiarity of the present study is that it uses congruence measures to establish whether a match of the leader to one's ideal expectations leads to more positive outcomes. The ideal leadership expectations are an individual difference and are brought by the followers to the leadership process and used as benchmarks in judging the leadership capacity by others. On the other hand, the actual leader characteristics are a group-level variable, since the same person leads several followers. Congruence therefore is constructed by one individual- and one group- level variable, theoretically speaking. Due to this peculiarity it is difficult to establish whether it is appropriate to aggregate the data in the present study to the group level.

In order to statistically establish whether it is appropriate to aggregate the variables of interest to the group level the appropriateness of such a procedure needs to be established. Chan (1998) identifies several categories of models with multiple levels – the additive, the direct consensus, the referent-shift consensus, the dispersion and the process models. The additive models use an additive measure of group-level constructs, by simply averaging or adding the scores on the construct for the group. Such models are not concerned with the variance among the group-level units. Direct consensus models assume that the average responses within a group represent the group-level construct. Such models rely on within group agreement, which is typically tested using the $r_{WG(J)}$ approach (e.g., James, Demaree, & Wolf, 1984). The referent shift consensus models are similar to consensus models, with the difference that the higher level variables are measured with reference to the higher (e.g., group) level. Establishing agreement follows the same statistical principles and procedure as for the direct consensus model. The dispersion models conceptualise the group-level as

within-group agreement or dispersion, and this constitutes the primary focus of interest in the variable. Finally, process models are concerned with a specific multilevel phenomenon that is not static, but is rather characterised by emergence or change. These models define the parameters of interest at both the lower and higher level of interest in a way that they are analogous to each other.

In the present study the former, more traditional, approach to group-level analysis is taken, since the research questions and hypotheses are not concerned with the variability of group members' responses (e.g., dispersion models) or a specific change (e.g., process models). As described earlier, the peculiarity of the present study is that it combines an individual level construct (ILTs) with a group level construct (ILT recognition in the group leader) to produce a congruence score. Therefore, the approach taken is a combination of additive and direct consensus models. That is, for the individually conseptualised constructs (ILTs) within-group agreement will not be considered as an essential prerequisite for aggregation, while for the group-level constructs it will. Thus, the data will be evaluated in terms of within-group agreement and between-group differentiation in order to justify aggregation, but these will be interpreted differently for the two types of constructs.

Within-group agreement is assessed using the $r_{WG(J)}$ index (James et al., 1984) using the following formula:

$$r_{WG(J)} = \frac{J[1 - (\overline{s_{xj}^2} / \sigma_E^2)]}{J[1 - (\overline{s_{xj}^2} / \sigma_E^2)] + (\overline{s_{xj}^2} / \sigma_E^2)}$$

Higher values indicate higher within-group agreement, with a suggested minimum of .70 required for justifying aggregation (James et al., 1984).

Two further measures are used to establish between-group differentiation – the interclass correlations (Bliese, 2000). ICC_1 refers to the proportion of variance that is due to group variability, while ICC_2 is an indicator of the reliability of the group means scores on a variable (see e.g., Newman & Sin, 2007). Values different from zero are desirable for ICC_1, with a suggested .20 minimum value (Bliese, 2000). For ICC_2 it is proposed to accept values over .60 (Glick, 1985). These are generally considered as indicatory values rather than strict cut-off points. The formulas of these two measures are:

$$ICC(1) = \frac{MSB - MSW}{MSB + (k-1)MSW}$$

(Bartko, 1976)

$$ICC(2) = \frac{MSB - MSW}{MSB}$$

(McGraw & Wong, 1996)

k = average group size, *MSB* = mean squares between estimates, *MSW* = mean squares within estimates.

Table 6.05 shows the $r_{WG(J)}$, ICC_1, and ICC_2 for the variables of interest in the group-level analysis. Overall, it is evident that the general and job-specific ILTs do not meet the least criteria in the tests of between-group differentiation, namely ICC_1, and ICC_2. As discussed earlier these are concepts that refer to individual differences and do not intend to measure group-level notions. Nevertheless, on the basis of the $r_{WG(J)}$ values and the role these variables play in constructing the ILT – ILT recognition congruence scores, they will be included in further analysis, only as components of the congruence factors. The values for the recognised ILTs, LMX and outcome variables provide sufficient support for their aggregation to the group level, since there is acceptable within group agreement ($r_{WG(J)}$). To that end, the group means are used in further analysis.

Table 6.06 shows the means, standard deviations and intercorrelations among the study's main variables. The Business Plan mark was centred around the tutor mean for each group in order to take into account the tutor effects. The centred marks were used in all further analysis.

Table 6.05: $r_{WG(J)}$, ICC_1, and ICC_2 for group-level aggregation

	$r_{WG(J)}$	ICC_1				ICC_2
		ICC_1	*F*	*df*	*p*	
General ILT dimensions						
Sensitivity	**1.19**	.10	1.29	316	.057	.23
Intelligence	**1.05**	**.25**	1.93	316	.000	.48
Dedication	**1.00**	.07	1.21	316	.124	.17
Dynamism	**.85**	.14	1.46	317	.010	.32
Job-specific ILT dimensions						
Sensitivity	**1.18**	**.20**	1.69	315	.001	.41
Intelligence	**1.30**	**.20**	1.70	315	.001	.41
Dedication	**.91**	.12	1.38	315	.024	.28
Dynamism	**.81**	.07	1.20	315	.127	.17
Recognised ILT dimensions						
Sensitivity	**.81**	**.35**	2.50	316	.000	**.60**
Intelligence	**.95**	**.34**	2.44	316	.000	**.60**
Dedication	**.96**	**.50**	3.78	316	.000	**.74**
Dynamism	**.90**	**.40**	2.84	315	.000	**.65**
LMX	**.94**	**.42**	3.07	327	.000	**.67**
Conflict	**.97**	**.14**	1.43	319	.014	.30
TMX	**.94**	.08	1.24	306	.094	.20
Group Satisfaction	**.93**	**.27**	2.03	319	.000	.51

Note. Boldface values fall within acceptable rule of thumb ranges

Table 6.06: Means, standard deviations and intercorrelations among the study's main variables (N = 116)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. GILT prototype	7.68	0.72	-										
2. JILTs prototype	7.60	0.77	.86***	-									
3. RILT prototype	6.83	1.14	.55***	.63***	-								
4. SD_g GILT	1.05	.51	-.77***	-.67***	-.55***	-							
5. SD_g JILT	1.09	.56	-.69***	-.71***	-.56***	.81***	-						
6. SD_g RILT	1.17	.50	-.29**	-.30**	-.53***	.36***	.47***	-					
7. LMX	3.70	0.56	.28***	.30***	.73***	-.30**	-.30**	-.42***	-				
8. Conflict	2.12	0.53	-.17	-.12	-.24*	.07	.01	.13	-.33***	-			
9.TMX	3.29	0.38	.08	.08	.19*	-.08	-.10	-.04	.37**	-.04	-		
10. Group Satisf.	3.90	0.59	.32***	.28***	.58***	-.22*	-.21*	-.37**	.62***	-.46***	.38***	-	
11. Presentation Mark	63.09	7.59	.10	.10	.06	-.14	-.06	-.07	.00	.08	.08	.12	-
12. Business Plan Mark	64.88	7.22	.13	.13	.02	-.15	-.10	.18	-.01	.10	.04	-.01	.31***

Note. *p<.05; **p<0.01; *** p<0.001 (2-tailed); GILT = General ILT; JILT = Job-specific ILT; RILT = Recognised ILT; SD_g = group standard deviation

Testing Hypothesised versus Alternative Models for General/Recognised and Job-specific/Recognised ILT Congruence at the Group Level

Following the same procedure outlined for the individual-level evaluation of the hypothesised models, the following analysis compares the hypothesised group-level models to four alternative plausible models in order to establish their adequacy in terms of fit to the data. That is, all scale variables are aggregated at the group level by computing the mean of all group-members' responses. Again, all the models were estimated using the maximum likelihood robust method, which produces the robust χ^2 statistic (S-B χ^2; Sattora & Bentler, 1994), and the robust standard errors (Bentler & Dijkstra, 1985), thus correcting for possible non-normality in the sample. The reported χ^2 values are the Sattora-Bentler scaled ones for all models, and the reported RMSEA is based on this robust statistic. Five cases were identified as contributing greatly to the models' multivariate kurtosis, and were therefore omitted from the analysis. The models are evaluated on the basis of their overall model fit using several indicators, as well the significance levels of the change in χ^2. Any suggested model modification is treated with caution, since this would be a more exploratory rather than confirmatory approach (see e.g., Epitropaki & Martin, 2005; Kelloway, 1998).

General / Recognised ILT Congruence

In the hypothesised model (Model 1) the independent variables are the congruence and level of the general ILT and recognised ILT variables, the mediator is LMX and the outcomes are conflict, TMX, group satisfaction, presentation mark and business plan mark. The first three outcomes are self-response scale measures, while the latter two are objective group performance measures taken two weeks following the scale data collection. The results show that the hypothesised model fits the data well, with $\chi^2(70, N = 112) = 92.07$, $p < .05$; $\chi^2/df = 1.31$; CFI = .95; NNFI = .93; SRMR = .06; and RMSEA = .05. Table 6.07 shows the comparison of the hypothesised model with General/Recognised congruence to the alternative ones. The fit indices for the hypothesised model fall within the acceptable ranges, indicating that the model fits the data well.

Table 6.07: Fit indices for nested model comparisons with general/recognised ILT predictors (N=112)

Model	χ^2	*Df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	92.07*	70	**1.31**	-	-	**.95**	**.93**	**.06**	**.05**
Alternative models									
Model 2	131.82***	60	**2.18**	39.75***	10	**.95**	**.93**	**.06**	.11
Model 3	162.07***	65	**2.49**	70***	5	**.94**	**.91**	**.08**	.12
Model 4	218.49***	67	**3.26**	126.42***	3	**.90**	.86	.16	.15
Model 5	162.80***	54	**3.01**	70.73***	16	.85	.81	.25	.14

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 tests partial mediation, with direct paths added between the congruence and level factors, and the outcome measures. Although the majority of the fit indices for Model 2 are within the acceptable ranges, RMSEA falls outside the acceptable model fit range ($\chi^2(60, N = 112) = 131.82$, $p < .001$; $\chi^2/df = 2.18$; CFI = .95; NNFI = .93; SRMR = .06; RMSEA = .11). The significant $\Delta\chi^2$ indicates that the model with the higher number of freely estimated parameters is overall better, in this case the alternative model ($\Delta\chi^2 = 39.75$, $\Delta df = 10$, $p < .001$). Nevertheless, in addition to the poorer overall fit indices, inspection of the factor loadings in Model 2 indicated that none of the direct paths between the independent variables and outcomes was significant, this model is therefore rejected.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, TMX, group satisfaction, presentation mark and business plan mark. This model fits the data somewhat, with only the RMSEA value falling outside the acceptable model fit range ($\chi^2(65, N = 112) = 162.07$, $p < .001$; $\chi^2/df = 2.49$; CFI = .94; NNFI = .91; SRMR = .08; RMSEA = .12). The significant $\Delta\chi^2$ indicates that it fits the data better than the hypothesised model, since Model 3 has fewer degrees of freedom and a greater number of freely estimated parameters ($\Delta\chi^2 = 70$, $\Delta df = 5$, $p < .001$). Nevertheless, with poorer fit indices and non-significant factor loadings between the predictors and outcomes, this model is rejected as compared to the hypothesised model.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the congruence and level factors. The majority of the model fit indices fall outside the acceptable ranges indicating that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(67, N = 112) = 218.49$, $p < .001$; $\chi^2/df = 3.26$; CFI = .90; NNFI = .86; SRMR = .16; and RMSEA = .15. The SRMR and RMSEA indices are in fact well outside the acceptable range. Model 4 is therefore rejected in spite of the significant change in χ^2 as compared to the smaller hypothesised model ($\Delta\chi^2 = 126.42$, $\Delta df = 3$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(54, N = 112) = 162.80$, $p < .001$; $\chi^2/df = 3.01$; CFI = .85; NNFI = .81; SRMR = .25; and RMSEA = .14. The change in χ^2 is significant ($\Delta\chi^2 = 70.73$, $\Delta df = 16$, $p < .001$) indicating that the model with a higher number of freely estimated parameters is more plausible, in this case that is the alternative model. Nevertheless, with unacceptable model fit indices this model is rejected.

Job-specific / Recognised ILT Congruence

The same procedure was followed in assessing the job-specific/recognised ILT congruence model. In the hypothesised model (Model 1) the independent variables are the congruence and level of the job-specific ILT and recognised ILT variables, the mediator is LMX and the outcomes are conflict, TMX, group satisfaction, presentation mark and business plan mark. The results show that the hypothesised model fits the data fairly well, with $\chi^2(70, N = 112) = 157.56$, $p < .001$; $\chi^2/df = 2.25$; CFI = .94; NNFI = .92; SRMR = .06; and RMSEA = .11, with the majority of fit indices falling within the acceptable range, part from RMSEA which is larger than .10. The hypothesised model was compared to four alternative models, with the same structures as those described above, and the only difference was that one of the components of congruence was job-specific rather than general ILTs. Table 6.08 shows the model fit indices and $\Delta\chi^2$ values for the five models.

Table 6.08: Fit indices for nested model comparisons with job-specific/recognised ILT predictors (N=112)

Model	χ^2	*Df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	157.56***	70	**2.25**	-	-	**.94**	**.92**	**.06**	.11
Alternative models									
Model 2	148.29***	60	**2.47**	9.27	10	**.91**	**.94**	**.05**	.12
Model 3	186.74***	65	**2.87**	29.18***	5	**.92**	.88	**.09**	.12
Model 4	262.23***	67	**3.91**	104.67***	3	.84	.88	.17	.16
Model 5	206.19***	54	**3.82**	48.63***	16	.80	.85	.24	.16

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 is a partial mediation model, with direct paths added from the job-specific/recognised ILT congruence and level to the outcomes; namely, conflict, TMX, group satisfaction, presentation mark and business plan mark. The model fits the data reasonably well, with $\chi^2(60, N = 112) = 148.29$, $p < .001$; $\chi^2/df = 2.47$; CFI = .91; NNFI = .94; SRMR = .05; and RMSEA = .12. Judging solely on the basis of fit indices it is evident that Model 1 fits the data better than Model 2. The non-significant $\Delta\chi^2$ confirms this finding, with the statistically non-significant test suggesting that the hypothesised model has a better fit since it has a smaller number of freely estimated parameters ($\Delta\chi^2 = 9.27$, $\Delta df = 10$, n.s.). On the basis of the overall fit indices and the non-significant $\Delta\chi^2$ test the alternative Model 2 is rejected.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, conflict, TMX, group satisfaction, presentation mark and business plan mark. This model fits the data poorly with $\chi^2(65, N = 112) = 186.74$, $p < .001$; $\chi^2/df = 2.87$; CFI = .92; NNFI = .88; SRMR = .08; RMSEA = .12. Both the NNFI and RMSEA indices fall outside the acceptable ranges. The $\Delta\chi^2$ on the other hand indicates the opposite, with the statistically significant test suggesting that the alternative model has a better fit since it has a greater number of freely estimated parameters ($\Delta\chi^2 = 29.18$, $\Delta df = 5$, n.s.). Nevertheless, all the paths between ILT congruence and outcomes were not significant. Similar to the case of the general/recognised ILTs congruence model comparisons, Model 3 is rejected on both statistical and theoretical grounds.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the job-specific/recognised ILT congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(67, N = 112) = 262.23$, $p < .001$; $\chi^2/df = 3.91$; CFI = .84; NNFI = .88; SRMR = .17; and RMSEA = .16. The CFI, NNFI, SRMR and RMSEA indices are in fact well outside the acceptable ranges. Model 4 is therefore rejected in spite of the significant change in χ^2 as compared to the smaller hypothesised model ($\Delta\chi^2 = 104.67$, $\Delta df = 3$, $p < .001$).

Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data poorly, with $\chi^2(54, N = 112) = 206.54$, $p < .001$; $\chi^2/df = 3.81$; CFI = .80; NNFI = .85; SRMR = .24; and RMSEA = .16. The change in χ^2 is significant ($\Delta\chi^2 = 48.63$, $\Delta df = 16$, $p < .001$) indicating that the model with a higher number of freely estimated parameters is more plausible, in this case that is the alternative model. Nevertheless, with overall poorer fit indices, alternative model 5, though plausible, is rejected as compared to the hypothesised model.

On the basis of the above model comparison it is confirmed that the fully mediated models are the most appropriate representations of the structure of the data in this study, for both general/recognised and job-specific/recognised ILT congruence. This supports the findings of the first study covered in Chapter 5 as well as the individual level analysis, and provides further evidence for the hypothesised models which propose that the congruence between ILTs and real manager ratings will predict outcomes, mediated by LMX at both the basic and subordinate level of categorisation.

Comparing the General and Job-specific Hypothesised Models at the Group Level

Following the same procedure as was described for the individual level analysis, the analysis reported here provides a direct comparison of the two hypothesised models. The first model assesses general/recognised ILT congruence as a predictor of outcomes, mediated by LMX, while in the second model the general/recognised is replaced by the job-specific/recognised ILT congruence. The two fully mediated hypothesised models are compared in terms of their fit to the data and their factor coefficients are discussed and evaluated. The model comparison procedure is the same as that described and applied in Chapter 5. Therefore, congruence is again constructed as a latent factor of the similarity between respondents' ratings of their ILTs and their ratings of their current manager on the same traits, with the ILTs loading onto the congruence factor set to .5, and the recognised ILTs loading onto the congruence factor set to -.5. The latent congruence variables were constructed using the

'Latent Congruence Model' method (Cheung, 2009). Since the compared models are not nested the most appropriate index for comparing which model better fits the data is the AIC measure (Akaike, 1987).

Table 6.09 shows the fit indices for the two models, as well as the AIC measure used for the comparison of the two models. In both models LMX fully mediates the relationships between the level and congruence and outcomes. On the basis of the fit indices both models fit the data well, with Model 1 showing slightly better fit across all indices. Specifically, $\chi^2/df_g < \chi^2/df_j$, $CFI_g > CFI_j$, $NNFI_g > NNFI_j$, $SRMR_g = SRMR_j$, $RMSEA_g < RMSEA_j$, and most importantly $|AIC_g| < |AIC_j|$ (23.62<46.92). The AIC measure is the primary measure of comparison of the two models as this is the appropriate measure to consult when comparing non-nested models, as is the case here. The model having general/recognised ILT congruence as the predictor has a lower positive AIC than the model with the job-specific/recognised ILT congruence as predictor. AIC values closer to zero indicate better model fit, leading to the conclusion the ILTs are more appropriately measured at the basic level of categorisation, termed as general ILTs in the present thesis.

Table 6.09: Model fit indices for General/Recognised and Job-specific/Recognised ILT congruence (N=112)

Model	χ^2	df	χ^2/df	CFI	NNFI	SRMR	RMSEA	AIC
General/Recognised								
Model 1	92.07*	70	1.31	.95	.93	.06	.05	**23.62**
Job-specific/Recognised								
Model 2	157.56***	70	2.25	.94	.92	.06	.11	**46.91**

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates the main measure of comparison with AIC values closer to zero indicating better overall fit.
Model 1 = General/Recognised congruence and level as predictors; LMX as mediator; well-being, task satisfaction and self-rated performance as outcomes. Model 2 = Job-specific/Recognised congruence and level as predictors; LMX as mediator; well-being, task satisfaction and self-rated performance as outcomes.

The standardised path coefficients for Model 1 are shown in Figure 6.06. Overall, the model confirms the findings of both the first study and the individual level analysis, with LMX fully mediating the relationship between general/recognised ILT congruence and the self-report outcomes, namely conflict, TMX and group satisfaction. Particularly, there is negative significant relationship between the ILT congruence factor and LMX (-.80, $p < .05$), indicating that higher incongruence is associated with lower LMX. LMX in turn has consistently

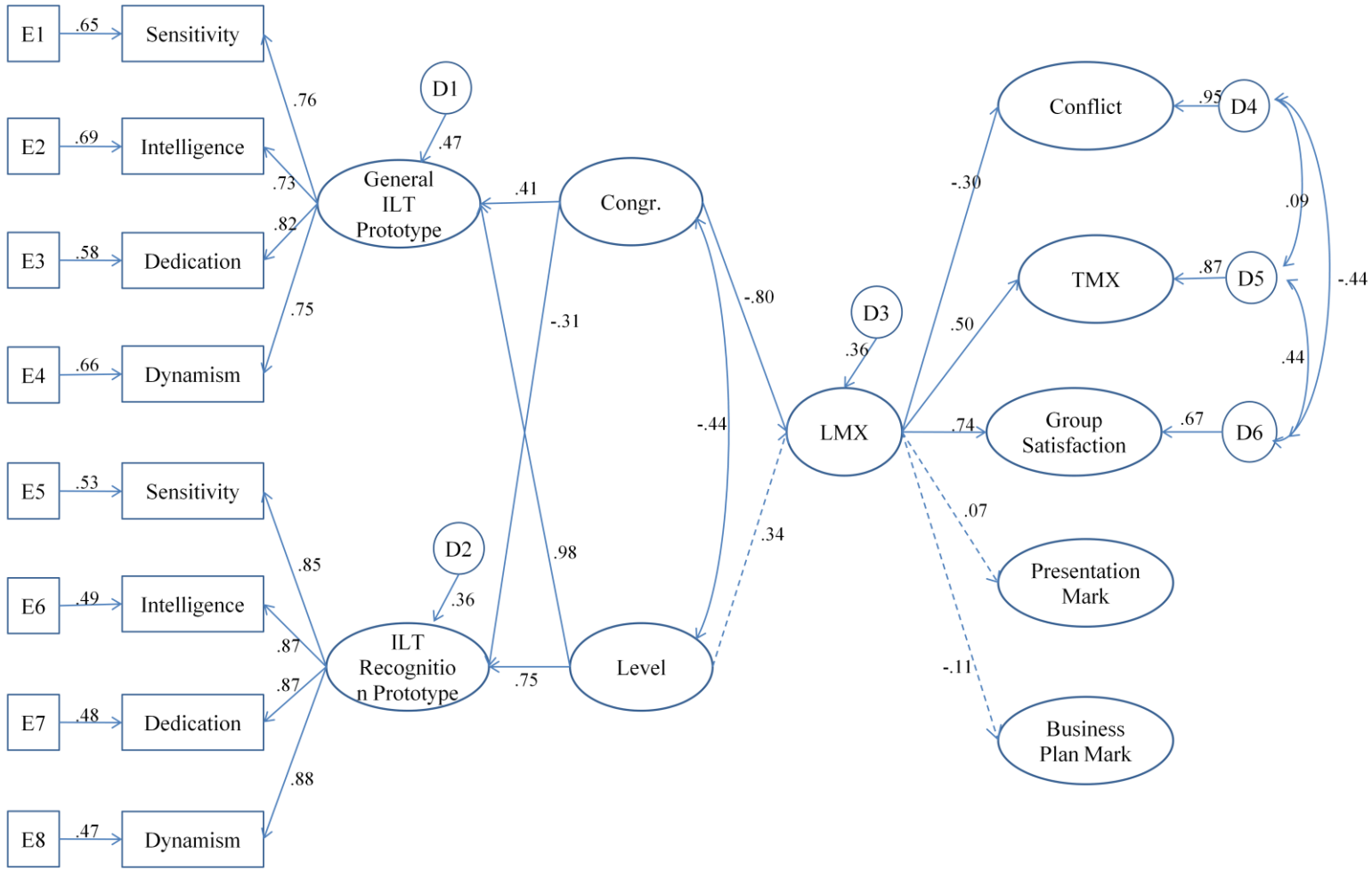
significant positive associations with the outcomes of TMX (.50, $p < .05$) and group satisfaction (.74, $p < .05$), and a negative significant relationship to intragroup conflict (-.30, $p < .05$). The relationships between LMX and the objective performance indicators (presentation mark and business plan mark) are not significant in the tested model. Therefore, in the present data there is evidence in support of the hypotheses regarding ILT/recognised ILT congruence predicting performance outcomes mediated by LMX. The general ILT prototype factor is positively related to the congruence factor (.41, $p < .05$), while the recognised ILT has a negative significant relationship with congruence (-.31, $p < .05$), showing that the congruence factor is in fact the endogenous indicator of the difference between the two. This model further shows that there is no significant relationship between the Level factor and LMX. This is unique to the present model, as the results of study 1 and the individual level analysis in the present study showed that the path between level and LMX is significant. Therefore, the present finding suggests that at the group level LMX is predicted by the congruence of general/recognised ILTs, but not by their mean levels.

Figure 6.07 shows the standardised path coefficients for Model 2, with job-specific/recognised ILT congruence being the predictor of interest at the group level. In this model again LMX fully mediates the relationship between the congruence factor and outcomes. The significant negative relationship between the congruence factor and LMX (-.77, $p < .05$) indicates that higher incongruence is associated with lower LMX. Compared to Model 1 the relationship between the congruence factor and LMX is somewhat stronger in Model 1. In Model 2, LMX is linked to the outcomes in exactly the same way as in model one, with positive relationships to TMX (.50, $p < .05$) and group satisfaction (.73, $p < .05$), and a negative relationship with conflict (-.30, $p < .05$). It should be noted that the mean level of job-specific and recognised ILTs (Level) does have a significant relationship to LMX in this model (.61, $p < .05$). Finally, the factor loadings of the indicators of the congruence factor are somewhat lower in Model 2 as compared to Model 1, with congruence having a positive loading onto the job-specific ILTs factor (.34, $p < .05$), and a negative one onto the recognised ILTs factor (-.33, $p < .05$).

In general, the present analysis provides further support for the two hypothesised models, indicating the higher similarity between followers' ILTs and their perception of their manager is related to better quality relationships with their manager and more positive work-related reactions regarding collaboration and relationships within the work-group – lower conflict levels, higher group satisfaction and better quality team-member exchanges. Nevertheless, the present group-level analysis failed to provide support regarding the relationship between ILT congruence and performance outcomes. The direct comparison of the fit to the data of

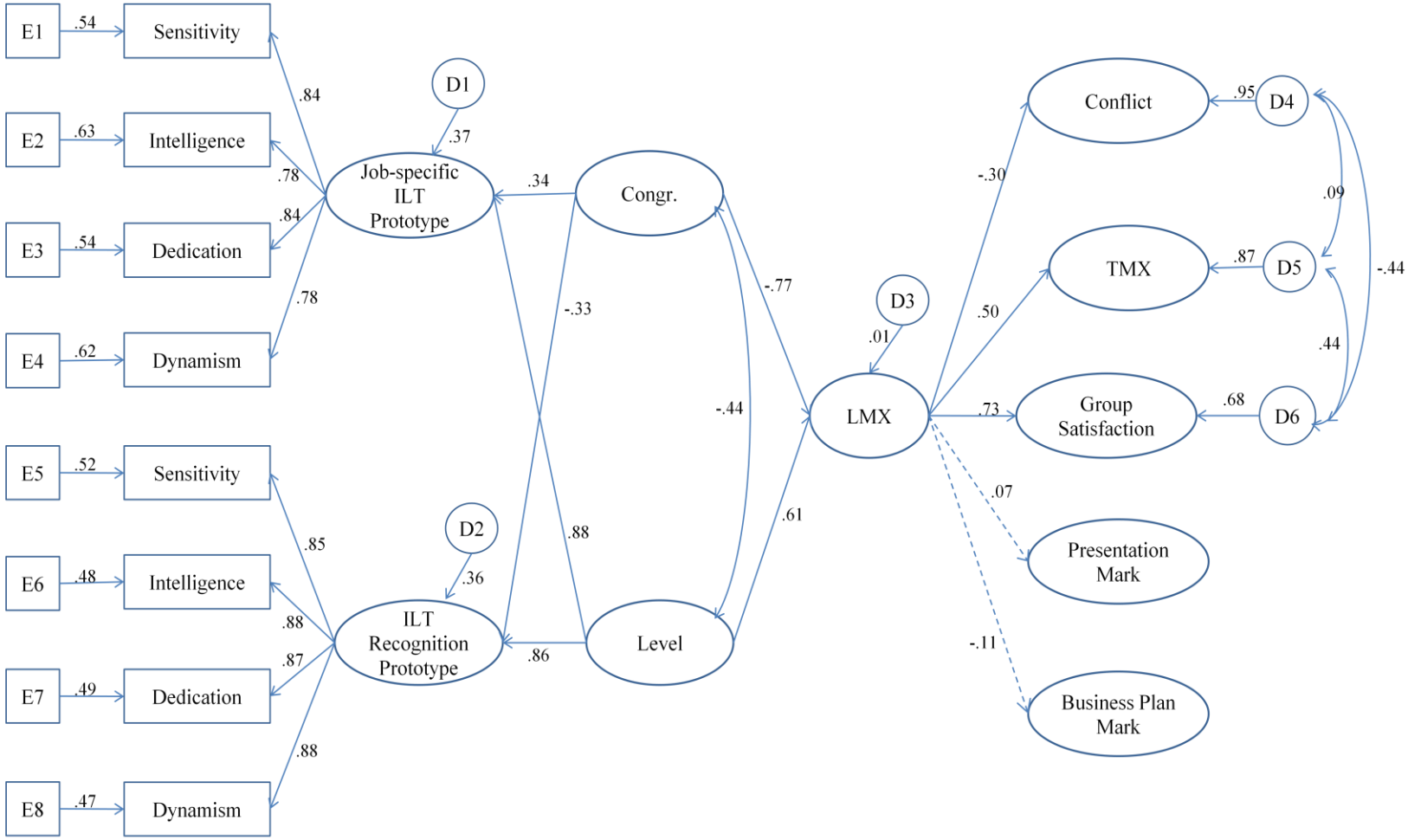
the two models revealed that ILTs as measured on the basic level of categorisation (general ILTs) represent the data better in the tested models, as compared to the job-specific ILTs.

Figure 6.06: Group level maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. Dashed paths are non-significant. All other factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(70, N = 112) = 92.07$, $p < .05$; $\chi^2/df = 1.31$; CFI = .95; NNFI = .93; SRMR = .06; RMSEA = .05

Figure 6.07: Group level maximum likelihood parameter estimates for the hypothesised Job-specific/Recognised ILT model (standardised solution)



Note. Dashed paths are non-significant. All other factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(70, N = 112) = 157.56$, $p < .05$; $\chi^2/df = 2.25$; CFI = .94; NNFI = .92; SRMR = .06; RMSEA = .11

Longitudinal analysis

The following analysis aims at establishing the causal link in the relationships of the congruence in ILTs and ILTs recognition with work-related outcomes, by investigating these relationships longitudinally. Previous analysis has established that general/recognised ILT congruence has an overall better fit to the data as a predictor of outcomes than the job-specific/recognised congruence. The longitudinal analysis therefore focuses solely on the general/recognised congruence as predictor. As described in the methods section, data regarding work-related reactions at both the individual and the group level was collected approximately five months into the students' project, and approximately four months after the first wave of data was collected. Additionally, two weeks after the second wave of data collection the students completed their practical sessions and their final share price (end of third virtual year of company operations) was recorded as an indicator of the groups' overall performance on the simulation. Finally, approximately two months after the second wave the students submitted their final individual and group assignments. These marks were also used as indicators of individual and group performance. Although a large proportion of the marks was moderated by the module leader and an external assessor (approximately 20% of all assignments), partial correlations indicated that there is still a significant tutor effect on the marks. Since there are 10 tutors teaching on the module it was not possible to control for tutor effects on these outcomes in the structural equation modelling procedure, as adding a categorical variable with 10 categories would markedly increase the demands regarding sample size. Nevertheless, in order to account for the tutor effect, all the marks were centred around the tutor mean prior to any analysis.

Of the 343 respondents who took part in the first wave of data collection, 235 agreed to participate in the second wave. Before any analysis can be conducted it is important to establish that there is no non-response bias by investigating the differences in the responses between the group of respondents who took part in both waves and those who took part in the first wave only. To that end a series of independent sample t-tests was conducted to compare the means on all ILT items between the two groups. The following table (Table 6.10) shows the means, standard deviations and t-test results of this comparison. As is evident from the significance levels, there were no significant differences between wave two respondents and non-respondents for the vast majority of wave one items, with the exception of four general ILT items (educated, manipulative, clever) and two recognised ILT items (masculine, manipulative), that had t-tests significant at the .05 level. Similarly, the majority of the significant items are aniprototype items, which are excluded from the analysis due to

being generally problematic as measures of ILTs (see CFA analysis – Measures section). The overall conclusion from the t-test analysis is therefore that there is no remarkable non-response bias in the sample.

Table 6.10: Means, Standard Deviations and t-tests for General ILT and Recognised ILT Items for the comparison of respondents who participated only in the first wave of data collection (T1) and those who took part in both (T1 & T2)

	Mean		SD				
	T1	T1 & T2	T1	T1 & T2	*t*	*df*	Sig. 2-tailed
General ILTs							
1. Strong	7.52	7.26	1.53	1.79	-1.24	315	.22
2.Educated	7.97	7.51	1.37	1.40	**-2.74**	**328**	**.01**
3.Domineering	5.58	5.75	2.30	1.92	.69	322	.49
4.Dynamic	7.63	7.37	1.52	1.49	-1.42	324	.16
5.Masculine	4.07	4.42	2.53	2.66	1.09	323	.28
6.Understanding	8.01	8.07	1.20	1.27	.40	328	.69
7.Male	3.09	3.31	2.66	2.62	.69	321	.49
8.Energetic	7.46	7.26	1.39	1.53	-1.10	326	.27
9.Pushy	4.59	4.85	2.26	2.21	1.00	324	.32
10.Dedicated	8.02	7.92	1.39	1.54	-.58	324	.57
11.Sincere	7.48	7.36	1.37	1.67	-.65	320	.52
12.Hard-working	8.39	8.26	1.00	1.22	-.93	328	.35
13.Intelligent	8.00	7.80	1.21	1.31	-1.28	325	.20
14.Loud	5.10	5.06	2.29	2.12	-.16	323	.87
15.Helpful	8.01	7.73	1.20	1.36	-1.79	328	.08
16.Manipulative	3.45	4.32	2.32	**2.73**	**2.72**	**321**	**.01**
17.Conceited	3.54	4.17	2.34	2.68	1.97	312	.05
18.Motivated	8.31	8.17	1.12	1.32	-.96	328	.34
19.Selfish	2.21	2.50	1.75	2.04	1.22	323	.22
20.Knowledgeable	7.83	7.84	1.35	1.30	.10	328	.92
21.Clever	7.80	7.41	1.27	1.50	**-2.25**	**324**	**.03**
Recognised ILT							
1. Strong	6.40	6.20	1.78	1.84	-.89	315	.37
2.Educated	7.27	7.00	1.47	1.49	-1.53	328	.13
3.Domineering	4.78	5.08	2.44	1.97	1.18	323	.24
4.Dynamic	6.41	6.12	1.93	1.79	-1.30	324	.20
5.Masculine	4.24	5.00	2.72	2.43	**2.51**	**322**	**.01**

	Mean		SD				
	T1	T1 & T2	T1	T1 & T2	*t*	*df*	Sig. 2-tailed
6.Understanding	7.36	7.20	1.63	1.68	-.77	329	.44
7.Male	5.43	5.69	3.54	3.42	.60	320	.55
8.Energetic	6.43	6.48	1.77	1.80	.20	325	.84
9.Pushy	3.94	4.26	2.35	2.31	1.14	323	.26
10.Dedicated	7.21	6.96	1.82	1.96	-1.10	326	.27
11.Sincere	7.03	6.97	2.06	1.73	-.28	321	.78
12.Hard-working	7.34	7.30	1.77	1.81	-.20	326	.85
13.Intelligent	7.38	7.09	1.43	1.38	-1.72	327	.09
14.Loud	4.53	4.69	2.22	2.16	.63	323	.53
15.Helpful	7.06	6.97	1.88	1.91	-.40	329	.69
16.Manipulative	2.84	3.55	2.30	2.51	**2.41**	**321**	**.02**
17.Conceited	3.32	3.83	2.40	2.60	1.62	313	.11
18.Motivated	7.15	6.99	1.69	1.76	-.76	327	.45
19.Selfish	1.96	2.41	1.84	2.04	1.87	324	.06
20.Knowledgeable	7.07	6.89	1.63	1.64	-.92	326	.36
21.Clever	7.23	6.89	1.50	1.44	-1.88	322	.06

Note. Boldface type indicates where the difference in the means is significant.

An alternative way of establishing whether there is non-response bias in the study's sample is following the structural equation modelling procedure using multigroup analysis as suggested by Little, Lindenberger and Maier (2000). The procedure involves testing one model that assumes no equality among the two groups and thus imposing no constraints of equality among the models for the two groups (respondents of only wave one and respondents of both waves). This is followed by a test of an alternative model that constrains all paths and correlations to being equal among the two groups. The two models are then compared in terms of the chi-squared difference to establish whether the model is significantly different among only wave one respondents and those respondents who took part in both waves of the study. The results show that both models fit the data well, with fit indices of $\chi^2(140, N = 343) = 206.25$, $p < .001$; $\chi^2/df = 1.47$; CFI = .97; NNFI = .95; SRMR = .07; and RMSEA = .08 for the model that does not impose any constraints among the two groups, and fit indices of $\chi^2(105, N = 343) = 256.51$, $p < .001$; $\chi^2/df = 2.39$; CFI = .97; NNFI = .95; SRMR = .08; and RMSEA = .09 for the model that imposes equality constraints among the two groups. A comparison of the two models indicates that there are no significant differences among them

($\Delta\chi^2$ = 50.26, Δdf = 35, p <.05), confirming that there is no issue of non-response bias in the sample of the present study.

In order to establish the causal link between ILT congruence and outcomes, structural equation models were tested with congruence measured at Time 1, LMX and self-response outcomes measured at Time 2, and objective performance outcomes measured at the end of the academic year, upon completion of the virtual three-year computer-simulated project. The following analysis reports the findings of these models at the individual and the group level.

Longitudinal individual-level analysis

Table 6.11 shows the means, standard deviations and interclass correlations among the key variables in the individual-level longitudinal analysis. The ILTs at the general level of categorisation are significantly related to the ILT recognition in the general manager, while the recognition if ILTs is positively linked to the quality of the leader-follower relationship 4 months later. The quality of the relationship between the leader and the follower is significantly linked to all followers' self-report reactions (task satisfaction, well-being and self-rated performance), while not related to the objective measure of individual performance (individual essay mark). It must be noted that this lack of a significant relationship does not come as a surprise, as the performance on this essay is not related to the group-work, therefore not directly influenced by the leadership process.

Table 6.11: Means, standard deviations and intercorrelations among the study's main variables (N = 232)

Variables	M	SD	1	2	3	4	5	6
1. GILT prototype T1	7.68	0.99	-					
2. RILT prototype T1	6.81	1.35	.49***	-				
3. LMX T2	3.67	.69	-.11	.37***	-			
4. Task Satisfaction T2	3.66	1.01	.04	.09	.25***	-		
5. Well-being T2	4.42	.74	.13	.26***	.41***	.45***	-	
6. Self-rated performance T2	3.68	0.46	.02	.02	.26***	.32***	.43	-
7. Individual Essay mark T2	63.55	12.28	.03	.01	.01	.03	09	.25***

Note. *p<.05; **p<0.01; *** p<0.001 (2-tailed); GILT = General ILT; RILT = Recognised ILT; T1 = Time 1; T2 = Time 2

Following the same procedure described for the cross-sectional analysis, a structural equation model was constructed with a latent general/recognised ILT congruence factor as a predictor. The mediating variable was again LMX, with the difference that it was measured at Time 2, that is four months after the ILT data was collected. The outcome measures were the same as for the cross-sectional analysis (task satisfaction, self-rated performance, well-being), again measured at Time 2. It was found that the model fits the data very well with all fit indices falling in acceptable ranges ($\chi^2(59, N = 232) = 142.30$, $p < .001$; $\chi^2/df = 2.39$; CFI = .98; NNFI = .97; SRMR = .06; and RMSEA = .08). Table 6.12 shows the comparison of the hypothesised model to other plausible alternative models.

Table 6.12: Fit indices for nested model comparisons with general/recognised ILT predictors (N=232)

Model	χ^2	df	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	142.30***	59	**2.39**	-	-	**.98**	**.97**	**.06**	**.08**
Alternative models									
Model 2	148.16***	51	**2.90**	5.86	8	**.97**	**.96**	**.05**	**.09**
Model 3	185.54***	55	**3.37**	43.24***	4	**.95**	**.97**	**.07**	**.10**
Model 4	132.51***	45	**2.94**	9.80	14	**.97**	**.96**	**.05**	**.09**
Model 5	245.88***	54	**4.55**	103.58***	5	**.93**	**.91**	.15	.13

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 has again ILT congruence and level as predictors, LMX at Time 2 as the mediator, and task satisfaction, well-being, self-rated performance and individual essay mark as outcomes in time 2, with the addition of direct paths between the congruence and level factors, and outcomes. An overview of the fit indices for Model 2 indicates that this as well is a plausible model ($\chi^2(51, N = 232) = 148.16$, $p < .001$; $\chi^2/df = 2.90$; CFI = .97; NNFI = .96; SRMR = .05; and RMSEA = .09), and the non-significant $\Delta\chi^2$ signifies that there the Model 2 is not significantly different to the hypothesised model ($\Delta\chi^2 = 5.86$, $\Delta df = 8$, n.s.). Nevertheless, there is clear evidence that the hypothesised model is more plausible. Particularly, the fit indices are marginally poorer for Model 2 as compared to Model 1 apart from apart from CFI which indicates a slightly better fit for Model 2, and an inspection of the

direct paths between the ILT congruence and level factors, and the outcomes are not statistically significant.

Model 3 tests whether the data is better represented by direct links between ILT congruence and level, and outcomes, considering LMX at time two as another outcome of the congruence, rather than a mediator. The model fits the data well with fit indices of $\chi^2(55, N = 232) = 185.54$, $p < .001$, $\chi^2/df = 3.37$; CFI = .95; NNFI = .97, SRMR = .07, and RMSEA = .10. The significant χ^2 difference indicates that Model 3 is significantly different than the hypothesised model ($\Delta\chi^2 = 43.24$, $\Delta df = 4$, $p < .001$), and inspection is the fit indices reveals that the hypothesised model has a better fit to the data than Model 3.

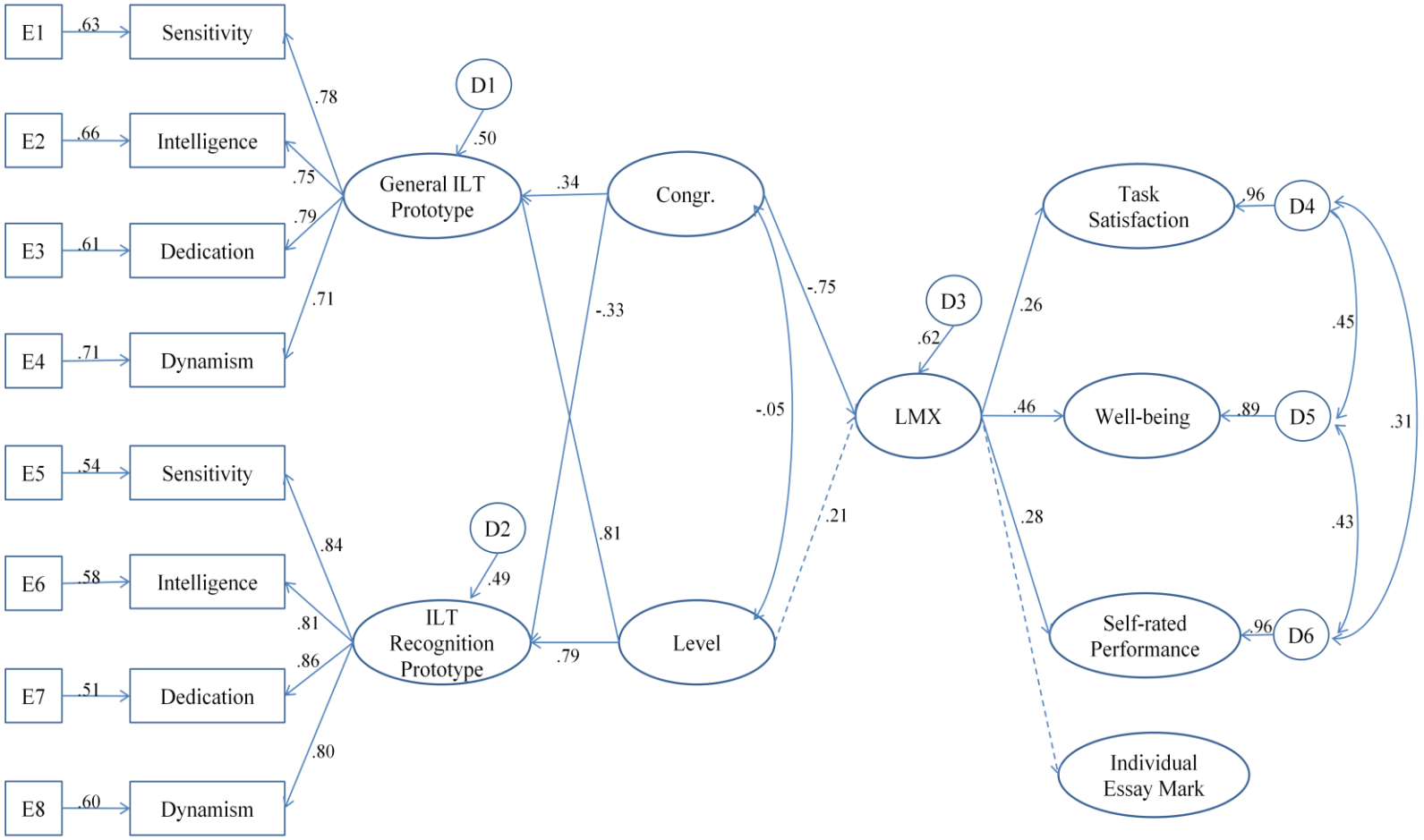
Model 4 is structured in such a way that all paths to LMX are restricted to zero; that is, it assumes that LMX is not correlated to any of the other variables in the model. It therefore estimates the relationship of ILT congruence and level to the outcomes, without considering the effect of LMX. The model fits the data well with fit indices of $\chi^2(45, N = 232) = 132.51$, $p < .001$; $\chi^2/df = 2.94$; CFI = .97; NNFI = .96; SRMR = .05; and RMSEA = .09. This model is not significantly different to the hypothesised model ($\Delta\chi^2 = 9.80$, $\Delta df = 14$, n.s.), and the model's fit indices are comparable to those of the hypothesised model. This shows that if LMX is not taken into account it is possible to detect direct effects between ILT congruence and outcomes. Nevertheless, inspection of the paths between ILT congruence and outcomes indicates that the relationships are stronger and more significant overall when LMX is taken into account as a mediator.

Finally, Model 5 is the null or independent model; that is, assumes that there are no relationships among the factors in the model. As expected, this model does not fit the data well, with several fit indices falling outside the acceptable ranges $\chi^2(54, N = 232) = 245.88$, $p < .001$, $\chi^2/df = 3.37$; CFI = .93, NNFI = .91, SRMR = .15, and RMSEA = .13). These are evidently poorer indicators of model fit as compared to the hypothesised model, and the χ^2 difference shows that the two models are significantly different ($\Delta\chi^2 = 103.58$, $\Delta df = 5$, $p < .001$).

Figure 6.08 shows the path coefficients for the hypothesised model of the error and disturbance terms for all the latent factors as well as for the hypothesised paths. The pattern of findings from this model is in line with the findings of Study 1 and of the cross-sectional part in the present study. In addition, it provides evidence of the causal links in the model since the outcome data was collected several months after the general and recognised ILTs were measured.

As expected the ILT congruence has a negative link to LMX (-.75, $p < .05$), indicating that high incongruence or difference between the followers' leadership prototype schemas and the recognition of these in their leader is associated with poorer quality relationships with the leader several months later. Expressed differently, this finding shows that high recognition of ideal prototypical traits in the leader by the follower is associated with better quality relationships in the future. This in turn is linked to positive work-related reactions; namely higher task satisfaction (.26, $p < .05$), higher reported well-being (.46, $p < .05$), and higher self-rated performance (.28, $p < .05$). No significant relationship is found among LMX and individual performance, which is not a surprising finding considering the nature of the task used as an indicator of performance. The individual essay that the students submitted at the end of the academic year was an academic essay of individuals' reflection on the module and the group-work, and was not in linked to leadership and group factors. Finally, the path coefficient between the ILT level factor and LMX is as well not significant in this model. This shows that the actual mean level of the ILT and ILT recognition ratings does not have a significant effect on LMX, signifying that ILTs play an important role as a benchmark for leader evaluation.

Figure 6.08: Individual level maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. Dashed paths are non-significant. All other factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(59, N = 232) = 142.30$, $p < .05$; $\chi^2/df = 2.39$; CFI = .98; NNFI = .97; SRMR = .06; RMSEA = .08

Longitudinal group level of analysis

In order to investigate longitudinally the applicability of the hypothesised model at the group level it is necessary to aggregate the variables of interest that were measured individually to the group level. To this end, $r_{WG(J)}$, $ICC_{1,}$ and ICC_2 were computed as indicators of within-group agreement and between-group differentiation before using the group means in the analysis. This was done here for the variables measured in Time 2 only, since the group-level cross-sectional analysis addressed the same issues for the Time 1 data. Table 6.13 shows the values of these indicators. The pattern of within-group agreement and between-group differentiation is similar to that of the Time 1. Particularly, the $r_{WG(J)}$ values show that there is sufficient within-group agreement to justify aggregation of the variables. This is confirmed by the ICC_1 values that show sufficient between-group differentiation. The ICC_2 do not provide evidence of sufficient differentiation for all constructs. Considering all indicators it is deemed that there is sufficient evidence to justify using group means in the group-level analysis.

Table 6.13: $r_{WG(J)}$, ICC_1, and ICC_2 for group-level aggregation

		ICC$_1$				
	$r_{WG(J)}$	ICC$_1$	*F*	*Df*	*p*	ICC$_2$
LMX T2	**1.00**	**.42**	2.74	318	.000	**.64**
Conflict T2	**1.25**	**.20**	1.60	313	.002	.37
TMX T2	**.90**	**.20**	1.54	310	.004	.35
Group Satisfaction T2	**.95**	**.38**	2.46	312	.000	**.60**
Team Realness T2	**1.02**	**.36**	2.32	304	.000	.58

Note. Boldface values fall within acceptable rule of thumb ranges

The means, standard deviations and intercorrelations of the key variables in the longitudinal group-level analysis are presented on Table 6.14.

Table 6.14: Means, standard deviations and intercorrelations among the study's main variables (N = 78)

Variables	M	SD	1	2	3	4	3	5	6	7	8	9	10
1. GILT prototype T1	7.68	.99	-										
2. RILT prototype T1	6.81	1.35	.71***	-									
3. SD_g GILT	1.05	.51	-.80***	-.62***	-								
4. SD_g RILT	1.17	.50	-.40***	-.50***	.36***	-							
5. LMX T2	3.67	.68	.02	.40***	-.10	-.23*	-						
6. TMX T2	3.24	.58	.06	.33**	-.13	-.23*	.24*	-					
7. Conflict T2	2.10	.72	-.22*	-.36**	.07	.19	-.16	-.06	-				
8. Group satisfaction T2	3.88	.82	.10	.35**	-.14	-.20	.53**	.42***	.-.50***	-			
9. Team realness T2	5.18	.89	.10	.44***	-.08	-.18	.62**	.52***	-.43***	.78***	-		
10. Group Report mark T2	62.53	11.87	.10	.24*	-.16	-.03	.32**	.16	-.15	.29**	.29**	-	
11. Simulation performance mark T2	72.02	18.50	.01	.12	-.08	.06	.14	.06	-.14	.18	.13	.43***	-
12. Share Price	7.90	8.32	-.07	.01	.01	.14	.08	.08	-.14	.19	.22*	.38**	.67***

Note. *p<.05; **p<0.01; *** p<0.001 (2-tailed); GILT = General ILT; RILT = Recognised ILT; T1 = Time 1; T2 = Time 2; SD_g = group standard deviation

Similar to the cross-sectional group-level analysis general/recognised ILT congruence and level are modelled as the predictors in the hypothesised model, with LMX at Time 2 fully mediating their relationship to group-level outcomes. These are TMX, conflict, group satisfaction, team realness, group report mark, simulation performance mark and company share price at the end of the third virtual year of operations. The group report mark and simulation performance mark were cantered around to tutor mean in order to take into account the tutor effect on the marks. Table 6.15 shows a comparison of this model to other plausible alternative models. The hypothesised model fits the data very well, with a non-significant χ^2 indicating excellent overall fit. The fit indices all fall well within the acceptable ranges ($\chi^2(95, N = 78) = 117.29$ n.s., $\chi^2/df = 1.23$; CFI = .96; NNFI = .95, SRMR = .09 and RMSEA = .05).

Table 6.15: Fit indices for nested model comparisons with general/recognised ILT predictors (N=78)

Model	χ^2	df	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	117.29	95	**1.23**	-	-	**.96**	**.95**	**.09**	**.05**
Alternative models									
Model 2	122.54**	81	**1.51**	5.25	14	**.98**	**.97**	**.05**	**.08**
Model 3	166.59***	88	**1.98**	49.30***	7	**.96**	**.94**	**.07**	.11
Model 4	190.41***	90	**2.12**	73.12***	5	**.95**	**.93**	.14	.12
Model 5	215.44***	68	**3.17**	98.15***	27	.89	.87	.24	.17

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model, no paths between latent factors and all variances restricted to 1.

Model 2 differs from Model 1 in that direct paths are added from the predictors (ILT congruence and level) to the outcome, testing the relationships as partially mediated by LMX. This model as well fits the data adequately ($\chi^2(81, N = 78) = 122.54$, $p < .01$, $\chi^2/df = 1.51$; CFI = .98; NNFI = .97, SRMR = .05 and RMSEA = .08), though not as well as the hypothesised model, since it has a higher and statistically significant χ^2. The non-significant difference in χ^2 between the two models signifies that the two models are not statistically different ($\Delta\chi^2 = 5.25$, $\Delta df = 14$ n.s.). Nevertheless, as found in previous analyses, the coefficients of the direct paths from the congruence and level latent factors to the outcomes

were not significant, leading to the rejection of the partially mediated model as compared to the hypothesised fully mediated one.

Model 3 regards LMX at Time 2 as another outcome of ILT level and congruence, rather than a mediator. This model as well fits the data adequately with the majority of fit indices falling in the acceptable ranges ($\chi^2(88, N = 78) = 166.59$, $p < .001$, $\chi^2/df = 1.98$; CFI = .96; NNFI = .94, SRMR = .07 and RMSEA = .11). Nevertheless, these are markedly poorer than the fit indices of the hypothesised model and the two models are significantly different ($\Delta\chi^2 = 49.30$, $\Delta df = 7$, $p < .001$). Therefore, Model 3 is rejected as a compared to the hypothesised model.

In Model 4 all paths to LMX are restricted to zero, thus imposing a constraint that LMX is not related to any of the studies variables. The fit of the model is not easily evaluated with several of the fit indices falling within acceptable range and SRMR and RMSEA falling outside desirable values ($\chi^2(90, N = 78) = 190.41$, $p < .001$, $\chi^2/df = 2.12$; CFI = .95; NNFI = .93, SRMR = .14 and RMSEA = .12). Additionally, the model is significantly poorer than the hypothesised model with $\Delta\chi^2 = 73.12$, $\Delta df = 5$, $p < .001$.

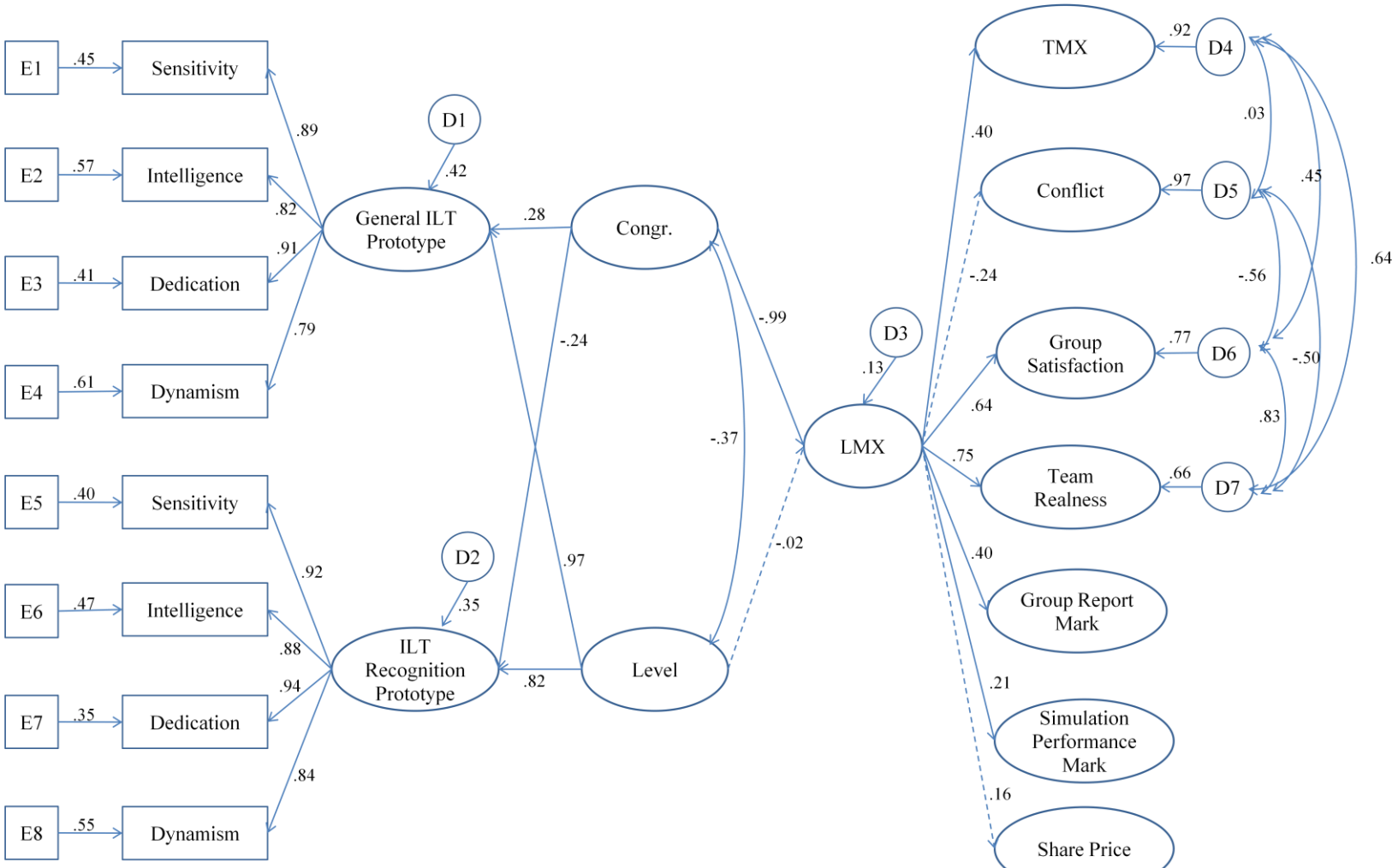
Finally, Model 5 is the independence model, where all the latent factors in the models are considered as uncorrelated. Of the model's fit indices, only χ^2/df falls within the acceptable range, with all other fit indices indicating a poor overall model fit ($\chi^2(68, N = 78) = 215.44$, $p < .001$, $\chi^2/df = 3.17$; CFI = .89; NNFI = .87, SRMR = .24 and RMSEA = .17). As expected, this model is significantly different than the hypothesised model ($\Delta\chi^2 = 98.15$, $\Delta df = 27$, $p < .001$), and with poorer fit indices it is rejected as a plausible alternative model.

Figure 6.09 shows the hypothesised model's path coefficients, with ILT congruence components measured at Time 1, and LMX and outcomes measured at Time 2. The direction and magnitude of the relationships in the model are comparable to those of Study 1 and of the cross-sectional and individual-level longitudinal analyses of the present study. Particularly the average ILT congruence in the groups at Time 1 is significantly related to LMX at Time 2 (-.99, $p < .05$), with higher incongruence leading to poorer leader-follower relationships. Again, the findings show that the mean level of general ILT ratings and ILT recognition do not have a significant effect on the quality of the leader-follower relationship (-.02, n.s.). The mean quality of the leader-follower relationships in a group in turn affects important group factors, follower reactions to the group work and objective group performance outcomes. Of the group factors, LMX significantly affects the quality of the relationships among the team members (TMX, .40, $p < .05$) and the extent to which the team meets the criteria that distinguish real from pseudo teams (team realness, .75, $p < .05$). LMX does not have a

significant effect on intragroup conflict in the present study (-.24, n.s.). Additionally, higher LMX in a team is linked to higher reports of group satisfaction among the team members.

An important finding in this model is that ILT congruence is linked to objectively measured group performance outcomes, through LMX. That is, when in a group a leader's traits fit closely the followers' prototypes of ideal leaders, better quality relationships will develop among leaders and followers leading to improved overall team performance. The outcome measures in the present study that are affected my LMX are teams final mark on their group reports (.40, $p < .05$) which accounted for 15% of their mark on the module, and their mark on their performance on the business simulation (.21, $p < .05$), as assigned by their tutor. The latter accounts for 10% of the students' final mark on the module and is assigned on the basis of several metrics from the simulation (e.g., share price, employee morale, product quality) as well as comparatively to the performance of other teams in the same tutorial. No significant effects are found in the relationship between LMX and the final share price of the groups' companies as estimated by the financial models incorporated in the simulation software. It must be noted that though the share price values are not affected by bias associated with a rater of team performance, there are still some weaknesses in this measure. For example if a company's initial strategy proves non-competitive in the first few months of its operations it is likely that Board of Directors (team) will make major changes to their strategy. Though these might be high quality decisions that have the potential of turning the company around, the effects of these decisions will not become evident in the three years that the simulation runs. That is, after an initial setback it takes a long time for companies to recover even if it is followed by effective leadership, good team climate and high quality decisions being made.

Figure 6.09: Group level maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. Dashed paths are non-significant. All other factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(95, N = 78) = 117.29$, $p > .05$; $\chi^2/df = 1.23$; CFI = .96; NNFI = .95; SRMR = .09; RMSEA = .05

Summary of findings

The first objective of the second study was to further clarify the appropriate level of leadership categorisation when evaluating the followers' judgment of their leaders with reference to followers' ILTs. The second objective was to investigate the causal links in the hypothesised model using a longitudinal study design and to extend the model to include objective performance measures as outcomes of ILT congruence, mediated by LMX. These were examined at both the individual and the group level, since leadership does have an effect on individuals' reactions but is rarely merely a dyadic process; it often involves leading groups of individuals who interact and often have shared performance objectives. The analytical approach taken in addressing the above issues was SEM. The ILT congruence was constructed in SEM using the Latent Congruence Modelling approach proposed by Cheung (2009).

The data collected during the first wave of the study was used in addressing the first objective. The theoretical models that were tested suggested that ILT congruence would have an effect on outcomes, and these would be mediated by LMX. At the individual level of analysis the outcomes that were considered were task satisfaction, well-being and self-rated performance, while at the group level these were intragroup conflict, TMX, group satisfaction, and group performance (presentation mark and business plan mark). The proposed models were tested separately with General/Recognised and with Job-specific/Recognised ILT congruence as predictors. The findings show that congruence at both levels of categorisation is linked to outcomes and these relationships are mediated by LMX, thus confirming both hypothesised models. A comparison of the two models confirmed the findings of the first study; that is, that the General/Recognised ILT congruence produces an overall better fitting model to the data as compared to Job-specific/Recognised ILT congruence, and is therefore the appropriate level of leadership categorisation to consider when measuring ILT congruence. Followers rely more on the general implicit schemas of effective leadership, rather than context-specific schemas. The same conclusion can be reached from both the individual and the group level analysis, since in both cases the General/Recognised congruence model had a better fit to the data. Additionally, the cross-sectional analysis revealed that LMX fully mediates the relationship between ILT congruence and outcomes (both for General/Recognised and Job-specific/Recognised ILT congruence). At the individual level significant effects were found on individuals' task satisfaction, well-being and self-rated performance, while at the group level significant mediated relationships were found for intragroup conflict, TMX, and group satisfaction. The cross-sectional analysis in the present

study did not provide support for the argument that ILT congruence has an effect on performance outcomes.

Since, Study 1 and the cross-sectional analysis in the present study conclusively showed that it is more appropriate to conceptualise and measure ILT congruence at the basic (i.e. general) level of categorisation, the longitudinal analysis was only concerned with the General/Recognised ILT congruence as the predictor. The mediator and self-report outcomes were measured four months after the ILT and ILT recognition were measured in order to investigate the possible causal effect of ILT congruence on outcomes. Objective performance measures were taken some weeks after the second wave of data collection.

At the individual level of analysis it was found that ILT congruence indeed predicts outcomes, mediated by LMX. In addition to the self-report outcomes which were the same as in the cross-sectional part of the study, a measure of individual performance was taken. The analysis did not show a significant effect of ILT congruence and LMX on the objective individual performance outcomes. This is not a surprising finding though, as the task that the students were assessed on was not related to their work in their teams, therefore not influenced by the leader and the leadership process.

At the group level of analysis the results showed the ILT congruence predicts TMX, group satisfaction and team realness, mediated by LMX. These effects were not found in the case of intragroup conflict, which is contradictory to the findings of the cross-sectional analysis. Additionally, the findings revealed significant effects of ILT congruence on two out of three objective group performance outcomes, mediated by LMX. This finding provides support for the argument the effect of the leader's match to the follower's schema goes beyond mere psychological reaction to affect objective performance.

Overall, the present study provided further support for the finding that followers rely more on their basic leadership categories in evaluating their leader's effectiveness, than on subordinate categories. It also confirmed that the hypothesised model of ILT congruence predicting outcomes mediated by LMX, at both the individual and group levels, including objective group performance outcomes. Some evidence was found for the causal effect of the proposed relationships, with the hypothesised model being confirmed using longitudinal study design.

CHAPTER 7 – STUDY 3: ILT LEVEL OF CATEGORISATION IN ORGANISATIONAL SETTINGS

The third study aims to replicate the findings of the previous two studies regarding the mediating role of LMX in the relationship between ILT congruence and outcomes. The purpose of this replication is to test the hypothesised theoretical model in an organisational context, and thus provide further support for the generalisability of the findings of the previous two studies. The samples of the previous studies were both student samples, which could be potentially problematic. For instance, the average age of the participants and their potentially limited experience in organisational settings could have resulted in ILTs content and the effects of the relationships under study that differ from these found in the general working population. The particular strength of present study are therefore that (1) it has a sample of working individuals, and (2) it is possible to investigate outcomes that are specific to organisational settings, namely organisational commitment. In the present study ILTs are measured at the general level of categorisation and as recognised in the immediate supervisor, since the previous studies showed that general/recognised ILT congruence is a better predictor of leader-follower relationship quality and follower-related outcomes than the job-specific/recognised ILT congruence. The outcomes that are investigated in the present study are followers' self-rated performance, intragroup conflict, well-being and organisational commitment. It must be noted that the research setting in the third study is Pakistan, which is a culture different than the one of the first two studies. As discussed in Chapter 2, previous research has shown that some ILTs are culture-specific, while others are universal (House et al., 2004). Although the present study does evaluate the appropriateness of the measurement tools in the context of the study (confirmatory factor analysis, see method section below), the results still need to be interpreted with caution, as a full validation of the scale in the Pakistani culture was not conducted as part of this study.

Method

Sample and Procedure

The data for the present study were collected from 10 organisations in Pakistan as part of a postgraduate master project. The data was collected using convenience sampling and the participating organisations cover a wide range of sectors and contexts. Particularly, they include a multinational oil field service provider, a project solutions provider, a logistics and distribution organisation, two large multinational telecommunications organisations, a

multinational bank, and a local college. The number of respondents per organisation varied from 6 to 30, adding to a total of 178 individual study participants. Of the respondents 25.7% were female and 23.3% had a female immediate manager at the time of the data collection. The average age of the study's participants was 29.49 years (*SD* = 7.94 years), with an average tenure of 3.90 years (*SD* = 3.86 years) and they worked an average of 46.84 hours per week (*SD* = 11.36 hours). The average tenure of the participants working under their current immediate manager was 2.24 years (*SD* = 1.39 years). In terms of professional role 3.4% reported they were doing operations/assembly work, 14.4% trade/technical, 8.6% clerical/secretarial, 10.9% sales, 28.2% professional work, 5.7% were in a supervisory role, 2.3% were in a managerial or senior administrative position, while 26.4% reported they were in other areas of work (e.g., dental assistant, teacher, nursing). A majority of 47.1% of the participants had a bachelors degree, followed by 26.4% who completed postgraduate studies, 11.5% with O-levels, 9.2% A-levels, 2.3% have had trade training or diploma, and 3.4% a different level of education. Finally, the participants were asked to indicate their employment status, with 52.9% reported they were in a permanent position, 41.4% were working on a contract basis, 3.4% were working on a casual basis, and 2.3% were in their probation period. The cover letter for participants, as well as the sections of the questionnaire that correspond to the present study, are presented in Appendix 7. All research materials were in the English language.

Measures

General ILTs: In the present study ILTs were measured at the basic level of categorisation using the same 21-item scale as in the previous two studies (Epitropaki & Martin, 2004). Respondents were asked to rate and Ideal Manager Generally on the provided traits, with responses ranging from 1 = *not at all characteristic* to 9 = *very characteristic*. Since the present study aims at testing the findings of the previous studies on an organisational sample it was important to maintain consistency in the way ILTs are measured and analysed. For this reason, and since the analysis in the previous studies indicated that antiprototypical leader traits do not generally comply with the proposed factor structure or hypothesised model, only prototypical traits were included as indicators of ILTs. The reliability of the *sensitivity* dimension was α = .83, *intelligence* α = .43, *dedication* α = .80 and *dynamism* α = .60. Inspection of the item-level descriptive indicated that one particular item, 'clever', accounted for the low reliability of the intelligence scale. This could be due to the culturally-contingent negative connotations of the word 'clever' in Pakistan. This item was therefore omitted from

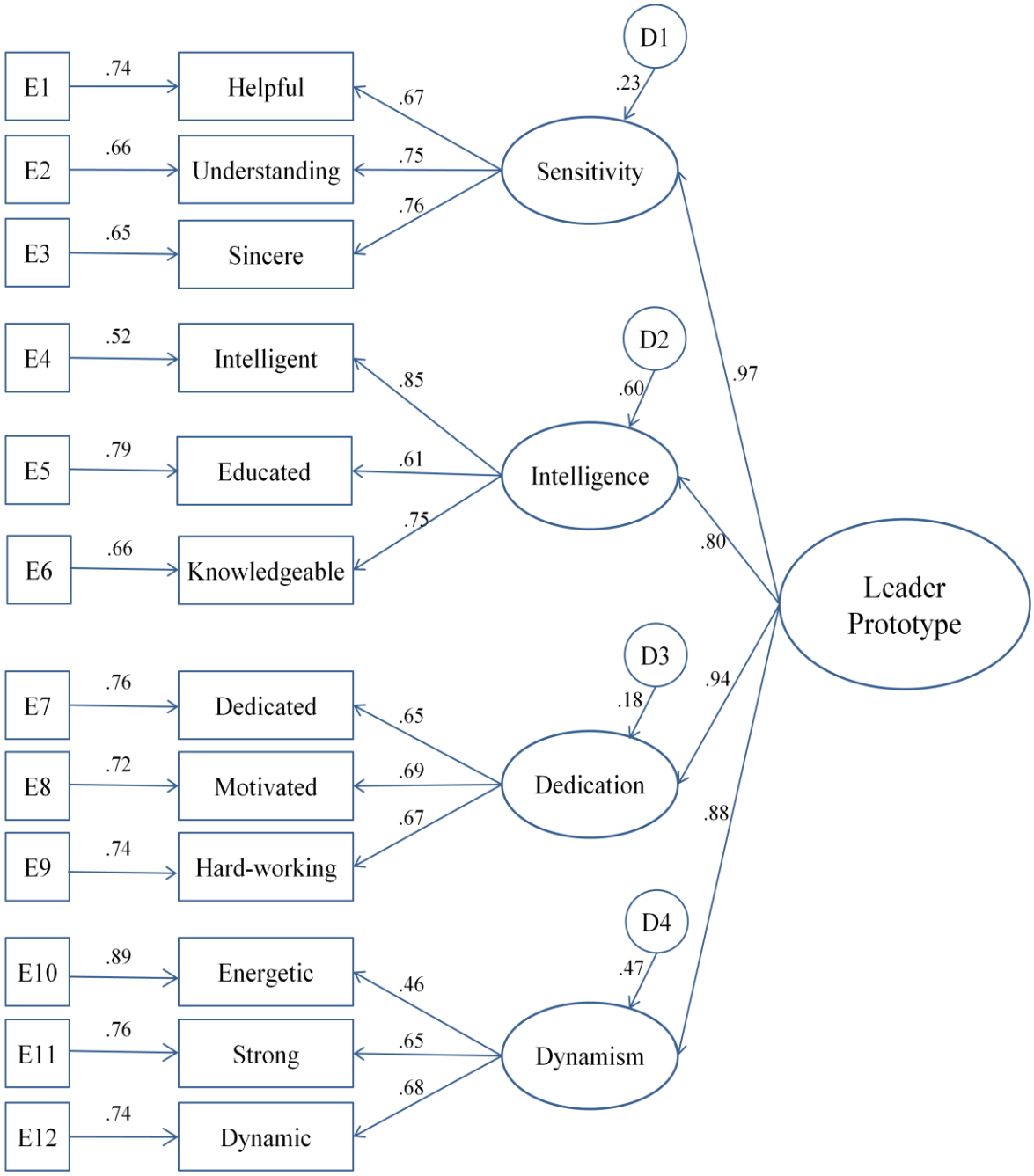
the intelligence subscale, resulting in a reliability of α = .71. The reliability of all items comprising the leader prototype scale (12 items) was α = .87.

In order to confirm that the factor structure of the items in the present study is the same as that suggested by Epitropaki and Martin (2004) and as found in the previous thesis' studies, two CFAs were conducted. The first CFA tested the first-order factor structure with the respective items loading onto the four ILT prototype dimensions. The results indicate that the first-order factor structure fits the data well, with fit indices of χ^2(48, N = 153) = 101.31 n.s.; χ^2/df = 2.11; CFI = .94; NNFI = .91; SRMR = .08; RMSEA = .08. The second CFA tested the second-order factor structure, with the four first-order factors loading onto one latent factor, the leader prototype. Again, the results showed that the one-factor second-order structure fits the data well, with fit indices of χ^2(50, N = 153) = 102.66 n.s.; χ^2/df = 2.05; CFI = .93; NNFI = .91; SRMR = .08; RMSEA = .09. The individual factor loadings of the second-order CFA are presented in Figure 7.01. Having confirmed the factor structure of the General ILTs, the mean score on each dimension was computed in order to reduce the number of estimated paths in the hypothesised model, and the four dimensions were used as indicators of general ILT prototype in further analysis.

Recognised ILTs: As in the first two studies, in the present study recognised ILTs were measured with the items as the General ILTs (Epitropaki & Martin, 2004). The respondents were asked to rate their current manager on the provided traits, using a response scale ranging from 1 to 9, with 1 = *not at all characteristic* and 9 = *very characteristic*. The reliability of the *sensitivity* dimension was α = .78, *intelligence* α = .67, *dedication* α = .80 and *dynamism* α = .56. Again, inspection of the item-level descriptive statistics of reliability indicated that omitting the item 'Clever' results in improved scale reliability of α = .85. This item was therefore not included in the scale and further analysis. The overall leader prototype scale (12 items) had a reliability of α = .91.

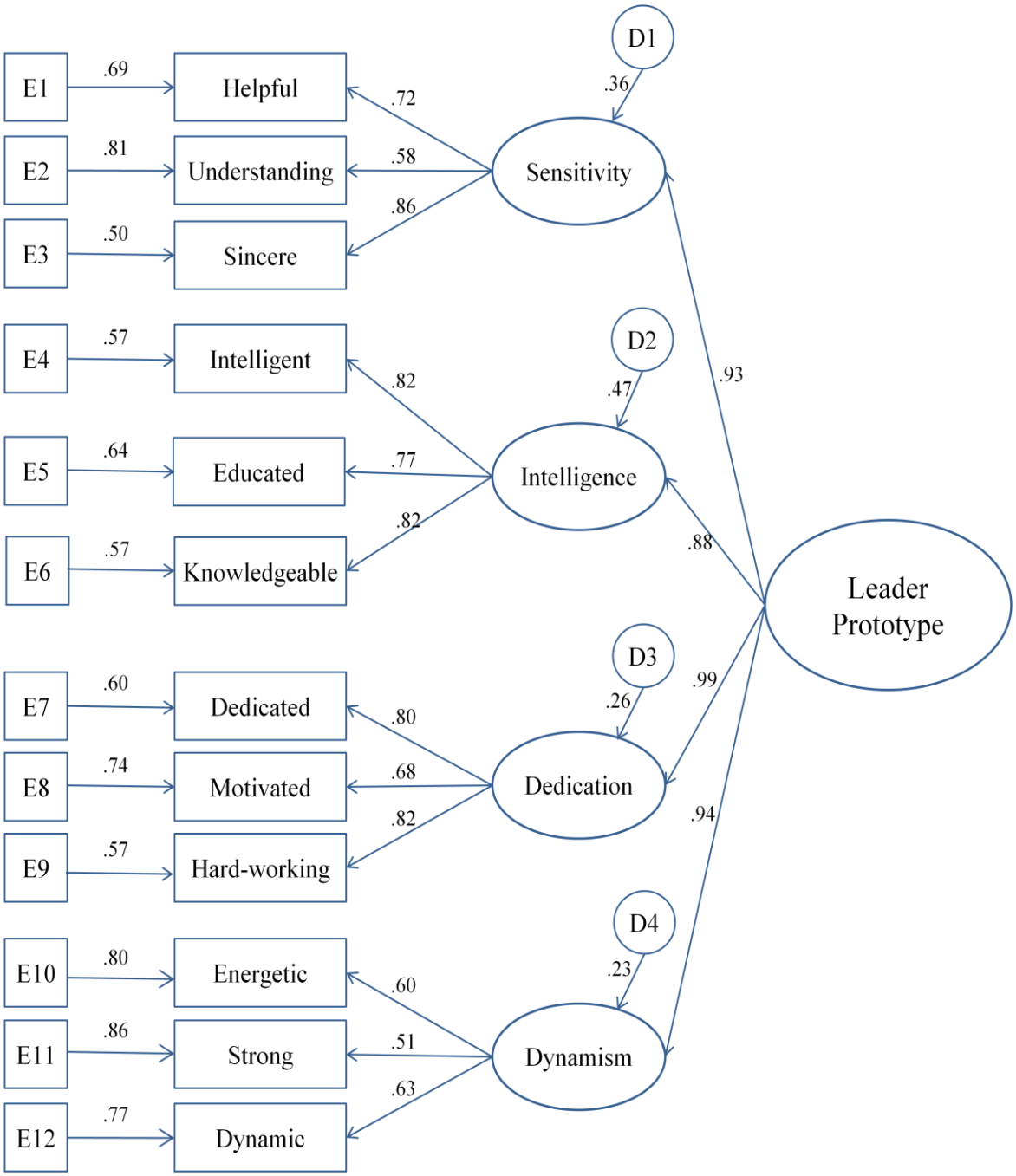
Factor analyses confirmed that the hypothesised factors fit the data well in both the first-order (χ^2(48, N = 153) = 112.06 n.s.; χ^2/df = 2.33; CFI = .97; NNFI = .95; SRMR = .06; RMSEA = .09) and second-order (χ^2(50, N = 153) = 150.21 n.s.; χ^2/df = 3.00; CFI = .93; NNFI = .91; SRMR = .08; RMSEA = .11) factor analysis. The individual factor loadings of the second-order CFA are presented in Figure 7.02. As with the general ILTs measure

Figure 7.01: Second-order factor structure for the General LTs scale (standardised solution)



Note. All factor loadings and the correlations coefficient between prototype and antiprototype are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices $\chi^2(50, N = 153) = 102.66$ n.s.; $\chi^2/df = 2.05$; CFI = .93; NNFI = .91; SRMR = .08; RMSEA = .09

Figure 7.02: Second-order factor structure for the Recognised LTs scale (standardised solution)



Note. All factor loadings and the correlations coefficient between prototype and antiprototype are significant at $p < .05$ level. E = error term for observed variables. D = disturbance term for latent variables. Fit indices $\chi^2(50, N = 153) = 150.21$ n.s.; $\chi^2/df = 3.00$; CFI = .93; NNFI = .91; SRMR = .08; RMSEA = .11

LMX: Consistent with the previous studies, LMX was measured with the LMX-7 scale (Graen & Uhl-Bien, 1995), consisting of seven items with responses ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The scale reliability is α = .94.

Intragroup conflict: Intragroup conflict was measured using Jehn's (1995) 8-item scale, as in the second study. The scale is designed to measure both task and relationship conflict and the responses range from 1 = *never* to 5 = *a lot*. The overall scale reliability in the present sample is α = .93.

Well-being: As in the previous studies, well-being was assessed using the 12-item scale developed by Warr (1990). Six items measure positive and six items negative well-being, with responses ranging from 1 = *never* to 6 = *all of the time*. The scale was computed by reversing the scores on the negative items and has a reliability of α = .90

Self-rated Performance: Consistent with the previous studies, self-rated performance was measured on an 11-item scale (Viswesvaran, Schmidt, & Ones, 2005), with responses ranging 1 = *poor* to 5 = *excellent*. The scale reliability in the present sample is α = .93

Organisational Commitment: The 18-item scale developed by Cook and Wall (1980) was used to measure organisational commitment. Respondents were asked to rate the statements on a Likert type scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. A sample item from the scale reads "I feel as this organisation's problems are my own". Five of the items in the scale are worded negatively and the scores on these were reversed to produce a reliability of α = .93.

Results

Since the data in the present study come from ten different organisations it is important to establish whether there are significant differences in the responses of the participants from the different organisations. To that end, all key variables in the study were subject to analysis of variance (One-way ANOVA) in order to test whether the differences in the mean scores of participants in different organisations are statistically significantly different. Results indicate that for the majority of the key variables there are statistically significant differences; these are ideal leader sensitivity ($F(11, 149) = 2.36$, $p < .05$), ideal leader intelligence ($F(11, 149) = 2.82$, $p < .01$), ideal leader dedication ($F(11, 148) = 1.86$, $p < .05$), ideal leader dynamism ($F(11, 149) = 2.95$, $p < .01$), recognised leader sensitivity ($F(11, 144) = 2.07$, $p < .05$), recognised leader intelligence ($F(11, 144) = 2.76$, $p < .01$), recognised leader dedication ($F(11, 144) = 3.30$, $p < .001$), recognised leader dynamism ($F(11, 144) = 2.34$, $p < .01$), conflict ($F(11, 165) = 12.09$, $p < .001$), well-being ($F(11, 165) = 3.61$, $p < .001$), self-rated performance ($F(10, 156) = 2.07$, $p < .05$), and organisational commitment ($F(11, 165) = 2.16$, $p < .05$). The only variable for which there were non-significant differences in responses

among organisations is LMX ($F(11, 163) = .74$, $p > .05$). These findings indicate that generally it would be advisable to control for organisational membership in any further analysis. Nevertheless, since the method used for testing the hypothesised model is SEM, controlling for a categorical variable with ten different categories requires an exceptionally large sample and is not possible in the present study. Therefore, instead of controlling for organisational membership, the variables that exhibited significant differences in their means were centred around the company mean in order to take into account company membership in the analysis. Further, mean scores were tested using one-way ANOVA for all other categorical descriptive variables, namely respondents' gender, their supervisor's gender, professional role, level of education, and employment status. There were no significant differences in responses based on these distinctions on any of the study's variables, it is therefore not necessary to control for these in the analyses or center the data to take into account their effect.

Table 7.01 shows the means, standard deviations and Pearson correlation coefficients among the study's key variables, as well as the sample descriptive variables that are continuous. The relationships between the study's main variables, and the demographic and descriptive variables (age, organisational tenure, tenure with supervisor, and hours worked per week) are not significant, there are therefore not controlled for in further analysis that deals with testing the hypothesised model.

Table 7.01: Means, standard deviations and intercorrelations among the study's main variables (N = 178)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age (years)	29.49	.94	-									
2. Org. Tenure (months)	46.79	46.37	.66***	-								
3. Tenure with supervisor (months)	23.89	16.69	.41***	.56***	-							
4. Hours worked per week	46.84	11.36	.10	.23**	-.06	-						
5. GILT prototype	7.82	.92	-.01	.01	.01	.01	-					
6. RILT prototype	6.93	1.10	.01	.10	.11	.06	.21**	-				
7. LMX	3.53	.82	-.06	.01	.07	-.05	.01	.45***	-			
8. Conflict	2.24	.84	.01	-.06	-.13	-.09	-.09	-.17*	-.34***	-		
9. Self-rated perf.	3.78	.60	.03	.09	.07	.04	-.11	.28***	.45***	-.38***	-	
10. Well-being	3.57	.91	.01	.15	-.04	.09	-.11	.32***	.23**	-.21**	.52***	-
11. Org. commitment	4.51	1.18	-.01	.06	-.02	-.01	-.07	.32***	.43***	-.25**	.55***	.52***

Note. *p<.05; **p<0.01; *** p<0.001 (2-tailed); GILT = General ILT; RILT = Recognised ILT

The hypothesised model was tested using Structural Equation Modeling, following the same procedure as in the previous two studies. That is, the ILT congruence indicator was constructed on the basis of the Latent Congruence Model (Cheung, 2009) with the general ILT prototype and recognised ILT prototype latent factors loading onto two further latent factors, the congruence and level. The factor loadings onto the congruence latent factor are constrained to .50 and -.50, while loadings onto the level latent factor are constrained to 1 for both indicators. The remaining variables were constructed with a single indicator, the mean score of the individual items comprising each scale, in order to reduce the number of estimated paths in the model. In order to account for the measurement error of the single-indicator constructs the path from the latent construct to its indictor is restricted to the square root of the scale's reliability, while the error variance is restricted to one minus the scale reliability multiplied by the variance of the scale (e.g., Hair, Anderson, Tatham, & Black, 1998).

The hypothesised model therefore had the general/recognised ILT congruence and level latent factors as predictors of conflict, self-rated performance, well-being and organisational commitment, with LMX as the mediator. The method of model fit estimation used was the maximum likelihood robust, which produces the robust χ^2 statistic (S-B χ^2; Sattora & Bantler, 1994), and the robust standard errors (Bentler & Dijkstra, 1985), thus correcting for possible non-normality in the sample. The missing values in the data were also estimated using the maximum likelihood method, producing the Yuan-Bentler scaled test statistic (Yuan & Bentler, 1998), which is the equivalent of the S-B χ^2. The model overall fits the data reasonably well, with the majority of the fit indices falling within acceptable ranges, and only RMSEA marginally outside the recommended <.10 cut-off value ($\chi^2(56, N = 178) = 133.83$, $p < .001$; $\chi^2/df = 2.39$; CFI = .98; NNFI = .97; SRMR = .09 RMSEA = .10).

Table 7.02 shows the comparison of the hypothesised model to other alternative plausible models. Model 2 is a partial mediation model, with paths added from the congruence and level factors to the outcomes. Overall, the hypothesised model has a more parsimonious fit to the data as compared to the alternative Model 2 ($\chi^2(48, N = 178) = 152.94$, $p < .001$; $\chi^2/df = 3.19$; CFI = .98; NNFI = .97; SRMR = .07 RMSEA = .12), since Model 2 has a higher χ^2/df and RMSEA values. The non-significant Chi-square difference indicates that the two compared models are not significantly different ($\Delta\chi^2 = 11.11$, $\Delta df = 6$, $p > .05$). Finally, inspection of the factor loadings of the alternative model indicates that there are no significant direct relationships between ILT congruence and outcomes. Model 2 is therefore rejected as compared to Model 1.

Table 7.02: Fit indices for nested model comparisons with general/recognised ILT predictors (N=178)

Model	χ^2	*df*	χ^2/df	$\Delta\chi^2$	Δdf	CFI	NNFI	SRMR	RMSEA
Hypothesized model									
Model 1	133.83***	56	**2.39**	-	-	**.98**	**.97**	**.09**	.10
Alternative models									
Model 2	152.94***	48	**3.19**	11.11	8	**.98**	**.97**	**.07**	.12
Model 3	167.53***	52	**3.22**	33.7***	4	**.98**	**.97**	**.07**	.12
Model 4	210.19***	54	**3.89**	76.36***	2	**.97**	**.96**	.12	.14
Model 5	316.84***	68	**4.66**	183.01***	12	**.95**	**.94**	.20	.15

Note. *p<.05; **p<0.01; *** p<0.001 (1-tailed).
Boldface type indicates where the values fall within acceptable model fit ranges.
Model 1 = Fully mediated (hypothesised model). Model 2 = Partially mediated model. Model 3 = No mediation, LMX regarded as outcome. Model 4 = All paths to LMX restricted to zero. Model 5 = Null model.

Model 3 was not mediated by LMX, having only direct paths between congruence and level, and LMX, job satisfaction, well-being and self-rated performance. The model fit is comparable, though slightly worse than Model 2 ($\chi^2(52, N = 178) = 167.53$, $p < .001$; $\chi^2/df = 3.22$; CFI = .98; NNFI = .97; SRMR = .07; RMSEA = .112). The significant $\Delta\chi^2$ indicates that the model is significantly different to the hypothesised model ($\Delta\chi^2 = 33.7$, $\Delta df = 4$, $p < .001$), which comparatively fits has a better fit to the data than the alternative Model 3.

Model 4 restricted all paths to LMX to zero; that is, LMX was not predicted by the congruence and level factors. The model fit indices indicate that the goodness-of-fit for Model 4 is worse than that for the hypothesised model, with $\chi^2(54, N = 178) = 210.19$, $p < .001$; $\chi^2/df = 3.89$; CFI = .97; NNFI = .96; SRMR = .12; and RMSEA = .14. The SRMR and RMSEA indices are in fact well outside the acceptable range. The significant change in χ^2 as compared hypothesised model with provides further support for the hypothesised model ($\Delta\chi^2 = 76.36$, $\Delta df = 2$, $p < .001$), as it has an overall better fit to the data than Model 4.

Finally, Model 5 is the baseline model, in which there are no paths between the latent factors and all the variances are restricted to one. The model therefore assumes that all variables in the model are uncorrelated. As is evident from the fit indices, this model fits the data relatively poorly, with $\chi^2(68, N = 178) = 316.84$, $p < .001$; $\chi^2/df = 4.66$; CFI = .95; NNFI = .94; SRMR = .20; and RMSEA = .15. With most of the fit indices falling outside the acceptable

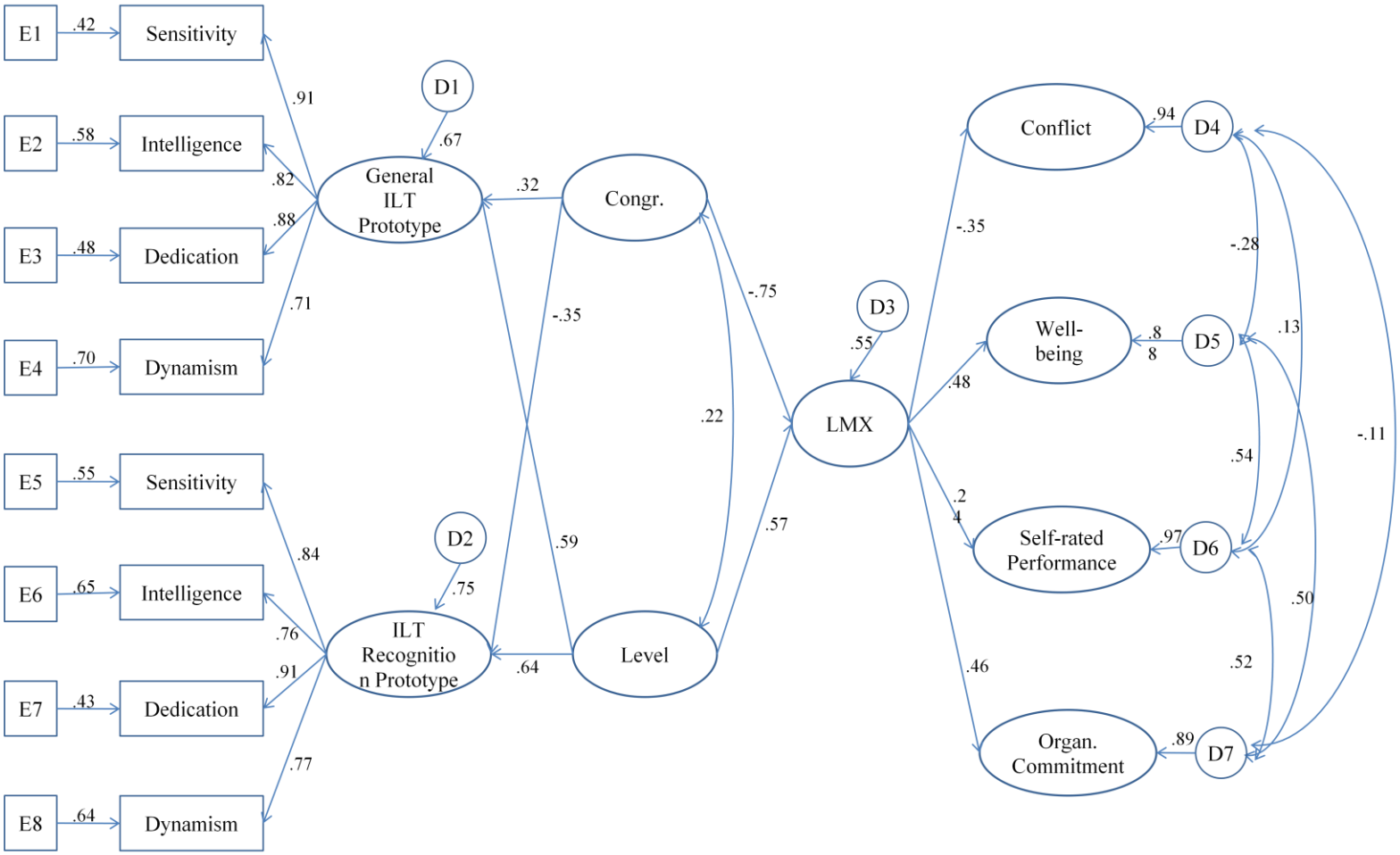
ranges and the change in χ^2 indicating that the hypothesised model fits the data better ($\Delta\chi^2$ = 183.01, Δdf = 12, p <.001) Model 5 is rejected.

Figure 7.03 shows the factor loadings of the hypothesised model. There is a negative relationship between ILT congruence and LMX (-.75, p < .05), indicating that higher incongruence between general ILTs and those recognised in one's immediate manager is linked to poorer relationship quality among the two. When there is congruence among one's ideal leadership expectations and their experience with their manager, better quality relationships develop between the two resulting in lower levels of reported conflict within the follower's work team (-.35, p < .05), higher follower well-being (.48, p < .05), higher self-rated performance (.24, p < .05), and higher organisational commitment (.46, p < .05).

Summary of findings

The pattern and direction of the relationships in the present study are the same as those found in the two previous studies. The general hypothesised model that ILT congruence predicts outcomes, mediated by LMX is therefore replicated here on an organisational sample. Apart from replicating the relationships between ILT congruence, LMX, conflict, well-being and self-rated performance, the third study looked at a further outcome – organisational commitment. It was found that this as well is predicted by the congruence between followers' basic-level ILTs and ILT recognition in their immediate manager, mediated by LMX.

Figure 7.03: Maximum likelihood parameter estimates for the hypothesised General/Recognised ILT model (standardised solution)



Note. All factor loadings and correlations are significant at $p < .05$ level. LMX = Leader-Member Exchange; E = error term for observed variables. D = disturbance term for latent variables. Model fit: $\chi^2(56, N = 178) = 133.83$, $p < .001$; $\chi^2/df = 2.39$; CFI = .98; NNFI = .97; SRMR = .09 RMSEA = .10

CHAPTER 8: GENERAL DISCUSSION AND CONCLUSION

In line with the contemporary trends in leadership research, the present thesis moves the focus from leader-centric to a more holistic and inclusive framework, by taking into account the perceptions of the followers as a contributing factor to successful leadership (e.g., Lord & Maher, 1991; Meindl, 1998). The main objective of this thesis is to examine the followers' cognitive processes that are responsible for the recognition of successful leadership and that guide the attitudes and behaviour of followers. In order to achieve this, Implicit Leadership Theories (ILTs) were examined in relation to the leadership process. ILTs are the mental schemas used in processing information regarding all types of leaders and, in this case, those in an organisational context (Epitropaki & Martin, 2005). These were assessed not merely as dormant perceptions of the followers, but as active benchmarks used by followers in evaluating their managers, recognising leadership, and responding to it. The dynamic nature of the two constructs under study, ILTs (the profile of traits in an 'ideal' leader) and ILT recognition (the extent to which the actual leader possesses those traits), is taken into account in the design of the research programme, with an investigation of the prototype matching processes at both the basic and the subordinate levels of categorisation. Prototype matching at the basic level of categorisation is operationalised as the congruence (or agreement) in the general ILTs of each responded to their rating of the extent to which these ILTs are recognised in their manager. The matching at the subordinate level is the congruence between the respondents' job-specific ILTs and the ILT recognition in their manager. The value of these constructs in organisational research and practice was assessed by examining their relationship with employee reactions and performance.

The present chapter discusses the findings of the research programme with regards to the level of categorisation (i.e., the level of abstraction or specificity of prototypical attributes used in categorising target individuals as leaders, effective leaders or non leaders) in ILT schema activation, the role of ILTs at the individual and work group levels, and the hypothesised effects of ILT congruence as a predictor of individual well-being and work-related outcomes, mediated by the leader follower relationship quality (LMX). This is followed by a discussion of the implications of the main findings for practice, and by an overview of the limitations of the present investigation. Implications for theory development and future research are discussed throughout the chapter. The final part deals with how the ethical considerations of the research process were addressed.

Discussion of Findings

Summary of Main Research Questions, Significance of Research and Main Studies

The present thesis has three distinct, yet interrelated objectives; these consist of two general research questions and a hypothesised model regarding specific relationships among the variables of interest. The first research question is concerned with the level of categorisation that followers rely upon in making leadership judgments and reads: "*Are ILTs at the basic level of categorisation more extensively utilised in making leadership judgments, and more predictive of work-related outcomes, as compared to the contextually contingent job-specific (subordinate) level of categorisation?"*. The second research question deals with the role of ILT congruence in team settings, and reads: "*Does the congruence between group-members' ILTs and the recognition of these prototypes in their leader have positive effects on team processes and outcomes?".* Finally, the third objective concerns the testing of a hypothesised model of the relationships. The model suggests that ILT congruence affects important individual and group outcomes of the leadership process, mediated by LMX.

As will be discussed in more detail in the following sections, the present research has five main contributions to theory and research in the area of ILTs. First, it extends our theoretical understanding of ILTs by addressing the issue of abstraction or contextual specificity (level) in ILT utilisation by the followers. Although contextual factors have been discussed extensively in theoretical models of follower perceptions (Chapter 2; see e.g., Lord & Maher 1991; Lord et al., 2001), the present is a first attempt at empirically examining this issue. Second, it investigates the effects of the extent to which a leader matches followers' leadership prototypes on both individual (e.g., work-related well-being) and group outcomes (e.g., team-member exchange). Theoretical and empirical investigations in both leadership and teamworking suggest that leadership is both an individual and a group level phenomenon (Chapter 3). However, previous research in the area of ILTs has focused only on individual-level effects. Thus, the present investigation sheds light on the role of ILTs and ILT congruence in settings where individuals are organised into groups. Third, the theoretical model that was proposed and tested in the present thesis replicates and extends previous empirical findings by using a wide range of outcome measures, including objective performance and group-level outcomes, both of which are investigated for the first time. Fourth, the present investigation adds to the body of literature addressing the issues of LMX, its antecendents and outcomes. Although ILT congruence had been associated with LMX in the literature, this link is somewhat unclear with different studies reaching somewhat different conclusions (Engle & Lord, 1997; Epitropaki & Martin, 2005). The present investigation

proposes that ILT congruence, as perceived by the followers, is associated with LMX, and that LMX is related to a wide range of individual and group level outcomes. The final contribution is of methodological value, and concerns the advanced data analysis technique used for the analysis of congruence scores, namely Latent Congruence Modelling (LCM, Chapter 4). This is the most recent methodological development in the analysis of congruence scores, it overcomes many of the problems associated with older methods, and it benefits from the advances associated with Structural Equation Modelling (SEM). Since the LCM method has thus far not been employed in the study of ILT congruence, the replication of past research findings using this method is important, as it adds confidence to the findings of past research that employed less advanced data analysis techniques.

A series of three studies was conducted in order to address the research questions and hypotheses. The first was a cross-sectional study that was conducted with a sample of students (n=175), with reference to their recent one-year paid work placement in an organisation. The data from this study was used to conduct a direct comparison of two competing structural models, one with ILTs measured at the basic level of categorisation and the other with ILTs measured at the job-specific (subordinate) level in relation to the recognition of ILTs in the manager. This allowed for an assessment of the predictive value of ILT congruence at the two levels and their comparison, as well as a partial test of the hypothesised model. A particular strength of this study is that the participants had been employed in a wide range of jobs and industries, making it possible to be confident of the generalisability of conclusions from the study's findings.

The second study was a longitudinal study with a sample of students (n_1= 343, n_2= 325) who participated in a 25-week business simulation as part of their degree. Students worked in groups of between four and five members, each led by a single individual throughout. Participants' reactions were gathered at two time points during the business simulation. The second wave of data was collected 10 weeks after the first one. The data from the first wave of collection was analysed cross-sectionally to provide further evidence on the level of ILT categorisation at which leadership schemas are activated to guide leadership judgments. The analyses for this sample were the same as for Study 1. In addition, the cross-sectional data was used for a preliminary investigation of the hypothesised relationships at both the individual and the group level of analysis, which had not been possible with Study 1 data. The longitudinal analysis of the data tested the hypothesised models at both the individual and group level, in order to provide evidence for the causal effects of ILT congruence on affective and performance outcomes, mediated through LMX. Only the data of respondents who participated in both studies were used for the longitudinal analysis (n=235). This study has

three main strengths. First, the setting of the study was stable and controlled, with group-members taking part in largely homogenous tasks across the groups, all following the same timeframe, having equivalent resources available, comparable group sizes, equivalent member roles across groups, and so on. The 'noise' that organisational contexts introduce to field studies is therefore reduced, with many factors affecting affective and performance outcomes remaining stable. Second, the study was conducted longitudinally, allowing for the investigation of the causal direction of the hypothesised relationships among study variables. Third, the study assesses the effects of ILT congruence on a wide range of objective performance outcomes, assessing several aspects of performance from various independent raters, thus avoiding common-source bias in the investigation of performance as an outcome of leadership processes.

The third study is cross-sectional in design and uses a sample of working individuals from ten different organisations (n=178). This allowed for testing the hypothesised model on a working sample, providing further support for the findings of the first two studies and investigating the generalisability of the hypothesised model in organisational contexts. The value of the third study as compared to the previous studies, lies in the fact that the sample comprised of working individuals, since the student participants of the first study were generally young and inexperienced work-wise, they might not have a well-developed ILTs profile. Additionally, by collecting data from a sample of employed individuals, it was possible to measure outcomes that are particular to organisational settings (e.g., organisational commitment and job satisfaction).

The research questions and hypotheses were therefore tested on a range of different samples, various settings and using different research methodologies, adding to the confidence regarding the validity and generalisability of the findings. An additional strength of the present research programme, as compared to previous studies in the field of ILTs is the advanced methodological approach that was utilised for the analysis of congruence between ILTs and ILT recognition. As described in Chapter 4, the Latent Congruence Model (LCM) methodology overcomes many of the problems in the traditional approaches to congruence analysis (e.g., confounding effect of congruence scores on the relationships between the components of congruence and outcomes, and low reliability of congruence indices). Furthermore, LCM is conducted using Structural Equation Modelling in estimating the relationships among the variables, a method with several benefits over correlational approaches to data analysis. For instance, it allows for all the effects of a hypothesised model to be tested simultaneously, it provides indices of overall model fit to the data, it accounts for measurement error, and it allows for the comparison of hypothesised theoretical models.

ILTs and Level of Categorisation

The critical review of the ILT literature presented in Chapter 3 revealed that contextual factors play an important role in both the formation and the utilisation of leadership prototypes or ILTs by followers, on the basis of the principles underlying the various theoretical frameworks of cognitive processes involved in leadership perception, attribution, judgments, and recognition. The first study, and the cross-sectional part of the second study, investigated whether ILT congruence is more predictive of outcomes when operationalised as similarity between a leader's traits and the general (basic level) leadership categories than the job-specific (subordinate level) categories. Findings from both studies consistently show that ILT congruence at both levels is associated with individual and group outcomes, mediated by LMX. This suggests either that attributes at both levels are utilised by followers in making leadership judgments, or that there is overlap in the attributes used in evaluating leaders on the two levels. The latter interpretation is less plausible compared to the former, since the evaluation in the psychometric properties of the ILT scales in both studies revealed that the general (basic level) ILT and the job-specific ILT scales measure distinct constructs. Even though the findings suggest that both models (with general/recognised and with job-specific/recognised ILT congruence as predictors) fit the data well, a closer look at the model fit indices and the Akaike index indicate that in fact the model with general/recognised ILT congruence as predictor is more representative of the data and a better predictor of the outcomes. The models with general/recognised ILT congruence as predictors were consistently better at predicting outcomes across the two studies, and at both the individual and group levels of analysis.

The leadership categorisation theory (e.g., Lord et al, 1982; Lord et al., 1984) proposes that leadership categorisation takes place at three levels, the superordinate, the basic, and the subordinate. The level of contextual specificity increases as the level of categorisation decreases. Specifically, the superordinate categories consist of relatively abstract and general leadership attributes that apply in distinguishing effective leaders from non-leaders or ineffective leaders, the basic categories consist of attributes for evaluating leaders and distinguishing them into functional categories (e.g., business, political, sport), and the subordinate level categories contain attributes used to differentiate among and evaluate different types of leaders within the same general categories (e.g., between liberal and democratic leaders within the political leaders category). Although there is a general agreement in the leadership categorisation conceptualisation that contextual factors play a role in forming leadership categories, and in fact the main differentiation among the levels is on the basis of contextual abstraction or specificity, the prevailing view is that followers draw

mostly on their basic level categories in categorising and evaluating leaders (Lord et al., 1982), a conclusion that is reached rather arbitrarily, without explicit theoretical and empirical support. In line with this assumption, researchers in the area of ILTs have consistently measured them at the basic level of categorisation, that is, with reference to the prototypical attributes that distinguish between effective business leaders in general and ineffective or non-leaders (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2005; Offerman et al., 1994). The findings reported in the present thesis provide support for the argument that leaders within the business context are evaluated primarily against attributes at the basic level of categorisation, and less so at the subordinate level. This provides empirical validation for the operationalisation of ILTs at the basic level, as utilised by the researchers in the field thus far.

According to the information-processing approach to follower perceptions of leaders, contextual factors have an effect on the inference and recognition of leadership in target individuals, especially when automatic cognitive information processes are used (Lord & Maher, 1991). Both the expert and the cybernetic models of information processing suggest that perceptions are formed based on pre-existing prototypes, as well as on contextual cues and context-specific knowledge. The findings of the first two studies indicate that in fact there is less reliance on contextually informed leadership prototypes and more on general leadership prototypes in the formation of perceptions regarding actual leaders. This suggests that, as Lord and Maher (1991) rightly postulate, the limited-capacity model of information processing provides a more appropriate framework for the analysis of follower perceptual processes, since it is based on the assumption that people rely on cognitive simplification in sense making, try to preserve cognitive resources, and rely on a satisfactory (rather than optimal) amount of information.

The finding that followers rely more on basic level categories in forming perceptions regarding their leaders partly contradicts the basic premises of the connectionist network approach to the interpretation of followers' perceptual processes. The connectionist network approach is based on the idea that cognitive schemas are contextually sensitive, and that the matching of environmental stimuli to prototypes is a real-time process that is constantly updated based on contextual cues (Lord et al., 2001). The theory proposes that pre-existing prototypes are activated in response to environmental stimuli, thus it can be inferred that although these might be quite general in nature, the activated prototype profile that is used in sense making will be influenced by contextual factors. The findings of the present research partly contradict these arguments. Although both context specific and general prototypes were found to influence leadership judgments, there is overall more reliance on the general prototypes in the perceptual processes of the perceiver. Nevertheless, this finding supports the

connectionist network principle of ‘gap-filling’, implying that when there is insufficient contextual information to inform the creation of perceptions perceivers rely heavily on recurrent networks and prototypes in their sense making.

Going back to the basic principles of social categorisation theory (Rosch, 1978), and in particular cognitive economy, it can be inferred that the increased reliance on basic, as compared to subordinate level categories, is due to the human tendency to simplify information and environmental stimuli by relying on pre-existing mental models in sense making. Reliance on mental models thus decreases the effort and cognitive resources invested in perception formation, and inferences regarding the target person are made on the basis of category characteristics and attributes, once a successful category match is achieved. This reasoning provides an interpretation for the activation of basic level categories in leadership perceptions. Nevertheless, the finding that leadership judgments are based on both basic and subordinate level categories is in agreement with the idea that humans are cognitively flexible and rely on categories to differing degrees under various conditions (Macrae & Bodenhausen, 2000). Extending this argument to the issue of levels in leadership categorisation, it is plausible to assume that under certain conditions followers might rely more on context-specific and less on general categories, and vice versa. For a more complete understanding of the role of contextual factors in schema activation, future research should investigate moderating variables affecting the cognitive mechanisms employed in leadership perceptions by the followers. Such moderating variables could be task-related factors (e.g., task complexity, routine vs. novel tasks, salient vs. secondary tasks), perceiver-related factors (e.g., followers’ motivation, objectives, personality traits), leader-related factors (e.g., behavioural distinctiveness, leadership style, personality traits, culture, communication style, engagement with the followers), organisation-related factors (e.g., industry, organisational culture, organisational climate, size of organisation), or situational variables (e.g., periods of crises, change, unexpected failure or success in individual or organisational performance).

In summary, the findings regarding the level of abstraction in leadership prototype utilisation by followers have implications for both theory development and future research. In terms of theory development, the theoretical frameworks regarding followers’ perceptual processes need to be refined and extended in order to add clarity and specificity to the role of context in cognitive functioning. Since schema activation appears to take place at both levels of categorisation, questions arise regarding the mechanisms and conditions affecting the reliance on different categories in making leadership judgments, and those can be addressed in future studies.

The Role of ILTs in Group Settings

The second study investigated the effects of ILT congruence at the group level of analysis, an issue that is largely neglected in the extant literature of leadership categorisation and ILTs. The analysis yielded two general findings. First, in the sample of the study, sufficient within group agreement and insufficient between group differentiations were found in the general and job-specific ILT dimensions (regarding ILT recognition in the leader, findings indicate that there was both within group agreement and between group differentiation on the dimensions). This finding supports the notion that ILTs are a variable of individual differences, as it was conceptualised in previous studies (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2005). Nevertheless, it must be noted that ILTs were measured during the early stages of the groups' interactions; perhaps as interactions within groups increase in time, the group members start developing shared mental models of leadership prototypes. The term mental model is defined as "team members' shared, organized understanding and mental representation of knowledge about key elements of the team's task environment" (Kozlowski & Bell, 2003, p. 347). The concept of shared mental models is not traditionally applied to perceptions regarding team leadership. However, since in a wide range of organisations team leadership is a key factor affecting the team's interactions and task performance, it can therefore be inferred that it is likely that shared mental models will develop among a team's members over time regarding leadership prototypes and the extent to which these are recognised in the team leader. Therefore, future research could investigate whether there is convergence in ILTs and ILT recognition among team members over time, and how this impacts upon the effects of leadership on team outcomes.

The second general finding is that the ILT/ILT recognition congruence, at both the general and the job-specific level, is associated not only with individual-level outcomes, but also with important group processes and outcomes, mediated by LMX. That is, the perceptions of individual members regarding their leader have an effect on their perception of the quality of their relationship with the leader and this in turn affects several aspects of group functioning and performance. The above associations were found to hold in both the cross-sectional and longitudinal analysis of the data, thus providing evidence of the causal effect of ILT congruence on team outcomes.

These findings indicate that theoretical models of follower information processing regarding leaders need to account for the fact that these have effects on outcomes at multiple levels. In terms of empirical studies, it is also imperative that the levels of analysis are explicitly and accurately recognised and addressed. That is, if participants are nested in groups, the

effects of group membership need to be controlled for, data needs to be analysed at the group level as well, or if the outcomes of interest are at the individual level of analysis, multilevel statistical techniques should be employed in order to identify cross-level effects.

Finally, the indication that team leadership has significant implications for team processes and outcomes needs to be investigated further within teams' research. As discussed in Chapters 2 and 3, teams' research has largely neglected the effects of leaders and the leadership process on team-related factors. The findings reported in the present thesis indicate that team leadership and follower perceptions regarding leaders are important factors that should be acknowledged in both theories and research in team working.

ILT Congruence as an Antecedent of LMX, and Affective and Performance Outcomes

The findings of all three studies consistently indicate that ILT congruence is significantly related to the quality of leader-follower relationships (LMX), and that LMX mediates the relationships between ILT congruence and outcomes, for both general and job-specific ILTs as components of congruence. This is confirmed in both the cross-sectional and longitudinal analyses, indicating that there is a causal direction from ILT congruence to LMX. The findings of previous research regarding ILTs and LMX (Epitropaki & Martin, 2005) are therefore replicated in the present thesis, and further extended to the group level of analysis and to include a wider range of outcomes, including task performance.

Analysis of a wide range of hypothesised models in the three studies provides consistent evidence regarding the mediating role of LMX in the associations between ILT congruence and outcomes. This is true both when general and when job-specific ILT congruence is the antecedent variable in the model. Particularly, all significant relationships were found to be fully mediated by LMX, and the fully mediated models were scrutinised against other plausible models, where LMX was not entered as a mediator. This investigation confirmed that indeed the models with LMX mediating the relationships of interest are in fact the closest representations of the data, as compared to the competing models that were constructed. It is therefore found that not only is ILT congruence related to LMX, but also that LMX is the mechanism through which ILT congruence affects work-related follower outcomes. This finding is in agreement with the theoretical arguments offered by Lord and Maher (1991) regarding the effect of follower perceptual processes on leader-follower dyadic interactions, and with the findings of relevant empirical investigations (Epitropaki & Martin, 2005).

Though these findings confirm that ILT congruence in the perception of the follower is an important factor affecting their perception of their relationship quality with their leader, there is

still some ambiguity regarding the overall effect of perceptual processes on the leader-follower relationship. For instance, Engle and Lord (1997) reported that leader-follower ILT congruence is not associated with LMX; thus, the similarity in leaders' and followers' perceptions of what constitutes ideal leadership does not influence the cognitive processes involved in self- and leader- judgments that influence LMX. Although, their findings do not provide support for the effect of both leaders' and followers' ILTs on LMX, their investigation was limited to the role of ILTs on their own, rather than as part of a cognitive process of matching between person and prototypes. It is likely that both followers' and leaders' perceptual processes have an even larger effect on LMX, and that the mechanisms involved in these effects are more complex than past research and the findings of the present studies. Based on the principles of dyadic-level perceptions and reciprocal influence discussed in Chapter 3 (Lord & Maher, 1991), and on recent developments in the field of Implicit Followership Theory (Shondrick & Lord, 2010; Sy, 2010; van Gils et al., 2010) that are covered in Chapter 2, it can be inferred that both leaders' and followers' perceptions will influence their behaviour, interactions and relationship quality in multiple ways. It is important that future research addresses these issues more comprehensively, since there is generally a lack of empirical evidence regarding leaders' and followers' cognitive processes as antecedents of LMX (Gerstner & Day, 1997). Apart from the effect of implicit-explicit ILT congruence on LMX that is demonstrated in the present thesis and in Epitropaki and Martin's study (2005), it should be investigated whether further variance in LMX can be explained by (1) the congruence between leaders' IFTs and the recognition of those in their followers, (2) the congruence in leaders' ILTs and the recognition of ideal leader traits in themselves, and (3) the congruence in followers' IFTs and the recognition of ideal follower traits in themselves. Further, as suggested by van Gils et al. (2010), leader and follower cognitive processes need to be investigated as potential antecedents of leader-follower agreement in perceptions of LMX as well.

With regards to the effect of ILT congruence on the average LMX at the group level of analysis, the second study revealed that the higher mean ILT congruence in a group, leads to higher mean LMX and group-level outcomes. Although this is an important finding regarding the role of individual follower perceptual processes in the team context, it is likely that what the second study revealed is only the 'tip of the iceberg' of the effects of followers' and leaders' perceptual processes on the outcomes. The encouraging findings reported here should motivate scholars to develop comprehensive theoretical frameworks for the interpretation of the effects of leader and follower information processing and categorisation on team processes and outcomes, and to investigate these effects in more detail.

The dominant framework in theory development and research in teamworking is the Input-Processes-Output (IPO) model (McGrath, 1964), which is utilised and extended by many researchers in the field (e.g., Barrick, Stewart, Neubert, & Mount, 1998; Cohen & Bailey, 1997; Hackman & Morris, 1975). Inputs are the antecedents of teams' processes and outcomes, and include factors such as members' personalities and skills, organisational culture, and organisational design. Among the team processes that the model includes are leadership, communication, decision making, conflict, interactions and so on. The outcomes include direct or indirect products of the team processes, such as performance, innovation, creativity, and team viability. The findings reported in the present thesis indicate that group members' cognitive processes regarding leaders could be considered as inputs in the IPO model, as they affect leadership which is one of the team processes. LMX on the other hand can be considered as a leadership-related process of teamworking. Further, the present findings could also be considered as an initial indication that team members' cognitive processes have an influence on other team processes as well. For instance, members' perceptions about their team members could be the result of similar mechanisms as those identified in leadership categorisation. That is, team members might rely on pre-existing prototypes of what constitutes ideal team members in making judgments about the other members of their group, and this could in turn affect the quality of the relationships that develop among the members of a team (TMX), ultimately influence team outcomes. Finally, the encouraging findings reported regarding the link between ILT congruence and LMX and outcomes in teams can be further refined and extended in future research through investigations of the effects of differences in ILTs among the team members on LMX differentiation (e.g., Boies & Howell, 2006; Henderson et al., 2008; Liden et al., 2006) within the team.

In Chapter 3 ten hypotheses were proposed regarding the relationships of ILT congruence with outcomes. All the relationships were proposed to be mediated by LMX, which was confirmed in the analysis of the three studies. The first hypothesis was concerned with the effects of ILT congruence on job satisfaction. This hypothesis was supported in the findings of the first study, and therefore validates the findings of past empirical evidence (Epitropaki & Martin, 2005). Both general and job-specific ILT congruence was found to be associated with job satisfaction, though causal inferences can be made only on the basis of theoretical arguments, since the first study cross-sectional in design. The second hypothesis regarding task satisfaction as the outcome of the leadership processes under study was investigated both cross-sectionally and longitudinally in the second study. Both analyses provided evidence that there was a significant link between general and job-specific ILT congruence

and task satisfaction mediated by LMX, with the longitudinal findings suggesting that the relationships are causal in the predicted direction. The third hypothesis stated that ILT congruence will influence follower work-related well-being, mediated by LMX. Findings from all three studies demonstrate that this hypothesis holds in the samples, with evidence of the predicted causal direction of the relationships. These findings are in line with evidence from previous research (Epitropaki & Martin, 2005). The fourth hypothesis regarded organisational commitment as the outcome of leadership processes. It was examined in the third study as an antecedent on general ILT/ILT recognition congruence, with findings providing support for the hypothesised relationships.

At the team level, hypothesis six proposes that ILT congruence will affect intragroup conflict, mediated by LMX. These relationships were investigated mainly in the second study. The cross-sectional analysis provided support for the hypothesised relationships, for both job-specific and general ILT congruence predictors. However, the same effects were not statistically significant in the longitudinal analysis, with only general ILT/ILT recognition congruence as predictor. This could be due to the complexity of the effects associated with conflict and wide range of moderating factors affecting its relationship with antecedents and outcomes. As discussed in Chapter 3, theoretical arguments and empirical evidence indicate that some forms of conflict are positive for group functioning and performance at moderate levels and negative at low and high levels. Future research should therefore revisit the relationship between followers' perceptions of leadership, LMX and conflict, and investigate the possibility of a curvilinear effect of LMX on conflict. Conflict was also investigated as an outcome in the third study, and findings indicate that the hypothesised relationships are true for the working sample. These findings should nevertheless be interpreted with caution, since the third study is cross-sectional in nature and the participants are not nested in formal work groups. The seventh hypothesis proposes that ILT congruence affects the quality of the relationships among the members of a group (TMX), mediated by LMX. Findings from the second study provide evidence in support of this hypothesis, for job-specific and general ILT congruence as predictors, in both the cross-sectional and longitudinal analysis. Equivalent effects are found for group satisfaction and team realness as outcomes, as proposed by hypotheses seven and eight.

Finally, hypotheses five and ten suggest that ILT congruence will have a positive effect on individual and group performance respectively, mediated by LMX. Self-rated performance was investigated as an indicator of individual performance in all three studies. The findings consistently show that both job-specific and general ILT/ILT recognition congruence were associated with self-rated performance, mediated by LMX. The second study investigated

further performance outcomes, which were objective performance measures since they were not assessed by the study's participants. The group performance outcomes following the first wave of data collection were not significantly related to ILT congruence and LMX. A potential interpretation for this finding could be that the groups were still at the initial stages of development, with a limited amount of interactions with the leader, when these measures were taken and the groups' performance was affected mostly by the individual members' skills, abilities and knowledge, rather than by the leadership process. Similarly, the longitudinal analysis of individual performance as the outcome did not provide support for the hypothesised relationships. A plausible interpretation of this finding could be that the individual task was not directly linked to the participants work in their groups or with their leader; the leadership process therefore did not have a direct effect on the participants' performance. Three further group performance outcomes were investigated in the longitudinal part of the second study, with findings providing support for the predictive effect of ILT congruence on group performance, mediated by LMX, for two of the three outcomes. Although the majority of the findings provide support for the hypothesised relationships between ILT congruence, LMX and performance, these effects render further investigation before any conclusive inferences can be drawn.

Implications for Practice

The present thesis, along with the major proportion of all research in the field of ILTs, confirms that followers have general pre-conceptions of what constitutes effective leadership. As discussed in Chapter 2, and in line with early conceptualisations of ILTs (e.g., Eden & Leviatan, 1975), this has an effect on subordinates' ratings of their managers regarding leadership traits and effectiveness, which is a common practice in manager appraisal using methods such as 360^0 feedback. Organisational members that deal with the collection and interpretation of data regarding leadership traits and effectiveness in organisations need to be vigilant of the biasing effects of ILTs on leader ratings and control for them by collecting data on raters' ILTs or account for them in the interpretation of scores. Several practices have been suggested as potential remedies to this problem, such as training raters' in rating exclusively on the basis of observed behaviour (e.g., Phillips & Lord, 1986). One successful example of such a practice comes from the political leadership domain. Silvester and Dykes (2007) report a study of the selection process of political leaders, that had as one of its aims to investigate whether male and female candidates performed differently using a standardised process for the selection of political leaders. In order to avoid bias in assessors' ratings, they trained the assessors on the observation, recording and evaluation of the

candidates in a manner that assured stereotyping was avoided as much as possible. They found that although women are largely misrepresent in positions of political leadership, their performance as assessed by the trained assessors did not differ significantly to that of male candidates.

A widely recognised implication of ILT research on practice relates to management training and development (e.g., Engle & Lord, 1997; Epitropaki & Martin, 2005). By learning which traits and attributes appeal most to followers and shape their perceptions of effective leadership, leaders can modify their behaviour to reflect these and enhance the enactment of such traits in their daily interactions with their subordinates. In this manner they can potentially provide the behavioural cues that will contribute to their categorisation as leaders or effective leaders in the minds of their subordinates. This in turn will favour the development of high quality relationships among leaders and followers, which is associated with positive affective reactions, and potentially higher performance. The present investigation revealed that these positive effects can be extended to the group level. Effectively, this means that any training of managers on team leadership would benefit from training on followers' perceptual processes and ILTs. The finding that followers rely predominantly on the basic level (general) ILTs indicates that there is no need to adjust training programmes to contextual factors relating to the subordinate's job, and that the traits that are associated to successful leadership in the minds of the followers can be transferred from one context to another and still yield positive leadership outcomes. Thus, the understanding of the value of ILT training is further enhanced since there is no need for additional leader training on ILTs when they move to a different organisation, post or hierarchical level.

Similarly, recruitment and selection of organisational managers and leaders could incorporate some form of assessment of the candidates' traits in relation to the traits that are generally identified as prototypical of effective leaders. In this manner recruiters can enhance the likelihood that the new recruit will be perceived as an effective leader by his or her subordinates, and thus the potential of this person developing high quality relationships with their subordinates, leading to positive work-related outcomes. The assessment of a person's traits can be conducted by either the use of a self-report questionnaire, rating of the person on the traits of interest by independent raters based on their interview and other activities (e.g., assessment centre exercises, presentations), or by making inferences from the written information obtained from the candidate (e.g., application form, curriculum vitae, cover letter) and their referee.

Schyns and Felfe (2008) discuss further implications of ILTs on managerial practices. One such implication is the effect of ILTs on managerial decision making. Managers might rely on their ILTs in making judgments regarding issues such as a proposed new project. They suggest that if the person making the proposal does not fit the managers' ILTs the proposal might be rejected in spite of indications that the project has a high likelihood of success. Alternatively, if the person making the proposal is perceived as a close match to what constitutes a prototypical leader the decision-makers might support the realisation of the proposed project even though it might have a high risk of failure. The present investigation confirms that perceivers tend to largely neglect contextual factors in making leadership judgments. Training of decision-makers should therefore focus on making them aware of their own categorisation processes and alerting them to the importance of explicitly taking into account contextual cues and information when making decisions, and relying less on their pre-existing cognitive structures.

Although placed in an organisational setting, the present thesis addresses several issues that are of general interest with regards to leadership, such as follower perceptual processes. Inferences can therefore be drawn with relation to further settings where leadership is of importance, or stated in the terms of categorisation theory, to further categories at the basic level of leadership categorisation. Like in organisational settings, it is likely the followers rely on prototypes of effective leadership when selecting and reacting to political, sports or religious leaders. Based on the findings reported in the present thesis, it can be argued that leaders or aspiring leaders in all domains could potentially benefit from a deeper understanding of their followers' or potential followers' implicit leadership of what constitutes effective leadership in their specific domain. Further research is needed in order to identify ILTs specific to various leadership settings and develop tools for their measurement. Such advancements will potentially benefit both our general understanding of ILTs with a wider knowledge of the content and utilisation of ILTs in different arenas, and the leaders and followers within each arena in relation to their behaviour and reactions to each other.

Limitations

Although several theoretical, methodological and empirical contributions and advances were achieved in the reported investigations, there are several limitations that need to be taken into account when interpreting the reported findings. The majority of the limitations of the three studies reported in this thesis are related to methodological and statistical factors. Many of these relate to the relatively small sample sizes in all studies. The theoretical limitations

discussed evolve mainly around the conceptualisation and measurement of subordinate level ILTs, and the consideration of ILTs at the group level of analysis.

With regards to sample composition it must be highlighted that the samples of the first two studies were students. Though it is common for researchers to draw conclusions based on studies with student participants, the question of generalisability of the findings to the working population arises. The third study addresses this problem, with an investigation of a subset of hypotheses on a working population. Since the third study was conducted in a culture different than that of the first studies, the generalisability of the findings still remains unclear. Past research indicates that some ILTs are culture-specific, and future research should take this into account. Culture sensitive scales for the measurement of ILTs are available (House et al., 2004), but were not used in the third study, as this would render comparisons in the findings of the other two studies impossible. Future research should investigate the hypothesised relationships using culture-sensitive tools in order to identify similarities and differences between cultures in the hypothesised relationships, or if a specific culture is of interest, culture-specific scales needs to be developed and validated before investigating the proposed relationships.

Further, the first and third study have a cross-sectional design and all the data was obtained from the same sources. The findings of cross-sectional studies reveal the relationships among the measured variables, but do not provide evidence on the direction of these relationships. Consequently, the directions of the relationships investigated in the cross-sectional studies can only be inferred from theoretical arguments regarding causality. The fact that the same participants provided data for both the hypothesised predictors and outcomes in the two studies, inevitably introduces common-source bias to the data. The second study partly overcomes these problems, by using longitudinal data, with some of the outcome measures obtained from independent sources.

Even though causality can be inferred from the findings of the second study, more comprehensive tests of causal relationships can be conducted with the use of Latent Growth Modelling techniques in data analysis. For such analysis to be possible it is necessary that data is collected in at least three points in time, so that patterns of changes on the predictor variables can be associated with changes in the outcomes.

Further, more accurate estimations of the proposed relationships could be obtained with the introduction of control and moderating variables to the structural equation models. Such variables are often categorical in nature. The reason for non-inclusion of such variables in the

analyses reported in the present thesis is that demands regarding sample size for model estimation in SEM increase with the further inclusion of variables, especially when these are categorical. The sample sizes of all three studies were too small to allow model estimation for large and overly complex models.

Similarly, regarding the effects investigated at the group level of analysis, the aggregation of the ILT variables was conducted on rather arbitrary terms, considering that these are inherently individual level variables. The group level investigation in the present thesis is in fact a first attempt to explore the role and effects of ILTs in a group context, and the measurement of ILTs was not especially designed to investigate group-level ILTs, rather existing individual-level measures were used. It is highly plausible that specific shared models of ILTs develop in groups over time, and these may not be accurately reflected in the available tools for measuring ILTs. The findings presented in this thesis indicate that individuals' ILTs play an important role in determining group level outcomes, which suggests that future research should take this into account by further investigating the group-level effects of ILTs, in addition to developing scales for measuring ILTs at the group level. Further, our understanding of ILTs in groups would be extended by explorations of how shared context- and group-specific ILTs form and evolve over time. It is likely that ILTs of specific individuals in the group, who have play a central role (i.e., extroverts, opinion-leaders, more experienced members) will affect the formation of shared ILTs, more than the ILTs of other members.

Further, the aggregation of variables to the group level does not permit for the investigation of cross level effects. Better ways for analysing such variables would be either conducting the analysis at the individual level, while controlling for group membership, or conducting multilevel analysis (e.g., Hierarchical Lineal Modeling, and Multilevel Structural Equation Modeling), which would additionally reveal any cross-level effects. Controlling for group membership was not possible in the group level analysis, due to the extensive sample size demands for model estimation as discussed above, and due to the fact that the available statistical packages for SEM analysis currently can handle categorical variables of up to seven categories. With the large number of groups investigated in the second study it was not possible to conduct such an analysis. Similarly, multilevel modelling was not possible due to high sample size demands, and due to the fact that such analysis can only be conducted with outcome variables that are at a lower level (i.e., individual level), which was not the case in the second study.

Additionally, weaknesses were consistently identified in the tool used to measure ILTs in the three studies, which is a 21-item scale of prototypical and antiprototypical traits of leaders (Epitropaki & Martin, 2004). Particularly, the analysis of the psychometric properties of the scale revealed that the antiprototypical dimensions do not consistently load onto the antiprototype factor, and that the nature of the relationships of the antiprototype factor to other constructs is different to that of the prototype factor. This could be due to many factors, such as inappropriate item content, poor scale validity across samples, prototype and antiprototype factors representing inherently different constructs and so on. Although it is outside the scope of the present thesis to address these problems in depth, it must be noted that further investigations are needed of the content and structure of ILTs. Schyns and Schilling (2011) provide arguments and empirical evidence that could help in resolving this problem. They observe that studies in the area of ILTs have focused on traits and attributes of ideal or effective leaders, rather than leaders in general. Their study revealed fifteen categories of leader attributes. Interestingly, among other categories they identified all of the dimensions included in the Offerman et al.'s (1994) scale (which the Epitropaki and Martin (2004) scale is based on), apart from masculinity, which is typically regarded as an antiprototypical dimension. Further, their analysis revealed that not all attributes that were rated as favourable leader characteristics were associated with effective leadership, nor were all unfavourable attributes associated with ineffective leadership. This could explain the source of the problems with existing ILT scales. Based on the findings of Schyns and Schilling (2011) it is suggested that future research extends the content of ILT scales to include the new categories of leader characteristics in their study, and that the associations between traits and leadership effectiveness are more explicitly addressed. This will potentially avoid the problems associated with the antiprototypical dimensions of ILTs identified in the present thesis.

Another potential limitation of the present investigations is that LMX was measured using the unidimensional scale LMX-7 (Graen & Uhl-Bien, 1995). Although, as discussed in Chapter 3, this scale adequately measures the quality of exchanges among leaders and followers, a more detailed understanding of the relationships of LMX with the remaining variables could be obtained by using the multidimensional scale LMX-MDM (Liden & Maslyn, 1998), which comprises of the affect, loyalty, contribution, and professional respect dimensions. This would have allowed for the investigation of the relationships with the individual components of leader-follower relationships, rather than with the generic construct of relationship quality.

The fundamental theoretical limitation of the research programme lies in the conceptualisation and measurement of ILTs at the subordinate level of categorisation,

referred to in this thesis as job-specific ILTs. A dilemma arises when two seemingly complementary theoretical approaches are dissected in order to infer their interpretation of contextual specificity and the influence of context on ILTs and their utilisation by followers. In particular, the traditional approach to ILTs is the Leadership Categorisation Theory (Lord et al., 1982), according to which different leadership attributes are associated with different levels of leadership categorisation in the minds of the followers. That is, at the superordinate level followers assess target individuals on the basis of general leader attributes that they hold in mind, in order to make a judgment as to whether they are leaders, good leaders or non-leaders. At the basic level of categorisation the attributes that are considered are more context specific and could be traits and characteristics that differentiate between leaders, good leaders or non-leaders in specific areas (e.g., politics, sports, business, religion). The subordinate levels consists of attributes that are used to make leadership judgments in even more context-specific terms; for instance in distinguishing between leaders, good leaders or non-leaders for a liberal political party. Therefore, according to this approach the content of ILTs (i.e., the specific attributes considered in making leadership judgments) are different in content, since they vary from very general to very context specific. This suggests that different ILT measurement scales should be used when assessing ILTs at different levels of categorisation. Since all available measures of ILTs are intended for measurement at the basic level, new scales would need to be developed that are specific to the context of interest of different studies.

Nevertheless, in the studies reported in the present thesis this was conducted; instead, an established measure of ILTs at the basic level was used to measure ILTs for both basic and subordinate level categories. This is in accordance to the more contemporary theoretical framework underlying ILTs, the Connectionist Network Approach (Lord et al., 2001). According to this approach individuals hold general and specific schemas of ideal leadership which are dynamic; they develop over time through learning, interactions and prior experiences, and they evolve and are being constantly revised under the influence of further relevant information and experiences acquired by the follower. Contextual cues act as triggers for schema activation, and different traits or combinations of traits are used for making leadership judgments in different situations. Additionally, different weights are assigned to each trait (or connection between traits) depending on contextual, leader-specific and follower-specific factors. Based on this interpretation it is appropriate to use the same traits or attributes for measuring general and context-specific ILTs, since what varies is their relative importance according to contextual cues and person-specific factors. This is the approach that is followed in the present thesis, whereby ILTs are measured using the same

items at different levels of abstraction, and the distinction between general and context-specific ILTs was achieved by giving different instructions with regards to the focal person being rated (i.e., business leader in general and leader for your job). According to the Connectionist Network approach these cues should drive general and context-specific ILT schema activation in the mind of the respondent. Statistical analysis was conducted in each study (see measures) to demonstrate that the general, job-specific and actual manager scales measure distinct constructs even though they utilise the same items. Although this is an indication that the methodology regarding ILT measurement at different levels used in the present thesis is appropriate, further studies need to investigate whether using different, context-specific, items to measure subordinate level ILTs in accordance with the Leadership Categorisation Theory would yield the same or different findings. It is plausible to assume that using a context-specific set of items might result in ILTs with better predictive capacity than the basic-level ILTs, which would contradict the findings reported in the present thesis and would raise further questions on the appropriateness of ILT underlying theoretical frameworks and the content of ILTs. Nevertheless, such an approach would not allow for the direct comparison of basic and subordinate level ILT congruence with actual leader ratings and their effect on LMX and outcomes, as the two scales would not be comparable comparable using statistical approaches to model comparison.

In essence, the present thesis regards job-specific ILTs in terms of the relevant importance of general ILTs in a specific context for a specific job. In order to investigate whether different attributes form ILTs for context-specific leadership judgments it will be essential for future studies to develop ILT scales that are representative of specific traits and attributes that are relevant in a given context. Although, this would be in agreement with the Leadership Categorisation Theory, it would not fully reflect the assumptions of the Connectionist Networks approach. As such, it would complement the findings of the present thesis and provide further clarification regarding the effect of context on ILTs and the schema matching process.

With regards to the overall theoretical perspective taken to the study of leadership in the present thesis, it could be argued that the conceptual developments and empirical investigations are bound by the limits of a traditional view of leadership. Future research could extend the theoretical advances and empirical investigations by investigating the role of perceptual processes in the cases of shared, distributed or rotating leadership. Moreover, better understanding of the dynamic processes involved in leadership perceptions could be gained by extending conceptualisation and research to include cases where employees are managed by more than one direct supervisor (e.g., in organisations with a matrix structure).

Ethical Considerations

According to the Ethics Committee of Aston University there are three major ethical consideration researches need to bear in mind and comply with when conducting research, namely beneficence, informed consent and confidentiality/anonymity.

Beneficence and Non-Malfeasance: these two terms refer to the researchers' goals, which should be to do good through his/her research and not to harm the stakeholders of the research. Such stakeholders could be the participants in the study, the audience, the direct users of the research findings, or the journal that publishes the study. The present study will benefit people and organisations by extending the current research available on followers' information processing regarding their leaders and on the antecedents of LMX as well as by concluding with recommendations on the practical applications of the findings in the improvement of LMX relationships within organisations. This demonstrates that it is the aim of the present thesis to benefit all its stakeholders. Throughout the conducted research programme it was assured that the process did not have any negative effects on any of the stakeholder groups. This was achieved through respect and honesty toward the participants of the study, as well as transparency and objectivity in the presentation and communication of the research to all its stakeholders.

Informed consent: In the first and third studies the participants' consent was gained by their voluntary completion of the questionnaire. All the participants of the second study were asked to sign a consent form, stating that they are willing to provide the required data for the purposes of the present research only.

Confidentiality/anonymity: The issue of confidentiality of private data is covered by the UK law (Committee, 2004) though, it needs be mentioned that the law does not always cover the ethical issues, and what is ethical is not always legal and vice versa (Neuman, 2006). Hence, it is largely depending on the researchers' conscience to take all possible precautions in an attempt not to harm anyone in the course of their research. In the presented research programme confidentiality was assured by not sharing the data provided by participants with individuals who do not have authorised access to such data and who are not participating in any way in the research. Five years after the data was collected it will be destroyed, to prevent unintentional exposure of the data to individuals not concerned with the present research. Anonymity was an option provided to all participants.

Conclusion

The thorough critical review of theoretical models and concepts of followers' perceptual processes, leader-follower relationships and leadership outcomes in the present thesis revealed several questions regarding the nature of and relationships among these concepts. The main questions that were identified regard the role of contextual factors in followers' perceptions of leadership, how followers' prototypes (i.e., ILTs) combine with their perceptions of their manager to influence relationship quality and outcomes, and whether in addition to individual-level, the congruence between prototypes and actual leaders influences important group processes and outcomes. A series of three studies was conducted to investigate the above questions. Advanced data-analysis techniques were used to as a tool to address these issues. The results indicate that the similarity or match of one's leaders to their prototype of ideal leader predicts both individual and group level outcomes, mediated by the quality of the relationship with the leader. This finding holds for matches with both general and context-specific prototypes, with the general ILT / actual leader match found to be a better predictor of relationship quality and outcomes. At the individual level these outcomes are job satisfaction, work-related well-being, organisational commitment, task satisfaction and performance, while at the group level these are intragroup conflict, team-member exchange, team satisfaction, team realness and team performance. The findings show that all significant relationships with leader match as predictor of outcomes are fully mediated by the quality of the leader-follower relationship. The hypothesised relationships were found to be true for all outcomes, apart from intragroup conflict and performance, for which the findings are mixed.

Although the theoretical and empirical advancements of the present thesis provide new insights into the leadership process and the role followers' perceptions play regarding its effectiveness, it merely scratches the surface of the complexity of both perceptual processes and the leadership process. Nevertheless, it points to some of the directions research in the field should take in unravelling the mysteries of human perception, the dynamic and complex nature of leadership, and the salient impact of leaders on team interactions, processes and performance.

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APPENDICES

Appendix 1- Study 1 Questionnaire

STUDENT LEADERSHIP QUESTIONNAIRE

Use the numbers 1-9 to indicate how characteristic do you consider the following traits of an:
1: not at all characteristic
9: very characteristic

	Ideal Manager GENERALLY	***Ideal Manager for YOUR JOB***	***Your ACTUAL Manager***
1. Strong			
2. Educated			
3. Domineering			
4. Enthusiastic			
5. Masculine			
6. Understanding			
7. Male			
8. Energetic			
9. Pushy			
10. Dedicated			
11. Sincere			
12. Obnoxious			
13. Intelligent			
14. Loud			
15. Helpful			
16. Manipulative			
17. Conceited			
18. Motivated			
19. Selfish			
20. Clever			
21. Dynamic			
22. Hard-working			
23.Knowledgeable			

Please circle the number that indicates the extent to which you agree or disagree with the following statements.

1. I feel I know where I stand with my immediate supervisor – I know how satisfied my manager is with me

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

2. I feel that my immediate supervisor understands my problems and needs

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

3. My immediate supervisor recognises my potential

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

4. Regardless of how much formal authority he/she has in his/her position, my immediate supervisor would use his/her power to help me solve problems in my work

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

5. Regardless of how much formal authority he/she has in his/her position, he/she would "bail me out", at his/her expense

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

6. I have enough confidence in my immediate supervisor that I would defend and justify his/her decisions if he/she were not present to do so

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

7. I would characterise my working relationship with my immediate supervisor as very good

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	**2**	**3**	**4**	**5**

Use the scale below to indicate how satisfied you are with the following aspects of your job:

1	2	3	4	5	6	7
Extremely dissatisfied	Very dissatisfied	Moderately dissatisfied	Not sure	Moderately satisfied	Very satisfied	Extremely satisfied

1. The physical working conditions	1	2	3	4	5	6	7
2. The freedom to choose your own method of working	1	2	3	4	5	6	7
3. Your fellow workers	1	2	3	4	5	6	7
4. The recognition you get for good work	1	2	3	4	5	6	7
5. Your immediate supervisor	1	2	3	4	5	6	7
6. The amount of responsibility you are given	1	2	3	4	5	6	7
7. Your pay	1	2	3	4	5	6	7
8. Your opportunity to use your abilities	1	2	3	4	5	6	7
9. Relations between management and workers at your organization	1	2	3	4	5	6	7
10. Your chance of promotion	1	2	3	4	5	6	7
11. The way your company is managed	1	2	3	4	5	6	7
12. The attention paid to suggestions you make	1	2	3	4	5	6	7
13. Your hours of work	1	2	3	4	5	6	7
14. The amount of variety in your job	1	2	3	4	5	6	7
15. Your job security	1	2	3	4	5	6	7
16. Now, taking everything into consideration, how do you feel about your job as a whole?	1	2	3	4	5	6	7

Using the response scale bellow, please indicate the answer that most closely applies to you about your ***feelings towards your job****.*

1	**2**	**3**	**4**	**5**	**6**
Never	Occasionally	Some of the time	Much of the time	Most of the time	All of the time

Tense	1	2	3	4	5	6
Depressed	1	2	3	4	5	6
Optimistic	1	2	3	4	5	6
Worried	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Anxious	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Enthusiastic	1	2	3	4	5	6
Relaxed	1	2	3	4	5	6
Comfortable	1	2	3	4	5	6
Miserable	1	2	3	4	5	6

Please respond to the following statements honestly and openly, in reference to your work standards:

1	2	3	4	5
Poor	Below Average	Average	Above Average	Excellent

Quality of work you do	1	2	3	4	5
Quantity or volume of work you do	1	2	3	4	5
Amount of effort devoted to your job	1	2	3	4	5
Your ability to do the job	1	2	3	4	5
Your overall performance	1	2	3	4	5
Your knowledge to do the job	1	2	3	4	5
Your ability to inspire work colleagues to perform well	1	2	3	4	5
Your skill in gathering and transmitting work-related information	1	2	3	4	5
Your proficiency in administrative duties	1	2	3	4	5
Your ability to work well with others	1	2	3	4	5
Your compliance with rules and regulations relevant	1	2	3	4	5

Please provide the following information:

1. Your age: _____
2. Your manager's age: _____
3. Your gender: _____
4. Your manager's gender: _____
5. A brief description of your job:_____

_____
_____
_____

Appendix 2 - Study 1 *t*-tests for Reference-focus and Trait-focus groups

Table A.01: Means, Standard Deviations and t-tests for General ILTs, Job-specific ILTs and Recognised ILT Items for responses by reference-focus and trait-focus

	Mean		SD				
	Reference Focus	Trait Focus	Reference Focus	Trait Focus	*t*	*df*	Sig. 2-tailed
General ILTs							
1. Strong	7.43	7.17	1.46	1.56	0.71	84	.48
2.Educated	7.84	7.43	1.17	1.53	1.31	84	.19
3.Domineering	4.81	5.13	2.06	1.52	-0.68	84	.50
4.Masculine	3.73	3.87	2.30	2.30	-0.25	84	.80
5.Understanding	7.84	7.65	1.14	1.64	0.60	84	.55
6.Male	2.97	3.04	2.27	2.60	-0.13	84	.90
7.Energetic	7.38	7.35	1.57	1.61	0.09	84	.93
8.Pushy	3.94	4.73	1.93	1.61	-1.72	83	.09
9.Dedicated	8.17	7.87	1.01	1.77	1.00	84	.32
10.Sincere	7.84	7.39	1.17	1.97	1.30	84	.20
11.Intelligent	7.84	7.83	1.33	1.37	0.05	84	.96
12.Loud	4.22	4.78	1.76	1.70	-1.32	84	.19
13.Helpful	8.19	7.70	1.08	1.77	1.57	84	.12
14.Manipulative	3.22	4.00	2.32	2.43	-1.36	84	.18
15.Conceited	2.65	3.24	1.99	2.49	-1.10	82	.28
16.Motivated	8.60	8.00	0.61	1.76	2.38	84	.02
17.Selfish	2.29	2.35	1.92	1.43	-0.14	84	.89
18.Clever	7.59	7.48	1.53	1.50	0.29	84	.77
19.Dynamic	7.40	7.26	1.20	1.40	0.47	84	.64
20.Hard-working	8.39	7.93	0.66	1.66	1.82	84	.07
21.Knowledgeable	7.76	7.58	1.06	1.29	0.65	84	.52
Job Specific ILTs							
1. Strong	7.19	7.26	1.72	1.74	-0.17	84	.87
2.Educated	6.92	7.70	1.85	1.22	-1.86	84	.07
3.Domineering	4.71	5.39	1.96	1.88	-1.43	84	.16
4.Masculine	3.97	3.96	2.74	2.74	0.02	84	.99
5.Understanding	7.63	7.70	1.31	1.85	-0.17	84	.87
6.Male	3.05	3.43	2.28	2.87	-0.65	84	.52
7.Energetic	7.41	7.65	1.74	1.61	-0.58	84	.57
8.Pushy	4.16	5.05	2.32	2.36	-1.53	83	.13

	Mean		SD				
	Reference Focus	Trait Focus	Reference Focus	Trait Focus	*t*	*df*	Sig. 2-tailed
9.Dedicated	8.16	7.39	1.05	2.13	2.23	84	.03
10.Sincere	7.59	7.13	1.58	2.01	1.10	84	.27
11.Intelligent	7.43	7.96	1.76	1.15	-1.33	84	.19
12.Loud	4.29	5.26	2.23	1.98	-1.85	84	.07
13.Helpful	8.08	7.65	1.26	1.70	1.26	84	.21
14.Manipulative	3.54	3.74	2.22	2.56	-0.35	84	.72
15.Conceited	2.54	3.19	1.94	2.11	-1.30	82	.20
16.Motivated	8.51	7.65	0.88	2.15	2.64	84	.01
17.Selfish	2.27	2.22	1.91	1.48	0.12	84	.91
18.Clever	7.24	7.83	1.81	1.07	-1.46	84	.15
19.Dynamic	7.30	7.46	1.41	1.46	-0.45	84	.66
20.Hard-working	8.33	7.52	0.79	1.97	2.73	84	.01
21.Knowledgeable	7.20	7.83	1.55	0.92	-1.21	84	.23
Recognised ILTs							
1. Strong	6.22	6.78	2.01	1.54	-1.21	84	0.23
2.Educated	6.79	7.26	1.94	1.54	-1.04	84	0.30
3.Domineering	5.16	5.96	2.29	2.69	-1.37	84	0.18
4.Masculine	4.81	3.91	2.99	2.99	1.23	84	0.22
5.Understanding	6.86	6.91	2.21	2.17	-0.10	84	0.92
6.Male	5.52	3.48	2.75	3.57	2.27	84	0.03
7.Energetic	6.16	7.26	1.96	1.66	-2.39	83	0.02
8.Pushy	4.38	5.23	2.45	2.72	-1.35	83	0.18
9.Dedicated	7.29	7.41	1.78	2.06	-0.26	82	0.80
10.Sincere	6.62	6.65	2.27	1.99	-0.06	84	0.95
11.Intelligent	6.87	7.22	1.87	1.59	-0.78	84	0.44
12.Loud	4.43	5.40	2.51	2.27	-1.47	84	0.15
13.Helpful	6.59	7.17	2.12	1.85	-1.17	84	0.25
14.Manipulative	3.59	3.70	2.49	2.64	-0.18	84	0.86
15.Conceited	2.98	3.14	2.30	2.22	-0.28	82	0.78
16.Motivated	6.98	7.30	1.77	1.77	-0.74	84	0.46
17.Selfish	3.14	3.22	2.24	2.63	-0.13	84	0.90
18.Clever	6.79	7.13	1.97	2.01	-0.70	84	0.49
19.Dynamic	6.17	7.02	1.74	1.20	-2.17	84	0.03
20.Hard-working	7.15	7.35	1.52	1.52	-0.53	84	0.60
21.Knowledgeable	6.82	7.20	1.74	1.60	-0.92	84	0.36

Appendix 3 - Business Game Presentation Marking Criteria

Business Game Presentations 2008-9 MARKING CRITERIA

Team Name:	Date:
Examiner:	Tutor:

Marking should be out of 100%. Two thirds of the marks should be awarded for the quality of the presentation and one third for the content. (please note: the content has a lower weighting because it is principally assessed by the written report). To reflect this, there are four marking categories as set out below:

1. Professionalism of the presentation (e.g. the technical issues, the quality of the overheads, distribution of work among the group, awareness of links between sections, awareness of the audience and presenting rather than reading)
2. Quality of the presentation (e.g. coherence and balance of the sections (1 min for intro; 6-7 mins on marketing; 4-5 mins on operations/HR; 2-3 mins on finance; 1 min on conclusion); understanding the process of presenting)
3. Coherence and credibility of the Business Plan (e.g. rationale, lack of contradiction, awareness of the market, awareness of financial implications)
4. General Comments (e.g. positive: going beyond the lecture material, showing innovation; negative: running out of time)

Appendix 4 – Study 2 Timeline

Groups A: 1, 2, 3, 4, 5, 6, 7, 8, 21, 22, 23, 24
Groups B: 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Week	Week Commencing	Module Stage	Simulation Stage	Data collection stage
	22/09/08			
	29/09/08			
1	**06/10/08**	1st tutorial for groups A		
2	**13/10/08**	1st tutorial for groups B		
3	**20/10/08**	2nd tutorial for groups A		
4	**27/10/08**	Mock practical for groups A 2nd tutorial for groups B		
5	**03/11/08**	3rd tutorial for groups A Mock practical for groups B		First wave of data collected from groups A
6	**10/11/08**	3rd tutorial for groups B		First wave of data collected from groups B
7	**17/11/08**	Presentations for groups A		Group assessment of Presentations for groups A
8	**24/11/08**	Presentations for groups B		Group assessment of Presentations for groups B Group assessment for all Business Plans (submitted on 26/11/2008)
9	**01/12/08**	4th tutorial for groups A		
10	**08/12/08**	1st practical for groups A 4th tutorial for groups B	Simulation start for groups A Gr. A 01/01/08-19/02/08 Approx. 3 months	
11	**15/12/08**	5th tutorial for groups A 1st practical for groups B	Simulation start for groups B Gr. B 01/01/08-19/02/08 Approx. 2.5 months	
Christmas Vacation				

12	**12/01/09**	(Exams)		
13	**19/01/09**	(Exams)		
14	**26/01/09**	2nd practical for groups A 5th tutorial for groups B	19/02/08-26/06/08 Gr. A Approx. 4 months	
15	**02/02/09**	6th tutorial for groups A 2nd practical for groups B	19/02/08-26/06/08 Gr. B Approx. 4 months	
16	**09/02/09**	3rd practical for groups A 6th tutorial for groups B	26/06/08-06/01/09 Gr. A Approx. 6 months (end of 1st year)	
17	**16/02/09**	7th tutorial for groups A 3rd practical for groups B	26/06/08-06/01/09 Gr. B Approx. 6 months (end of 1st year)	
18	**23/02/09**	4th practical for groups A 7th tutorial for groups B	06/01/09-06/10/09 Gr. A Approx. 10 months	
19	**02/03/09**	8th tutorial for groups A 4th practical for groups B	06/01/09-06/10/09 Gr. B Approx. 9 months	Second wave of data collected from groups A
20	**09/03/09**	5th practical for groups A 8th tutorial for groups B	06/10/09-06/07/10 Gr. A Approx. 9 months (end of year 2)	Second wave of data collected from groups B
21	**16/03/09**	9th tutorial for groups A 5th practical for groups B	06/10/09-06/07/10 Gr. B Approx. 9 months (end of year 2)	
22	**23/03/09**	6th practical for groups A 9th tutorial for groups B	06/07/10-05/04/11 Gr. A Approx. 10 months (end of year 3) Simulation ends for group A	Final simulation results (from software) and final simulation grade (from tutors) collected.
Easter Vacation				

23	**20/04/09**	10th tutorial for group A 6th practical for group B	06/07/10-05/04/11 Gr. B Approx. 10 months (end of year 3) Simulation ends for group B	
24	**27/04/09**	10th tutorial for group B		
25	**04/05/09**			Individual assessment for all (Essays submitted on 06/05/09) Group assessment for all (Reports submitted on 08/06/09)
Summer Vacation				

Appendix 5 - Study 2 First Wave Questionnaire

Team Survey | **F copy**

Dear Student,

The ABS Undergraduate Programme is working in collaboration with the Work & Organisational Psychology Group to study leadership and group effectiveness. Your participation in this study will be greatly valued. Participation in this study involves the completion of surveys throughout the Business Game module (BS2225). Please note that participation in this study is NOT part of the BS2225 course or assessment, and is purely voluntary and you have the right to withdraw at any time. There is no penalty for non-participation.

All volunteers will be entered into a **PRIZE DRAW** of **10 X £50.00 Bull Ring vouchers**. To be entered into the prize draw, participants must complete both questionnaires within the specified deadline on each questionnaire. The prize draw will be made on **31st May 2009** and the winners will be notified by email.

If you agree to participate, this will entail:

1. Complete *two* questionnaires about you and your leader. These will be administered during Tutorial 3 and 8. The questionnaires will take approximately 10 minutes to complete each.
2. Allow the matching of your questionnaire to records held within the Undergraduate Programme regarding your grades from Year 1, 2, and 3, your demographics, and your performance in the Business Game simulation. Only student candidate numbers will be used for this process, no names will be matched to student candidate numbers.
3. Allow the use of the data collected from your questionnaire for further analysis and publication of results in academic and practitioner journals (*only aggregated results, not individual responses, will be reported).*

All data collected from the questionnaires will be treated in accordance with the Data Protection Act (1998), under which the data handling procedures at Aston University are registered. Confidentiality of your data will be maintained at all times. All data collected will be sanitised by allocating a unique code to remove all identifying information of participants. Only the researcher will have access to identifying data. Should you withdraw your informed consent to participate in this study, please send an email to topakaa@aston.ac.uk and your data will be deleted from the database immediately.

If you require any further information, please do not hesitate to contact either *Anna Topakas* at **topakaa@aston.ac.uk** (Office: SW 8005 or Tel: 0121 204 3314) or Prof. R. Martin at **r.martin@aston.ac.uk.**

If you would like to participate, please sign the CONSENT FORM on the next page prior to completing the questionnaire

ASTON UNIVERSITY **REG/04/624**

ETHICS COMMITTEE

CONSENT FORM FOR VOLUNTEERS

PROJECT TITLE: Relationship between leadership style, Implicit Leadership theories and trust on team member's well-being and performance

RESEARCH WORKERS, SCHOOL AND SUBJECT AREA RESPONSIBLE

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Volunteer's Statement

I have been informed, in writing, about the purpose of the study and the particular form of participation required. I have read and understand the explanation. I agree to participate in the study of "Leadership and Teamworking" conducted by the Work and Organisational Psychology group in collaboration with the Aston Business School Undergraduate Office throughout the academic year of 2008/2009. I am aware that I am free to withdraw from the study at any time.

Signature: _____

Full Name: _____
(Please do not give your Student Candidate Number on this document)

Date: _____

Thank you for your participation in this research.

SECTION 1: General Information (F)

Your Student Candidate Number	**Your Group Number**
If your Student Candidate Number is not available, please provide your full name below. Under NO circumstances should you give both Student Candidate Number AND full name.	**OR Your Company's Name**

Your country of origin: *(where you mainly grew up)*	☐	UK	☐	Other (please state) _____	
Your first language:	☐	English	☐	Other (please state) _____	
If you are a student from outside the UK, you have been living in UK for _____year(s) _____month(s)					
You are:	☐	Male	☐	Female	
How old are you? _____year(s) _____month(s)					
How much work experience do you have? (part-time and full-time) _____year(s) _____month(s)					
How did the Managing Director in your team come to hold his/her position?					
☐	They volunteered	☐	By majority vote of the team	☐	By drawing (random) lots
☐	That was the only position left for them	☐	No one else wanted the position	☐	Other (please state) _____
Do you think he/she is the real leader in your group?				☐ Yes	☐ No

SECTION 2

Please use the following scale to indicate how closely you think each statement describes the relationship between YOU and YOUR TEAM LEADER.

	Strongly disagree	**Disagree**	**Neither agree nor disagree**	**Agree**	**Strongly agree**
I feel I know where I stand with my team leader…I know how satisfied my team leader is with me.	1	2	3	4	5
I f eel that my team leader understands my problems and needs.	1	2	3	4	5
My team leader recognises my potential.	1	2	3	4	5
Regardless of how much formal authority he/she has build in his/her position, my team leader would use his/her power to help to solve problems in my work.	1	2	3	4	5
Regardless of how much formal authority my team leader has, he/she would “bail me out,” at his/her expense.	1	2	3	4	5
I have enough confidence in my team leader that I would defend and justify his/her decision if he/she were not present to do so.	1	2	3	4	5
I would characterise my working relationship with my team leader as very good.	1	2	3	4	5

Use the numbers 1-9 to indicate how characteristic do you consider the following traits of an:
A. Ideal Manager **GENERALLY** (for all types of jobs)
B. Ideal Manager for **YOUR BUSINESS GAME COMPANY**
C. Rate **YOUR CURRENT MANAGING DIROCTOR** in the Business Game.

1: not at all characteristic
9: very characteristic

Note: Please give all **three** ratings for each characteristic before moving to the next one (i.e. give all three ratings for 'strong' before rating 'educated' and so on).

	Ideal Manager GENERALLY	**Ideal Manager for YOUR COMPANY**	**Your CURRENT Managing Director**
Strong			
Educated			
Domineering			
Dynamic			
Masculine			
Understanding			
Male			
Energetic			
Pushy			
Dedicated			
Sincere			
Hard-working			
Intelligent			
Loud			
Helpful			
Manipulative			
Conceited			
Motivated			
Selfish			
Knowledgeable			
Clever			

SECTION 3

Using the scale below, please indicate the answer that most closely applies to you about ***your feelings towards your work as part of your Business Game Group.***

	Never	Occasio-nally	Some of the time	Much of the time	Most of the time	All of the time
Tense	1	2	3	4	5	6
Depressed	1	2	3	4	5	6
Optimistic	1	2	3	4	5	6
Worried	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Anxious	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Enthusiastic	1	2	3	4	5	6
Relaxed	1	2	3	4	5	6
Comfortable	1	2	3	4	5	6
Miserable	1	2	3	4	5	6

Please respond to the following statements honestly and openly, in reference to your work standards in your role in the team:

	Poor	Below Average	Average	Above Average	Excellent
Quality of work you do	1	2	3	4	5
Quantity of work you do	1	2	3	4	5
Amount of effort devoted to your work	1	2	3	4	5
Your ability to do the work	1	2	3	4	5
Your overall performance	1	2	3	4	5
Your knowledge to do the work	1	2	3	4	5
Your ability to inspire group members to perform well	1	2	3	4	5
Your skill in gathering and transmitting work related information	1	2	3	4	5
Your proficiency in administrative duties	1	2	3	4	5
Your ability to work well with others	1	2	3	4	5
Your compliance with the rules and regulations relevant	1	2	3	4	5

SECTION 4

All things considered, how satisfying do you find this activity (Business Game)?	**Very dissatisfied**	**Dissatisfied**	**Neither/ Nor**	**Satisfied**	**Very satisfied**
In general, to what extent do you enjoy performing this activity (Business Game)?	**Very dissatisfied**	**Dissatisfied**	**Neither/ Nor**	**Satisfied**	**Very satisfied**

Please use the following scale to indicate how closely you think each statement describes YOUR TEAM.

	Strongly Disagree	**Disagree**	**Neither / Nor**	**Agree**	**Strongly Agree**
I am pleased with the way my colleagues and I work together.	1	2	3	4	5
I am very satisfied with working in this team.	1	2	3	4	5
I am satisfied with my present colleagues in my team.	1	2	3	4	5

Please answer the following questions about how YOUR TEAM works together.

	Never	**A little**	**A moderate amount**	**Quite a bit**	**A lot**
How often do people in your team disagree about opinions regarding the work being done?	1	2	3	4	5
How frequently are there conflicts about ideas in your work team?	1	2	3	4	5
How much conflict about the work you do is there in your work team?	1	2	3	4	5
To what extent are there differences of opinion in your work team?	1	2	3	4	5
How much friction is there among members of your work team?	1	2	3	4	5
How much personality conflict is evident in your work team?	1	2	3	4	5
How much tension is there among members of your work team?	1	2	3	4	5
How much emotional conflict is there among members of your work team?	1	2	3	4	5

Please answer the following questions about how YOUR TEAM works together.

How often do you make suggestions about better work methods to other team members?	Never	Rarely	Sometimes	Often	Always
Do other members of your team usually let you know when you do something that makes their job easier (or harder)?	Never	Rarely	Sometimes	Often	Always
How often do you let other team members know when they have done something that makes your job easier (or harder)?	Never	Rarely	Sometimes	Often	Always
How well do other members of your team recognise your potential?	Not at all	A little	Somewhat	Well	Very well
How well do other members of your team understand your problems and needs?	Not at all	A little	Somewhat	Well	Very well
How flexible are you about switching job responsibilities to make things easier for other team members?	Not at all	A bit	Somewhat	Very	Very much
In busy situations, how often do other team members ask you to help out?	Never	Rarely	Sometimes	Often	Always
In busy situations, how often do you volunteer your efforts to help others on your team?	Never	Rarely	Sometimes	Often	Always
How willing are you to help finish work that had been assigned to others?	Not at all	A bit	Somewhat	Very	Very much
How willing are other members of your team to help finish work that was assigned to you?	Not at all	A bit	Somewhat	Very	Very much

Your opinion is highly valued. Thank you for spending time to assist with this study.

Appendix 6 - Study 2 Second Wave Questionnaire

Team Survey | **F2 copy**

Dear Student,

The ABS Undergraduate Programme is working in collaboration with the Work & Organisational Psychology Group to study leadership and group effectiveness. Your participation in this study will be greatly valued. Participation in this study involves the completion of 2 surveys throughout the Business Game module (BS2225). Please note that participation in this study is NOT part of the BS2225 course or assessment, and is purely voluntary and you have the right to withdraw at any time. There is no penalty for non-participation.

All volunteers will be entered into a **PRIZE DRAW** of **10 X £50.00 Bull Ring vouchers**. To be entered into the prize draw, participants must complete BOTH questionnaires within the specified deadline on each questionnaire. The prize draw will be made on **31st May 2009** and the winners will be notified by email.

If you agree to participate, this will entail:
1. Complete *two* questionnaires about you and your leader. These will be administered during Tutorial 3 and 8. The questionnaires will take approximately 15 minutes to complete each.
2. Allow the matching of your questionnaire to records held within the Undergraduate Programme regarding your grades from the Module and your demographics. Only student candidate numbers will be used for this process, no names will be matched to student candidate numbers.
3. Allow the use of the data collected from your questionnaire for further analysis and publication of results in academic and practitioner journals (*only aggregated results, not individual responses, will be reported).*

All data collected from the questionnaires will be treated in accordance with the Data Protection Act (1998), under which the data handling procedures at Aston University are registered. Confidentiality of your data will be maintained at all times. All data collected will be sanitised by allocating a unique code to remove all identifying information of participants. Only the researcher will have access to identifying data. Should you withdraw your informed consent to participate in this study, please send an email to topakaa@aston.ac.uk and your data will be deleted from the database immediately.

If you require any further information, please do not hesitate to contact either *Anna Topakas* at **topakaa@aston.ac.uk** (Office: SW 8005 or Tel: 0121 204 3314) or Prof. R. Martin at **r.martin@aston.ac.uk.**

If you would like to participate, please sign the CONSENT FORM on the next page prior to completing the questionnaire

ASTON UNIVERSITY **REG/04/624**

ETHICS COMMITTEE

CONSENT FORM FOR VOLUNTEERS

PROJECT TITLE: Relationship between leadership style, Implicit Leadership theories and trust on team member's well-being and performance

RESEARCH WORKERS, SCHOOL AND SUBJECT AREA RESPONSIBLE

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r.martin@aston.ac.uk
0121 204 4293
SW 8007

Volunteer's Statement

I have been informed, in writing, about the purpose of the study and the particular form of participation required. I have read and understand the explanation. I agree to participate in the study of "Leadership and Teamworking" conducted by the Work and Organisational Psychology group in collaboration with the Aston Business School Undergraduate Office throughout the academic year of 2008/2009. I am aware that I am free to withdraw from the study at any time.

Signature: _____

Full Name: _____
(Please do not give your Student Candidate Number on this document)

Date: _____

Thank you for your participation in this research.

SECTION 1: General Information (F)

Your Student Candidate Number	**Your Group Number**
If your Student Candidate Number is not available, please provide your full name below.	**OR Your Company's Name**

Your country of origin: *(where you mainly grew up)*	☐	UK	☐	Other (please state) _____
You are:	☐	Male	☐	Female

How old are you? _____year(s) _____month(s)

How did the Managing Director in your team come to hold his/her position?

☐	They volunteered	☐	By majority vote of the team	☐	By drawing (random) lots
☐	That was the only position left for them	☐	No one else wanted the position	☐	Other (please state) : _____

Do you think he/she is the real leader in your group?	☐	Yes	☐	No

SECTION 2

Please use the following scale to indicate how closely you think each statement describes the relationship between YOU and YOUR TEAM LEADER.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I feel I know where I stand with my team leader…I know how satisfied my team leader is with me.	1	2	3	4	5
I feel that my team leader understands my problems and needs.	1	2	3	4	5
My team leader recognises my potential.	1	2	3	4	5
Regardless of how much formal authority he/she has built in his/her position, my team leader would use his/her power to help to solve problems in my work.	1	2	3	4	5
Regardless of how much formal authority my team leader has, he/she would “bail me out,” at his/her expense.	1	2	3	4	5
I have enough confidence in my team leader that I would defend and justify his/her decision if he/she were not present to do so.	1	2	3	4	5
I would characterise my working relationship with my team leader as very good.	1	2	3	4	5

SECTION 3

Using the scale below, please indicate the answer that most closely applies to you about ***your feelings towards your work as part of your Business Game Group.***

	Never	Occasio-nally	Some of the time	Much of the time	Most of the time	All of the time
Tense	1	2	3	4	5	6
Depressed	1	2	3	4	5	6
Optimistic	1	2	3	4	5	6
Worried	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Anxious	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Enthusiastic	1	2	3	4	5	6
Relaxed	1	2	3	4	5	6
Comfortable	1	2	3	4	5	6
Miserable	1	2	3	4	5	6

Please respond to the following statements honestly and openly, in reference to your work standards in your role in the team:

	Poor	Below Average	Average	Above Average	Excellent
Quality of work you do	1	2	3	4	5
Quantity of work you do	1	2	3	4	5
Amount of effort devoted to your work	1	2	3	4	5
Your ability to do the work	1	2	3	4	5
Your overall performance	1	2	3	4	5
Your knowledge to do the work	1	2	3	4	5
Your ability to inspire group members to perform well	1	2	3	4	5
Your skill in gathering and transmitting work related information	1	2	3	4	5
Your proficiency in administrative duties	1	2	3	4	5
Your ability to work well with others	1	2	3	4	5
Your compliance with the rules and regulations relevant	1	2	3	4	5

SECTION 4

All things considered, how satisfying do you find this activity (Business Game)?	**Very dissatisfied**	**Dissatisfied**	**Neither/ Nor**	**Satisfied**	**Very satisfied**
In general, to what extent do you enjoy performing this activity (Business Game)?	**Very dissatisfied**	**Dissatisfied**	**Neither/ Nor**	**Satisfied**	**Very satisfied**

Please use the following scale to indicate how closely you think each statement describes YOUR TEAM.

	Strongly Disagree	**Disagree**	**Neither / Nor**	**Agree**	**Strongly Agree**
I am pleased with the way my colleagues and I work together.	1	2	3	4	5
I am very satisfied with working in this team.	1	2	3	4	5
I am satisfied with my present colleagues in my team.	1	2	3	4	5

Please answer the following questions about how YOUR TEAM works together.

	Never	**A little**	**A moderate amount**	**Quite a bit**	**A lot**
How often do people in your team disagree about opinions regarding the work being done?	1	2	3	4	5
How frequently are there conflicts about ideas in your work team?	1	2	3	4	5
How much conflict about the work you do is there in your work team?	1	2	3	4	5
To what extent are there differences of opinion in your work team?	1	2	3	4	5
How much friction is there among members of your work team?	1	2	3	4	5
How much personality conflict is evident in your work team?	1	2	3	4	5
How much tension is there among members of your work team?	1	2	3	4	5
How much emotional conflict is there among members of your work team?	1	2	3	4	5

Please answer the following questions about how YOUR TEAM works together.

How often do you make suggestions about better work methods to other team members?	Never	Rarely	Sometimes	Often	Always
Do other members of your team usually let you know when you do something that makes their job easier (or harder)?	Never	Rarely	Sometimes	Often	Always
How often do you let other team members know when they have done something that makes your job easier (or harder)?	Never	Rarely	Sometimes	Often	Always
How well do other members of your team recognise your potential?	Not at all	A little	Somewhat	Well	Very well
How well do other members of your team understand your problems and needs?	Not at all	A little	Somewhat	Well	Very well
How flexible are you about switching job responsibilities to make things easier for other team members?	Not at all	A bit	Somewhat	Very	Very much
In busy situations, how often do other team members ask you to help out?	Never	Rarely	Sometimes	Often	Always
In busy situations, how often do you volunteer your efforts to help others on your team?	Never	Rarely	Sometimes	Often	Always
How willing are you to help finish work that had been assigned to others?	Not at all	A bit	Somewhat	Very	Very much
How willing are other members of your team to help finish work that was assigned to you?	Not at all	A bit	Somewhat	Very	Very much

With your Business Game Team in mind, to what extent do you agree or disagree with the following statements:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Team members are committed to achieving the team's objectives	1	2	3	4	5	6	7
We agree in the team about what our team objectives are	1	2	3	4	5	6	7
The team often reviews its objectives	1	2	3	4	5	6	7
We regularly reflect upon team performance and how it could be improved	1	2	3	4	5	6	7
We have to coordinate our work tightly in this team	1	2	3	4	5	6	7
Members of my team have to communicate closely with each other to get the job done	1	2	3	4	5	6	7
We are free to decide how to carry out the team's tasks	1	2	3	4	5	6	7
In this team we set our own goals	1	2	3	4	5	6	7
We are formally recognised as a team within our organisation	1	2	3	4	5	6	7
It is clear who the members of our team are	1	2	3	4	5	6	7
Members are clear about their own role within the team	1	2	3	4	5	6	7
Members are clear about the roles of other team members	1	2	3	4	5	6	7

Your opinion is highly valued. Thank you for spending time to assist with this study.

Appendix 6 - Study 3 Questionnaire

I wish to thank you for agreeing to participate in this survey which is conducted as part of my final Masters project, in conjunction with the Ms Anna Topakas' doctoral research project. The information you will provide is of great importance and your contribution is very much appreciated. My aim is to investigate the nature of the relationships between employees and their supervisors within organisations. This will add to the understanding of the process which contributes to the improvement of employee performance and well-being in general.

I commit to keep fully confidential all the data you will provide and to use those solely in the context of the present study. The data will not be made available to any member of the organisation or any other individual other than my academic supervisor. Your participation to the study is voluntary and you are free to withdraw from the study at any time. The questionnaire will take approximately 20 minutes to complete. Once again, thank you for your time and your valuable contribution.

Yours sincerely,

Ruhkaam Karimian

For any queries do not hesitate to contact me at karimiar@aston.ac.uk.

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SECTION A

Using the response scale below, please indicate the extent to which you agree or disagree with the following statements about your immediate supervisor.

Strongly Disagree 1	Disagree 2	Neither agree nor disagree 3	Agree 4	Strongly Agree 5

I feel I know where I stand with my immediate supervisor…..I know how satisfied my manager is with me	1	2	3	4	5
I feel that my immediate supervisor understands my problems and needs	1	2	3	4	5
My immediate supervisor recognizes my potential	1	2	3	4	5
Regardless of how much formal authority he/she has in his/her position, my immediate supervisor would use his/her power to help me solve problems in my work	1	2	3	4	5
Regardless of the amount of formal authority my immediate supervisor has, he/she would "bail me out" at his/her expense	1	2	3	4	5
I have enough confidence in my immediate supervisor that I would defend and justify his/her decisions if he/she were not present to do so	1	2	3	4	5
I would characterize my relationship with my immediate supervisor as very good.	1	2	3	4	5

Please use the numbers 1-9 to indicate how characteristic do you consider the following traits of an:

A. *Ideal Manager **GENERALLY** (for all types of jobs)*
B. *Your **CURRENT** Manager*

1: not at all characteristic
9: very characteristic

Note: Please give all **three** ratings for each characteristic before moving to the next one (i.e. give all three ratings for 'strong' before rating 'educated' and so on).

	Ideal Manager GENERALLY	***Your CURRENT Manager***
Strong		
Educated		
Domineering		
Dynamic		
Masculine		
Understanding		
Male		
Energetic		
Pushy		
Dedicated		
Sincere		
Hard-working		
Intelligent		
Loud		
Helpful		
Manipulative		
Conceited		
Motivated		
Selfish		
Knowledgeable		
Clever		

SECTION B

Using the response scale below, please answer the following questions about how your team works together.

Never 1	A Little 2	A moderate amount 3	Quite a bit 4	A lot 5

How often do people in your work team disagree about opinions regarding the work being done?	1	2	3	4	5
How frequently are there conflicts about ideas in your work team?	1	2	3	4	5
How much conflict about the work you do is there in your work team?	1	2	3	4	5
To what extent are there differences in opinion in your work team?	1	2	3	4	5
How much friction is there among members of your work team?	1	2	3	4	5
How much are personality conflicts evident in your work team?	1	2	3	4	5
How much tension is there among members of your work team?	1	2	3	4	5
How much emotional conflict is there among members of your work team?	1	2	3	4	5

SECTION C

How much of the time has your job made you feel each of the following:

Never 1	Occasionally 2	Some of the time 3	Much of the time 4	Most of the time 5	All of the time 6

Tense	1	2	3	4	5	6
Depressed	1	2	3	4	5	6
Optimistic	1	2	3	4	5	6
Worried	1	2	3	4	5	6
Motivated	1	2	3	4	5	6
Anxious	1	2	3	4	5	6
Gloomy	1	2	3	4	5	6
Calm	1	2	3	4	5	6
Enthusiastic	1	2	3	4	5	6
Relaxed	1	2	3	4	5	6
Comfortable	1	2	3	4	5	6
Miserable	1	2	3	4	5	6

Use the scale below to indicate how you generally feel about working with this company

Strongly Disagree 1	Moderately Disagree 2	Slightly Disagree 3	Neither Agree nor disagree 4	Slightly Agree 5	Moderately Agree 6	Strongly Agree 7

I really feel that I belong to this organisation	1	2	3	4	5	6	7
I am proud to belong to this organisation	1	2	3	4	5	6	7
I do not feel emotionally attached to this organisation	1	2	3	4	5	6	7
I do not feel part of the family at my organisation	1	2	3	4	5	6	7
I really feel as if this organisation's problems are my own	1	2	3	4	5	6	7
This organisation has a great deal of personal meaning for me	1	2	3	4	5	6	7
It would not be morally right for me to leave this organisation now	1	2	3	4	5	6	7
It would not be right for me to leave this organisation now, even if it were to my advantage	1	2	3	4	5	6	7
I think I would be guilty if I left my organisation now	1	2	3	4	5	6	7
I would violate a trust if I left my organisation now	1	2	3	4	5	6	7
If I got another job offer for a better job elsewhere, I would not feel it was right to leave my organisation	1	2	3	4	5	6	7
I would not leave my organisation right now, because I have a sense of obligation to certain people who work here	1	2	3	4	5	6	7

I would not leave this organisation because of what I stand to lose	1	2	3	4	5	6	7
For me personally the cost of leaving this organisation would be far greater than the benefits	1	2	3	4	5	6	7
I continue to work for this organisation because I don't believe another organisation could offer me the benefits I have here	1	2	3	4	5	6	7
I have no choice but to stay with this organisation	1	2	3	4	5	6	7
I stay with this organisation because I can't see where else I would work	1	2	3	4	5	6	7
I feel that I have too few options to consider leaving this organisation	1	2	3	4	5	6	7

Please respond to the following statements honestly and openly, with reference to your working standards:

Poor 1	Below Average 2	Average 3	Above Average 4	Excellent 5

Quality of your work	1	2	3	4	5
Quantity or volume of work you do	1	2	3	4	5
Amount of effort devoted to your job	1	2	3	4	5
Your ability to do the job	1	2	3	4	5
Your overall performance	1	2	3	4	5
Your knowledge to do the job	1	2	3	4	5
Your ability to inspire work colleagues to perform well	1	2	3	4	5
Your skill in gathering and transmitting work-related information	1	2	3	4	5
You proficiency in administrative duties.	1	2	3	4	5
Your ability to work well with others	1	2	3	4	5
Your compliance with rules and regulations relevant	1	2	3	4	5

SECTION D

Demographic Information

1. Gender (please tick) ❒ Male ❒ Female
2. Your age _____years
3. How long have you been working for this organization? ____years ____months
4. How long have you been working for your current immediate supervisor? ____years ____months
5. What sex is your immediate supervisor? ❒ Male ❒ Female
6. On average how many hours a week you work? _____hours
7. Name the organization you work
8. What is you role within the organization please tick the option which best describes your work ❒ Operations/Assembly Work ❒ Professional Work ❒ Trade/Technical Work ❒ Supervisor Work ❒ Clerical/Secretarial Work ❒ Manager or Senior Administrator ❒ Sales Work ❒ Other_____
9. What is your highest level of education? ❒ Metric/ O Levels ❒ FSc/ A Levels ❒ Diploma/Trade ❒ Bachelor Degree ❒Post-Grad (Masters, PhD) ❒ Other_____
10. What is your employment status ❒ Permanent ❒ Contract ❒ Casual ❒ Probation

Thank you for participating in our survey.