



UNIVERSITY OF  
BIRMINGHAM

**CRYSTALLISING COMMITMENT  
THROUGH  
STRUCTURAL EQUATION MODELLING:  
THE CASE OF MANUFACTURING TEAMS  
IN SOUTH KOREA**

by

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## **ABSTRACT**

The use of teams in organisations has become widespread, and research on teams has been extensive. However, in comparison with measures of organisational level variables there has been comparatively little research on team members' attitudes and behaviour. This study examines team members' commitment to their team and to their organisation using data from two transport-related companies in the small- and medium-sized category in South Korea ( $N=358$ ). Drawing on social exchange theory and the cognition-attitude-behaviour mechanism, the thesis proposes a multiple mediation model that suggests team commitment and organisational commitment mediate the relationship between psychological empowerment and organisational citizenship behaviour.

Prior to examining the proposed theoretical model, the thesis looks at the applicability of Allen and Myer's (1990) organisational commitment scale and the distinctiveness of team commitment from organisational commitment. Parsimonious validity testing suggests that the normative organisational commitment scale is not applicable, and a three-factor model of organisational commitment works better in a South Korean context. Analysis of structural equation models using LISREL supports the two commitments' multiple mediation role, demonstrating that both team commitment and organisational commitment positively and independently mediate the relationships between psychological empowerment and organisational citizenship behaviour. Further, results present the negative interaction effects of the two commitment forms on organisational citizenship behaviours.

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## LIST OF ABBREVIATIONS

$\alpha$	Cronbach's alpha coefficient
AOC	Affective Organisational Commitment
AVE	Average Variance Extracted
BOCS	British Organisational Commitment Scale
CC:HiSac	Continuance Commitment: High Sacrifice
CC:LoAlt	Continuance Commitment: Low Alternative
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
COC	Continuance Organisational Commitment
$df$	Degree of freedom
EFA	Exploratory Factor Analysis
GC	Group Commitment
OC	Organisational Commitment
OCB	Organisational Citizenship Behaviour
OCBI	Organisational Citizenship Behaviour toward Individuals
OCBO	Organisational Citizenship Behaviour toward the Organisation
OCQ	Organisational Commitment Questionnaire
OCS	Organisational Commitment Scale
$p$	Level of significance/ $p$ -value
PCA	Principal Component Analysis
PAF	Principal Axis Factoring
NOC	Normative Organisational Commitment
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modelling
SME	Small and Medium-sized Enterprise
SRMR	Standardized Root Mean Square Residual
TC	Team Commitment
TCM	Three-Component Model
TLI	Tucker-Lewis Index



# **CHAPTER 1. INTRODUCTION**

## **1.1. Introduction**

This chapter provides an overview of the thesis and explains how it is structured. It opens by explaining the research background (1.2), followed by the scope of the research (1.3). The rationale for the research (1.4) is then discussed, specifically focusing on the reasons for choosing team commitment and organisational commitment, and the research context. Next, the research aims (1.5) are addressed, followed by the research questions (1.6). The following section states the main contributions the thesis is intended to make (1.7); and the chapter concludes with the thesis outline (1.8).

## **1.2. Background to the Research**

The use of teams in the workplace has become widespread (Sinclair, 1992), corresponding to organisational changes in the demanding environment of business. Research on teams has been widely conducted and this has been done with an emphasis on team effectiveness, team performance/productivity, group-level decision-making, and so on (Arnold et al., 2005). However, such research seemed to this researcher to have focused on economic dimensions. There had been comparatively little research on the attitude and behaviour of people within their teams, for example on team members' attitudes to the team, whilst the research on employees' attitudes toward the organisation – for example on their satisfaction and organisational commitment – had been carried out intensively and repeatedly.

Among employees' attitudes, commitment in the workplace had been investigated as a predictor of a number of work-related attitudes and behaviours (Meyer, Stanley, Herscovitch & Topolnytsky, 2002), and the body of research work amassed in this area could be considered substantial, given that management studies is a relatively new discipline (Becker, 1960; Buchanan, 1975; Mowday, Steers & Porter, 1979; Salancik, 1977; Sheldon, 1971). However, commitment continued to be of interest, and at the time this thesis was embarked on, contemporary researchers considered that some fundamental questions needed to be raised about the work of earlier theorists. Working within the tradition established by Becker and others, a number of contemporary researchers continued to study the relationships of causation and correlation between workplace commitment, work outcomes and employee attitudes (Al-Eisa et al., 2009; Blomme et al., 2010; Erdogan & Enders, 2007; Liao et al., 2009; Parish et al., 2008; Rhoades et al. 2001; Sharma et al., 2009; Strauss et al., 2009; Turker, 2009). This continuing interest demonstrated that, as well as being practically relevant, the topic of commitment remained of theoretical significance.

Among the different forms of work commitment, organisational commitment had historically been the main focus (Morrow, 2011) of interest. Together with research on organisational commitment, there had been extensive research into occupational commitment (Blau et al., 1993; Kim & Mueller, 2011; Tsoumbri & Xenikou, 2010), career commitment (Blau, 1985; Duffy et al., 2011; Goulet & Singh, 2002), professional commitment (Blau, 1999; Chang & Choi, 2007; Rhee et al., 2011) and union commitment (Bamberger, Kluger & Suchard, 1999; Carson et al., 2006; Chan et al. 2006). However, there had been comparatively little research focusing on team commitment. This was noteworthy since many organisations, and many researchers

working on organisation theory, had suggested that in recent years that firms had changed their structures to become less hierarchical, and one of the features of this development had been the introduction of team systems (Poza & Markus, 1980). It is beyond the scope of this thesis to review the literature on new organisational forms (see Tracey, Phillips & Jarvis, 2011 for a recent review); but if we simply allow that these changes are more than rhetorical, it seems clear that teams have become increasingly important aspects within organisation structure.

Any employee can have multiple goals in their workplace (Meyer & Herscovitch 2001), and he or she may have multiple commitment foci at the same time (the next chapter presents the previous studies on multiple commitments). The combination of multiple commitments toward work outcomes may be complementary (for example, career commitment may enhance commitment to a profession), conflicting (for example, professional commitment may reduce commitment to an organisation that is making changes that affect professional values), or zero-sum (for example, high workplace commitment makes less commitment to home: Heywood, Siebert & Wei, 2010). So, how about commitment to team? As researchers interested in commitment, we can ask how team commitment interacts with other commitment forms in teams, and whether these interactions are complementary or conflicting in their impact.

Having identified that the research on multiple commitments had been mainly carried out in North American, European and Chinese contexts, and in large firms, the researcher expected that findings from a different research context would contribute to a generalizing of theory. For instance, there had been little work differentiating organisational commitment from team commitment in an Asian context, even though – according to Becker's (2009) typology of commitment foci – team commitment was

one of the most proximal commitment foci, which meant that team commitment in the workplace was a very meaningful construct to examine.

Since its introduction, team working had mainly been used with production-line workforces in the automotive manufacturing sector (Mueller, 1994) and hence the research on teams (including team commitment) had been conducted in large manufacturing firms. However, with just a few exceptions, Korean automobile manufacturers were mainly small- and medium-sized firms. Further, unlike other developed countries, where team systems were widespread across the manufacturing workforce, team systems in Korea had mainly been introduced into large conglomerate firms' office environments. Hence, Korean research on team systems had been mainly conducted in large non-manufacturing organisations, which suggested there was an opportunity to carry out research on team systems in small- and medium-sized enterprises (SMEs) in manufacturing industry.

Taken together, these questions about the role of team commitment and its distinctiveness from organisational commitment in the context of small- and medium-sized manufacturing firms in South Korea triggered the researcher's interest and led to the present study.

### 1.3. Scope of the Research

This study considers only team members, as the major construct being researched is team commitment. As a piece of research into multiple commitments, this study focuses on team commitment and organisational commitment among the various forms of commitment in the workplace. As mentioned in the research background, this is to

examine the construct distinctiveness in SMEs, where the psychological distances between teams and their organisation is not distal as it is in large or multinational firms, but tends rather to be proximal. The context for this is specifically small- and medium-sized transport-related manufacturing companies (one auto parts manufacturer and one motorbike manufacturer) in South Korea.

In order to look at team members' attitudes and behaviour in teams, a relational and reciprocal framework was proposed for this study, drawing on social exchange theory and the cognition-attitude-behaviour mechanism. The study would examine team commitment and organisational commitment, looking at the interaction of attitudes of employees working in teams. For the relational constructs that would represent this interaction of attitudes, the study would focus on (i) psychological empowerment, which influences commitment and (ii) organisational citizenship behavior, which two commitments influence in terms of performance.

#### 1.4. Justification for the Research

##### 1.4.1. Commitment Forms

This study was set up to look at the roles of commitment in team systems, and commitment to team was chosen as the most important item for consideration. As teams are 'embedded in an organisational context' (Kozlowski et al., 1999: 245), organisational commitment was selected as another commitment form, to see how team commitment interacted with other commitment forms. The following sections give detailed descriptions:

#### 1.4.1.1. Team Commitment

This area of the research would look at how team performance or productivity could be explained from the perspective of commitment research. As mentioned earlier, commitment is one of the best predictors of workplace attitudes and behavior. So, in terms of the study, it was expected that employees would focus their commitment on their proximal work-unit, and interact with the other members of it on a daily basis. Therefore, we can say that commitment to team was an essential commitment focus in the team environment.

Secondly, a relatively small volume of research had been conducted on team commitment, since the research on teams had tended to be broadly conducted. Such research had generally focused on team effectiveness, team performance, team building and groups' decision-making (Arnold, 2005). So, it was hoped that the present study would contribute to an area of research on teams that was quite weak.

Thirdly, leaving aside organisational commitment, there had been less research on team commitment compared to other commitment forms, such as career commitment, professional commitment and union commitment. Considering how popular team systems are in organisations, researchers need to pay more attention to team commitment to enrich the amount of knowledge of employees' attitudes and behaviour.

Finally, it was known that inappropriate forms of measurement for team commitment had lessened its importance. This research would aspire to prove the significance of team commitment in the workplace by using a more appropriate scale to measure on-the-job rather than off-the-job interaction.

#### 1.4.1.2. Organisational Commitment

An organisation and a team have distinct and contrasting sizes, as an organisation is an over-arching structure whereas teams are its small work-units. Given the contrasting sizes, employees can be expected to identify different psychological distances between themselves and the two structures. It was obvious to the researcher that employees' commitment to teams and to their organisation represented distinct commitment foci, and this had been supported by previous studies (Zaccaro & Dobbins, 1989; Ellemers, de Gilder & van den Heuvel, 1998; Bishop et al., 2005). However, studying this distinctiveness in the context of small- and medium-sized companies would provide much stronger supporting evidence. Given that the two commitment forms were about organisational structure and intra-organisational commitment forms, examining these forms should show more consistency than using other commitment forms, such as supervisor or union commitment.

Employees' organisational commitment is the basis for all their commitment. Therefore, organisational commitment had conventionally been examined in multiple commitment research. Other commitment forms could be pursued only after employees joined an organisation: commitment to teams, supervisors and unions are examples of these other forms. Moreover, it is the organisation that is management's ultimate concern, and commitment research is intended to enhance the organisation's productivity. Hence this research accepted that employees' commitment to organisation was their core commitment, and it needed to be examined to see how the other commitment forms interacted with it.

#### 1.4.2. Research Context

The research context chosen consisted of two medium-sized transport-related manufacturing companies in South Korea. The following are the reasons for the choice of this context:

Firstly, research findings obtained in a South Korean context would help to generalize a commitment theory developed in a North American culture. A great deal of commitment research had been conducted in North America. At the time this research was initiated, research on this topic had been conducted in Europe and Asia as well, but the Asian research had tended to incline toward a Chinese context. Although Korea and China share a common culture in terms of Confucianism, the two countries' economies are different. In this respect, this study would extend findings about commitment to another Asian country.

Secondly, the research findings would provide more precise guidelines for researchers conducting commitment research amongst South Korean employees, as the study would employ the original version of three-component model of commitment (Allen & Meyer, 1990) and test its validity in a Korean context. As the previous representative studies on the three-component-model's scale validity with Korean samples (Ko, Price and Mueller, 1997; Lee, Allen, Meyer and Rhee, 2001) had employed the revised version (Meyer, Allen & Smith, 1993), the findings of this study would help define organisational commitment scales suitable for a Korean context. This would provide a foundation to develop a universally applicable measure by offering a common-item pool, especially for businesses with diverse workforces and for multinational firms operating globally. Furthermore, establishing the validity of the three-component commitment



scale in a Korean context would influence the selection of a team commitment scale, as team commitment was often measured on the organisational commitment scale.

Thirdly, this study would specifically examine manufacturing. Traditionally, manufacturing had been the main environment for team-based working; so, previous research on team (workgroup) commitment had often collected its data from manufacturing. Therefore, another set of findings from manufacturing would help the comparison and discussion of research findings. Moreover, manufacturing in South Korea accounts for about 30 per cent of GDP, and it would be meaningful to examine employment relationships in a major national working environment.

Fourthly, the South Korean automobile manufacturing industry is prosperous, as it has a strong position in the global market. South Korean automobile manufacturers rank in the top four or five manufacturing areas in the world in terms of production volume. At the heart of the automobile manufacturing industry are auto parts manufacturing companies. This meant that the study would examine a nationally as well as a globally prosperous industry sector.

Finally, there is a significant need in Korea to foster human resource management in small- and medium- sized enterprises (SMEs), as SMEs create considerable employment in a country where medium-sized companies account for about one quarter of employment. A report on the status of South Korean businesses in 2009 by the Ministry of Employment and Labor (2011) states that SMEs represent 99.8 per cent of total business enterprises in South Korea. Another statistical report from the Small and Medium Business Administration in 2012 on the status of SMEs in Korea, specifically on those businesses in manufacturing whose employees number more than five, states

that a total of 99.9 per cent of businesses are SMEs (3 million SMEs) and 87.7 per cent of all employees work in SMEs. SMEs in the manufacturing sector of industry produce 47.6 per cent of turnover and 50.5 per cent of value added. South Korean auto parts manufacturers mainly consist of small- (fewer than 50 employees) and medium-sized (fewer than 300 employees) companies, except for the car manufacturers' own auto parts companies. So, given the employment impact of SMEs in Korea, the research on SMEs would be worthwhile.

### 1.5. Research Aims

The aim of the research reported in this thesis was three-fold:

The first aim was to establish the importance of team commitment and its distinctiveness from organisational commitment, against a background in which team systems in organisations had become widespread across the sectors of Korean industry, regardless of the size of firms. This would help management and team leaders to understand how their team members' commitment influenced behaviour and how they could promote team performance or team productivity.

As it was understood that employees could set themselves several goals, and commitment foci corresponding to these goals, the second aim was to examine the relationships between the roles played by multiple commitments, and to establish how the attitudes of team members related to their perceptions (cognition) and behaviour: in other words, to examine the mediating effects of commitments. By understanding team members' perceptions and attitudes, and the impacts of these on performance, leaders or managers would be able to adapt the context offered by the team to promote their goals.

The research sought to establish the concurrent existence of multiple commitments, and to provide an understanding of the relationships between them. So, the third aim of the thesis was to understand the interaction between organisational commitment and team commitment. This was essential in order to find out whether these two commitments produced their effects in a complementary or a conflicting way.

It was hoped that the research for this thesis would provide an insight into team members' attitudes, perceptions and behaviour using parsimonious and validated construct measurements, and further that it would help managers to set strategic goals for organisations as a whole and for individual teams by presenting the interaction effects among multiple commitment forms.

#### 1.6. Research Questions

The current competitive business environment needs flexible and resilient organisations. Given this need, managements want autonomous employees who are willing to show voluntary behaviour, and commitment plays an important role in stimulating such autonomous and voluntary behaviour. Considering the findings of Cohen (2003) and Reichers (1985) that combinations of different commitment forms influenced organisational behaviour better than any individual commitment, this study would examine two commitment forms: team and organisational. Based on the literature review, the research questions (RQs) were developed to cover three areas; constructs of commitment (RQ1 and RQ2), effects of commitment (RQ3 and RQ4) and interaction effects (RQ5).

**RQ1.** How do we measure team commitment and organisational commitment in a South Korean context?

**RQ2.** Are they distinct constructs, even in small- and medium-sized companies where teams and organisation are much closer than in large firms?

**RQ3.** To what extent, does team commitment have the power to explain work outcomes? Is it different in this from organisational commitment?

**RQ4.** Do employees' attitudes (team commitment and organisational commitment) mediate their perceptions (psychological empowerment) and behaviours (OCBI and OCBO)?

**RQ5.** How does the combination of team commitment and organisational commitment influence work outcomes? Are the two commitments complementary or conflicting?

## 1.7. Main Contributions

The main contributions of the thesis derive from its study of an area that had previously been understudied, and these contributions are listed below (Chapter 9 discusses in detail).

Firstly, the thesis provides evidence of the theoretical importance of team commitment, even in small- and medium-sized companies where psychological distance between team and organisation is proximal compared to the distance in large firms. Its distinctiveness, and different role from that of organisational commitment, are

demonstrated in a research context not previously investigated: a South Korean manufacturing team-based working environment. Secondly, this thesis shows how the social exchange mechanism works in a team environment by examining team members' perceptions, attitudes and behavior. The thesis illustrates how the two commitment foci, commitment to teams and to organisation, mediate the relationship between perception and behavior. Thirdly, the thesis helps to promote effective team management and goal-setting for teams by demonstrating the conflicting (negative) interaction effects between team commitment and organisational commitment. Fourthly, the thesis provides some common items for organisational (or team) commitment measurement by presenting items applicable in a South Korean context among those of Allen and Meyer's (1990) original version of a three-component model. Lastly, the thesis makes researchers aware that it is better to adapt the measurement of latent constructs to the research context, rather than just to follow previous studies' practices, by demonstrating how results achieved with scales based on second-order latent constructs differed from previous ones, as a result of parsimonious measurement selection processes.

## 1.8. Thesis Outline

This thesis is composed of nine chapters. Chapter 2 reviews the previous research on commitment, focusing on team commitment and organisational commitment, which are the main constructs looked at in the study. A broad range of studies of commitment in terms of definition, construct (foci and bases), antecedents/correlates/outcomes and measurement, as well as of the three models of work commitment relationships, and

specific reviews of team and organisational commitment, provide the direction of this study of two foci of commitment's mediation.

Chapter 2 establishes that there has been little research on the mediating roles of team commitment and organisational commitment, and Chapter 3 discusses the corresponding constructs: psychological empowerment and organisational citizenship behaviour (OCB). Reviewing previous research on the three constructs – empowerment, commitment and OCB – makes the research rationale clear by establishing that there has not yet been any research to link these three relational constructs.

Recognizing the relationships between constructs from the previous chapters, Chapter 4 proposes hypotheses along with a theoretical framework and a hypothesized model drawing on social exchange theory and the cognition-attitude-behaviour mechanism. This chapter briefly discusses team structure and Korean team systems in order to emphasize the importance of team commitment.

Chapter 5 discusses the overall research methodology for this study from research design to research methods. The background of the research context, Korean manufacturing industry, is provided to help understanding of the later stages of analysis results. In addition, pilot testing with 35 MBA students in Korea who are company employees is described and supports the applicability of the prepared questionnaire and feasibility of this study.

Chapter 6 presents a separate analysis from the main analysis for the original version of the three component model (TCM) of Allen and Meyer (1990). A significant number of previous studies on team commitment have employed Porter et al.'s OCQ or Meyer and Allen's affective commitment scale, after rephrasing it to substitute team for

organisation. However, the applicability of TCM in a Korean context is still debatable. So it is important that a different approach from that of the main analysis finds evidence for the validity and reliability of unproven scales and further supports their generalizability.

Prior to the main analysis, Chapter 7 explores the data and assumptions. To find the validity of each scale, this chapter employs several empirical methods: inter-item correlation analysis; two stages of factor analysis – exploratory factor analysis and confirmatory factor analysis; and composite reliability and average variance extracted (AVE) for convergent validity.

Identifying the scales that hold appropriate reliabilities and validities, Chapter 8 tests the hypothesized multiple-mediation model. A direct model, two indirect models (a full mediation model and a partial mediation model) and an alternative model are discussed, and their direct, indirect and total effects are compared. Furthermore, the interaction effects of team commitment and organisational commitment on OCB are discussed.

The final chapter, Chapter 9, draws conclusions from the preceding chapters. The findings are summarizing and the contributions of the thesis are discussed. There are also an indication of the research limitations and suggestions for future research.

## 1.9. Conclusion

This chapter has looked at the research aims and questions for this study, and provided an explanation of the background to the research. It has also outlined justifications for the research, and its scope in terms of the main contribution of the thesis. Bearing in mind the research questions and rationales for the research, the next chapter starts will

review the literature on the research subject and explain the theoretical grounds of this study.



## **CHAPTER 2. COMMITMENT**

### **2.1. Introduction**

This chapter reviews the literature on commitment theory in general as commitment is the main construct explored in this study. As the research on commitment has been developed in relation to organisational commitment, it is organisational commitment that is the subject of mainstream research on commitment. Therefore, this chapter will explore how previous researchers have looked at team (workgroup) commitment along with organisational commitment in the workplace.

Considering the multifaceted characteristic of commitment, this chapter begins by examining how commitment has been defined, guided by Klein, Molloy, and Cooper's (2009) and Brown's (1996) commitment classifications (2.2). As commitment itself is a multifaceted construct, it is not surprising that researchers have approached the workplace commitment with multiple bases and foci. The next sections, 2.3 and 2.4, review the foci and bases of work commitment with discussion of the dimensionality of commitment. These two sections of commitment constructs focus on examining the literature specifically devoted to organisational commitment and team commitment to see how team commitment research has been developed. As organisational commitment and team commitment are the main constructs studied in this thesis, the following section examines how the two foci of commitment are related in the workplace by looking at their antecedents, correlates and outcomes (2.5). Then, three interrelated models of work commitment are reviewed to see how researchers have attempted to define the global form of work commitment (2.6). After identifying

measurement problems in the models, the different scales used by researchers are examined (2.7). The concluding section (2.8) summarises the main findings and provide the theoretical ground to develop this study.

## 2.2. Conceptualizations of Commitment

Commitment is an important, multifaceted construct, but it is also one that is hard to define. That is because commitment is a broad concept which encompasses the meanings of ‘involvement’, ‘attachment’, ‘engagement’, ‘loyalty’, ‘cooperation’, ‘devotion’ and ‘dedication’, among others. Brown (1996) classifies a typology of commitment, reflecting how previous research has approached this breadth of meaning. He proposes a typology, with an indication of various distinctions between two approaches to studying commitment: the attitudinal approach and the behavioural approach. Further, he classifies three forms of commitment - affective, normative and continuance - as being forms of attitudinal commitment. As commitment is considered as an attitudinal aspect rather than a behavioural aspect, Brown’s typology is used in Table 2.1 to see the trend how researchers define commitment.

Klein, Molloy and Cooper’s (2009) study much finely refines Brown’s (1996) typology. By reviewing how researchers define work commitment within the organisational behaviour (OB) and industrial/organisational (I/O) psychology literature, Klein et al. identify eight conceptualizations of commitment and classify them into three categories: (i) as antecedents of commitment (ii) as outcomes of commitment, and (iii) as conceptualizations that are neither antecedents nor outcomes.

Based on Klein et al.'s (2009) eight conceptualizations together with Brown's (1996) commitment typology, Table 1 demonstrates how commitment is variously defined. The table shows that even within the work of a particular researcher, the definition might not be consistent across all studies. For example, the 'psychological attachment' conceptualization of commitment of Allen and Meyer (1990) contrasts with the 'binding force' conceptualization of commitment of Meyer and Herscovitch (2001). Interestingly, there are relatively few studies of commitment that are based on operationalisations of the researcher's own definition. Instead, most empirical studies employs mainstream definitions in the literature. In broad terms, these stem from two founding conceptualizations of commitment. So, one group of researchers cites Mowday, Steers, and Porter's (1979) definition of commitment as identification, while many other studies refer to O'Reilly and Chatman's (1986) or Allen and Meyer's (1990) definition as psychological attachment. Across studies of commitment as a whole, then using Brown's (1996) dichotomy between attitudinal and behavioural approaches to commitment, the research has been dominated by an attitudinal approach. Three of the conceptualizations of commitment in Table 1 are described as not being associated with either antecedents or outcomes of commitment: these are conceptualizations of commitment as an attitude, as a binding force and as a bond.

Both Blau (1985) and Chusmir (1982) defined commitment as an attitude in their descriptions (respectively) of career commitment and job commitment. However, as pointed out by Klein et al. (2009), this definition has limitations in that it does not distinguish commitment from other workplace attitudes such as job satisfaction. Salancik (1977) contributed to the development of the behavioural approach to commitment. Based on his view, a number of researchers define commitment as a force

Table 2.1. Conceptualizations of commitment

Conceptualization of commitment	Commitment as:	Commitment typology	Studies	Commitment form(s) examined	Definition	Related theories	Limitations
Neither in terms of outcomes or antecedents	Attitude	Attitudinal commitment	Chusmir (1982: 596)	Job commitment	An attitude or an orientation toward the job that links or attaches the identity of the person to the job		The concept of attitude is not distinguishable from other work-related attitudes, such as satisfaction.
			Blau (1985: 278)	Career commitment	One's attitude towards one's profession or vocation		
	Binding Force	Behavioural commitment	Salancik (1977: 62)	Commitment	A state of being in which an individual becomes bound by his actions and through these actions to beliefs that sustain the activities and his own involvement		The commitment force is difficult to distinguish from other forces operating an individual's emotions, cognitions, and behaviour.
			Brown (1996: 241)	Organisational commitment	The essence of a commitment is an obliging force which requires that a person honour the commitment, even in the face of fluctuating attitudes and whims		
			Meyer & Herscovitch (2001: 301)	Commitment	A force that binds an individual to a course of action of relevance to one or more targets		
	Bond (or psychological attachment)	Attitudinal commitment	O'Reilly & Chatman (1986: 493)	Organisational commitment	The psychological attachment felt by the person for the organisation; it will reflect the degree to which the individual internalizes or adopts characteristics or perspectives of the organisation	Attachment Theory	Conceptualizing commitment as a bond is most viable (Klein, Brinsfield & Molloy, 2006); however, it is limited in that it

Conceptualization of commitment	Commitment as:	Commitment typology	Studies	Commitment form(s) examined	Definition	Related theories	Limitations
Understood principally in terms of antecedents			Mathieu & Zajac (1990: 171)	Organisational commitment	A bond or linking of the individual to the organisation		focuses entirely on an attitudinal approach.
			Allen & Meyer (1990: 14)	Organisational commitment	A psychological state that binds the individual to the organisation (i.e., makes turnover less likely)		
	Investments/ Exchange	Behavioural commitment	Becker (1960: 32)	Commitment as side-bets	Commitments come into being when a person, by making a side bet, links extraneous interests with a consistent line of activity	Social Exchange Theory	What has been invested, received, or exchanged are antecedents to commitment and not commitment itself.
	Identification	Attitudinal commitment	Mowday, Steers & Porter (1979: 226)	Organisational commitment	The relative strength of an individual's identification with and involvement in a particular organisation	Social Identity Theory	Social identities are antecedents to commitment rather than commitment itself (Meyer et al., 2006; Riketta, 2005).
			Blau (1987: 290)	Job involvement	The extent to which the individual identifies psychologically with his/her job		

Conceptualization of commitment	Commitment as:	Commitment typology	Studies	Commitment form(s) examined	Definition	Related theories	Limitations
	Congruence (internalization)	Attitudinal commitment	Wiener (1982: 421)	Organisational commitment	The totality of internalized normative pressures to act in a way that meets organisational interests	Theory of Work Adjustment, Person-Organisation Fit, Person-Job Fit	Congruence implies a fit between the goals and values of individuals and the characteristics of the commitment target. Congruence is an antecedent of commitment.
Understood principally in terms of outcomes	Motivation	Attitudinal commitment	Carson & Bedeian (1994: 240)	Career commitment	One's motivation to work in a chosen vocation	Motivation Theory, Goal-setting Theory	There are interrelationships between motivation and commitment, but motivation is an outcome of commitment (Meyer et al., 2004).
	Continuance* (desire/intention to continue or unwillingness to withdraw from the target)	Attitudinal commitment	Hunt, Chonko & Wood (1985: 116)	Organisational commitment	A strong desire to remain a member of a particular organisation, given opportunities to change jobs	Exchange Theory	One's desire to continue with a target is an outcome of commitment and not an element of commitment itself.
			Mowday, Porter, & Steers (1982: 27)	Organisational commitment	A strong desire to maintain membership in the organisation		

\* This is different from the continuance commitment of Meyer and Allen's (1991) three-component model

that obliges/binds workers to targets (Brown, 1996; Meyer & Herscovitch, 2001). However, they have sometimes failed to distinguish between commitment as a psychological state (which is closer to the attitudinal approach) and commitment as a force (closer to the behavioural approach). Following O'Reilly and Chatman (1986), one of the most common definitions of commitment in the literature is as a bond, or psychological attachment. This definition was adopted by Mathieu and Zajac (1990) and a very widely cited paper by Allen and Meyer (1990). However, despite strong support from a number of researchers, this account is limited in that it focuses entirely on an attitudinal approach.

Three of the conceptualizations of commitment in Table 1 can be understood as referring to antecedents of commitment rather than to commitment itself. These are investments/exchange, identification and congruence.

Research within social exchange theory tends to follow Becker's (1960) concept of investments/exchange from his side-bet theory, whereby individuals stake some unrelated aspect of their lives on continued organisational membership. Sheldon's (1971) study supports Becker's (1960) side-bet theory. In her study, investment indices derived from age, position and organisational tenure are associated with organisational commitment. Further, her findings suggest that social involvement has positive relationships with commitment. This may be a good way to observe the process of commitment from both an economic and a behavioural perspective. However, it is limited as a definition because the concepts of investment and exchange are process oriented, and perhaps refer to the aetiology or development of commitment, rather than to an overall concept or state. Research that has been informed by economics has tended to favour this definition in terms of investment and exchange. Research within

social identity theory has mainly adopted Mowday et al.'s (1979) definition of commitment as identification. Identification and commitment demonstrate high correlations, and yet previous research has also suggested that they are quite different constructs (Riketta & Van Dick, 2005; Meyer, Becker & Van Dick, 2006). From the perspective of person-environment fit, commitment has been defined in the literature in terms of congruence. Wiener (1982) suggested that the strength and type of commitment could be defined according to 'organisation-individual's value congruence' and also in terms of 'generalized loyalty and duty', which are in turn explained by identification, socialization and internalization. In this sense congruence can be seen as a process in which an employee adjusts his or her fit to the organisation (person-organisation fit) or job (person-job fit).

Two conceptualizations of commitment in Table 1, those of motivation and continuance, can be regarded as outcomes of commitment rather than as commitment itself.

Setting this aside for now, as Table 1 suggests, one such hypothesised outcome, motivation, can be defined as 'a set of internal and external forces' (Klein et al., 2009: 15). This resonates strongly with the definition of commitment as a binding force. Indeed, it has been suggested that there is a strong interrelation between motivation and commitment, and at the same time studies by Meyer, Becker and Vandenberghe (2004) and Wiener (1982) illustrate that these are constructs that can be reliably differentiated. Based on a motivation process model, Meyer et al. (2004) developed an integrative model of commitment and motivation, noting that definitions of the two concepts are similar but different. They argued that commitment has been used to explain turnover, job performance, and organisational citizenship behaviour, whereas motivation is discussed in relation to task performance. The final conceptualization of commitment



noted in the table above, continuance, can be regarded as an outcome of commitment (It is important to note that this is not the same as the continuance of Meyer and Allen's (1991) three-component model, which is seen as a sub-dimension of commitment, related to the availability of alternatives and personal sacrifices.). In this sense, continuance is simply a desire to maintain membership of the organisation. The continuance concept often appears in the literature side-by-side with exchange theory. In this view of commitment, employees who have already committed to an organisation's targets would naturally like to retain their membership of the organisation. This definition does not refer to commitment itself, but can be regarded as a result of commitment. Another trend in the research follows Mowday et al.'s (1979) comprehensive commitment definition, based on three factors in Porter et al.'s (1974) Organisational Commitment Questionnaire (OCQ), which contains conceptualizations of continuance, congruence and identification.

Having reviewed these conceptualizations, it is important to acknowledge that, as part of a causal chain of constructs, commitment could theoretically come 'before' an antecedent or 'after' an outcome. So, to take examples from above, commitment to organisational goals might be enhanced by seeing a competitor fail and recognizing corresponding threat or opportunities. This increased commitment could in turn lead to increased identification with an organisation shown above as an antecedent. Similarly increased motivation due to factors unrelated to commitment might lead to increased commitment, even though it is shown as an outcome. Although in the conceptualizations above there is always theoretical justification for the causal ordering of these constructs, causality is difficult to establish since most of the studies are cross-sectional. Studies of commitment invariably describe relations between constructs that

are based on statistical association, rather than being predictive in the strict causal sense. This is noteworthy because researchers into commitment occasionally blur the different senses of 'predict' in the narrow, statistical sense (predictive of association), and 'predict' in its everyday meaning (supporting inferences about the future).

To put this historical review in perspective, it is helpful to draw on Klein et al. (2009), who argue that a psychological attachment or bond is the most distinguishable conceptualization of commitment for the workplace. Although commitment does not have to be limited to attitudinal aspects, it could be argued that the attitudinal approach might be more suitable than the behavioural approach when it comes to considering some forms of knowledge work. In industries where tacit knowledge and skills are key, and where the transformation processes associated with work are difficult to scrutinize, behavioural commitment could even be considered an outdated industrial or Taylorist conceptualization of commitment. Instead, an appropriate definition might be one that is not oriented to targets, but that takes account of the complexities inherent in employees' commitment toward multiple foci. The problem with an exclusive reliance on attitudinal commitment, though, is that attitudes and behaviour should perhaps be regarded as a set, because of the reciprocal relationship between them. Commitment is a concept that is mutually constituted in relation to both attitudes and behaviours. When employees aim for a collective target, or work on any project, their commitment is often developed reciprocally, because they are not exclusively responsible for the outcomes. These are not, in a sense, 'located' in one person.

### 2.3. Commitment Constructs: Bases of Commitment

Given these various conceptualizations of commitment, it is not surprising that researchers' operationalisations of commitment vary. Meyer and Herscovitch (2001) classify researchers' conceptual frameworks of commitment into unidimensional (Blau, 1985; Mowday, Porter & Steers, 1982), and multidimensional forms (Allen & Meyer, 1990; Meyer & Allen, 1984, 1991; O'Reilly & Chatman, 1986) which are views on bases of commitment. By adapting the bases of attitudinal change developed by Kelman (1958), O'Reilly and Chatman (1986: 493) proposed identification ("a desire for affiliation"), internalization ("congruence between individual and organisational values") and compliance ("for specific, extrinsic rewards") as the bases of psychological attachment and as the separate dimensions of commitment. Beyond attitudinal and behavioural commitment, Meyer and Allen (1991) suggested a three-component model of commitment which consists of affective, normative and continuance commitment. Their three-component framework is in line with the bases proposed by O'Reilly and Chatman (1986), but it encompasses a broader meaning than that. Meyer and Allen (1991: 61) briefly explained these conceptualizations as "a desire (affective commitment), an obligation (normative commitment) and a need (continuance commitment)".

This dimensionality is strongly related to researchers' measurement selection. However, the growing consensus among researchers is that commitment is a multidimensional construct, and a great deal of commitment profile research follows this trend (Bentein et al. 2005; Gellatly et al. 2009; Sinclair et al. 2005; Somers, 2009, 2010; Tsoumbris & Xenikou, 2010; Wasti, 2005). More specifically, much of the contemporary literature follows Meyer and Allen's (1991) three-component model.

Simultaneously, however, some researchers do question the validity of a multidimensional construct, and especially Meyer and Allen's three-component model, since it is the most widely cited. Included in such recent research have been criticisms based on the fact that there are strong correlations and considerable overlap between measures of affective and normative commitment (Bozeman & Perrewé, 2001; Cooper-Hakim & Viswesvaran, 2005; Ko, Price, & Mueller, 1997). Cooper-Hakim and Viswesvaran's (2005) meta-analysis study of work commitment forms finds that there is considerable concept redundancy between organisational commitment and occupational commitment. The authors suggest that this is due to the vague measurement scales of two sub-dimensions of commitment, affective and normative. The researchers infer that even knowledgeable respondents may not distinguish between the two concepts properly. In contrast, some researchers argue that these are two different constructs, with no overlap (Bergman, 2006; Meyer & Herscovitch, 2001; Meyer & Parfyonova 2010; Meyer et al. 2002; Lee, Allen, Meyer & Rhee, 2001). Bergman (2006) suggests that normative commitment can continue to be a meaningful and distinctive construct if it is properly defined and employed in the right research context. Among those who find problems with the other component of commitment are some researchers who suggest that continuance commitment has two dimensions: for example, the Continuance Commitment Scale (CCS) differentiates between HiSac (High Sacrifices) and LoAlt (Low Alternatives), and these sub-dimensions affect turnover intention in different ways (Lee et al., 2001; McGee & Ford, 1987; Meyer & Herscovitch 2001). Among the three commitment dimensions, the highest correlations are between affective and normative, and the weakest correlations are between affective and continuance (Lee et al. 2001; Meyer & Herscovitch, 2001; Meyer et al. 2002).

#### 2.4. Commitment Forms: Foci of Commitment

A number of recent studies have considered the various foci of employees' commitment in the workplace. In an earlier, influential study, Morrow (1983) demonstrated 25 forms of work commitment. She classifies work commitment into five facets, each representing a focus of commitment: *protestant work ethic* for value focus; *career salience* for career focus; *job involvement* for job focus; *organisational commitment* for organisation focus; and *union commitment* for union focus. Morrow notes that there will be considerable overlap between organisational commitment and job involvement forms of commitment, and that job involvement is highly interrelated with other facets such as career salience, protestant work ethic and organisational commitment. Morrow also suggests that taking account of distinct work foci can eliminate aspects of redundancy in different formulations of commitment.

This multi-foci commitment perspective was further developed by Reichers (1985). She takes the view that organisational commitment should be understood in the whole context of employees within their organisation, then suggests a multiple commitment form rather than a unitary organisational commitment. Considering each individual's own experience, employees will have different specific goals and corresponding foci: foci driven by interaction with co-workers (or supervisors), top managers and unions within their organisation; and foci driven by interaction with customers/clients, professional associations and the community outside their organisation.

In line with Morrow's (1983) argument about redundancy in commitment forms, Carson and Bedeian (1994) also claim that researchers have generated more than 25 forms of work commitment, but that many of these are partially redundant or indistinct

from one another. Similarly, Cooper-Hakim and Viswesvaran (2005) conducted a meta-analysis from which they identify five work commitment forms (organisational commitment, job involvement, career commitment, work ethic endorsement, and union commitment), and 21 sub-dimensions. They carried out a broad study to find the correlations and inter-correlations among the commitment forms, and they state that there are no constructs that demonstrate substantial redundancy, although there is considerable overlap between organisational commitment and occupational commitment. Arguably, though, this finding from a meta-analysis could obscure potentially important differences in the relationship between these commitment forms in certain contexts. It may be, for instance, that there are tensions between organisational and occupational commitment where an employee's organisation is undergoing significant restructuring, while competitor or sister organisations remain more stable. Cooper-Hakim and Viswesvaran (2005) suggest that the finding of concept redundancy between these forms is due to the vague measurement scales used for two sub-dimensions of commitment: affective and normative.

In addition, Cooper-Hakim and Viswesvaran's (2005) study supports that of Cohen (2003), in which constellations of different commitment forms are shown to predict organisational behaviour better than any one commitment form in isolation. Meyer et al. (2004) suggest that employees' foci can include organisation, occupation, supervisor, team, program, customer, and union commitment, either alone or in combination. They also argue that each commitment form has three bases, affective, normative and continuance, whose adaptability to foci of commitment is verified with North American samples (Clugston, Howell & Dorfman, 2000) and Belgian samples (Stinglhamber, Bentein & Vandenberghe, 2002).

Stinglhamber et al. (2002) classify employees' commitment into three categories according to their relationships: organisational focus (organisational commitment), intra-organisational foci (supervisors and workgroup commitments) and extra-organisational focus (customer commitment). With respect to organisational structures and employees' relations with their organisation, the following section focuses on the review of two foci of commitment, organisational commitment as an employees' organisational focus and team commitment as their intra-organisational focus, which are also the principal axes of this study.

#### 2.4.1. Organisational Commitment

Organisational commitment has been taken as a significant dimension of work attitudes (Meyer et al., 2002) and is the most popular work commitment form studied in the literature of industrial and organisational psychology and organisational behaviour (Mathieu & Zajac, 1990; Meyer & Maltin, 2010). The definition, dimensions and measurement of commitment at work are typically understood in terms of the most prevalent measures of organisational commitment. This high concentration of attention on organisational commitment may be justified, given that organisational commitment may be more 'manageable' than other forms of commitment; that it has better predictive power in relation to turnover than job satisfaction; and that organisations whose employees have higher levels of commitment show higher performance and productivity and lower levels of absenteeism and failure to keep to schedules (Cohen, 2003).

#### 2.4.2. Team Commitment

Bishop, Scott and Buroughs's (2000) study was the first to use the term, team commitment. Just before their study, Ellemers, de Gilder and van den Heuvel's (1998) study used the term, team-oriented commitment; and previously, researchers had referred to group commitment or work group attachment (Cohen, 2003). While earlier research was oriented to establishing work commitment as a global construct, the research on team commitment has been developed and guided by the view that employees can have various commitment foci. For instance, one of the earliest studies on team (group) commitment, that of Zaccaro and Dobbins (1989), argues that employees have multi-level attachments in their organisation, and that group commitment is more correlated with group-level variables such as cohesiveness and task-based group linking, while organisational commitment is associated more with organisation level variables such as fulfilled expectations and satisfaction with the organisation.

Subsequent research, though we argue that this area has been comparatively under-researched, has continued to demonstrate that team commitment and organisational commitment are different concepts (Ellemers et al., 1998; Kirkman & Rosen, 1999; Randall & Cote, 1991). If the goals of a team and those of its parent organisation are incompatible, then it follows that organisational commitment and team commitment are not going to work in the same way (Randall & Cote, 1991; Zaccaro & Dobbins, 1989). A number of different findings can be brought together to support this common sense inference. For example, in terms of employee turnover, if an employee has a low level of attachment to his or her work team, the employee may seek to change teams while still remaining within the organisation (Wayne, Shore & Liden, 1997). Equally, whilst



team commitment has been shown to have a significant relationship with job performance (Bishop, Scott & Burroughs, 2000), other studies have suggested that organisational commitment has a weak relationship (Cooper-Hakim & Viswesvaran, 2005). Foote and Tang (2008) find that team commitment has a positive influence on job satisfaction and that it plays a mediating role between job satisfaction and organisational citizenship behaviour. Bishop et al. (2000) posit that team commitment has an effect on organisational citizenship behaviour, intent to quit, and job performance.

#### 2.4.3. Studies on Team Commitment and Organisational Commitment

As Zaccaro and Dobbins (1989:267) stated, “The organisation as a whole has remained the locus of commitment.” In this regard, studies on multiple commitments have essentially included organisational commitment. This section looks at how researchers have researched team (group) commitment along with organisational commitment.

Since Morrow (1983) and Reichers (1986) suggested their various forms of commitment and multiple foci for employees’ commitment, there has been a continuous flow of studies on multiple commitments. Among these researches, Zaccaro and Dobbins’ (1989) study is the earliest one that focuses specifically on group commitment and organisational commitment.

Zaccaro and Dobbins (1989) focused on group and organisational commitment among the multiple commitments suggested by Reichers (1985), and they substantiated the conceptual distinction between group and organisational commitment. Drawing on the results of their study of a military school, a place where the functions of groups and the

organisation as a whole are highly salient, they demonstrate that group commitment powerfully explains group-related variables (group cohesiveness and task-liking), whereas organisational commitment does not. Whilst showing the different effects of the two commitment forms, they argue that these two commitments have different psychological bases. For this reason, group commitment does not necessarily respond to the organisation with a positive social exchange mechanism, whereas organisational commitment in the workplace does. These researchers suggest that a positive social exchange, for example one involving perceived support and satisfaction, can be achieved only when the goals of groups and organisation are more instrumentally relevant.

Inspired by Reicher's (1985) work, Becker (1992) examined multiple foci and bases of commitment along with organisational commitment. By means of interviews, he identified three major foci: top management, immediate supervisors and immediate workgroups. Based on O'Reilly and Chatman's (1986) study on the basis for commitment, Becker used identification, internalization and compliance as the bases of commitment. Although he did not separately examine the different foci of commitment (instead, he aggregated three foci of commitment into one form, as 'other foci', in his hierarchical regression analysis), his findings show that three foci of commitment other than organisational commitment clearly account for variance in work outcomes, and that three bases of commitment explain work outcomes better than commitment. Becker then called for research to explore the relevant specific work performance corresponding to each of the multiple foci and bases of commitment.

Using Becker's (1992) data set, Hunt and Morgan (1994) explored global organisational commitment as a key mediating construct between constituency-specific commitment

(workgroup, supervisor and top management) and work outcomes. They found that their suggested global organisational mediating model was better than a normal direct link between constituency-specific commitment and work outcomes in terms of the numbers of significant paths and model-fit-indices. However, the path from workgroup commitment to global organisational commitment was not statistically significant. Unlike Becker in his 1992 study, they separately examined the effects of each specific commitment on global organisational commitment (as a mediating model) and on work outcomes, with reconceptualization of global organisational commitment as a key mediating construct for various specific commitments. From this they infer that employees in lower positions may not consider their work group as meaningful or as associated with the organisation as a whole. However, with a single item of group commitment related to level of attachment, as was used in Becker's (1992) data, it can be argued that workgroup commitment does not represent a significant commitment to the global organisational commitment.

Ellemers, de Gilder and Van Den Heuvel (1998) identified that previous studies on multiple commitment forms (Becker, 1992; Becker & Billings, 1993; Hunt & Morgan, 1994) were derived from the same data set and that commitment forms other than organisational commitment had not been precisely measured. Considering the relationship between commitment and career-oriented behaviour, they examined three foci of commitment: organisation, team and career. They examined how the three foci were related to demographic factors, behaviour and performance. With respect to demographic factors, they state that the three foci of commitment are not clearly associated with gender, education or team size. With respect to behaviour, their results suggest that team commitment is strongly and positively associated with OCBI (helping

behaviour) and working overtime, while career commitment is positively associated with participation in training and applications for voluntary work. For the relationship with performance, they suggest that career commitment is more related to task capabilities. However, none of the three forms of commitment is related to task performance. Team commitment is more related to contextual performance, for example to interpersonal skills and collaboration with co-workers, whereas organisational commitment is the only commitment form to explain relational performance, for example quality of relations with co-workers or supervisors.

Considering the cultural context of each society, Clugston, Howell and Dorfman (2000) examined the cultural effects on commitment, assuming that societal socialization takes place prior to organisational socialization. Rather than the three bases of commitment used previously, identification, internalization and compliance (Becker, 1992; Hunt & Morgan, 1994; O'Reilly & Chatman, 1986), Clugston et al. used Meyer and Allen's (1991) affective, normative and continuance commitment bases for three distinct foci of commitment, organisation, supervisor and workgroup, supported by the findings from Becker (1992) and Hunt and Morgan (1994). They demonstrate that the model consisting of three foci of commitment based on three bases of commitment is better than the model with three foci or with three bases of commitment only. For the cultural effects, they found positive relationships between cultural dimensions and the specific base of commitment across all foci: power distance with continuance and normative commitment; uncertainty avoidance with continuance commitment; and collectivism with normative commitment. They found that collectivism is positively associated with workgroup commitment across all bases. Finally, Clugston et al. also verified that

Meyer and Allen's (1991) three-component model could be adapted to measure other foci of commitment such as commitment to supervisor and workgroup.

Whilst previous multiple commitment research has focused on relationships with work outcomes or between foci or bases, Bishop and Scott (2000) explored the antecedents of commitment in a self-directed environment: sewing teams. They proposed the mediating model of satisfaction between the three antecedents – resource-related conflict, intersender conflict and perceived task interdependence – and team and organisational commitment. Their findings suggest that the two foci of commitment have different antecedents and different paths to indirect effects. They show the different levels of indirect effects on team commitment and organisational commitment through satisfaction with supervision and with co-workers. In particular, the indirect effects of intersender conflict on team commitment are much more significant than on organisational commitment in a self-directed team context.

Baruch and Winkelmann-Gleed's (2002) study explored employees' multiple commitment foci, including workgroup commitment, occupational commitment and different levels of organisational commitment to the NHS, the Health Care Trust and the employing organisation. Their findings suggest that workgroup commitment has significant correlation with occupational commitment and with commitment to organisation at the highest level (the NHS in their study) but not to the Trust or the employing organisation. This, admittedly, is a rather labyrinthine context containing multiple layers of organisational influence and complexity. Indeed it is difficult even to specify what the organisation is when considering the NHS (clinical teams, the wards, the directorate, the hospital, the Trust, or the NHS). This might partly explain why relationships between group commitment and organisational commitment are

inconsistent with respect to the level of analysis in this study. For both theoretical and empirical reasons, I will not discuss Baruch and Winkelmann-Gleed's study in detail here.

Stinglhamber, Bentein and Vandenberghe (2002) explored the multiple dimensions (bases) and foci of commitment with Belgian samples. While supporting the multiple commitment idea of Reichers (1985) in the complex business environment they investigate, they classify employees' commitment foci into five categories: organisational focus, intra-organisational foci (supervisors and workgroups), extra-organisational focus (customers) and occupational focus. Their findings support the fact that their suggested commitment foci and dimensions are distinct from each other. Moreover, two subcomponents of continuance commitment to the organisation – high sacrifice and low alternatives – were strongly supported. Organisational commitment is the focus among the five commitment foci that largely explains the intent to quit and turnover. However, continuance commitment to workgroup and supervisor are positively related to the intent to quit.

Stinglhamber, Bentein and Vandenberghe's (2002) research findings of on multiple foci were extended via the same researchers' study, published in 2004, which was carried out specifically from the perspective of affective bases of commitment to the three foci of organisation, supervisor and workgroup. Recognizing that multiple commitments were not totally independent and might have indirect effects, the researchers proposed using the mediating model of affective organisational commitment. Their model is similar to the one used by Hunt and Morgan (1994) but different in that Vandenberghe et al. specifically focused on the commitment effects on real turnover through turnover intention with a longitudinal approach. The results showed that the three foci of

commitment have indirect effects on turnover, and organisational commitment is the strongest factor among them in influencing turnover intention, which is a mediator between turnover and commitment. By demonstrating that the three foci of commitment have different antecedents and different magnitudes of effects on work outcomes, they suggest that a constructive and quality exchange relationship fosters employees' commitment: perceived organisational support – organisational commitment; LMX – supervisor commitment; and perceived workgroup cohesiveness – workgroup commitment.

Snape, Chan and Redman (2006) applied the multiple foci of commitment research in a Chinese context. Considering a sample from a state-owned manufacturing company, they excluded the extra-organisational focus: the customers. With the affective bases of commitment, they examined commitment to the organisation, supervisor and workgroup. Their findings demonstrate that the three foci of commitment with an affective base are distinct constructs in a Chinese context. Having identified that commitment profile research has tended to examine the interactions between bases of commitment (for instance, between affective, normative and continuance commitment), they examined the interaction effects between focal commitments. The results support the prevalence of interaction effects between focal commitments. Commitments to supervisor and to workgroup have a significant negative interaction effects on OCBO (protecting company resources) and OCBI (interpersonal harmony).

Similarly to Clugston et al. in their 2000 study, Felfe and Yan (2009) examined cultural effects on commitment through a comparative analysis. They specifically postulated that workgroup commitment had more predictive power over organisational commitment in a collective context. To understand the different commitment patterns

between Eastern and Western cultures, they collected their data from Germany and China. Their comparative study supported the idea that workgroup commitment explains OCB and turnover intention to a greater extent than organisational commitment does, and its effects are stronger in a collectivist context (China) than in an individualist context (Germany). Their findings showed that collective culture is significantly related to normative organisational commitment but not significantly to normative workgroup commitment.

Strauss, Griffin and Rafferty (2009) employed organisational and team commitments as psychological mediators between transformational leadership and proactivity (these authors state this is a broader concept than OCB) and between transformational leadership and proficiency (planned core tasks). They proposed a target similarity model to distinguish team and organisational levels. Their finding indicated that team commitment significantly mediates the relationships between team leaders' leadership and team members' proficiency but failed to show the significant mediation between team leader's leadership and team members' proactivity. However, their study showed that these two foci of commitment are distinct and their roles in the workplace are different.

Identifying that longitudinal research on team commitment had rarely been carried out, Neining et al. (2010) examined the effects of team commitment and organisational commitment over a period of three years, using three measurement points over the period. They found that there are significant effects of team commitment on team performance and OCB (altruism) over a three-year period, but not for shorter periods, for example, time 1 to time 2 or time 2 to time 3. For the non-significant effects of team commitment on team-related outcomes for a shorter period, they infer that this is



because team commitment is easily influenced by daily reciprocal relationships and hence it is a temporary, situational construct compared to organisational commitment. Their longitudinal findings corresponded to the ones from the previous studies which show that organisational commitment makes greater contributions to organisational-related outcomes (job satisfaction and turnover intention), whereas team commitment contributes more to team-related outcomes (team performance and altruism).

Investigating those characteristics of Chinese workers that indicated their attachment in instrumental terms, Chan, Snape and Redman (2011) approached multiple foci of commitment with affective and instrumental bases. Compared to Snape et al.'s (2006) study, they added union commitment. Their findings consistently demonstrate that four foci of commitment (organisation, supervisor, workgroup and union) and two bases (affective and instrumental) are distinct constructs in a Chinese context. To measure the instrumental bases of commitment, they developed scales through semi-structured interviews. Their findings, however, contradicted their expectations: instrumental bases of commitment do not play an important role in various outcomes. The instrumental bases of commitment only affect organisational withdrawal cognition. Their findings support that affective workgroup commitment is not significantly associated with organisational withdrawal cognition but is significantly associated with OCBI, and suggest that the affective base of commitments is well able to explain work outcomes, while the instrumental base of commitments is limited in the extent to which it can do this.

Table 2.2. Previous Empirical Studies on Team Commitment and Organisational Commitment

Studies	OC measurement	TC measurement	Level of correlations btw TC & OC*	Sample	Examined variables	Analysis for main studies	Main findings
Zaccaro & Dobbins (1989)	Mowday et al.(1979) OCQ without intent to quit items	Mowday OCQ. Modified to refer to the group rather than to the organisation	0.45	A student cadet corps (a military training body) at a university in the US ( N=203)	Group-, leader-, and organisational-related variables.	hierarchical regression analysis	Supported a conceptual distinction between group and organisational commitment
Becker (1992)	OCQ without intent to quit items (13 items)	Single-item of a level of attachment	0.36	A military supply company in the US ( N=763 for a time1 & N= 440 for a time2)	Prosocial behaviour (altruism, conscientiousness, industriousness) Intent to quit	Hierarchical regression analysis	Demonstrated that the effects of commitment to top management, supervisor and workgroup as well as bases of commitment on employees' prosocial behaviour and intent to quit are significant and unique
Hunt & Morgan (1994)	OCQ without intent to quit items (13 items)	Single-item of a level of attachment	n.a.	A military supply company in the US: Becker's (1992) data	Prosocial behaviour (altruism, conscientiousness, industriousness) Intent to quit	SEM to test the mediating effects of a global form of OC	Demonstrated the mediating model of global organisational commitment is significantly better than many organisational commitment models

Studies	OC measurement	TC measurement	Level of correlations btw TC & OC*	Sample	Examined variables	Analysis for main studies	Main findings
Ellemers, de Gilder & van den Heuvel (1998)	Meyer & Allen's (1991) AOC	Developed from van den Heuvel et al. (1995)	AOC-TC: 0.57 - 0.61	Dutch population (N= 690), A large financial service firm in Belgium (N=287)	OCB, task/ contextual/ relational performance	Stepwise regression analysis	Demonstrated that commitment to org., team and career has distinct specific relationships with employees' behaviour and performance
Clugston & Dorfman (2000)	Meyer & Allen's (1991) TCM	Modified Meyer & Allen's (1991) TCM, replacing the term organisation with workgroup	AOC-ATC: 0.29; NOC-NTC: 0.49; COC-CTC: 0.54; AOC-NTC: 0.13	A public agency in the US (N=156)	Cultural dimensions (power distance, uncertainty avoidance, collectivism, masculinity)	Hierarchical regression analysis	Showed that there are significant positive associations of cultural dimensions with three foci and three bases of commitment, organisation, supervisor and workgroup
Bishop & Scott (2000)	OCQ short version	OCQ short version, replacing the term organisation with team.	n.a.	A clothing manufacturing company in US (sewing teams), N= 485	Resource-related conflict/ perceived task interdependence/ intersender conflict/ satisfaction w supervision and coworkers	SEM to test the mediating effects of satisfaction between antecedents and commitment	Demonstrated that there are different antecedents of team and organisational commitment which have indirect effects on them
Baruch & Winkelmann-	Porter et al.'s OCQ (1974)	Porter et al.'s OCQ (1974)	Not significant	NHS Trust employees	Job satisfaction Intention to stay	Regression analysis	Presented the interrelationships

Studies	OC measurement	TC measurement	Level of correlations btw TC & OC*	Sample	Examined variables	Analysis for main studies	Main findings
Gleed (2002)		+ Cook & Wall (1980)		(N=92)	Enthusiasm, stress, comfort, gloom, job control, perceived support		between four foci of commitment (team, occupational, two different levels of organisational commitment) and showed that employees have different levels of organisational commitment toward the levels of organisations.
Stinglhamber, Bentein & Vandenberghe (2002)	Revised version of Meyer et al. (1993) TCM scales	Slightly changed from Meyer et al.'s (1993) version	AOC-ATC: 0.37; NOC-NTC: 0.60; HiSacOrg-CTC:0.18	Sample 1: university alumni in Belgium (N=478) Sample 2: nurses in Belgium (N=186)	Intent to quit Turnover	Hierarchical regression analysis / Logistic regression analysis	With Belgian samples, findings suggested that five suggested commitment foci and three dimensions are distinct from each other
Vandenberghe, Bentein & Stinglhamber (2004)	Meyer et al. (1993) affective OC	Meyer et al. (1993) affective OC after rephrasing as workgroup	Study1: AOC-ATC: 0.41 Study2: AOC-ATC: 0.72	Uni. alumni (N= 301), Nurses (N= 199) in Belgium	POS, LMX, workgroup cohesiveness, turnover intention, turnover	Longitudinal study/ Study1: regression analysis Study2: SEM for a	Found that there are direct/indirect effects between commitments and between commitment and outcomes

Studies	OC measurement	TC measurement	Level of correlations btw TC & OC*	Sample	Examined variables	Analysis for main studies	Main findings
						mediating model	
Snape, Chan & Redman (2006)	Meyer et al. (1993) affective OC	Meyer et al. (1993) affective OC after rephrasing as workgroup	AOC-ATC: 0.46	Chinese manufacturing workers (N=223)	OCBI/O, Withdrawal cognitions	Regression analysis	Suggested that commitment to org., supervisor, workgroup are distinct commitment forms in a Chinese context
Felfe & Yan (2009)	Felfe et al. (2008) adapted from Stinglhamber et al. (2002) and Meyer et al. (1993)	Felfe et al. (2008) after rephrasing as team	[China] AOC-ATC: 0.63, NOC-NTC: 0.64 [Germany] AOC-ATC: 0.28, NOC-NTC: 0.51	Clerical workers from Germany and China (N=235)	OCBI(altruism), OCBO (consciousness), Turnover intention, absenteeism	Hierarchical regression analysis	Demonstrated that workgroup commitment has more predictive power in a collective context (China) than in an individual context (Germany)
Strauss, Griffin & Rafferty (2009)	Meyer et al. (1993) affective OC	Meyer et al. (1993) affective OC after rephrasing as team	AOC-ATC: 0.62	An Australian public sector agency (N=320)	Transformational leadership, self-efficacy, proficiency and proactivity	Path analysis	Through the target similarity model, demonstrated that team and organisational commitment are distinct forms and their roles in the workplace are different

Studies	OC measurement	TC measurement	Level of correlations btw TC & OC*	Sample	Examined variables	Analysis for main studies	Main findings
Neininger et al. (2010)	A short German version of OCQ (Porter & Smith, 1970) by Maier and Woschée (2002)	ffective OCQ after rephrasing as team	AOC-ATC: 0.50, 0.55, 0.43 through the three points of measurement	2 medium-sized German automotive supply tech. companies	Job satisfaction, turnover intention, team performance, and OCB/altruism	Longitudinal study, Multiple regression analysis	Demonstrated that team commitment has incremental effects on team-related outcomes (team performance, OCB(altruism) over a three-year period but not shorter periods.
Chan, Snape & Redman (2011)	Vandenberghe et al.'s (2004) affective OC, Self-developed instrumental OC	Vandenberghe et al.'s (2004) affective workgroup commitment, Self-developed instrumental TC	AOC-ATC: 0.41, Instrumental OC- Instrumental TC: 0.41	A joint venture company in China involving Chinese and Japanese automobile groups (N=179)	OCBI(altruism), OCBO(conscientiousness), Org'l withdrawal cognition	Regression analysis	Demonstrated four distinct foci of commitment (org., supervisor, workgroup and union) with two bases (affective and instrumental) in a Chinese context. Confirmed affective base of commitment is a strong factor in explaining work outcomes.

*Note.* \* Presented the only significant correlated figures in this table.

OC = Organisational Commitment, TC = Team Commitment, AOC = Affective Organisational Commitment, ATC = Affective Team Commitment, NOC = Normative Organisational Commitment, NTC = Normative Team Commitment, COC = Continuance Organisational Commitment, CTC = Continuance Team Commitment, HiSacOrg = High Sacrifice Organisational Commitment.

Table 2.2 provides a summary of the studies reviewed in this section. Inspired by Reichers' (1985) multiple foci of commitment and Meyer and Allen's (1991) three-component model for commitment bases, researchers have undertaken multiple commitments studies. Through Zaccaro and Dobbins's (1989) study, team commitment has been developed and received researchers' attention. Since then, the studies that followed have exhibited that team commitment is a commitment form different from commitment to organisation, top management, supervisor or union, regardless of research contexts. However, similarly to the research on organisational commitment, research on team commitment has also been limited to North America and Europe. Research in an Asian context has mainly been conducted in China.

With the exception of studies by Becker (1992), Hunt and Morgan (1994), Clugston and Dorfman (2000), Stinglhamer et al. (2002), Felfe and Yan (2009), Chan et al. (2011), research has mainly employed affective bases of commitment. Apart from multiple bases of commitment research, team commitment has mainly been measured by affective organisational commitment, except Ellemers et al. (1998). Although Clugston and Dorfman's (2000) study with public sector samples in the US shows weak correlations between affective organisational commitment and team commitment at, 0.29, the general correlations between two foci of commitment, regardless of the measurements of commitment used, are modest, or even strong, at 0.36 to 0.72. Although, Baruch and Winkelmann-Gleed's (2002) study presented the non-significant correlations between team and organisational commitment, correlations between team and NHS commitment were significant at 0.30.

Researchers examined the effects of team commitment from the perspective of level of impact, for example organisational level and team level. Based on proximity theory and

a social exchange perspective, the reviewed studies showed that team commitment is more associated with team-level antecedents and outcomes, while organisational commitment is more related to organisational-level. To verify these effects of the foci of commitment, multiple regression analysis was largely employed and structural equation modelling was used to explore commitments' mediation effects. Perceived support, leadership, organisational citizenship behaviour (OCB) and turnover intention were the main related variables examined with team and organisational commitment.

Considering this review, it can be noted that there has been little research on the topic of multiple work commitment foci focusing on team and organisational commitment (Zaccaro & Dobbins, 1989; Ellemers et al., 1998; Bishop & Scott, 2000; Felfe & Yan, 2009; Neining et al., 2010).

## 2.5. Antecedents, Correlates and Outcomes

As shown in the review in the previous section, commitment has played a key role as an antecedent, correlate, and consequence of important organisational constructs such as motivation, stress, job satisfaction, job involvement, and turnover intentions (Mathieu & Zajac, 1990). More recent research demonstrates this in relation to a greater variety of variables, including leadership (Liao et al., 2009; Strauss et al., 2009), perceived organisational support (Erdogan & Enders, 2007; Rhoades et al., 2001), self-efficacy (Al-Eisa et al. 2009), corporate ethical values (Sharma et al., 2009), corporate social responsibility (Turker, 2009), organisational change (Parish et al., 2008), and psychological contract (Blomme et al., 2010). Affective commitment in particular has been shown to be significantly correlated with a wide range of outcome measures



(Meyer & Herscovitch 2001; Meyer et al. 2002). In the light of this, most researchers have used affective commitment rather than normative or continuance commitment as their experimental factor (Cooper-Hakim & Viswesvaran 2005; Rhoades et al. 2001; Riketta, 2002; Turker, 2009).

This is in line with the findings of Allen and Meyer (1996) and Meyer et al. (2002), who conducted a meta-analysis to identify the antecedents, correlates, and outcomes of commitment. Table 2.3 summarizes Meyer et al.'s (2002) findings, and demonstrates the relationships between variables and commitment based on Meyer and Allen's (1991) three-component model. The shaded cells represent high correlation with commitment, with values of  $\rho > \pm .30$ . Correlations with demographic variables are generally low, but age and organisational tenure show positive relationships across the three commitment scales, as  $.12 < \rho < .15$  and  $.16 < \rho < .21$ , respectively. Age is more related to the values of affective and continuance commitment, whereas tenure is more related to continuance and normative commitment.

In the antecedents, under the category of work experience, perceived organisational support is the strongest positive variable for affective and normative commitment. All variables in this category are strongly related to commitment, but the strongest relationships are with affective commitment. Meanwhile, availability of alternatives and transferability of education and skills are negatively related to continuance commitment, while availability of investments is positively related to affective and normative commitment. Professionals' low organisational commitment as compared to their career commitment can be explained by this result (Chang et al. 2008; Igbaria et al. 1991).

Table 2.3. Antecedents, Correlates, and Outcomes of Three-base Commitment Scales

(unit: $\rho$ value)					
Relations	Variables	Sub-variables	ACS	NCS	CCS
Antecedents	Demographic variables	Age	.15	.12	.14
		Gender	-.03	-.02	.01
		Education	-.02	.01	-.11
		Organisational tenure	.16	.17	.21
		Position tenure	.07	.15	.15
		Marital status	.09	.00	.04
	Individual differences	Locus of control	-.29	-	-
		Self-efficacy	.11	-	-
	Work experiences	Organisational support	.63	.47	-.11
		Transformational leadership	.46	.27	-.14
		Role ambiguity	-.39	-.21	.10
		Role conflict	-.30	-.24	.13
		Interactional justice	.50	.52	-.16
		Distributive justice	.40	.31	-.06
		Procedural justice	.38	.31	-.14
	Alternatives/ Investments	Alternatives	-.07	-.08	-.21
		Investments	.24	.21	.01
		Transferability of education	-.04	-.07	-.22
		Transferability of skills	.17	.13	-.31
Correlates	Job involvement		.53	.40	.03
	Occupational commitment		.51	-	-
	Overall job satisfaction		.65	.31	-.07
	Pay satisfaction		.35	.19	.02
	Coworker satisfaction		.45	.16	-.11
	Promotion satisfaction		.38	.18	-.04
	Supervision satisfaction		.42	.13	-.04
	Work satisfaction		.62	-	-.11
Outcomes	Turnover		-.17	-.16	-.10
	Overall withdrawal cognition		-.56	-.33	-.18
	Overall absence		-.15	.05	.06
	Overall job performance		.16	.06	-.07
	Self-rated job performance		.12	.07	-.05
	Supervisor-rated job performance		.17	-	-.08
	Organisational citizenship		.32	.24	-.01
	Stress		-.21	-	.14
	Work-Family conflict		-.20	-.04	.24

*Note:* ACS, Affective Commitment Scale; NCS, Normative Commitment Scale; CCS, Continuance Commitment Scale;  $\rho$  = weighted average corrected correlation.

❖ *Table 2.3 was developed using Meyer et al.'s (2002: 30-35) Tables 3, 4 and 5.*

All the variables in the category of correlates have quite strong relations with affective commitment. Overall job satisfaction has the highest correlation, followed by work satisfaction, job involvement, and occupational commitment. The correlations of five facets of satisfaction are markedly lower than overall job satisfaction. As one might largely expect, overall job satisfaction, and individual facets of intrinsic satisfaction (to do with the work itself) and extrinsic satisfaction (to do with supervision, prospects for promotion, co-workers) are negatively related to continuance commitment. This can be explained by the fact that employees who are satisfied do not remain with their organisations because they have to.

Relationships with outcome variables are relatively weaker than those with antecedent variables. Generally, attitudinal outcomes, such as overall withdrawal cognition, show high correlations with affective and normative commitment. Overall, behavioural outcome variables, such as turnover, absence and job performance, show relatively weak relationships, with the exception of the correlation between organisational citizenship and affective commitment ( $\rho=.32$ ). This result is to be expected given that Meyer and Allen's (1991) three-component model is of attitudinal rather than behavioural commitment, according to Brown's (1996) typology. In addition, turnover, absence, stress and work-family conflict are negatively related with affective commitment.

Cooper-Hakim and Viswesvaran (2005) conducted a meta-analysis to examine the impact of work commitment forms on specific outcome variables. Their findings show that job satisfaction is the most popular outcome variable used in the studies, followed by turnover intent and job performance. Findings reveal that all forms have higher

Table 2.4. Antecedents, Correlates, and Outcomes of Team Commitment and Organisational Commitment

Relations	Variables	Sub-variables		Teams	Organisations
Antecedents	Demographic variables	Age		.08(5)	.11(9)
		Gender		.04(6)	.01(14)
		Education		.00(6)	-.02(7)
		Organisational tenure		.02(6)	.05(12)
		Job tenure		.02(2)	.09(2)
		Marital status		-.08(1)	.06(1)
	Psychological characteristics	Perceived support	Organisation	.25(8)	.63(9)
			Supervisor	.62(1)	.34(1)
			Team	.59(7)	.30(6)
		Expectations, met		.43(1)	.57(1)
		Perceived justice, org. focused	Distributive	-.10(1)	-.16(1)
			Procedural	.00(1)	.28(2)
	Job characteristics	Hierarchical position		.25(1)	.14(3)
		Task interdependence		.13(4)	.13(1)
		Role state	Ambiguity	-.14(2)	-.55(1)
			Conflict	-.39(1)	-.53(1)
	Group/ Leader relations	Team cohesiveness		.61(3)	.23(2)
		Interpersonal conflict		-.47(3)	-.15(1)
		Social interaction	Group	.66(1)	.24(1)
			Organisation	.15(1)	.58(1)
		Leader-Member Exchange	Affect/Respect	.12(2)	.32(2)
			Contribution	.12(1)	.19(1)
			Loyalty	.46(1)	.36(1)
			Leadership behaviour	.46(4)	.20(2)
	Organisational characteristics	Collectivism		.27(2)	.14(2)
		Organisational size		.02(1)	-.05(2)
Correlates	Correlations among foci	Organisations		.37(32)	-
		Career		.29(5)	.37(5)
		Job involvement		.34(3)	.49(2)
		Occupation		.37(5)	.53(5)
		Profession		.29(1)	.35(1)
		Union		-	.36(2)
	Satisfaction	Job satisfaction		.45(2)	.56(7)
		Satisfaction w/ social foci	Peers	.63(2)	.22(2)
			Teams	.68(3)	.13(1)
		Satisfaction w/ nonsocial foci	Organisations	.38(2)	.68(2)
			Progress	.39(1)	.56(1)
			Promotion	.35(1)	.53(1)
Work	.55(3)		.56(3)		
Outcomes	Organisational Citizenship	OCBI <sup>a</sup>		.20(17)	.15(22)
		OCBO <sup>b</sup>		.32(13)	.25(13)
		OCB toward	Supervisor	.07(1)	.09(2)
			Team	.10(1)	-
	Task Performance	In-role		.09(5)	.12(12)
		Goal achievement		.32(1)	.24(1)
		Innovation		.13(2)	.13(1)
		Team performance		.30(4)	.07(1)
	Withdrawal intentions and behaviour	Intent to quit	Organisation	-.25(11)	-.47(17)
			Team	-.29(1)	-.05(1)
		Job applications		-.18(3)	-.12(3)
		Job search		-.04(2)	-.14(2)
		Overtime work		.22(1)	.10(1)
		Absenteeism		-.06(3)	-.07(3)
	Turnover		-.16(4)	-	

*Note:* The numerals in parentheses are the numbers of correlations upon which the estimates are based. Gender was scored so that 0 = woman, 1 = man. Classification of magnitude: 0-.05 = negligible, .06-.20 = small, .21-.40 = large. This classification is purely descriptive and not based on significance tests.

<sup>a</sup>OCBI = Organisational citizenship behaviour directed toward individuals, including altruism, compliance, conscientiousness, consideration, courtesy, and interpersonal helping. <sup>b</sup>OCBO = Organisational citizenship behaviour directed toward organisations, including civic virtue, loyal boosterism, non-idleness, loyalty to the organisation, sportsmanship, participating in training, and using 'voice' on behalf of the organisation.

❖ *Table 2.4 was developed using Becker's (2009) Tables 5.2, 5.3 and 5.4.*

correlations with job satisfaction than with job performance. Becker's (2009) study illustrates the situation in more detail and demonstrates a greater variety of work commitment forms. Table 2.4 was developed using Becker's (2009) findings and illustrates the main antecedents, correlates, and consequences of commitment to the two foci, teams and organisations. For ease of reference, dark-shaded-cells represent strong correlation,  $r > \pm .41$ , and light-shaded-cells represent large correlation,  $.21 < r < .40$ . As Becker noted, this classification is not based on a formal meta-analysis, and is therefore somewhat descriptive (the figures are calculated using median correlations rather than weighted or reflecting a thorough process of significance testing).

Becker's (2009) findings are similar to those of Meyer et al. (2002), although the focus of the two studies differs. Becker (2009) considers commitment forms, whilst Meyer et al. (2002) consider three dimensions of commitment. The relationships for most of the demographic variables are not statistically significant. Age, organisational tenure and job tenure are weakly related with organisational commitment ( $r = .11, .05$  and  $.09$ , respectively). Interestingly, marital status is negatively related with team commitment ( $r = -.08$ ), but positively related with organisational commitment ( $r = .06$ ), perhaps reflecting a need for stability at work that may at times override the wishes of the team. Psychological perception is more strongly related to organisational commitment than to team commitment. However, perceived support from supervisor and team is more strongly related to team commitment. Contrary to Meyer et al.'s (2002) findings ( $.31 < r < .52$  with ACS and NCS), perceived justice is not strongly related to organisational commitment ( $.16 < |r| < .28$ ). One surprising result here is that perceived distributive justice is negatively related to both types of commitment. Ambiguous and conflict role states are negatively related to both types of commitment, but most strongly to organisational commitment ( $r = -.55$  and  $-.53$ , respectively). It is noticeable that hierarchical position influences team commitment more strongly ( $r = .25$ ) than it does

organisational commitment ( $r = .14$ ). This can be explained by the fact that the team is more proximal and provides more direct interaction. Analysis of this result also can be informed by social identity theory: distinctiveness in terms of one's hierarchical position in a team may enhance team commitment (Felfe & Yan, 2009). Most of the variables in group-leader relationships, such as team cohesiveness, interpersonal conflict, social interaction in the group, and leader member exchange (LMX), are strongly related to team commitment. Even collective organisational culture is more related to team commitment than to organisational commitment. Felfe and Yan's (2009) comparative study between Germany and China supports this different predictive power based on the individual and collective culture difference. Their study suggests that in collectivistic contexts, team commitment can have a higher influence than organisational commitment on certain work outcomes (such as OCB).

Both team and organisational commitment are strongly correlated with other commitment forms. Team commitment is highly correlated with organisational ( $r = .37$ ) and occupational ( $r = .37$ ) commitment, while organisational commitment is strongly correlated with job involvement ( $r = .49$ ) and occupational commitment ( $r = .53$ ). Satisfaction is highly correlated with both team and organisational commitment. Job satisfaction is strongly related with both (with team commitment  $r = .45$ , with organisational commitment  $r = .56$ ). Social foci satisfaction is more strongly related to team commitment ( $.63 < r < .68$ ), while non-social foci satisfaction is more strongly linked with organisational commitment ( $.53 < r < .68$ ). This could be explained by the fact that team commitment is more local, has more reciprocal characteristics and is more affected by daily interaction than is organisational commitment (Neininger et al., 2010).

As in the findings of Meyer et al. (2002), the outcome variables have relatively weak relationships with the two commitment forms, especially with organisational commitment. However, team commitment has stronger relationships with work outcomes than does

organisational commitment. With the exception of overtime work, all the listed outcome variables are negatively associated with both types of commitment.

With regard to task performance, team commitment shows a stronger correlation than does organisational commitment, even though, according to Becker's finding, there has been more research about relationships between task performance and organisational commitment. Goal achievement and team performance in particular are highly related to team commitment. As expected, organisational commitment is strongly associated with intent to quit the organisation; however, its relationship with intent to quit the team is negligible, whereas team commitment is largely associated with intent to quit both the organisation and the team. Both these findings suggest the value of differentiating between team and organisational commitment and clearly demonstrate that the two commitment forms have different foci. Interestingly, however, organisational citizenship behaviour directed toward individuals (OCBI) and organisations (OCBO) has a stronger association with team commitment ( $r = .20$  and  $.32$ , respectively) than with organisational commitment ( $r = .15$  and  $.25$ , respectively). This is consistent with Neiner et al.'s (2010) empirical results. Their longitudinal study with three points of measurements shows that team commitment has stronger association with in-role behaviour, team performance, and extra-role behaviour, OCB, whereas organisational commitment is more related to turnover intention and job satisfaction.

Overall, Becker's (2009) findings present that team commitment and organisational commitment are strongly associated with attitudinal variables such as psychological characteristics and satisfaction, and with interactive variables within group-leader relations, and have generally weak relationships with outcome variables. In particular, behavioural outcome variables appear to be more associated with team commitment than with organisational commitment.



## 2.6. Interrelationships among Work Commitment Foci

A number of researchers have studied correlations between work commitment, work outcomes and employees' attitudes. Organisational commitment is often correlated with attitudes at work, whereas team commitment is more often correlated with the occurrence of particular behaviours at work (Ellemers et al., 1998). Furthermore, combinations of different commitment forms predict organisational behaviour better than any individual form (Cohen, 2003). In an earlier section in this chapter, research on multiple commitments was reviewed, with a focus on team and organisational commitment. However, it would be better to examine the interrelationships among the foci of commitment to investigate the extent to which commitment to the organisation and to the team are sufficiently different and meaningful commitment foci in the workplace.

Carmeli, Elizur and Yaniv (2007) sought to establish a universal form of work commitment through examining interrelationships between commitment foci. According to their sum of facet definitional framework for work commitment, work commitment is affected most by work values, followed by career identification. They defined four facets based upon the suggestion of Cohen (1999) and Hackett, Lapierre and Hausdorf (2001): work, job, career and organisation, arguing that the focus should be on the four commitment forms that are universal. Again though, their study does not contain measures for group or team commitment.

In multiple commitment research, Randall and Cote's model and Morrow's two models are key work commitment models exploring the interrelationships among work commitment constructs (Carmeli et al., 2007), and the Randall and Cote model provides a platform to examine the interrelationships between different commitment forms. Cohen (2000)

attempted to validate the models. The following section reviews the models to see how team and organisational commitment are reciprocally related.

#### 2.6.1. Randall and Cote's (1991) Model

Randall and Cote's (1991) study used a multivariate model to illustrate the interrelationships among five forms of work commitment: work group attachment (WGA), organisational commitment (OC), job involvement (JI), protestant work ethic (PWE) and career salience (CS). Their nomological framework proposed job involvement as a key moderating variable, which was influenced by work group attachment and the protestant work ethic, and which in turn influenced organisational commitment and career salience. Randall and Cote's Pearson correlation matrix reveals that all five forms are correlated at a significant level, with the exceptions of WGA and PWE, and WGA and career salience. The strongest relationship is between OC and PWE; and the weakest is between OC and WGA. The bivariate correlations containing WGA combination constructs, such as 'OC x WGA' and 'CS x WGA', were not significant.

#### 2.6.2. Cohen's (2000) Revision of Randall and Cote's (1991) Model

Aiming to establish universal forms of work commitment, Cohen (2000) compared Randall and Cote's (1991) model with Morrow's (1993) model. He used the same work commitment forms, but under different names: WGA became group commitment (GC); PWE became work involvement (WI), and career salience was renamed career commitment (CC). Cohen (2000) tried to validate the pathways in the Randall and Cote model, and in doing so discovered some interesting path coefficients. Four paths through job involvement indicated

high path coefficients (that are statistically significant):  $GC \rightarrow JI$ ,  $WI \rightarrow JI$ ,  $JI \rightarrow OC$ , and  $JI \rightarrow CC$ . However, the path  $GC \rightarrow OC$  is not significant.

All five forms of work commitment are significantly correlated, and the degree of correlation is relatively higher than in Randall and Cote's result. The strongest relationship is between JI and WI; whereas the weakest is between GC and WI. Job involvement is highly related to the other forms. Group commitment has relatively weak correlations.

However, Cohen's subsequent argument - that the usefulness of group commitment should be reconsidered - is open to question in that both studies measured group commitment mainly by evaluating employees' social interactions, and according to Sheldon's (1971) social involvement scale. The relatively high factor loading for off-the-job social interaction items indicates that the WGA scale may have overlooked the importance of on-the-job teamwork. Items relating to on-the-job socialization reported the lowest factor loading among six items (see Randall & Cote, 1991: 206 for a review). This makes it difficult to draw inferences about interrelations with commitment forms that are predominantly or solely work-related (such as organisational commitment or occupational commitment).

### 2.6.3. Cohen's (2000) Revision of Morrow's (1993) Model

To enable comparison with the Randall and Cote model, Cohen (2000) reconstructed the universal forms of work commitment from Morrow's (1993) concentric circle model. The relevance of this study for understanding group or team commitment is that in doing so, he replaced calculative organisational commitment with group commitment.

Morrow's concentric circle model of commitment forms (1993) suggests there are interrelations between five work commitment forms: work ethic being the innermost form,

followed by occupational commitment, continuance organisational commitment, affective organisational commitment, and with job involvement as the outermost form. Cohen reconstructed the model based on the proximity approach in previous studies (Gregersen, 1993; Lawler, 1992; Yoon et al., 1994). He placed job involvement and group commitment as the most proximal to employees, and work involvement, occupational commitment (career commitment in Cohen's study), and organisational commitment as more distant. His argument is compatible with Becker's (2009) commitment typology based on level of abstraction and psychological distance. According to Becker's (2009) foci typology, job involvement (JI) and group commitment (GC) are proximal-concrete, organisational commitment (OC) is distal-concrete, and career commitment (CC) and work involvement (WI) are distal-abstract foci.

Compared to the Randall and Cote model, Cohen's revision of Morrow's model reveals few significant paths, and he reports a weaker model fit. Further, GC does not appear to mediate as expected: paths from CC to GC, from WI to GC and from JI to GC are not significant. Only OC is significantly related with GC.

#### 2.6.4. Model Comparison

Table 2.5 presents the characteristics of the models examined. Although Randall and Cote (1991) conducted confirmatory factor analysis, they did not provide the empirical figures on each form of commitment's path. Noting this, Cohen (2000) conducted a path analysis and his findings present that the role of job involvement as a mediator is significant in both the Randall and Cote model and the revised Morrow model. Further, the entire pathway of the Randall and Cote model is significant, whereas the revised Morrow model does not

Table 2 5. Comparison between Randall and Cote's Model and the Revised Morrow Model

	Randall & Cote (1991) Model	Randall & Cote Model by Cohen (2000)	Revised Morrow's (1993) Model by Cohen (2000)
Work commitment forms used	<ul style="list-style-type: none"> <li>- Work Group Attachment (WGA)</li> <li>- Protestant Work Ethic (PWE)</li> <li>- Job Involvement (JI)</li> <li>- Organisational Commitment (OC)</li> <li>- Career Salience (CS)</li> </ul>	<ul style="list-style-type: none"> <li>- Group Commitment (GC)</li> <li>- Work Involvement (WI)</li> <li>- Job Involvement (JI)</li> <li>- Organisational Commitment (OC)</li> <li>- Career Commitment (CC)</li> </ul>	
Sample	Staff personnel at a large university in the Northwestern US	Nurses from three small hospitals in Israel	
Methodology	<ul style="list-style-type: none"> <li>- Pearson bivariate correlations</li> <li>- Confirmatory factor analysis (CFA)</li> <li>- Analysis of covariance structures</li> </ul>	<ul style="list-style-type: none"> <li>- Chi-square test</li> <li>- 6 Fit Indices: AGFI, RFI, CFI, NFI, TLI, RMSEA</li> <li>- Path analysis</li> </ul>	
Measure <sup>b</sup>	<ul style="list-style-type: none"> <li>- WGA: 6-items owned developed scale, expanded from a Sheldon(1971)'s 3-item social involvement scale (<math>\alpha=.75</math>)</li> <li>- PWE: 4-item Blood's (1969) Protestant ethic subscale after dropping non-protestant ethic subscale (<math>\alpha=.54</math>)</li> <li>- JI: 4-item Lodahl &amp; Kejner's (1965) short version (<math>\alpha=.81</math>)</li> <li>- OC: Porter et al's (1974) OCQ (<math>\alpha=.90</math>)</li> <li>- CS: 7-item from Greenhaus's (1971) work role salience scale (<math>\alpha=.64</math>)</li> </ul>	<ul style="list-style-type: none"> <li>- GC: 6-item Randall &amp; Cote (<math>\alpha=.71</math>)</li> <li>- WI: 10-item Kanungo's scale (<math>\alpha=.74</math>)</li> <li>- JI: 6-item Kanungo's scale (<math>\alpha=.76</math>)</li> <li>- OC: 9-item Porter et al's (1974) OCQ short version (<math>\alpha=.92</math>)</li> <li>- CC: 8-item Blau's (1985) scale (<math>\alpha=.83</math>)</li> </ul>	
Correlations of GC and OC	WGA-OC: .08*	GC-OC: .37*	
The strong relations between foci	OC – PWE(.34**), OC – JI(.33**); OC x PWE <sup>a</sup> , CS x JI <sup>a</sup> , CS x PWE <sup>a</sup>	JI – WI(.67***), JI – CC(.57***)	
The weak relations between foci	OC – WGA(.08*); OC x CS <sup>a</sup> , JI x WGA <sup>a</sup>	GC – WI(.18**), GC – CC(.25***)	
No significant relations	WGA – PWE, WGA – CS; OC x WGA <sup>a</sup> , WGA x PWE <sup>a</sup> , CS x WGA <sup>a</sup>	None	
Mediator commitments	Job Involvement among work commitment	Job Involvement among work commitment	Job Involvement & Group commitment between

	Randall & Cote (1991) Model	Randall & Cote Model by Cohen (2000)	Revised Morrow's (1993) Model by Cohen (2000)
			commitment and work outcomes
Significant path	Figures are not presented	GC→JI; WI→JI; JI→OC; JI→CC	OC→JI; OC→GC; CC→JI; WI→GC
Non- significant path	n.a.	GC→OC; OC→ CC	OC→GC; CC→GC

*Note:* <sup>a</sup> Bivariate construct correlation; <sup>b</sup> Scales with reliability, Cronbach alpha coefficients in parentheses. Pearson correlation, \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

demonstrate a perfect significant path. The paths from career commitment and work involvement to group commitment are not significant.

Another important consideration in understanding the interrelations of these commitment forms is that the degree of correlation between group commitment and organisational commitment is quite different between the two studies: .08 in Randall and Cote; and .37 in Cohen. This can perhaps be explained by the selection of measures used to operationalise the two commitment forms. As Carmeli et al. (2007) point out, Randall and Cote (1991) use only one aspect of organisational commitment, namely affective organisational commitment. As will be discussed later, their group commitment scale also places considerable emphasis on social interaction. The influence of these could be weaker depending on contextual features, if for instance nurses or emergency service staff work more closely together as a workgroup than, say, consultants or university administrators. This suggests that if we wish to compare the results more effectively, it would be better to hold any such contextual variations constant and do this within the same industry.

It is also important to note that group commitment has very weak correlations with the other commitment forms, with the exception of organisational commitment (though this is still not significantly correlated). All the weak relations between commitment forms involved group commitment, and there are no significant relations with this form, while most of the strong correlations are with job involvement or organisational commitment. As mentioned earlier, this can perhaps be explained by the influence of non-work-related factors in the measurement of group commitment. Even though group commitment is more connected to task at work and in on-the-job teamwork, five items from this scale are about social interaction and one is arguably about group identity ('I

feel very much part of the people I work with'). The interrelations between these different commitment forms may well have differed if the scale had contained more work-related items.

Finally, one of the most interesting results from this study is the direction between group commitment (GC) and organisational commitment (OC). In the revised Morrow model, the direction from OC to GC is a significant path, while in Randall and Cote the direction from GC to OC is not significant. The theoretical justification for inferring this causal direction can be found in Becker's (2009) foci typology, in which abstract and distal commitment foci tend to influence concrete and proximal commitment foci rather than the other way around. Following this reasoning, one path (from GC to OC) is not significant in the Randall and Cote model. However, this result differs from that of Seo and Kim (2003), which is significant and which used Ellemers et al.'s (1998) team-oriented scale. Seo and Kim (2003) examined the causal direction from team commitment to organisational commitment through two stages. First, they tested this with employees in a single company. Then, they retested with another company to increase generalizability. From the two studies they establish that team commitment plays a mediating role between group cohesiveness and organisational commitment and between job satisfaction and organisational commitment. This underlines the importance of empirical investigation with appropriate measures, since otherwise it may be difficult to establish the causal direction of interrelations among commitment forms.



## 2.7. Commitment Measurement

In view of the importance of considerations relating to measurement, the different commitment scales used by researchers are more closely examined in this section. The information below illustrates how previous researchers have employed commitment scales, and identifies implications for the measurement of commitment.

### 2.7.1. Organisational Commitment Scale

Porter et al.'s (1974) Organisational Commitment Questionnaire (OCQ) and Allen and Meyer's (1990) scale, based on a three-component model (TCM), are representative measurements of organisational commitment (see Table 2.6 presenting the characteristics of each scale). A number of researchers have used short versions of the scales: Porter et al.'s OCQ without six reversed questions, or Allen and Meyer's affective organisational commitment scale without three reversed questions. Recent empirical research suggests that Allen and Meyer's measure is superior to Porter et al.'s OCQ from the perspective of the scale validity and its reliability (Benkhoff, 1997; Cohen, 2003).

Both these commitment scales can be categorized as grounded in an attitudinal approach: the OCQ operationalises commitment as identification; and Allen and Meyer's operationalises commitment as psychological attachment. Allen and Meyer's scale is three dimensional (affective, normative and continuance commitment), while the OCQ is unidimensional. Although Porter et al. suggest the OCQ as a unidimensional scale, it is based on three related factors: "1) a strong belief in and acceptance of the organisation's goals and values; 2) a willingness to exert considerable effort on behalf

Table 2.6. Characteristics of Two Representative OCS and British OCS

	Porter et al.'s (1974) OCQ	Allen & Meyer's (1990) TCM	Cook & Wall's (1980) BOCS
Commitment Definition	Identification	Psychological attachment	Psychological attachment
Dimension	Unidimensional measure	Multidimensional measure	Unidimensional measure
Related factors	3 factors: identification (congruence), loyalty and continuance	3 or 4 factors (3 factors: affective, normative and continuance/ 4 factors: two continuance, HiSac & LoAlt)	3 factors: identification, involvement and loyalty
No. of scale items	15	18 : ACS- 8 ; CCS- 8 ; NCS: 8 (revised NCS: 6)	9 (with 3 reversed questions)
Main usage in the literature	9-item OCQ (excluding 6 reversed questions)	5-item ACS (excluding 3 reversed questions)	6-item BOCS is recommended, which 3 negative phrased items are omitted (Mathews & Shepherd, 2002)
Concept redundancy	OCQ and TC items are substantially overlapped (Bozeman & Perrewé, 2001).	- Overlapping concept with turnover intentions (Bozeman & Perrewé, 2001). - High correlations and considerable overlap between ACS and NCS (Bozeman & Perrewé, 2001; Cooper-Hakim & Viswesvaran, 2005; Ko et al., 1997; Meyer et al. 2002).	.
Generalizability to non-north American culture	.	- Problems in CCS and NCS to apply Korean context (Ko et al., 1997; Lee et al. 2001) - Higher correlation outside North America (Meyer et al. 2002)	.
Limitation	Focused mainly on affective aspect: Highly correlated with Allen & Meyer's ACS (Meyer et al. 2002)	Highly correlated between ACS and NCS, which is exposed to outside North America more than North America	- Only for British employees - Items are overlapped with Porter et al.'s and Allen & Meyer's

*Note:* OCS= Organisational commitment scale; ACS= Affective commitment scale; NCS= Normative commitment scale; CCS= Continuance commitment scale

of the organisation; and 3) a strong desire to maintain membership in the organisation” (Mowday et al., 1979: 226). The dimensionality of Porter et al.’s OCQ scale is debatable. Some researchers, based on their empirical studies, agree with Porter et al.’s suggestion that the OCQ is a unidimensional measurement (Ferris & Aranya, 1983; Morrow & McElroy, 1986; Mowday et al., 1979). However, all three of the studies mentioned used the varimax method for factor rotation, which entails treating underlying variables as orthogonal rather than allowing for the possibility that they are interrelated. On the other hand, some researchers claim that the OCQ has two or three factors according to Porter et al.’s commitment definition and is therefore not unidimensional but multidimensional (Angle & Perry, 1981; Benkhoff, 1997; Koslowsky et al., 1990; Reichers, 1985; Yousef, 2003). Interestingly, Luthans et al. (1985) found that Porter et al.’s scale yields different dimensions across three countries, regardless of the prevailing national culture: there is one factor for the American and the Japanese samples and two factors for the Korean sample (whereas one might have expected the cultures of Korea and Japan to be more similar out of these three). Luthans et al. were unable to find or offer any distinctive interpretation for why there should be a difference between these two factors, and explained this by drawing attention to how, across these studies, the phrasing of items has differed. This is consistent with a positively-phrased factor and a negatively-phrased factor. This different style of phrasing, especially in relation to the reversed items, results in items loading onto a second factor, as in Angle and Perry’s (1981) study. In sum, differences seem to be a consequence of measurement and operationalisation, rather than reflecting theoretical points of interest.

Researchers have repeatedly raised questions as to the validity of the scales, especially in terms of concept redundancy. Bozeman and Perrewé (2001) argue that Porter et al.’s OCQ substantially overlaps with turnover cognition items. The implications of this redundancy (item-content overlap) are quite profound in the sense that a great deal of empirical research

has been premised on a linkage between commitment and intent to quit (see Morrell & Arnold, 2007 for a critical review). Though it potentially invalidates or overturns a number of claims in the research on commitment and turnover, Bozeman and Perrewé's (2001) study is consistent with earlier work, notably Benkhoff's (1997) claim that six of the 15 OCQ items can be identified as 'desire to stay', and are inferred being driven by one of Porter et al.'s three definitions of commitment: a strong desire to maintain membership. Bozeman and Perrewé (2001) suggest that six retention-related items in the OCQ should be removed, to avoid any overlap with turnover cognition when employee turnover is being studied. They recommend that further research should be carried out to establish measurement validity, while pointing out that all three of Meyer and Allen's dimensions possess concepts that overlap with turnover intention. The authors conclude that organisational commitment and its sub-dimensions should be clearly defined again to avoid scale content overlap.

In a later study, Meyer et al. (2002) acknowledge that there is considerable overlap between the affective and normative commitment scales, but based on their findings they suggested that this high correlation could be decreased by using eight-item rather than six-item scales. In addition, their study suggests that there are higher correlations between the three commitment scales when the instruments are used outside North America.

There has been considerable research to test the generalizability of the organisational commitment construct to non-North American contexts (Hui & Triandis, 1985; Hulin, 1987; Ko et al., 1997; Lee et al, 2001; Lincoln & Kalleberg, 1985; Ryan et al., 1999; Yousef, 2003). Ko et al. (1997) and Lee et al. (2001) assessed the cross-cultural generalizability of Allen and Meyer's three dimension organisational commitment (OC) scale, with particular reference to Korean culture. They also tested the fit of the commitment scales. Ko et al. (1997) used multiple indices of fit to evaluate the model and conducted covariance structure analysis. They argue that both the affective commitment scale and normative commitment scale are

salient and differentiable constructs even though the two overlap. However they do not find full support for the three-factor measure, since the continuance commitment scale proved harder to validate. The authors found problems in applying both the continuance commitment scale and also the normative commitment scale to Korean culture and suggest that Meyer and Allen's three dimensions need to be defined more clearly. However, they admit that clear conceptualization will not be easy, due to the inherent difficulty of psychometric scale measurement.

Lee et al. (2001) conducted two studies to generalize three commitment constructs to South Korea. In the first study, they evaluated Ko et al.'s (1997) result, at the same time as, evidently, paying more care to the translation process from English to Korean. They obtained similar results and inferred that the problems in validating the three-factor framework might be caused by cultural differences. To explore this they then carried out a second empirical study using an alternative Korean version of these OC scales. As a result of this study, they conclude that (with appropriate modification) the three OC constructs are meaningful and can be adequately operationalised in an Asian context. In addition, their findings suggest that normative commitment apparently matters more in making turnover decisions in collectivist cultures such as South Korea than in individualist cultures like North America.

In contrast, Yousef (2003) applied Porter et al.'s OCQ dimensionality test to a United Arab Emirates (UAE) sample consisting of 85% Asians and 13% Arabs. This culture is one thought to be characterized by collectivism, large power distance, strong uncertainty avoidance and average masculinity, and Yousef (2003) obtained results consistent with those from Western studies. His research gives particular weight to the multidimensionality of Porter et al.'s OCQ.

In addition to Porter et al.'s OCQ and Allen and Meyer's TCM, Cook and Wall (1980) developed the British Organisational Commitment Scale (BOCS). Similar to the OCQ, the BOCS is a unidimensional measure containing three factors. Cook and Wall revised Buchanan's (1974) three organisational commitment components, in the process developing new versions of the scales that are similar to the OCQ's three factors: "1) identification - pride in the organisation: the internalization of the organisation's goals and values; 2) involvement - the willingness to invest personal effort as a member of the organisation, for the sake of the organisation; 3) loyalty - affection for and attachment to the organisation; a sense of belongingness manifesting as 'a wish to stay' "(Cook and Wall 1980: 40-41). Bar-Hayim and Berman (1992) challenge the dimensionality of the BOCS, instead arguing that it is essentially a two-dimensional scale which consists of 'moral involvement' and 'loyalty' (they studied a sample in Israel of whom 75% were production workers, in other words broadly similar to Cook and Wall's UK sample of blue-collar workers).

#### 2.7.2. Team Commitment Scale

In contrast to organisational commitment, team commitment is a newly studied work commitment form and, to date, there have been few measures of it. Most of the measures of team commitment are adaptations of those measures used by Porter et al.'s (1974) short version of the OCQ and Allen and Meyer's (1990) affective commitment scale as shown in Table 2.2. Further, Bishop et al. (2005) reexamined the construct validity of team commitment along with organisational commitment, with four different data sets in the US. In order to distinguish these from a particular construct, perceived support, they scrutinized the scales of two foci of commitment by employing two different measures: the OCQ and the affective commitment scale of Allen and Meyer. Supporting the validity of two different measures of team commitment, their results showed that these two foci of commitment are

distinct from each other and different from perceived support of organisation and team. One of their results indicated that a two-factor model that combines the same targets (team commitment and perceived team support vs. organisational commitment and perceived organisational support) is better than another two-factor model that combines the same characteristic constructs (team commitment and organisational commitment vs. perceived team support and perceived organisational support).

However, Bishop et al.'s (2005) adaptations for the team commitment scale simply consisted of replacing the term 'organisation' with 'team' or 'group' (see Table 2.2). This adaptation, though pragmatically appealing, is perhaps theoretically unsatisfactory. Simply changing 'organisation' to 'team' does not allow scope for fine-grained differentiation in terms of proximity: for example, for the fact that proximate foci of commitment, perhaps expressed with reference to frequency of contact and immediate work colleagues, may have important contrasting features in comparison with distal foci of commitment, for instance where 'organisation' is arguably a much more remote or abstract notion.

More promisingly, there are two specific scales for assessing team commitment: Randall and Cote's (1991) for group commitment and Ellemers et al.'s (1998) for team commitment. The construct validity of these scales has been tested, and they have also been demonstrated to possess acceptable psychometric properties (Cohen, 2003). However, Randall and Cote's measure is arguably more biased in favour of the social identity and non-work related aspect of commitment, because three of the six items of their scale were taken from Sheldon's (1971) social involvement scale. Ellemers et al.'s scale is more wide ranging, and includes some items selected from existing commitment scales (Becker, 1992; Blau, 1985; Meyer & Allen, 1991; O'Reilly & Chatman, 1986) that reflect attitudinal, affective perspectives and others that are rephrased to reflect a focus on joint performance among a team's co-workers (Ellemers et al., 1998: 719), which is desirable for the measurement of team characteristics.

## 2.8. Conclusion

Because commitment is a multifaceted construct with multiple senses and because it has been operationalised in so many different ways, it is hard to try to hold on to a unitary definition. However, there is considerable evidence to support the notion that commitment (variously defined and variously operationalised) is something that we should try to understand better, and that we should measure. Team commitment and organisational commitment have shown various associations with work outcomes and hypothesised antecedents, which indicates that they have theoretical importance and also that measures of team commitment and organisational commitment have implications for practice. To summarise the main findings from this review, we can reflect on the following:

First, individual researchers have tended to define commitment in unitary terms - that is, as a unidimensional concept tied to a single definition (for instance as attachment, or as a binding force). However, the measurements used in their studies tend to incorporate multiple factors and so, in an important sense, they are not consistent with any single, fixed definition. For example, although Porter et al. suggest the OCQ as a unidimensional commitment scale, it contains three factors. Some subsequent empirical studies of the OCQ have suggested that it has only two factors, although Porter et al. operationalise organisational commitment using three sub-scales (Angle & Perry, 1981; Yousef, 2003). Cook and Wall's factor structure in the BOCS has also been questioned by findings from Bar-Hayim and Berman (1992). Although the BOCS presents three concepts as a unidimensional scale, Bar-Hayim and Berman suggest that it is a multidimensional scale with two factors. Several researchers agree that there are tensions between multi-factorial measures of commitment (affective, continuance and normative, for instance) and unidimensional conceptualizations of commitment (as attachment) (Benkhoff, 1997; Swailes, 2002).



Therefore, as one implication drawn from this review, I would suggest that studies adopting one definition of commitment should remain consistent with this when it comes to their measurement selection. So, for example, studies that use the ‘identification’ definition of commitment should choose a scale that is wholly related to the identification factor. This can in some instances be achieved post hoc, not by dropping reversed questions, but by examining factor (-loading) analysis. “This is required since the accuracy and explanatory power of commitment theory are directly related to the accuracy with which measures of commitment represent the construct that they are supposed to represent” (Swales, 2002: 155).

Second, researchers now widely accept that employees can have multiple commitment foci at the same time, and have researched the multi-foci and multi-bases of commitment. However, there has been little empirical research that examines employees’ multiple forms of work commitment focusing on team commitment and organisational commitment. In an effort to establish a global form of work commitment, Randall and Cote (1991) and Cohen (2000) sought to do this empirically. However, these studies arguably overlook the power and worth of team commitment as a separate commitment form by using an inappropriate instrument that is predominantly focused on workgroup members’ social (i.e. off-the-job) interaction. Cohen (2000) has suggested finding another commitment form to replace team commitment (rather than changing the measures of team commitment), but this loses sight of the potential worth of considering more proximate sources of commitment in a context where new organisational forms suggest moves away from hierarchy and towards flatter team structures. Evidence that this is an important form of commitment to consider comes from the 2004 Workplace Employment Relations Survey (WERS), which provides a nationally representative account of the state of employment relations and working life inside British workplaces. The WERS clearly shows the popularity of team systems in the UK. On the basis of the 2004 WERS findings, Kersley et al. (2005:10) report that: “Teamworking is the

most common, with almost three-quarters (72 per cent) of workplaces having at least some core employees in formally-designated teams.”

Third, and relatedly, despite the theoretical importance of team commitment, there are few studies which seek to operationalise it alongside organisational commitment as a discrete commitment form. As outlined, a number of these measures have limitations in that they simply substitute 'team' for 'organisation', which arguably loses sight of a valuable distinction between proximal and distal foci of commitment. Also, some measures of team commitment have been historically biased towards considering off-the-job factors because of their roots in instruments that operationalise a definition of commitment as attachment. So, we need to revisit and examine the concept of team commitment, and develop fine-grained measures that allow us to speculate about the causal relations between organisational commitment and team commitment.

To do this means using team commitment measures that are designed for that express purpose. One reason it is valuable to explore multiple commitment foci is in order to respond to the demands of a context where new organisational forms are associated with fewer hierarchies. This need for more sophisticated research is supported by the findings of Randall and Cote (1991) and Cohen (2000): that team commitment has a stronger and significant relationship with organisational commitment than do other work commitment forms. However, the likely direction of any causal relationship between team commitment and organisational commitment has been debated (Cohen, 2000; Seo & Kim, 2003), therefore, it is worthwhile examining the extent to which the two commitment forms interact, comparing how differently they explain work outcomes, examining how the combination of the two constructs increases the predictive power for work outcomes and, further, investigating the effect of interaction between the two commitments on work outcomes.

Finally, research into multiple commitments has, so far, been predominantly centred on North America and Europe. Even the research that has been carried out in Asia has been mainly done in a Chinese context. In terms of the comparatively fewer studies conducted in other contexts, several have raised doubts about the generalizability of some of the operationalisations of commitment. Doubts about generalizability have been raised both in relation to factor structure and construct validity / construct differentiation. An as yet under-developed aspect to this is the need for greater sensitivity in relation to translating some of these items. In this respect, there is a need for research to be conducted in areas other than the aforementioned three areas, North America, Europe and China, which would help to determine whether it is possible to generalize commitment theory.

For example, in Luthans et al.'s (1985) comparative study of organisational commitment, which used Porter et al.'s OCQ, the results suggest that the Korean sample has produced two-factor loadings while the American and Japanese samples have given a single factor. On closer examination the authors conclude that the Korean sample does not offer sufficient evidence for a distinct and new commitment construct. Instead, there are important differences in phrasing, and in the use of negative, reversed-score items, in relation to positive items. Yousef's (2003) testing of Porter et al.'s OCQ with UAE employees shows similar results to those of Luthans et al. (1985). As in the Korean sample, the factor loading suggests that very similar items, which were negatively phrased, were loaded on to a second factor.

In conclusion, we need to include team commitment as a crucial and separate element, although it has been identified that two of the most influential models in the commitment literature used insufficiently sophisticated measures, which, in turn, has led to an oversimplified account of employee commitment that mixes together different forms of commitment, which can usefully be separated. It is one of the most relevant foci in the global

form of employees' work commitment. This seems important if we acknowledge that in at least some organisations, or sectors, forms of management are becoming less hierarchical and more team-oriented. From the review on multiple commitments, it was identified that there has been little research focusing on team commitment and organisational commitment and a great deal of research examining antecedents and outcomes of commitment rather than its mediating roles. In this respect, this study will examine team and organisational commitment's mediating effects. The next chapter will discuss the corresponding constructs for which team and organisational commitment mediate the relationships.

## **CHAPTER 3. PSYCHOLOGICAL EMPOWERMENT, COMMITMENT AND ORGANISATIONAL CITIZENSHIP BEHAVIOUR**

### **3.1. Introduction**

The review of the literature on commitment research in the previous chapter suggests that commitment to teams and organisations strongly corresponds with affective and interactive psychological characteristics (see Table 2.4 in Chapter 2). In this respect, empowerment is a construct with both an affective and an interactive psychological character, as can be explained by social exchange theory, a theory that has relevance for both empowerment and commitment.

Moreover, commitment is a concept that belongs in motivational constructs (Meyer et al., 2004), as does psychological empowerment (Conger & Kanungo, 1988). By integrating the theories of commitment and motivation, Meyer et al. (2004) considered how empowerment (especially self-efficacy and self-determination), commitment and employees' discretionary/non-discretionary behaviours might be associated. They suggest that, together, commitment and motivation predict and explain any form of intentional behaviour. Given this, they propose a model illustrating how these motivational mindsets, influenced by self-efficacy, self-determination and commitment, influence discretionary and non-discretionary behaviours and work outcomes and satisfaction.

Drawing on by Meyer et al.'s (2004) integrative model of commitment and motivation, this chapter examines the relationship between psychological empowerment and commitment, in as much as both are motivational constructs and have effects on discretionary behaviours. Empowerment has been suggested as a predictor of organisational commitment and team commitment (Kirkman & Rosen, 1999) as well as of performance (Chen & Klimoski, 2003; Seibert, Silver & Randolph, 2004; Wat & Shaffer, 2005), while commitment is also associated with performance (Hunter & Thatcher, 2007; Riketta, 2002; Wright & Bonett, 2002). Furthermore, commitment has been researched as a predictor of job performance and organisational citizenship behaviour (Chen & Francesco, 2003; Sinclair et al., 2005). Therefore, it will be beneficial to examine how the two commitment forms are associated with empowerment and performance, especially organisational citizenship behaviour (OCB).

Given the above rationale for a relationship between commitment and empowerment and OCB, this chapter begins by reviewing how empowerment and OCB in the workplace have been studied. This is followed by a review of how previous studies have examined and described the relationship and influences between them. Finally, the chapter presents the relationship proposed for study in this thesis.

### 3.2. Empowerment

Empowerment is understood as a “form of employee involvement designed by management to generate commitment and enhance employee contribution” (Morrell & Wilkinson, 2002: 122). Working with this definition, empowerment in the area of management has mainly been studied with regard to two features: psychological

empowerment and structural empowerment. The former has been examined chiefly from the point of view of organisational psychology, and the latter from the point of view of human resource management. Each concept has been described as multidimensional. As with commitment, empowerment is not captured by a single concept (Spreitzer, 1995a; Thomas & Velthouse, 1990) but is considered as a multifaceted construct (Morrell & Wilkinson, 2002). Table 3.1 presents the definitions and sub-dimensions of each empowerment form, and the differences between them. The main difference is in the definition. Structural empowerment is a set of practices, and focuses on the efficacy or efficiency of the system in the organisation, while psychological empowerment is a constellation of psychological states, perceptions and cognitions on the part of individual employees. Between these two main concepts lies the sociostructural empowerment suggested by Kanter (1977).

Kanter (1977) suggested six dimensions of sociostructural empowerment that could be measured: access to 1) opportunity, 2) information, 3) support, and 4) resources; and 5) formal power and 6) informal power to facilitate. Kanter (1977, 1993) defines power as the ability to mobilize information, resources and support to get things done in an organisation. The structure of power and opportunity are the two primary features in the generation of states of powerfulness and powerlessness. Having significant ‘opportunity’ for problem-solving, the expansion of work knowledge and work skills, and participation in special task forces or projects requiring organisational commitment produces employee empowerment. The structure of power comprises three aspects: access to information, support and resources. ‘Information’ refers to the knowledge and skills accessed through communication and sharing. ‘Support’ is delivered by giving positive feedback, and encouraging autonomy and collaboration among staff.

Table 3.1. Three Conceptions of Empowerment

Conception	Definition	Dimension	Perspective from (mainly)	Level of analysis	Studies
Structural Empowerment	A practice or set of practices that involve the delegation of authority and responsibility to employees	Work design such as job design, job characteristics, job enrichment and work arrangements	HRM	Individual	Patterson et al. (2004)
				Team	
Sociostructural Empowerment	A set of structures, policies and practices designed to decentralize power and authority through the organisation	6 dimensions (Kanter, 1977): - opportunity - access to resources - information - support - formal power - informal power	HRM Nursing	Both individual and team	Laschinger et al. (2004); Laschinger et al. (2010)
Psychological Empowerment	A constellation of experienced psychological states or cognitions	2 dimensions (Mathieu et al., 2006): - authority - responsibility 4 dimensions (Spreitzer, 1995a) : - competence - self-determination - meaning - impact	Org'l Behaviour (Work Psychology)	Individual	Chen et al. (2007); Laschinger et al. (2004)
				Team	Chen et al. (2007); Kirkman & Rosen (1999); Kirkman et al. (2004); Mathieu et al. (2006)

Note. <sup>1</sup> Definition of three conceptions cited from Mathieu, J.E. et al. (2006). Empowerment and team effectiveness: An empirical test of an integrated model. *Journal of Applied Psychology*, 91(1), 97-98.



‘Access to resources’ can be achieved by providing adequate time, supplies and money to carry out work. Access to these empowerment structures is facilitated through two political routes: formal and informal power systems. ‘Formal power’ is derived from job activities, while ‘informal power’ is gained from alliances or relationships with people at different levels in the organisation (Laschinger, Gilbert, Smith & Leslie, 2010). However, this sociostructural empowerment is claimed as a contextual antecedent of psychological empowerment, rather than as empowerment itself (Seibert, Wang & Courtright, 2011).

Meanwhile, measurement of psychological empowerment from the organisational behaviour perspective has been dominated by Spreitzer’s (1995a) scale. This scale measures psychological empowerment with the four dimensions of meaning, competence, self-determination and impact. “Meaning” refers to the value of a work goal or purpose, and involves a person-job fit (Spreitzer, 1995a). “Competence”, or self-efficacy, differs from global efficacy and expresses an individual’s belief in his or her capability to perform activities with skill (Gist, 1987). “Self-determination” refers to “autonomy in the initiation and continuation of work behaviours and processes” (Spreitzer, 1995a: 1443). “Impact” is “the degree to which an individual can influence strategic, administrative, or operating outcomes at work’ (Ashforth, 1989: 207-208).

However, as a whole, the results of research on the extent to which psychological empowerment can be understood as a unitary construct are inconsistent. Spreitzer, Kizilos and Nason’s (1997) study presents the different contributions of the four dimensions to perceived effectiveness, work satisfaction and job-related strain. Their findings suggested that the four dimensions had different relationships with work outcomes, and that no single dimension could predict all three of the above outcomes.

Their results presented a consistent pattern based on two data sets: one drawn from a manufacturing company's middle managers; and the other from an insurance company's lower-level employees. The data set for the former suggested that meaning and self-determination were significantly related to work satisfaction, which in turn was highly correlated with organisational commitment; and the strongest relationship was between meaning and work satisfaction. Competence was most significantly related to job strain, followed by work effectiveness. Impact was significantly associated only with work effectiveness. The second data set excluded work effectiveness as the respondents were largely non-managerial employees, but showed a somewhat similar pattern. Meaning was still the best predictor of work satisfaction; and competence appeared to increase work satisfaction. From these results, Spreitzer et al. (1997) conclude that competence and impact are more significantly related to work effectiveness, while meaning is the best predictor of work satisfaction. However, surprisingly, although self-determination is the strongest factor loaded onto psychological empowerment in a second-order empowerment factor model, in this study it appeared to be significant only in the middle managers' sample. From this unexpected result, Spreitzer et al. (1997) infer that autonomy is less important for employees than having a sense of meaning, competence, and impact in the workplace, and that flattening the organisational system, for example by forming teams, may lessen the degree of autonomy for employees in the workplace.

Unlike Spreitzer et al. (1997), many researchers identify psychological empowerment as a single construct, and indeed Spreitzer (1995b) herself suggested that the four dimensions combined into one overall construct of psychological empowerment. These other researchers conduct their empirical analyses with a second-order empowerment

factor (Alge et al., 2006; Aryee & Chen, 2006; Chen & Kilmoski, 2003; Zhang & Bartol, 2010).

While Spreitzer's four dimensions of psychological empowerment represent the mainstream of the research, Mathieu, Gilson and Ruddy (2006), seeking to build on previous studies, propose two dimensions of psychological empowerment: responsibility (Hyatt & Ruddy, 1977), and authority (Hardy & Leiba-O'Sullivan, 1998). Hyatt and Ruddy (1977) looked at the characteristics that affected working groups' performance. For their study, in order to develop a group development profile, they selected 13 characteristics for achieving effective working groups. One of these characteristics, empowerment, referred to working group members' decision-making opportunities, their accountability and responsibility for outcomes, and their opportunities for problem-solving.

Following Hyatt and Ruddy (1977), who emphasize the aspect of responsibility, Mathieu et al. (2006) propose responsibility as one of their empowerment dimensions. Between these two studies, Hardy and Leiba-O'Sullivan (1998) examined the reasons why empowerment programs often fail to meet expectations, seeking for answers from both the mainstream management perspective and the critical theoretical perspective. They suggest that power is conducted in four dimensions: the control of scarce resources – for instance, information, expertise, prestige, access to higher members and the control of money and rewards; the control of decision-making processes; the shaping of meanings; and the power relations embedded in the system. In each dimension, employees can be empowered by the proper mobilization of opportunities. In another study, Hardy and Leiba-O'Sullivan (1988) claim that, from the critical theoretical perspective, the cause of empowerment programs' failure is power

domination in the system, while the mainstream management perspective suggests that power is functional and can be shared. Following on from this, Mathieu et al. (2006) propose the granting of authority as another dimension of empowerment.

However, Mathieu et al.'s authority is also close to Kanter's sociostructural empowerment in the sense of power mobilization. Kanter's formal/informal power in the organisation influences access to opportunity, resources, information and support. Similarly, in Hardy and Leiba-O'Sullivan's (1988) four dimensions, power is embedded in the system (organisation) and the level of power domination is the key issue.

There is a similarity between structural empowerment and sociostructural empowerment in the emphasis both place on the delegation of power in the system, whilst psychological empowerment focuses on employees' feelings and experience. The research on structural empowerment is generally about designing work to induce high involvement, high commitment and high productivity among employees, and eventually to increase performance. For instance, Patterson, West and Wall's (2004) study seeks to identify how management practices and structural empowerment influence performance. Their study will be reviewed later in this chapter.

Noting the different ways in which empowerment was implemented, Cho and Faerman (2010) examined the validity of psychological and structural empowerment constructs with samples ( $N = 191$ ) from local government in South Korea. Their findings suggested that public sector organisations, in carrying out reform of public bureaucracy, had focused on structural empowerment and had overlooked the importance of psychological empowerment. Pursuing this concern further, they attempted to validate the multidimensionality of structural empowerment, with its participative decision

making, feedback and delegation of authority; and of psychological empowerment, with its meaningfulness, competence, self-determination and impact. Their findings using structural equation modelling suggested that these two types of empowerment were distinct constructs. Self-determination presented the highest factor loading on psychological empowerment among the four sub-factors, and had the strongest relationship with competence, followed by impact and meaningfulness. However, they then found that structural and psychological empowerment seemed to converge as a single factor in an integrative model of empowerment. Their integrative model of structural and psychological empowerment suggested that there were both correlations and differences between them. Their model gives us a clue as to why these two empowerment forms have been found to have similar positive effects on employees' behaviour and performance.

After the review of OCB, Table 3.2 presents the way in which empowerment, two forms of commitment (organisational commitment and team commitment), and work outcomes (OCB and performance) have been examined in previous studies.

### 3.3. Organisational Citizenship Behaviour (OCB)

Organisational citizenship behaviour (Organ, 1988) is defined as 'discretionary, voluntary behaviours that are not part of an employee's specific role requirements nor formally rewarded by the organisation' (Lavelle, Rupp & Brockner, 2007:848). This definition indicates why OCB is called discretionary behaviour (Meyer & Herscovitch, 2001) or extra-role behaviour (Katz, 1964; Williams & Anderson, 1991).

Studies to date (Cooper-Hakim & Viswesvaran, 2005; Johnson, Groff & Taing, 2009; Mathieu & Zajac, 1990; Meyer et al., 2002) indicate that organisational citizenship behaviour is strongly associated with organisational commitment. Organ and Ryan's (1995) meta-analytic review of 55 studies looked at how OCBI (presented as altruism in their study) and OCBO (presented as generalized compliance in their study) were related to organisational commitment, – specifically to overall organisational commitment, affective commitment and continuance commitment. Their results suggested that both OCBI and OCBO had significant relationships with organisational commitment, especially affective commitment, but not with continuance commitment. This result is not surprising given that continuance commitment is linked to financial cost and sacrifice, whereas affective commitment is connected to psychological attachment, identification and congruence.

More specifically, from the social exchange point of view, Lavelle et al. (2007) point out that there are intended beneficiaries of citizenship, and suggest that the associations between commitment and OCB derive from the quality of social exchange relationships. They suggest that employees' attitudes influence their behaviour according to their target focus and the level of their effect on the quality of their exchange relationships. For instance, if employees set their target towards the organisation, then organisational justice, organisational trust, perceived organisational support, organisational commitment/identification and citizenship in the context of the organisation may produce a combination that has more influence than other foci such as supervisory justice or perceived supervisor support.

There are semantic connections between OCB and commitment. Podsakoff, Mackenzie, Paine and Bachrach's (2000) review of OCB research reveals the shared common

concepts among them. From their extensive review, Podsakoff et al. (2000) identified 30 conceptual definitions of OCB and classified them into seven categories: 1) helping behaviour, 2) sportsmanship, 3) organisational loyalty, 4) organisational compliance, 5) individual initiative, 6) civic virtue and 7) self-development. These categories of OCB are explained further below:

- 1) *Helping behaviour*: Podsakoff et al. (2000) identify two concepts of helping behaviour that had previously been empirically considered as a single factor (Podsakoff, Ahearne & MacKenzie, 1997; Podsakoff & MacKenzie, 1994). One is a behaviour that voluntarily helps others, variously defined as altruism, peace-making, or cheerleading (Organ 1988, 1990); interpersonal helping (Moorman & Blakely, 1995); OCBI (William & Anderson, 1991); interpersonal facilitation (Van Scotter & Motowidlo, 1996); and helping others (George & Jones, 1997). The other is a behaviour that prevents the occurrence of work-related problems, and is noted as courtesy (Organ 1988, 1990).
- 2) *Sportsmanship*: Sportsmanship is defined as ‘a willingness to tolerate the inevitable inconveniences and impositions of work without complaining’ (Organ, 1990: 96). However, Podsakoff et al. (2000) claim that this definition should be broader, because the idea of a good sport also implies sacrifice, conformity of ideas, and a positive attitude.
- 3) *Organisational loyalty*: Organisational loyalty encompasses spreading goodwill, protecting the organisation, and supporting organisational objectives (George & Jones, 1997). However, the measurement of this concept needs further examination

to establish its validity. Organisational loyalty differs from the loyalty of commitment in that OCB loyalty is about employee behaviour, whilst commitment is about employee attitudes. Allen and Meyer's (1990) normative commitment scale contains items measuring loyalty as a social and personal obligation toward the organisation; whereas Cook and Wall's (1980) BOCS measures loyalty as a sense of belonging to an organisation.

- 4) *Organisational compliance*: This is a longstanding area of citizenship behaviour. Smith, Organ and Near (1983) describe it as a more impersonal form of conscientiousness, for instance, being punctual and not wasting time. It is called generalized compliance (Smith et al. 1983), organisational obedience (Graham, 1991), OCBO (William & Anderson, 1991), or organisational rules and procedures (Borman & Motowidlo, 1993). Podsakoff et al. (2000) see this concept as employees' internalization of, and adherence to, the organisation's rules, regulations and procedures.
- 5) *Individual initiative*: Among the seven types of OCB, this is the only task-related behaviour. It includes voluntary acts of creativity and innovation to improve performance, and has been defined as conscientiousness (Organ, 1988), enthusiasm and volunteering (Borman & Motowidlo, 1993), dedication to job (Van Scotter & Motowidlo, 1996), and personal industry/individual initiative (Moorman & Blakely, 1995). This is the most difficult form of OCB to distinguish from in-role behaviour or task performance (Organ, 1988, Van Scotter & Motowidlo, 1996).
- 6) *Civic virtue*: Podsakoff et al. (2000: 525) describe this as a "macro-level" commitment to the organisation as a whole, and a willingness to participate actively



in governance and monitor the environment for threats and opportunities. It is referred to as civic virtue (Organ, 1988, 1990) and as organisational participation (Graham, 1991). Further, Podsakoff et al. suggest that this behaviour derives from employees' recognition of their role as a part of the organisation.

- 7) *Self-development*: Although self-development has not yet been empirically validated, it is regarded as a discretionary form of citizenship behaviour. It includes voluntary engagement in improving knowledge, skills and abilities (George & Jones, 1997).

From the above OCB definitions and classifications, we can see that there are common words to describe both this construct and the construct of commitment: for example loyalty, identification, engagement, internalization and even macro-level commitment.

The relationship between commitment and OCB has also been considered using a multi-foci approach by Lavelle et al. (2007). Supporting William and Anderson's (1991) three classifications of workplace behaviours, OCB to organisation (OCBO), OCB to individuals (OCBI) and in-role behaviour (task performance), Lavelle et al. (2007) put forward the idea that citizenship behaviours have different foci: for example, OCBI targets co-workers, team members and supervisors, while OCBO targets the organisation. Similarly, commitment has multiple foci, such as co-workers, teams, supervisors, unions, top management and the organisation itself. They propose a target-specific relationship model based on the target similarity framework supported by Lavelle, Konovsky and Brockner's (2005: this conference paper was later published as Lavelle et al., 2009) finding from their work with layoff survivors ( $N = 106$ ), using

Becker's (1992) commitment scales. This suggests that organisational commitment is a better predictor of OCBO (specifically, compliance, in their study) than is group commitment; whereas group commitment is a better predictor of OCBI (specifically, helping behaviour, in their study). They set two affective commitments (organisation and workgroup) as mediators between organisational procedural fairness and OCBO, suggesting that organisational commitment fully mediates the relationship between fairness and OCBO, whereas workgroup commitment does not even partially mediate this relationship. From the findings of their second study, working with university students' project teams ( $N = 635$ ) and using Allen and Meyer's (1990) affective commitment scale, they suggest that workgroup commitment fully mediates the relationship between workgroup fairness and OCBI.

Similarly to Lavelle et al. in their (2007) study, from the perspective of behaviour targets, Ilies, Fulmer, Spitzmuller and Johnson (2009) suggest a target-focused two-factor framework (e.g. OCBI and OCBO), using the OCB definitions by Podsakoff et al. (2000). Although the two foci of OCB had been categorized under helping behaviour and organisational compliance, as Podsakoff et al. (2000) suggested, Ilies et al. (2009) re-categorized OCB according to the behaviour targets. They suggest that measures of conscientiousness (as citizenship behaviour is not a trait), sportsmanship, compliance, job dedication, loyalty, creativity/innovation and civic virtue should be categorized as OCB to organisation (OCBO); while measures of altruism, such as helping, cooperative behaviour, personal support, pro-social behaviour, interpersonal facilitation and courtesy should be categorized as OCB to individuals (OCBI). After re-categorization, they verified their classification, with 94.4% agreement.

However, the OCB measure most frequently used in the research is a variation of Smith et al.'s (1983) five-item scale (Organ & Ryan, 1995), the items being altruism, compliance, courtesy, sportsmanship and civic virtue.

### 3.4. Connections between Commitment, Empowerment and OCB

From the perspective of social exchange theory, and as confirmed by the literature review, psychological empowerment, commitment and citizenship behaviour are all related.

As discussed in this chapter and in previous chapters, commitment, psychological empowerment and OCB do not have a single construct form. Instead, they each encompass several meanings. Therefore, researchers have been able to choose those dimensions of each that were favourable to their research: for instance, two factors from psychological empowerment, one component of organisational commitment and three factors from OCB. This multidimensional characteristic is also seen in the fact that each of the three constructs has been established in several theories, and means that they have much in common.

For instance, the 'meaning' of psychological empowerment can be explained by person-job fit theory and by congruence theory: how the value of work (the goal) is internalized. This is one conceptualization of commitment. And psychological empowerment also has a relationship with OCB. An explanation of psychological empowerment's self-determination dimension can include initiative in work behaviours; and psychological empowerment's impact can be described as the degree of participation encouraged, which is very close to the definition of civic virtue in OCB. Graham (1991) refers to

civic virtue as organisational participation. In addition, a concern with knowledge, skills and abilities in the workplace is another common aspect of the three constructs – an aspect seen in Kanter’s theory of access to information (sociostructural empowerment), Spreitzer’s theory of competence (psychological empowerment) and George and Jones’s (1997) theory of self-development (OCB).

It is in the light of such theoretical connections between the three constructs, that their causal relationships are examined below.

### 3.5. Causal Relationships

Focusing on the selected antecedents of commitment, empowerment and its consequences, and organisational citizenship behaviour, a review was carried out of previous studies on the relationships between empowerment and commitment, between empowerment and performance, between commitment and performance, and between empowerment, commitment and performance.

The results of this are shown in Table 3.2. To express the different patterns of structural empowerment and psychological empowerment, the empowerment column of the table is divided into psychological and structural empowerment, with the study on sociostructural empowerment included in the structural empowerment section (Gilbert et al., 2010). Commitment is divided into organisational and team commitment, because these are the two core aspects of commitment studied here. Since a great deal of commitment research has focused on the affective or global form of organisational commitment, but little has been done specifically on normative or continuance commitment, organisational commitment has not been divided to reflect these different

aspects. The types of performance are specified, and it can be seen that, because the research on commitment has mainly examined psychological empowerment, there has been a tendency to concentrate on discretionary behaviour, OCB, in the table. Research on human resource management or high involvement/commitment, on the other hand, has generally studied structural empowerment, focusing on the effects of power delegation in the organisation, and has therefore tended to study non-discretionary behaviour, which appears in the table under the headings productivity, financial performance and task performance.

The following sub-sections discuss, from an empowerment perspective, the different empowerment, commitment and performance findings presented in the table. As the three main constructs – commitment, psychological empowerment and OCB – are considered multifaceted, these three constructs have often been measured as second-order models representing the hypothesis that these seemingly distinct, but related constructs can be accounted for by one or more common underlying higher-order constructs (Chen, Sousa & West, 2005: 471-472). The reviews in the following sub-sections will look at whether the researchers have examined these constructs as second-order models or as first-order, single-factor models.

#### 3.5.1. From a Psychological Empowerment Perspective

A major tenet of empowerment theory is that empowered individuals should perform better than those who are relatively less empowered (Thomas & Velthouse, 1990). To

Table 3. 2. Relationships between Commitment, Empowerment, Performance and OCB in Previous Studies

Relationships	Study	Constructs studied								Methodology	Sample	Main Findings
		Empowerment		Attitudinal Perform.		Financial Perform.			Extra-role Behv.			
		Psy. E	St. E	OC	TC	Prod	Fin.	Task	OCB			
Empowerment → Commitment	Avolio, Zhu, Koh, & Bhatia (2004)	✓		✓						Survey	Hospital in Singapore	In a high power distance culture Psy. E significantly mediates between transformational leadership and OC only at the indirect leadership level
	Ahmad & Oranye (2010)	✓	✓	✓							Hospitals in Malaysia and England	Psy. E has stronger positive significant associations with OC than does St. E.
Empowerment → Performance	Alge et al. (2006)	✓						✓	✓ OCB O /OCB I	Email Survey	Study 1: a Univ. in the US Study 2: multiple Univs. in the US	OCBI and OCBO are particularly related to “self-determination” and “meaning” among Psy.E factors, while “impact” is related to OCBO.
	Aryee & Chen (2006)	✓						✓		Survey	A listed Chinese company in China	Psy. E mediates the relationship between LMX and JS, task performance and intent to leave.
	Gilbert et al. (2010)		✓						✓	Survey	Hospitals in Canada	Empowerment is significantly related to both OCBO and OCBI

Relationships	Study	Constructs studied								Methodology	Sample	Main Findings
		Empowerment		Attitudinal Perform.		Financial Perform.			Extra-role Behv.			
		Psy. E	St. E	OC	TC	Prod	Fin.	Task	OCB			
	Guerrero & Barraud-Didier (2004)		✓			✓	✓			Survey	Large French companies	4 bundles of HRPs (empowerment, compensation, communication and training) have a strong impact on performance when put together.
	Koberg et al (1999)	✓				✓				Survey	Hospitals in the US	Psy. E has positive relationships with perceived productivity, effectiveness and JS and negative relations with intent to leave.
	Patterson, West & Wall (2004)		✓			✓	✓			Interview /Survey	Manufacturing companies in the UK	St. E (job enrichment and skill enhancement) significantly influences productivity and performance.
	Seibert, Silver & Randolph (2004)	✓				✓		✓		Survey	A manufacturer in the US	Empowerment climate has positive relationship with work unit perform. And Psy. E has significant positive relationship with indiv. perf. and JS.
	Zhang & Agarwal (2009)	✓							✓	Survey	2 companies in China	Empowerment and OCB have a significant relationship and this relationship becomes stronger when distributive justice is mediated.

Relationships	Study	Constructs studied								Methodology	Sample	Main Findings
		Empowerment		Attitudinal Perform.		Financial Perform.			Extra-role Behv.			
		Psy. E	St. E	OC	TC	Prod	Fin.	Task	OCB			
	Wat & Shaffer (2005)	✓							✓ OCB O /OCB I	Survey	Investment banks in Hong Kong	Partial support for direct effects of Psy. E on dimensions of OCBs
Empowerment → Commitment / Performance	Kirkman & Rosen (1999)	✓		✓	✓	✓			✓	Survey/ Interview	Textile and high-tech manufacturers, an insurance company in the US	Team-level empowerment has significant effects on team-level attitudinal outcomes (OC, TC, JS) and team-level performance outcomes (productivity, proactivity, CS).
	Liden, Wayne & Sparrowe (2000)	✓		✓				✓		Interview / Survey	A large service org. in the US	Each factor of Psy. E has a different association with outcomes.
	Seibert, Wang & Courtright (2011)	✓		✓				✓	✓	Meta analysis	-	Establishes validity of a single construct of Psy. Emp and broad quantitative review on psy. emp.
Commitment → Performance	Chang, Rosen & Levy (2009)			✓				✓	✓ OCB O/OC BI	Meta analysis	.	Significant relationships between AOC and OCBI, OCBO and task performance.
	Chen & Francesco (2003)			✓				✓	✓	Survey	A large pharmaceutical manufacturer in China	Supports 3-factor OC instead of 4-factor OC. NOC is not significant with OCB/performance.



Relationships	Study	Constructs studied								Methodology	Sample	Main Findings
		Empowerment		Attitudinal Perform.		Financial Perform.			Extra-role Behv.			
		Psy. E	St. E	OC	TC	Prod	Fin.	Task	OCB			
	Cohen (2006)			✓	✓			✓	✓	Survey	Israeli teachers, Jews and Arabs	Shows the different relationships between commitment and performance with four cultural dimensions.
	Riketta (2002)			✓				✓	✓	Meta analysis	.	Attitudinal OC is more related to OCB and white-collar workers. OC scales used do not matter but the source of performance does.
	Sinclair et al. (2005)			✓				✓	✓ OCB O/ OCBI	Survey	In the US, Study 1: a petroleum and a natural energy company Study 2: Students employed in a Univ.	Suggest 4-cluster AC-CC commitment profiles and identify that low AC-CC cluster group shows significantly different performance and antisocial behaviours from other cluster groups.
	Tremblay et al. (2010)			✓				✓	✓	Survey	A hospital in Canada	No mediating effect of AOC btw trust and OCB/Performance when there is a control effect of perceived support.

*Note.* Psy. E: Psychological Empowerment, St. E: Structural Empowerment, OC: Organisational Commitment, TC: Team Commitment, Prod: Productivity, Fin: Financial performance, Task: Task performance, OCB: Organisational Citizenship Behaviour, OCBI: OCB to Individuals, OCBO: OCB to Organisation, JS: Job Satisfaction, CS: Customer Service

validate this statement, psychological empowerment has been examined with various work outcomes, such as job satisfaction, organisational commitment, job performance and turnover intention (Aryee & Chen, 2006; Koberg et al., 1999; Liden et al., 2000). The relevant studies are detailed below:

### ***Empowerment – Commitment***

Avolio, Zhu, Koh and Bhatia's (2004) study with data from a large public hospital in Singapore presents findings related to the relationships between organisational commitment and transformational leadership, mediated by psychological empowerment and moderated by hierarchical structural distance between leader and follower in terms of job responsibility. These researchers used Spritzer's (1995) 12-item psychological empowerment scale and Cook and Wall's (1980) OC scale, and included three items of identification, three items of involvement and three items of loyalty.

Their findings showed that demographic factors, such as age, length of tenure, education and employment type were not significantly related to organisational commitment. They found that the effect of transformational leadership on organisational commitment was significantly greater with the mediation of psychological empowerment than when there was no mediation. When they placed structural distance as a moderator between leadership and organisational commitment, leadership effects suggested differences according to the different levels of power, such as nursing officers (higher-level leaders, indirect leadership) and senior staff nurses (lower-level leaders, direct leadership). Psychological empowerment was significantly related to organisational commitment for both higher- and lower-level leaders, but the significant relationship between leadership and organisational commitment was found only among higher-level leaders, those at an indirect level of leadership. Given this result, the authors suggest that the moderator effects of cultural distance cause the differences

between their results and those of prior research conducted in Western cultures. In Singaporean culture, where power distance is higher than in Western cultures according to the Hofstede Index (1991), lower-level leaders feel less empowered than higher-level leaders.

Ahmad and Oranye's (2010) study suggests differences between Asian and Western culture. Their descriptive survey of nurses in Malaysia and England showed that empowerment did not automatically lead to job satisfaction. They studied structural empowerment using Laschinger and Havens's (1996) scale, which originated in Kanter (1977); psychological empowerment using Spreitzer's (1995a) scale; job satisfaction drawing on Stamps (1997), and organisational commitment using Meyer and Allen's (1991) three-component model. Although there are sub-dimensions of empowerment, they did not specifically indicate each sub-dimension's associations with other variables.

However, their findings suggest that psychological empowerment has much stronger significant positive associations with organisational commitment than does structural empowerment, regardless of the demographic and cultural differences between the two countries. By contrast, their descriptive statistical results for three-component organisational commitment showed different patterns for the Malaysian and English samples. Amongst the English samples, continuance commitment presented non-significant relationships with affective and normative commitment but significant relationships with total organisational commitment; whilst among the Malaysian samples, affective, normative and continuance commitment were significantly related to each other.

***Empowerment – Performance (Productivity, Finance, Task and Organisational Citizenship Behaviour)***

Alge et al. (2006) studied how the relationship between information privacy and organisational citizenship behaviour was mediated by psychological empowerment with samples drawn from white-collar university administration staff in the US. According to their findings, psychological empowerment generally exerts more positive influences on OCBO than on OCBI. OCBI is particularly related to self-determination and meaningfulness on empowerment subscales, while OCBO is particularly related to self-determination, meaning and impact. Interestingly, competence is not significantly related to OCBI or OCBO in the correlation matrix. In this study, psychological empowerment, OCBI and OCBO were looked at as unified, second-order factor models.

Choi (2007) studied the influence of workplace characteristics on employees' OCB toward organisational change, and examined the mediation effects of psychological empowerment. The data were collected from a large electronics company in Korea, and more than 90% of the respondents were male. In this study Choi examined three dimensions of psychological empowerment: meaningfulness, competence and self-determination. He found that psychological empowerment had significant effects on change-oriented OCB at the individual level as well as group level. This suggests that psychologically empowered individuals exhibit more innovative behaviour because autonomous performers are less constrained by technical rules, feel more efficacious in carrying out their tasks, and are willing to take on additional roles (Choi, 2007; Spreitzer, 1995).

Aryee and Chen's (2006) study supports Liden et al.'s (2000) findings. In their examination of how psychological empowerment mediates between LMX and work outcomes such as job satisfaction, task performance and psychological withdrawal behaviour in a Chinese context,

they found that psychological empowerment had significant and positive relationships with job satisfaction, turnover intention and task performance. This result is similar to the findings of Koberg et al. (1999), who empirically reached the conclusion that a four-factor psychological empowerment model was better than a one-factor model, and used it as a second-order factor for their study.

Koberg et al. (1999) examined the antecedents and outcomes of empowerment with professional workers in a large hospital in the US. Their findings suggested that psychological empowerment increased work productivity/effectiveness and job satisfaction, and decreased employees' intentions of leaving. In their study, psychological empowerment was measured as a single composite from the averaged four sub-scale values, due to insignificant inter-correlations between the four sub-factors. Among the personal demographic factors, such as sex, education, ethnicity, length of tenure and locus of control, only length of organisational tenure was a significant predictor of psychological empowerment. These researchers also found that among the environmental factors, 'worth of group' had most influence on psychological empowerment, along with group effectiveness. Their results support Spreitzer's suggestion that 'work-unit level social structure may ultimately provide the most explanatory power in understanding empowerment' (1996: 501), and reinforce the important relationships between psychological empowerment and team commitment.

Zhang and Agarwal's (2009) study looked at the relationship between psychological empowerment and OCB in a Chinese context. They examined the links between empowerment, psychological contract fulfilment and communication as HR practices, and how OCB and turnover intentions were mediated by justice. They employed Spreitzer's (1995a) 12-item scale for psychological empowerment, and altruism, conscientiousness and civic virtue for OCB. Their results indicated that psychological empowerment had

motivational effects that directly affected employees' discretionary behaviour – that is their OCB – and had increased predictive power for OCB when it was mediated by justice. However, they did not present the empowerment relationship of each sub-factor with OCB.

Wat and Shaffer (2005) used samples ( $N = 183$ ) from investment banks' marketing personnel in Hong Kong. Compared to Zhang and Agarwal (2009), they demonstrated more specific relationships between empowerment and OCB by presenting the relationship for each empowerment sub-dimension. They employed Spreitzer's (1995a) empowerment scale and five measures of OCB: conscientiousness, sportsmanship, civic virtue, courtesy and altruism. Conscientiousness, sportsmanship and civic virtue are regarded as OCBO, while courtesy and altruism are viewed as OCBI. The results did not show consistent relationships among the factors: rather they suggested that competence had a significant effect on conscientiousness and sportsmanship, while impact had a significant effect on conscientiousness. None of the four factors of empowerment had a significant effect on civic virtue. Meanwhile, meaning had a significant effect on courtesy, and self-determination had a significant effect on altruism. The results suggested that psychological empowerment influenced the two types of OCB differently, with impact and competence having a particular influence on OCBO, while meaning and self-determination exerted an influence on OCBI.

### ***Empowerment – Commitment and Performance***

While a majority of studies on empowerment have examined the construct at the individual level, Kirkman and Rosen (1999) looked at it at the team level, using a sample of 111 teams drawn from four organisations in the US: two textile manufacturers, a high-technology manufacturer and an insurance company, of which two were *Fortune* 50 organisations and two were smaller companies. To measure team empowerment, various previously validated

scales were adapted rather than using Spreitzer's (1995a) scale. These included Guzzo et al.'s (1993) and Thomas & Tymon's (1993). However, the concepts of team empowerment were the same as Spreitzer's concept of team potency, which is made up of team competence, team meaningfulness, team autonomy and team impact. The findings suggested that team empowerment had significant effects on team-level performance (productivity, proactivity and customer service) and team-level attitudinal outcomes (job satisfaction, organisational commitment and team commitment); likewise empowerment at an individual level had the same influence on performance and attitudinal outcomes.

Liden, Wayne and Sparrowe's (2000) study, using samples from a large service organisation in the US and employing Meyer and Allen's (1984) original 8-item affective organisational commitment scale, suggested a mediating role for psychological empowerment in the workplace. Their model, in which psychological empowerment mediated between LMX (Leader-Member-eXchange), TMX (Team Member eXchange), job characteristics and work outcomes such as job satisfaction, affective organisational commitment and job performance, supported partial mediation. Their results suggested that meaningfulness mediated between LMX/TMX and affective organisational commitment, and between job characteristics and work satisfaction, whilst competence mediated positively between TMX and job performance, and negatively between job characteristics and work satisfaction. Impact and self-determination did not mediate the two links.

Similar to Spreitzer et al.'s (1997) study, Liden et al.'s (2000) results supported the different effects of the sub-dimensions of psychological empowerment: meaning was more associated with attitudinal outcomes, whilst competence was more associated with work-related outcomes, such as job performance, as well as satisfaction.

Recently, Seibert, Wang and Courtright (2011) conducted a meta-analytic review of psychological and team empowerment, noting that there had been no quantitative review of the literature since Spreitzer (1995a) formulated her psychological empowerment scale. They set two types of antecedents of psychological empowerment: contextual antecedents, such as high-performance managerial practice, socio-political support, leadership and work design characteristics; and individual characteristics, such as education, length of tenure, age and job level and positive self-evaluation. Then, they assumed that individual-level psychological empowerment would mediate individual attitudinal outcomes such as organisational commitment, job satisfaction, strain and turnover intention, whilst team-level psychological empowerment would mediate into team performance. Their results supported those of Kirkman and Rosen (1999) in suggesting that team-level empowerment would influence team-level performance.

Seibert et al.'s (2011) findings suggested that psychological empowerment was more strongly related to contextual characteristics than to individual ones. They found mixed results with regard to the association of individual characteristics: gender and education were not significantly related to empowerment; but length of tenure, age and job level were significantly related to it. As expected, psychological empowerment was found to be positively and strongly related to organisational commitment and job satisfaction and negatively related with turnover intention. On the other hand, the results indicated that psychological empowerment had moderate effects on OCBs and task performance. These results were consistent regardless of whether they were produced by self-rating or external rating. In addition, Seibert et al. (2011) tested the boundary conditions of psychological empowerment, for example as imposed by industry or culture. Their findings suggested that in industry (including both the service sector and manufacturing) these conditions moderated between empowerment and job satisfaction, and that the service sector had stronger



moderating relationships than manufacturing. Their findings suggested that psychological empowerment had stronger associations with task performance in Asia than in North America and they state that this could be either because of a collective culture that is more oriented towards identification and inclusiveness, or the result of standard work arrangements that are not affected by cultural values.

They also tested the dimensionality of psychological empowerment, to consider the validity of a unitary second-order latent construct of psychological empowerment rather than four distinct constructs. Their results suggested that a unitary construct had stronger and more consistent associations with work outcomes than did four sub-factors. Among the sub-factors, only self-determination and competence seemed to have any significant relationship with organisational commitment. This was contrary to the results of Liden et al. (2000) and Spreitzer et al. (1997), which suggested that meaning was a significant predictor of organisational commitment and satisfaction.

### ***Commitment – Performance***

Chang, Rosen and Levy (2009) used meta-analysis drawing on 57 papers with 70 separate samples to study the relationship between perceived organisational politics and performance (i.e. in-role/extra-role behaviours) and turnover intention. Between these they placed the mediators of strain and morale (affective organisational commitment and job satisfaction). Although affective organisational commitment, as a sub-factor of morale, did not appear to have any direct effect on performance, there was the suggestion of significant relationships with task performance, OCBI, OCBO and turnover intention.

Chen and Francesco's (2003) study suggested more specific relationships between organisational commitment profiles and the in-role (work performance) and extra-role (OCB) behaviours of employees in a large pharmaceutical manufacturer in China. These researchers measured organisational commitment using Myer et al.'s (1993) revised six-item scale, and two factors of OCB: altruism and conscientiousness. As they were considering the profiles of commitment, they tested a three-component model of organisational commitment in a Chinese context. Their results supported a three-factor model of commitment, which was consistent with Ko et al.'s (1997) result. In other words, their study did not support two dimensions of continuance organisational commitment: low alternative and high sacrifice. Rather, it suggested that the two sub-dimensions were not independent and were highly correlated.

Among the three components, it was found that normative organisational commitment was not significantly related to in-role performance and OCBs, but had a moderating effect on them as an interaction term, linking them to affective commitment. Continuance organisational commitment did not have a significant relationship with in-role performance. As expected, affective organisational commitment seemed to have significant relationships with three work outcomes. Contrary to a previous study (Becker, 2009), affective organisational commitment was found to have a stronger relationship with altruism – OCBI – than with conscientiousness – OCBO. The authors suggest that this result is a product of the Chinese value of personalism, whereby people find more attachment within the organisation than to the organisation itself.

Cohen (2006) approached OCB and commitment in terms of their cultural aspect. He compared two groups of teachers from Jewish and Arab schools in Israel with reference to four cultural dimensions: collectivism/individualism, power distance, uncertainty avoidance, and masculinity/femininity. The commitment forms examined were affective organisational

commitment, group commitment, occupational commitment and job involvement. Affective organisational commitment was measured using Allen & Meyer's (1984) scale, and group commitment with the scale used by Randall and Cote's (1991). For work outcomes, Cohen looked at in-role performance, OCBO and OCBI (especially altruism). He expected to find higher commitment and OCB in the Arab group, assuming higher levels of collectivism, masculinity and power distance, and stronger levels of uncertainty avoidance than in the Jewish group, which he assumed would exhibit more individualism and heterogeneity, and focus on different values.

The results suggested a correlation between affective organisational commitment and group commitment that was significant but not high; this was consistent with Cohen's (2000) finding. Of the four cultural dimensions, collectivism/individualism had a more significant relationship with group commitment than with organisational commitment. The assumptions regarding different cultural values were partially supported. There were differences, but not precisely as expected. The Arab teachers showed higher levels of collectivism, masculinity and power distance, but lower levels of uncertainty avoidance than the Jewish ones. The Jewish teachers, who demonstrated higher levels of uncertainty avoidance, presented significantly higher in-role performance and OCBO than the Arab teachers, and there was no significant difference in OCBI altruism. The Arab teachers demonstrated higher job involvement and group commitment than the Jewish teachers, and there were no significant differences in occupational and organisational commitment between the two groups. Cohen's (2006) results suggested that among the four cultural dimensions, power distance had the strongest interactions with other examined variables. Organisational commitment had a stronger positive effect on OCBO in a high power distance and high uncertainty avoidance culture, but it had an adverse effect on OCBO in a low power distance culture. However, there was no interaction effect for group commitment in Cohen's study.

Riketta (2002) conducted meta-analysis with 111 samples across diverse occupational groups to examine how attitudinal organisational commitment was associated with employees' job performance. He noted that some studies (Randall, 1990; Cohen, 1991) had not distinguished the effects of affective organisational commitment from those of other forms of commitment, such as normative and continuance; and that some studies (Allen & Meyer, 1996; Mathieu & Zajac, 1990; Organ & Ryan, 1995) had drawn their findings from only one specific measure, such as Allen and Meyer's (1990) affective organisational commitment scale.

For his research, Riketta looked only at attitudinal organisational commitment, using Allen and Meyer's scale and Mowday et al.'s (1979) organisational commitment questionnaire (OCQ) to observe the role of attitudinal organisational commitment in relation to job performance. He found that Allen and Meyer's scale presented higher correlations with performance than did Mowday et al.'s OCQ, but there was no statistically meaningful difference. The source of performance data, such as self-, supervisor, or peer ratings, or objective indicators, had only a slightly significant effect; and there was no significant effect on the affective organisational commitment-performance relationship from using the different commitment measurements.

However, self-rated performance suggested a higher correlation with attitudinal commitment than did supervisor-ratings and objective indicators. In addition, the results suggested that attitudinal organisational commitment was more associated with extra-role behaviour than with in-role behaviour, and more strongly related with white-collar office workers than with blue-collar workers. Riketta's (2002) findings suggested, contrary to expectation, that job level, age and length of tenure were not significant, and even affective organisational commitment-performance relationships declined as age and length of tenure increased. He suggests that this unexpected result was because autonomy was not properly operationalised.

Sinclair, Tucker, Cullen and Wright (2005) studied how two profiles of affective commitment (AC) and two profiles of continuance commitment (CC) were associated with OCB and with antisocial behaviours. In order to identify the commitment cluster (profile combination) groups, they conducted two studies, one with full-time energy industry employees and the other with students who worked part time. Then they identified four cluster groups: allied (moderate AC - moderate CC), complacent (moderate AC - low CC), devoted (high AC - high CC) and free agents (low AC - low CC). The only statistically significant difference among clusters related to the free agents, whose task performance, OCB and antisocial behaviour differed significantly from those of the other clusters. As expected, the free agents showed lower OCBI, OCBO and supervisors' task-performance rating, and engaged in more antisocial behaviour. This study suggested that affective commitment was more associated with OCBO and task performance than with OCBI, and the correlation of continuance commitment with performance was relatively insignificant.

Tremblay et al.'s (2010) study of employees of a Canadian hospital ( $N = 1,219$ ) suggested links between HRM practices and employees' in-role and extra-role behaviours, through the three or four mediating stages of perceptions (perceived justice or perceived organisational support), trust, and affective organisational commitment. Tremblay et al.'s contribution was to try and find connections between HRM practices and employees' attitudinal commitment and behaviour. Their results suggested that the HRM practices of top-down information distribution, performance feedback and skill development, and bottom-up information flow and non-monetary rewards, significantly influenced employee perceptions and developed further trust and affective organisational commitment. However, affective organisational commitment failed to mediate the relationship between trust and in- and extra-role behaviours when there were control effects of perceived support and justice. These researchers' findings suggested that trust itself, through affective commitment, did not strongly influence

employees' behaviour, but affective commitment played a meaningful role when employees perceived a positive atmosphere. Their findings are consistent with Morrell and Wilkinson's (2002) view that attitudinal shaping without a supporting mechanism is unlikely to bring about real change, and is also in line with Shore and Wayne's (1993) results which suggested that perceived organisational support was a stronger predictor of OCB than affective commitment, but continuance commitment was not related to OCB.

### 3.5.2. From a Structural Empowerment Perspective

Compared to research on psychological empowerment, research on structural empowerment has paid less attention to relationships that include commitment and extra-role behaviours. Instead, structural empowerment research has tended to examine performance and productivity. This approach has usually been adopted by research that has looked at human resource management (HRM), such as high involvement management (HIM) and high commitment management (HCM).

#### ***Empowerment – Performance***

Patterson, West and Wall (2004) looked at the effect of empowerment on performance from an HRM perspective. They considered the relationships between integrated manufacturing (IM) and performance mediated by empowerment. For their study, they looked at IM in terms of advanced manufacturing technology (AMT), total quality management (TQM), and just-in-time inventory control (JIT); company performance in terms of productivity and profit; and empowerment practices in terms of job enrichment and skill enhancement. The results suggested that in IM, AMT was the only HRM practice to influence performance

significantly, and that empowerment, especially job enrichment, had a direct effect on productivity, irrespective of the use of AMT. The findings suggested that IM and empowerment were positively related, but the study found no synergy effects on performance. This suggested that the level of empowerment was important, because ‘employees require the skill and autonomy to cope effectively with the increased problem-solving demands’ (Patterson et al., 2004: 643). In a sense, this interpretation is fairly similar to the interpretation of competence and self-determination in terms of employee skills and capabilities and the degree of autonomy they are allowed that is used when discussing psychological empowerment.

Several pieces of research have suggested that commitment-based management has a positive impact on employee’ behaviour (Edwards & Wright, 2001; Gelade & Ivery, 2003; Kinnie et al., 2000). Adopting this high-involvement work system perspective, Guerreor and Barraud-Didier (2004) suggest that empowerment is important in business practice. They measured work content, work time and teamwork as proxy variables of empowerment and then tested the relationships of these with three kinds of performance: social (e.g. employee productivity), organisational (e.g. work climate and employee attendance), and financial (e.g. earnings).

Interestingly, their results suggested that economic performance was strongly related to social and organisational performance. Specifically, among human resource practice (HRP) bundles, empowerment and communication were strongly correlated with social performance. The study suggested that the combination of HRPs had a stronger impact on performance than did each individual practice. Although this research looked at an optimal bundle of practices, though not at attitudinal bundles, this result is similar to the finding (Cooper-Hakim & Viswesvaran, 2005; Cohen, 2003) that commitment forms in combination had higher predictive power for organisational behaviour.

### 3.5.3. From a Sociostructural Empowerment Perspective

Research on sociostructural empowerment (developing the ideas of Kanter, 1977, 1993), has generally been carried out in the management of healthcare (Gilbert, Laschinger & Leiter, 2010; Laschinger et al., 2004).

#### ***Empowerment – Performance***

Gilbert et al.'s (2010) study using the responses of 897 Canadian healthcare professionals shows the links between sociostructural empowerment and OCB mediated by emotional burnout. They looked at altruism and courtesy for OCBI, and civic virtue, conscientiousness and sportsmanship for OCBO. Empowerment was measured according to Kanter's (1977) definition, comprising four dimensions: opportunity, support, resources and information. Their results suggested that Kanter's sociostructural empowerment was associated more with OCBO than with OCBI. Given this result, Gilbert et al. suggest that the primary source of empowerment is the organisation rather than co-workers or supervisors, since empowerment is more strongly associated with the organisation than with respondents' co-workers. In terms of social exchange theory, they infer that empowered employees exhibit more discretionary behaviour toward the organisation than toward their co-workers. Their results also suggested that empowerment was significantly related to emotional exhaustion, and this emotional burnout mediated between empowerment and OCBO, but not between empowerment and OCBI.

### 3.6. Highlights from the Review



The review above suggests that commitment research has mainly considered psychological empowerment rather than other forms of empowerment (Avolio et al., 2004; Kirkman & Rosen, 1999; Liden et al., 2000; Seibert et al., 2011).

As discussed earlier, Kanter's (1977, 1993) concept of sociostructural empowerment does not provide a clear boundary: it is in a sense located between structural empowerment and psychological empowerment. The concern with power mobilization is close to structural empowerment, which centres on power delegation and transfer under the organisational system. The 'opportunity' for enhancement of knowledge, skills and ability is connected to the 'competence' of psychological empowerment. If, as Seibert et al. (2011) suggest, sociostructural empowerment is a contextual antecedent of psychological empowerment, 'access to resources' can be more easily achieved from supervisor or organisational support. Therefore, employees' perceived support or 'access to support' will be a plausible context for psychological empowerment, for commitment and for OCB. Moreover, 'informal power' gained through alliances or relationships with co-workers, supervisors or higher-level staff is connected to the context for the 'impact' of psychological empowerment.

Ahmad and Oranye's (2010) study suggests that organisational commitment has a stronger positive relationship with psychological empowerment than with sociostructural empowerment, regardless of differences between countries or organisational cultures. Their findings provide a rationale for this study to select psychological empowerment rather than sociostructural empowerment. Similarly, structural empowerment is not within the scope of this study, because the main theme of the study is individual employees' attitudes (especially commitment), and structural empowerment focuses on the structure of the organisation.

With regard to commitment forms, researchers have tended to employ only the affective organisational commitment subscale for their studies (Chang et al., 2009; Cohen, 2006; Liden

et al., 2000; Tremblay et al., 2010). Although some studies use all three components of organisational commitment, they often find that affective commitment is the strongest predictor of employee attitudes and behaviours (Chen & Francesco, 2003).

As Table 3.2 indicates, psychological empowerment is often examined alongside organisational commitment but very rarely with team commitment. Although Kirkman and Rosen (1999) reported statistically significant relationships between psychological empowerment, team commitment and organisational commitment, and proactivity behaviour, their analysis was conducted at a team level. However, Koberg et al.'s (1999) study, which considered the antecedents and outcomes of empowerment with technically skilled, professional employees in a hospital, hinted at possible positive relationships between team commitment and psychological empowerment in a finding that suggested there were significant relations between group worth and psychological empowerment. Given this, including team commitment related to psychological empowerment at the individual analysis level will contribute to generalise the previous findings.

From the cultural aspect, Cohen (2006) also suggests the importance of team commitment (group commitment in his study): there are differences in team commitment by groups (Arabs and Jews), but no differences in occupational and affective organisational commitment. It is Cohen who suggests that team commitment works better in a collective culture. The findings of Seibert et al.'s (2011) study on industry's moderating effect are consistent with this, suggesting that manufacturing industry tends to have a more collectivistic culture than other sectors (service and public sectors). If there are no moderating effects of industry on the relationships between psychological empowerment and organisational commitment, what does this suggest about the effects of team commitment in a manufacturing industry with a collective culture?

Cohen's (2006) findings suggest that affective organisational commitment has a stronger positive effect on OCBO in high power distance (PD) and high uncertainty avoidance (UA) cultures, categories to which Korean culture belongs, according to the Hofstede Index, as its PD index is 60 and UA index is 85. Meanwhile, Chen and Francesco's (2003) findings, which contradict those of other studies, raise the question of whether the stronger relationships between affective organisational commitment and OCBI can be applied to the Korean context, since Korean culture is typically understood as being more similar to Chinese culture than to Western culture. In this respect, it would be interesting to look at whether Korean manufacturing employees' affective organisational commitment has more effect on OCBI or on OCBO.

With respect to performance, we find that commitment research has largely investigated employee behaviour, such as extra-role, discretionary behaviour, rather than financial performance, productivity or profit. Views on how to operationalise performance differ across these studies. However, focusing on empowerment has repeatedly been understood as an effective strategy to tap (albeit by proxy) various aspects of performance (Patterson et al., 2004). When looking at organisational behaviour, researchers have focused on employee behaviour alongside their task performance, whilst research into human resource management/industrial relations has focused on sales or labour productivity.

Nonetheless, social, organisational and financial performances are significantly and strongly related to each other (Guerreor & Barraud-Didier, 2004). A widely held assumption across these different literatures is that managers can expect an increase in performance when their management practices encourage high commitment and high involvement on the part of employees and increase their perceived empowerment. Given this managerial perspective, the creation of a model that links high perceptions of empowerment, high commitment and better performance will be interesting.

Nevertheless, there appears to be a research gap when it comes to models linking the three constructs. There have been studies that have presented similar relational models (Koberg et al., 1999; Liden et al., 2000; Seibert et al., 2011); but none of these has given commitment a mediating role between empowerment and discretionary behaviour. In these models, the relationships between their three constructs (empowerment, commitment and behaviour) are presented in two simple steps, from psychological empowerment to attitudinal outcomes or from psychological empowerment to financial outcomes, rather than in three steps that link all the constructs together.

### 3.7. Conclusion

The review has identified a trend within the research. Psychological empowerment has mainly been researched in connection with task performance or extra-role behaviour. Relatively little research has been conducted on the relationship between psychological empowerment and commitment. Consequently, there are few studies on the relationships between psychological empowerment, commitment and performance, although there is relatively abundant research on the relationship between commitment and performance (again, mainly about extra-role behaviour or task performance). There is no published study that examines the role of commitment as a mediator between psychological empowerment and performance. Although there are significant relationships between cognition or perception and attitude (Greenwald & Banaji, 1995), relatively little attention has been paid to these.

Given this lack of research on relationships between the three constructs of empowerment, commitment and performance, this study will investigate the relationships between employees' psychological empowerment (cognition), team commitment and organisational

commitment (attitudes) and OCBI/OCBO (behaviour) in the workplace. Chapter 4 will discuss the conceptual framework for this study.

## **CHAPTER 4. CONCEPTUAL FRAMEWORK**

### **4.1. Introduction**

As discussed in Chapter 3, three constructs (psychological empowerment, commitment and OCB), were identified as being of particular theoretical importance. Although there was evidence to suggest that there were significant relationships between these constructs, no researchers had yet tried to link all three simultaneously in a web of relationships. Instead, research had tended to examine the relationships between empowerment and commitment (e.g. 'x' model); empowerment and OCB (e.g. 'y' model); and commitment and OCB (e.g. 'z' model). This study was designed to contribute to the literature by putting these 'x', 'y' and 'z' models into one integrated model through a more refined understanding of commitment based on the review. Chapter 4 describes the development of a conceptual model designed to support the testing of a hypothesised causal relationship between employees' perceived cognition and discretionary behaviour mediated by two foci of commitment: psychological empowerment – organisational commitment and team commitment – and organisational citizenship behaviour.

The chapter begins by explaining the perceived importance of team commitment with a discussion of team structure. It justifies the choice made between two commitment forms: team commitment, as an essential commitment form in current business systems; and organisational commitment, as a traditionally representative commitment form and as the basis of commitment. This section contains an explanation of Korean team

systems, which were to provide the research context. Although the research on team and organisational commitment had suggested that these were different forms, and their effects on work outcomes were different, it seemed particularly interesting to test their distinctiveness in small- and medium-sized enterprises (SMEs). This was because in these kinds of organisation, the organisation itself was likely to be a less remote or abstract concept to employees than in large, multinational firms, for instance. Also, the impact of a team on the organisation's overall effectiveness was likely to be more significant.

This section is followed by a look at social exchange theory, which was to be the paradigm for the proposed mediating model. Following this look at social exchange theory's relevance to an examination of the three constructs' simultaneous relationships, the next section presents the operationalisations of the main constructs. Then, the hypotheses are introduced, which were based on the literature review, and the intention to integrate the 'x', 'y' and 'z' models into one mediating model. Then, the hypothesized mediating model, guided by a theoretical framework, – cognition, attitude and behaviour – is presented in a diagram. The chapter concludes by stating the aims of the study.

#### 4.2. Organisational Structure: Team

The latest Workplace Employment Relations Survey (WERS) in the UK found that approaching three-quarters (72 per cent) of workplaces indicated that they had at least some core employees organized into formally designated teams, although the extent of the autonomy of these teams varied considerably (Kersley et al., 2005: 10–11). It is

likely that interest in team working will continue to be strong in coming years as organisations attempt not only to locate more responsibility for performance within work groups but also to increase flexibility through greater worker interchangeability, thereby reducing costs by cutting the number of supervisory posts, and also perhaps introducing new forms of supervision that are based within teams (Sinclair, 1992).

In some contexts, working in teams seems only marginally different from previous systems of work organisation based around less formal but still important work group arrangements (Harley, 2001). However, the circumstances under which team working is being tried, often as part of an effort to achieve job reductions, lower staffing levels and increased emphasis on quality assurance, means that, for many employees, team working is part of a significant change from what has gone before (Procter & Burridge, 2008). This is seen, for example in the increasing amount of responsibility given to teams for such areas as task allocation and quality control (Benders, Huijgen & Ulricj, 2001).

There is another reason why we should pay attention to teams and team management. Economic recession generates employee redundancies in both the public and private sectors. When there are redundancy plans, each individual employee is a potential candidate; therefore the team itself, made up of candidates for redundancy, may come within the scope of the business restructuring. If a team fails to increase its productivity, it can be dissolved or merged into other teams. In that case all the team members become unemployed, except those offered a place in another team or another company. For those who remain, it will take time to become familiar with a new team culture or work responsibility. Furthermore they may feel 'survivor guilt' and demonstrate lower commitment and reduced work performance (Brockner et al., 1987). It is possible that



in this situation employees may feel more bound to their own team than to their organisation. And there are other circumstances in which employees tend to commit more to their team than to their organisation. Given the possibility of structural changes to less hierarchical organisations, and an ensuing stronger attachment toward teams than toward organisations (Riketta & Van Dick, 2005), we need more research on the roles and effects of team commitment in the workplace.

In line with the above, Becker's (2009) typology of foci suggests a strong theoretical reason why we should seriously consider team commitment among the various forms of work commitment. Becker classifies employees' foci according to the level of abstraction and psychological distance. He suggests four typologies, as seen in Figure 4.1, assuming that the more frequent and meaningful the interactions, the more proximal the employees' target.

		Level of Abstraction	
		Concrete	Abstract
Psychological Distance	Proximal	My work team	The customer
	Distal	The CEO	Top management

Figure 4.1. Examples of Foci Typology  
*Source.* Becker (2009, p. 162)

Becker gives examples from the views of low-level manufacturing employees: 'my work team' is a proximal-concrete type; 'the CEO' is a distal-concrete type; and 'top

management' is an abstract-distal type. Becker's (2009) examples explain that an employee's immediate work team is the most proximal target; hence, it is conceivable that team commitment may well be an important variable to consider alongside the mix of traditional indicators of satisfaction – intent to quit, perceived autonomy, and so on.

#### 4.2.1. Korean Team Systems

The team system was introduced into South Korea in the middle of the 1980s by Samsung, as an experiment, and became more widely used after about a decade (Choi, 2012; Won, 2007). One study (LG Economic Research Institute, 1995) reports that 76 per cent of the top ranked 1,000 Korean companies had introduced the team system by the middle of the 1990s. As a result of the flexibility it offers in coping with the increased uncertainties of a competitive global business environment, the team system has become increasingly popular since then, and about 70 per cent of organisations in Korea currently employ it (Kim & Yoon, 2011).

The interest in team working has been focused on manufacturing industry, and in particular on the automotive sector (Mueller, Proctor & Buchanan, 2000). However, in contrast to countries such as America, Japan and other developed western countries, where team systems have been prevalent on the production lines of factories, the team system in Korea has been mainly used in research or office environments (Won, 2007).

In the past, the Korean organisational structure was hierarchical, 'characterized by respect for seniority and the general acceptance of high power distance in social relationships' (Choi, 2007b: 228). However, responding to the need for a flexible and reactive organisational structure in a competitive global economy, the team context has

enabled the pursuit of diversity and heterogeneous characteristics by devaluing the concept of seniority, and encouraging the hiring of women and foreign labourers and experienced employees (Kim & Yoon, 2011).

Korean research on diversity in the team context has been conducted to evaluate the effectiveness and efficiency of the team system (Choi, 2007b; Choi, 2012; Kim & Yoon, 2011). To study diversity in the team context, Korean researchers have examined various aspects: task-related factors such as role/task conflict (Shim et al., 2011); attitudinal factors such as job satisfaction (Kim, Park & Seo, 2011) and commitment (Kim, 2011; Seo, 2002, 2003); performance factors, such as team performance (Kim, 2002; Kim & Yoon, 2011; Won, 2007) and citizenship behaviours (Seo, 2003); cognitive factors such as team- or self-efficacy (Jeong, 2009; Kim, 2002) and perceived support (Seo & Kim, 2007); and contextual factors such as group/team cohesiveness (Kim, Park & Seo, 2011; Seo, 2003).

Recent findings (Schippers et al., 2003; Van Der Vegt, Emans & Van De Vliert, 2000) show that the diverse composition of teams and task interdependence influence team members' commitment to their team. However, research on team commitment or team attachment in Korea has been conducted mainly in the area of sports and hospitality management (Chi & Kim, 2009; Kim, 2002; Kim, 2011; Kim, Park & Seo, 2011) or of large firms (Jeong, 2009; Seo, 2002, 2003; Seo & Kim, 2007, Shim et al, 2011).

Considering that the team system in Korea has largely been used in office settings, it is understandable that research on teams has inclined to the perspective of large firms where the system has been introduced, and that the focus of recent research has been on the sport, leisure and hospitality industries. However, this suggested to the researcher

that there was a worthwhile opportunity to examine manufacturing companies with more traditionally run work groups and whose organisations were mainly small- and medium-sized. In taking this opportunity, this study expects to be the point of departure since research on team systems in manufacturing industry had been neglected in Korea.

#### 4.3. Social Exchange Theory in Commitment Research

In the frame of social exchange relationships, Emerson (1976: 345-346) identified three mechanisms: “(i) actions or decisions by individuals; (ii) transactions between individuals; and (iii) exchange relations as series of transactions between the same individuals.” These mechanisms can be applied to everyday working life. The values and rewards of the workplace can be exchanged through daily social relations between employees and their organisation or team, or between employees and intra- or extra-organisational structures. In this area, researchers have identified relational constructs, such as commitment (Lawler & Yoon, 1996; Shore & Wayne, 1993), organisational citizenship behaviour (Konovsky & Pugh, 1994; Organ, 1988), psychological empowerment (Ary & Chen, 2006; Conger & Kanungo, 1988; Liden et al., 2000), and trust (Aryee, Pawan & Chen, 2002; Pillai, Schriesheim & Williams, 1999), apart from the economic value or rewards of exchange.

In a recent review of the ways in which sociologists and organisational behaviour researchers have developed social exchange theory, Cropanzano and Mitchell (2005) identified reciprocity as the primary exchange rule. In their study, they explicitly explain the causal direction of reciprocal relationships discussed by Blau (1964: 101): ‘successful exchanges can cause one individual to become committed to another’.

They divided the causal arrows into two operations: (i) a series of exchanges causes interpersonal relationships, and (ii) interpersonal relationships alter the nature of the exchange. For example, in the case of the former statement, the frequent communications between leaders and subordinates needed for task completion may produce a high quality of LMX relationships (Graen & Uhl-Bein, 1995); and in the case of the latter phenomenon, the high quality of LMX may make leaders seek the advice of subordinates.

Cropanzano and Mitchell (2005) state, based on social exchange theory, that organisational commitment is a relational, reciprocal construct in work settings, while arguing that, “the social exchange relationship is a mediator or intervening variable” (Cropanzano & Mitchell, 2005: 882). We can find the mediating role of commitment mentioned in previous research (Bishop et al., 2000; Cohen, 2000; Hunt & Morgan, 1994; Vandenberghe et al., 2004). Hunt and Morgan (1994) and Vandenberghe et al. (2004) examined the mediating role of organisational commitment. Hunt and Morgan (1994) set global organisational commitment as a mediator between other commitment foci (work group, supervisor and top management) and work outcomes (OCB and intent to quit); and Vandenberghe et al. (2004) placed affective organisational commitment as a mediator between commitments (affective team commitment and affective supervisor commitment) and intent to quit.

Bishop et al. (2000) and Cohen (2000) examined the mediating roles of two foci of commitment at the same time. Cohen (2000) put organisational and occupational commitment as mediators between commitments (work group, job involvement and work involvement) and outcomes (turnover intention, absenteeism and turnover); whereas Bishop et al. (2000) investigated team and organisational commitment’s

mediation between perceived (team and organisational) support and outcomes (OCB, intention to quit and job performance).

Bishop et al.'s findings with 380 production employees in an automotive factory in the US indicated that team and organisational commitment had a distinct pattern of mediating roles between antecedents (perceived support) and outcomes. Both commitments significantly mediated the relationships between perceived support and OCB; and team commitment mediated the relationships between perceived team support and job performance; while organisational commitment mediated the relationships between perceived organisational support and intention to quit. Bishop et al. suggested that employers' support caused two foci of commitment, and those foci, contributed by employees' perceived support, altered future exchanges, such as lower turnover intentions and increased OCB and job performance.

Eisenberger et al. (1986) stressed the strength of employees' exchange ideology, suggesting that employees' positive perceptions increased attachment (commitment), which resulted in greater efforts toward goals as a reward. Flynn et al. (2012: 495) argued that, 'the psychological experience of power is central to the study of organisations'. Psychological empowerment was described as the 'flow of perceptions' shaped by a work environment (Spreitzer, 1995a: 1444), and employees' perceptions are a good antecedent of commitment (Arnold et al., 2005). Drawing on both previous studies, this research would apply Cropanzano and Mitchell's (2005) suggestion and extend Bishop et al.'s (2000) study by setting psychological empowerment as a series of exchanges instead of perceived support (see Figure 4.2). Employers delegate power to employees (a series of exchanges); employees' perceived empowerment causes

organisational commitment and team commitment (interpersonal relationships); and then these commitments in turn cause employees' OCBs (alter the nature of exchanges).

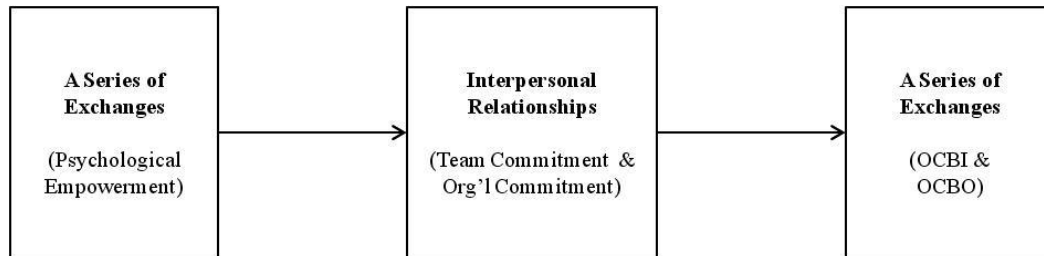


Figure 4.2. Social Exchange Relationships

Therefore, this study would examine whether commitment mediated the relationships between psychological empowerment and voluntary behaviour, OCB. All three main constructs, commitment, empowerment and OCB, had relational (that is, they were connected) and reciprocal (that is, they lead to a response by another) characteristics, which were the basis of the social exchange theory.

#### 4.4. Operationalised Definitions of Constructs

The five main constructs were operationalised for this study:

##### 4.4.1. Psychological Empowerment

Psychological empowerment is defined as having four aspects – meaning, competence, self-determination and impact, as discussed in Spreitzer (1995a: 1443-1444).

Meaning: the value of a work goal or purpose, judged in relation to an individual's own ideals or standards.

Competence (or self-efficacy): an individual's belief in his or her capability to perform workplace activities with skill; in other words, self-efficacy with regard to work roles.

Self-determination: an individual's sense of having choice in initiating and regulating actions. Self-determination reflects autonomy in the initiation and continuation of work behaviours and processes.

Impact: the degree to which an individual can influence strategic, administrative, or operating outcomes at work.

#### 4.4.2. Organisational Commitment

Since this study intended to validate Allen and Meyer's (1990) original version scale in a Korean context, organisational commitment was defined following Meyer and Allen's (1991:67) conceptualisation, as follows:

Affective organisational commitment: the employee's emotional attachment to, identification with, and involvement in the organisation.

Normative organisational commitment: a feeling of obligation to continue employment.

Continuous organisational commitment: an awareness of the costs associated with leaving the organisation.



#### 4.4.3. Team Commitment

Team commitment has been defined as a sense of responsibility for collective outcomes. It includes the motivation to help colleagues and the willingness to work overtime (Ellemers et al., 1988: 714).

What is a ‘team’ to which employees commit? A number of researchers have defined a team or work group. Table 4.1 lists some commonly accepted or frequently cited team definitions: although some researchers have distinguished between work groups and teams (Katzenbach & Smith, 1993), this study used these two terms interchangeably, as did Hollenbeck et al. (1995) and Kozlowski et al. (1999) in their tables.

As shown in Table 4.1, the characteristics of teams have been understood by researchers as shared common goals, interdependence, boundedness, specified roles, and so on. For example, Kirkman et al. (2004) concisely explained teams as (i) groups of individuals who (ii) work interdependently, (iii) have common goals, and (iv) are mutually accountable for task accomplishment. This definition was used in the survey questionnaire for this study to help respondents’ understanding of a team, prior to team-related questions, see Appendix 1).

However, this definition has some limitations, and the word team can have a wide variety of meanings, being acceptable in some cases as a description of a partnership between just two people (although Hollenbeck et al. state that a team is not just a set of independent decision makers), and in others as a multinational corporation (for instance, in a CEO’s company address or newsletter).

Table 4.1. Team Definitions

Studies	Definition
De Dreu and West (2001:1196)	The definition of <i>teams</i> as ongoing, semiautonomous groups in which members have joint responsibility for accomplishing a set of tasks
Hackman (1990: 4)	<i>Work groups</i> are intact social systems, complete with boundaries, interdependence among members, and differentiated member roles. Moreover, members are dependent upon one another for shared purpose, and they invariably develop specialized roles within the group as that purpose is pursued
Hirschfeld et al. (2006: 467)	<i>Teams</i> are commonly regarded as structured sets of people who pursue collective performance objectives within larger organisation systems and who require coordinated interactions to successfully accomplish relevant tasks
Hollenbeck et al. (1995: 293)	<i>Groups</i> such as these are best characterized as <i>teams</i> , rather than as sets of independent decision makers, for several reasons. First, these individuals are highly interdependent. Each is dependent on others for important information related to the team's success. Second, the members have a common goal and a common fate. The team's success or failure directly affects the individuals' own outcomes. Third, members of the team influence each other in the course of making a decision.
Kirkman et al. (2004: 335)	<i>Work teams</i> are groups of individuals who work interdependently, have common goals, and are mutually accountable for task accomplishment
Kozlowski et al. (1999: 245)	<i>Work teams</i> and <i>groups</i> are two or more individuals who socially interact, have one or more common goals, exist to perform task-relevant functions, exhibit workflow interdependencies, and are embedded in an organisational context
Salas et al. (1992: 4)	A <i>team</i> is a distinguishable set of two or more people who interact dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission, who have each been assigned specific roles or functions to perform, and who have a limited life-span of membership
Sundstrom, et al. (1990:120)	<i>Work teams</i> are defined as interdependent collection of individuals who share responsibility for specific outcomes for their organisation

There is also a problem in that the word team (in Kirkman's definition) implies common goals; but the goals of a team may be set by others outside the team who have different interests (and who may even seek to exploit team members). Any reasonably large group of people will be likely to have goals that diverge to some degree: for example some may be intent on getting promoted, while others' main objective is to balance work and family life. Team working may imply, or be promoted as, a 'management-free' way of working; but actually it can lead to various types of supervision or surveillance even if these are not described as managerial (Sinclair, 1992).

It is not the intention of this thesis to give further consideration to the concept of team working in this study, the main purpose of which is to contribute to the existing literature on occupational psychology using well-established methods, but applying a novel technique. With the limitations set by teams being broadly referred to as above and the interchangeable definitions of teams and workgroups, as reviewed in Table 4.1, teams in this study are referred to as a broad concept of work groups, rather than specifically defined teams.

In order to operationalise the concept of team in this context, the research used the pre-existing organisational structures in the two firms studied. Both firms (described in more detail in Section 5.4 of Chapter 5), were team-based, manufacturing firms, and in both (as across the sector) there was a shared understanding of the purpose of the teams in which people worked (usually related to product lines). The pilot study (see section 5.6 of Chapter 5) supported the idea that items mentioning 'team' were easily understood without any need for additional guidance on the questionnaire as to how team was being defined.

#### 4.4.4. Organisational Citizenship Behaviour (OCB)

Employees' extra-role behaviour, or discretionary behaviour, falls into two types of organisational citizenship behaviour (OCB): behaviour toward their organisation; and behaviour toward individuals, such as other members of their team or co-workers in general. The followings are the definitions used in this study:

OCB: individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organisation (William & Anderson, 1991: 601).

OCBI: OCB toward employees' co-workers comprises behaviours that help other organisational members, and which can be termed 'altruism'; and behaviours that prevent problems that might affect others, and which can be termed 'courtesy'. (William & Shiaw, 1999: 660)

OCBO: OCB exhibited by employees toward their organisation comprises behaviours that go beyond those expected by specific role requirements, and which can be termed 'conscientiousness'; and behaviours that are essential modes of (political) organisational participation, and can be termed 'civic virtue' (William & Shiaw, 1999: 660).

#### 4.5. Proposed Hypotheses

Drawing on social exchange theory, this study would employ the perspective as a foundation for understanding relationships between employees' perceptions, attitudes and behaviours. The following section develops this line of enquiry by proposing the hypotheses to be examined.

#### 4.5.1. Allen and Meyer's (1990) Organisational Commitment Scale

Most commitment research that had looked at the workplace had used some construction of organisational commitment and, typically, this had relied on a construction of organisational commitment as affective. Except for studies oriented specifically toward the literature on commitment, little research had been conducted that looked at all three bases of organisational commitment (affective, normative and continuance) in relation to other commitment foci and typical work variables (for instance, satisfaction, perceived performance and so on). Also, and of particular relevance to the context for this research, the applicability of Meyer et al.'s (1993) three-component model to other cultures was still debatable and had not been discussed in terms of the original scale (Allen & Meyer, 1990). Therefore, this study, which would seek to apply a model and scale developed in a North American context to a South Korean one, would make a contribution to understanding the generalizability of this and other scales.

As discussed in Chapter 2, the applicability of Allen and Meyer's (1990) three-component organisational commitment scale in a South Korean context was still debatable. Ko et al. (1997) had suggested that normative commitment was invalid in a Korean context. Acknowledging their suggestion, Lee et al. (2001) had re-examined the same scale in this context and found that normative commitment was not applicable, despite the fact that these researchers placed considerable stress on the back-translation process. Both studies had employed Meyer et al.'s (1993) scale, which was a revised version of Allen and Meyer's (1990). The revised scale had six items for each of affective, normative and continuance commitment, rather than eight items for each. There were considerable differences between the two versions of the normative

commitment scale in terms of the different aspects of obligation: the original scale focused on generalized obligation, whereas the revised one focused on socialized obligation (see Chapter 6, for the differences in the two scales). Since the revised version of the normative commitment scale measured significantly different aspects from the original version, it was considered better to examine the applicability of the model in a South Korean context with the original version of the normative commitment scale. This would help us see whether or not its result was consistent with the one from the revised normative commitment scale of Meyer et al. (1993).

Noting the inappropriateness of Meyer et al.'s (1993) scale, Lee et al. (2001) had carried out a second study with another revised version, by Meyer, Barak and Vandenberghe (1996), a version devised for the purpose of 'avoiding North American-specific expressions, shortening items and simplifying the item content' (Lee et al., 2001: 604). For example, the phrase 'a matter of necessity as much as desire' in the continuance commitment scale seemed to be an English expression that Korean people were not familiar with; 'If I had not already put so much of myself into this organisation, I might consider working elsewhere,' in Meyer et al.'s (1993) version had been shortened in Lee et al.'s new version to 'For me personally, the cost of leaving this organisation would be far greater than the benefit', with both items originating from the statement, 'One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice. Another organisation might not match the overall benefits I have here,' in the 1990 original version.

Their new version of the organisational commitment scale, in which each component retained five items, had shown good validity. However, the researchers had noted that the new items developed for use in a Korean context partly overlapped with the original

items: for instance, half of the original normative and continuance commitment scale items appeared in almost identical form in the new scale. The researchers had then suggested that for future research a universally applicable measure should be developed, one which would be good in organisational practice, particularly with diverse work forces and globalized businesses. In moving toward such a scale, the finding of items applicable in a Korean context would be a stepping-stone to developing a universally applicable measure of commitment by providing a common item pool.

McGee and Ford (1987) had maintained that continuance commitment was not a unidimensional commitment form. Instead, they considered it to be driven by two main factors: low alternative options (CC: LoAlt); and high beneficial reward sacrifice (CC: HiSac). In response to this, Ko et al. (1997) had tested the dimensionality of continuance commitment. However, their findings had not supported multi-dimensionality. Contrary to this, Lee et al.'s (2001) results, obtained using their newly developed scale, which contained half of the original scale of continuance commitment, had supported two dimensions of continuance commitment. Therefore, it would be meaningful to test its dimensionality with the original scale, considering the inconsistent results produced by the different versions.

While there had been some research on commitment, mainly with the revised scale, in a Korean context at the time this study was initiated, there had been no research to validate Allen and Meyer's original (1990) scale for measuring normative and continuance commitment. Organisational commitment is a popular construct for research in Korea. I searched for research on organisational commitment in DBPIA, a representative Korean research database that is a scholarly, multi-disciplinary, full-text database and includes 1,359 scholarly journals published by 689 academic societies and

research centres in Korea. For the years 2006 to 2011, the database contained a total of 1,459 papers under the heading organisational commitment. These were mainly research in business and economics topics, followed by sociology, and then law/public administration. All these pieces of research used organisational commitment scales, whether the original or the revised, or Mowday et al.'s OCQ. Given the popularity of the commitment topic in Korea, it seemed important to re-examine the validity in a Korean context of Allen and Meyer's (1990) original scale alongside the revised versions by Meyer et al. (1993) and Meyer et al. (1996).

In view of the issues discussed above and the fact that Lee et al.'s (2001) newly developed scale overlapped somewhat with the original version across three components, establishing the validity of Allen and Meyer's (1990) original normative and continuance commitment scales was essential prior to the testing of hypotheses. Therefore, I proposed the following hypotheses:

*H1. The normative organisational commitment scale of Allen and Meyer (1990) has validity for application in a South Korean context.*

*H2a. Continuance commitment has two sub-dimensions in a South Korean context.*

*H2b. Hence, a four-factor model of organisational commitment, comprising affective organisational commitment, normative organisational commitment, continuance organisational commitment (Low Alternative) and continuance organisational commitment (High Sacrifice) is supported.*



#### 4.5.2. Team Commitment and Organisational Commitment

Every employee can have multiple goals in the workplace (Reichers, 1985; Meyer and Herscovitch, 2001), according to their interaction, as seen in the examples of Becker (2009) (see Figure 4.1). At the same time, employees may have multiple commitment foci as a result of their multiple work goals. Although workplace commitment had been heavily researched, the research had been predominantly focused on organisational commitment, rather than on a combination of several commitment forms. In the research on multiple commitment in the workplace, occupational and career commitment had been the main foci with organisational commitment (Baruch & Winkelmann-Gleed, 2002; Boshoff & Mels, 2000; Carmeli et al., 2007; Cohen, 2000, 2006; Randall & Cote, 1991).

Among the various forms of work commitment, team commitment had received least research attention, even though the use of teams had become increasingly popular across all types of organisation (Kirkman, Tesluk & Rosen, 2004; Sinclair, 1992). In fact, there had even been suggestions that team commitment be excluded from the global definition of employees' workplace commitment, although some researchers had kept team (work group) commitment as one of the foci of employees' commitment (see Table 2.2). Randall and Cote (1991) and Cohen (2000) had downplayed the importance of team commitment and removed it from the global form of workplace commitment, based upon an unsuccessful attempt to establish its construct validity. However, both those studies had employed a team commitment instrument primarily focused on work group members' social interaction, for example in off-the-job situations, whereas team commitment is more associated with work-related factors, such as team goals, performance, cooperation, and work sharing.

In line with the findings of Riketta and Van Dick (2005), which led them to suggest that the relationships between organisational commitment and team commitment were inconsistent, the results of Seo and Kim (2003) and Randall and Cote (1991) and Cohen (2000) were contradictory. While Seo and Kim's findings had suggested that the path from team commitment to organisational commitment was significant, Cohen's path had presented as non-significant, as had the results of Randall and Cote's bivariate correlation test between the two commitment forms. Seo and Kim's study had employed Ellemers et al.'s (1998) scale, which included more work-related factors; but Randall and Cote's and Cohen's studies had used a scale created from Sheldon's (1971) social involvement scale. Since these two kinds of team commitment scales contained different proxy items, the inconsistency in results might not be unexpected.

Given the inconsistency discussed above, this study would re-examine the relationship between team commitment and organisational commitment with an appropriate team commitment measurement. Although research on team commitment had mainly been conducted with employees in large firms, I assumed that team commitment and organisational commitment would still be distinct and salient commitment forms in small- and medium-sized enterprises, where organisation itself was not as abstract a concept and arguably where individual teams had more impact within the firm overall. Therefore, I proposed the following hypothesis:

*H3a. Team commitment is a commitment form distinct from organisational commitment, even in small- and medium-sized enterprises.*

*H3b. However, team commitment and organisational commitment are significantly related to each other.*

#### 4.5.3. Psychological Empowerment – Commitment: ‘x’ Model

Psychological empowerment had often been employed as a unified second-order factor model with four sub-factors when Spreitzer’s (1995a) scale had been used, as Spreitzer (1995b) suggested that the four dimensions combined into an overall construct of psychological empowerment. Only a small number of studies had reported each sub-factor’s different effects on work outcomes (Liden et al., 2000; Spreitzer et al., 1997) and these had suggested that the four sub-factors should be examined separately rather than in a unified model. Although Koberg et al. (1999) had failed to combine the four sub-factors of psychological empowerment into a unified model, and measured it as a single composite, Aryee and Chen (2006) and Seibert et al. (2011) had found empirical evidence that this four-factor second-order latent model provided a better model fit than a unitary, single-factor, first-order model of psychological empowerment. Given this finding, a contribution of this study might be to see whether the validity of a four-factor model of psychological empowerment could be generalised to a Korean context.

*H4. Psychological empowerment as a unified second-order latent construct that includes four sub-factors has validity for application in a South Korean context.*

The relationship between psychological empowerment and commitment was been identified from the literature review (see Table 3.2). This clearly established that psychological empowerment contributed positively to employees’ team commitment and organisational commitment. As discussed earlier, however, previous research had been inclined to focus on the relationship with organisational commitment.

Koberg et al.'s (1999) study had given an indication of team commitment's relationship with psychological empowerment. Although their study had concerned the antecedent context of empowerment, these researchers had proved the significant importance of groups, citing Spreitzer's (1996) argument that work groups' social structure had strong predictive power for the workings of empowerment. Kirkman and Rosen (1999) had empirically shown the relationships between these two constructs; however, they had only reported these relationships at a team level, not at an individual level. Instead, they had assumed positive relationships at the individual level, to aggregate and transform the data into team level data. Therefore, we needed empirical support to establish the relationships between these two constructs at an individual level. Given this, the hypothesis was proposed as follows:

H5a. *Psychological empowerment relates positively to team commitment.*

H5b. *Psychological empowerment relates positively to organisational commitment.*

#### 4.5.4. Psychological Empowerment – Organisational Citizenship Behaviour: 'y' Model

As shown by the literature review, psychological empowerment had been researched more often with discretionary behaviour, OCB, than with commitment (see Table 3.2). This research trend could be explained by the two constructs' definitions. Three dimensions of psychological empowerment – self-determination, impact on team and competence – were somewhat connected to OCB's voluntary, participating and self-developing characteristics.

Taking a multi-foci approach, two factors of OCB would be examined: OCBO and OCBI. The validity of this target-focused two-factor framework had been established in previous studies (Ilies et al., 2009; Lavelle et al., 2005, 2007; William & Anderson, 1991).

Wat and Shaffer (2005) had demonstrated that impact and competence significantly influenced OCBO, whilst meaning and self-determination significantly affected OCBI. This result was in line with the findings of Spreitzer et al. (1997), suggesting that impact and competence were more associated with work effectiveness and meaning was the strongest predictor of work satisfaction. Because work effectiveness related to organisational productivity and work satisfaction was an individual attitude, it could be said that their findings were fairly similar. However, Alge et al.'s (2006) study, employing a second-order latent construct rather than four individual sub-factors, had clearly shown that psychological empowerment was more positively related to OCBO than to OCBI. Given this finding, the following hypothesis was proposed:

*H6a. Psychological empowerment relates positively with both OCBI and OCBO.*

*H6b. Psychological empowerment is more related to OCBO than to OCBI.*

#### 4.5.5. Commitment – Organisational Citizenship Behaviour: 'z' Model

The literature review had highlighted the fact that commitment research had commonly been conducted with OCB. A great deal of commitment research concerning performance had examined task performance as in-role behaviour and OCB as extra-role behaviour (see Table 3.2). However, this had typically been done with affective

organisational commitment. Therefore, a study working on team commitment would demonstrate the relationships between commitment and OCB. Moreover, previous studies had tended to measure team commitment with organisational commitment scales (Meyer et al.'s affective commitment scale, or the OCQ that replaced organisational with team) or a one-item scale (Becker, 1992; Hunt & Morgan, 1994) or a scale reflecting items more related to social involvement. The contribution of the present study's findings would be to show whether the relationships between OCB and team commitment were consistent with previous findings when they were measured with more work-related items.

With its target-focused two-factor framework, this study would examine the relationships between commitment and OCB in relation to the inconsistent results for these relationships shown by previous studies.

From the perspective of target similarity (Lavelle, 2007; 2009), OCBO (OCB toward the organisation) had shown itself more positively related to organisational commitment than team commitment, whereas OCBI (OCB toward individuals) had given the opposite result. However, the findings of Becker's (2009) meta-analytic literature review of 44 studies (see Table 2.3) and Cohen's (2006) empirical study had suggested that team commitment had stronger effects on both OCBI and OCBO than did organisational commitment, and team commitment's effect on OCBO was higher than on OCBI. Following the meta-analytic review, the following hypotheses were proposed:

*H7. Organisational commitment relates positively to both OCBI and OCBO and its effects on OCBO are stronger than on OCBI.*

*H8a. Team commitment relates positively to both OCBI and OCBO and its effects on OCBO are stronger than on OCBI.*

*H8b. Team commitment has more powerful relations with both OCBI and OCBO than does organisational commitment.*

#### 4.5.6. Cognition – Attitude – Behaviour: An Integrated Mediating Model

Psychological empowerment had been regarded as the expression of an employee's cognition in relation to their work environment (Spreitzer, 1995a; Thomas & Velthouse, 1990) and also as a motivational construct (Conger & Kanungo, 1988). Organisational commitment and team commitment had been considered workplace attitudes, and commitment a motivational construct (Meyer et al., 2004). OCB had been seen as voluntary and discretionary behaviour (Katz, 1964; Meyer & Herscovitch, 2001; Organ, 1988). Therefore, the influence of motivational constructs on behaviour was also expected.

It had been considered that a person's behaviour was driven by his or her cognition ('y' model) (Millar & Tesser, 1986) or by attitudes ('z' model) (Eagly & Chaiken, 1993). Similarly, Millar and Tesser (1989) had argued that attitude-behaviour relations were also driven by cognition. From the previous literature review, three causal relations had already been identified: for example, Seibert et al. (2011) had suggested organisational commitment as an attitudinal consequence of psychological empowerment (cognition–attitude 'x' model) and OCB as a behavioural consequence of psychological empowerment (cognition-behaviour 'y' model); and Cohen (2006) had set both team

commitment and organisational commitment as antecedents of OCB (attitude-behaviour 'z' model). Therefore, from an individual's fundamental psychological flows, the causal flow of psychological empowerment (cognition) – team commitment and organisational commitment (attitude) – and OCB (behaviour) could be proposed.

As shown in the literature review in Chapter 2, previous studies had focused on relationships between the antecedents or outcomes of commitment or between the foci or bases of commitment. The role of commitment forms as potential mediators had been paid comparatively little attention. Indeed it seemed that little research had been conducted even on the mediating roles of multiple commitment forms. Therefore, while it was expected that this study would help to close the research gap, the following hypotheses could be addressed for a multiple-mediation model, reflecting a target-focused two-factor framework:

*H9a. Organisational commitment, as a unified second-order factor structure, mediates the relationship between psychological empowerment and OCBI.*

*H9b. Organisational commitment, as a unified second-order factor structure, mediates the relationship between psychological empowerment and OCBO.*

*H10a. Even taking into account the effects of organisational commitment, team commitment has an independent, additional mediating effect on the relationship between psychological empowerment and OCBI.*

*H10b. Team commitment has an independent, additional mediating effect on the relationship between psychological empowerment and OCBO.*



#### 4.6. Theoretical Framework

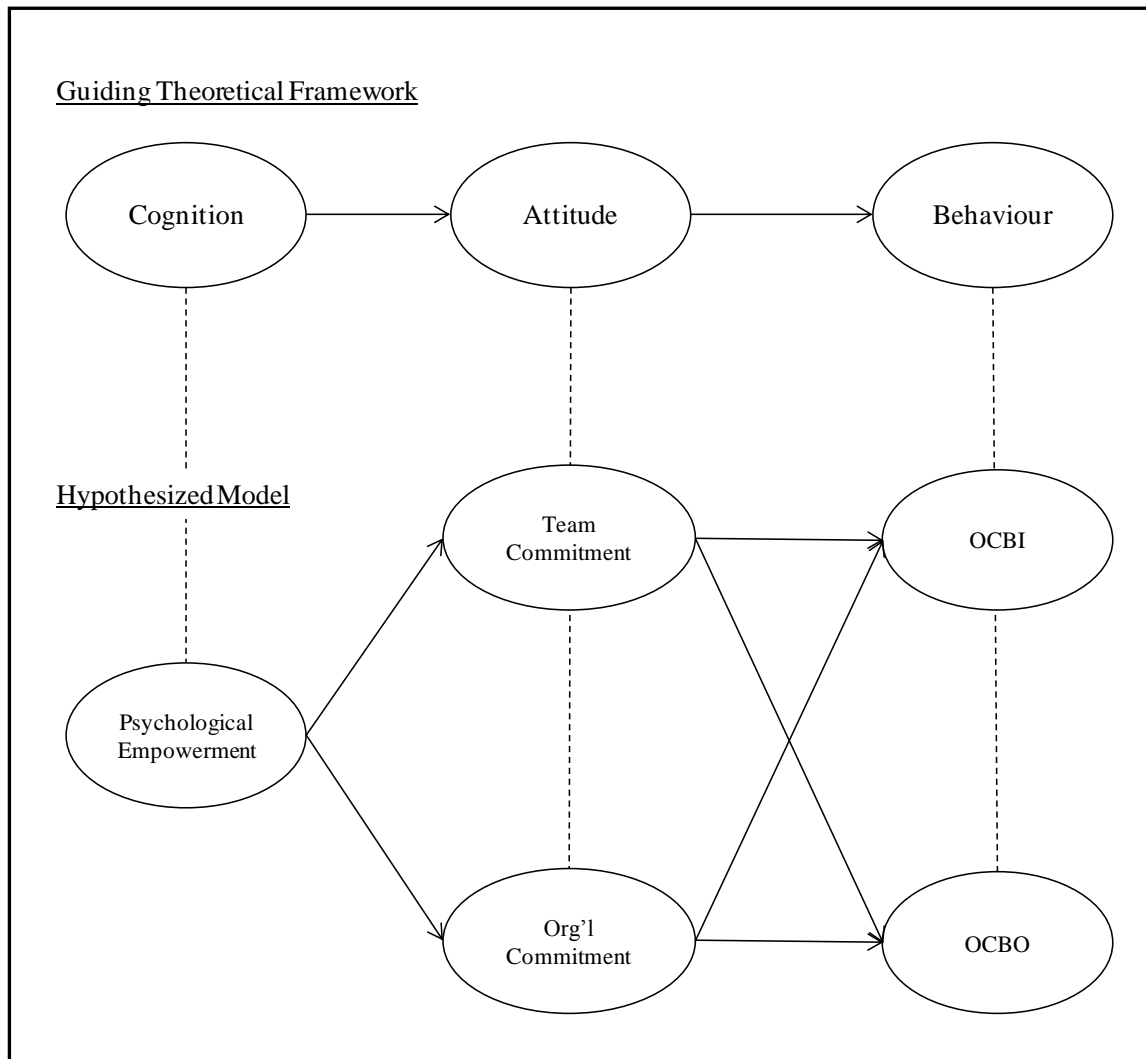


Figure 4.3. Guiding Theoretical Framework and a Hypothesized Model

Figure 4.3 illustrates a theoretical framework for this study that was based on the proposed hypotheses. Previous studies (Becker & Kernan, 2003; Lavelle et al., 2005, 2007; Rhodes & Eisenberger, 2002) had stressed the importance of lining up the foci of both independent and dependent variables. In line with this, the attitude and behaviours of this study would have two foci: individuals and the organisation: commitment to team vs. commitment to organisation; and OCB to individuals (team members) vs. OCB to the organisation.

#### 4.7. Conclusion

Having described the understudied area identified in commitment research on the relationship between empowerment, commitment and OCB, this chapter has described how a theoretically grounded hypothesized model was developed. The rationale for this hypothesized model was derived from: 1) a research area examining the role of commitment as a mediator between psychological empowerment and OCB, based on social exchange theory and also based on the ‘cognition – attitude – behaviour’ mechanism that influences behaviour; 2) the scarcity of research on the effects and roles of team commitment in these causal relationships; and therefore 3) a multiple mediating model of organisational commitment and team commitment within a target-focused two-factor framework. In light of this, ten hypotheses, including some relating to scale validity testing, were developed for the empirical study.

The hypotheses presented in this chapter would help to achieve the following research aims of the study:

A first objective of the study was to look at the validity in a South Korean context of several scales testing organisational commitment: 1) Allen and Meyer’s (1990) original three-component organisational commitment scale, which was designed specifically to test degrees of normative and continuance commitment; 2) scales designed to test the dimensionality of continuance organisational commitment; and 3) a unified second-order latent construct designed to measure psychological empowerment, organisational commitment, OCBO and OCBI, that all embrace first-order latent sub-factors. Establishing the validities of the various scales would help to support the results of hypothesized model testing, which was the major purpose of the study.

Secondly, the study would examine how important team commitment was in the current business environment, to see whether it could be suggested as one of the global work commitment forms or not. In order to examine team commitment's roles, the study would measure this form of commitment with more work-related items, rather than as a form of affective organisational commitment or a form of social-interaction. This would help the researcher to find out whether team commitment should be considered an important work attitude and one that was different from organisational commitment.

Thirdly, the main purpose of the study was to identify commitments' mediating roles. If team commitment as well as organisational commitment significantly mediated the relationship between psychological empowerment and OCB, the findings would help managers encourage employees' commitment in a productive way.

Finally, the study was intended to look at whether the target similarity approach worked. Taking a multi-foci approach, a target-focused two-factor framework was proposed, using two foci of commitment (team commitment and organisational commitment) and two foci of discretionary behaviour (OCBI and OCBO). Lavelle et al. (2007) proposed a target similarity relationship model based on their (2005) findings (this conference paper was later published as Lavelle et al., 2009), suggesting that group commitment had more effect on OCBI, whereas organisational commitment had more effect on OCBO. However, contrary to the theoretical logic, this target similarity had been found not to apply in other studies. The findings of Becker (2009) and Cohen (2006) did not suggest that the specific foci relationships between commitment and behaviour were not consistent. Hence, this study with South Korean samples would help to generalize some of the ideas produced by previous findings by re-examining the consequences of target similarity.

This chapter has shown how the researcher built on a broad range of literature to postulate a theoretically grounded hypothesized framework, thus laying the foundations for the next chapter, which outlines the methodology employed, and for the empirical analysis.

## **CHAPTER 5. RESEARCH METHODOLOGY**

### **5.1. Introduction**

Guided by the literature review, the previous chapter, Chapter 4, proposed the theoretically driven conceptual model and hypotheses for this study. This chapter provides the research paradigm, the research design and the research methods that the study would employ to test the hypotheses and the proposed model. The following sections explain how this study would collect data and how the collected data would be analysed. Then, the pretesting with postgraduate students at Birmingham University and the findings of pilot-testing with 35 MBA students in Korea are presented, before the chapter concludes.

### **5.2. Research Paradigm**

The quantitative paradigm based on positivism has come to predominate in social science research. In particular, the quantitative paradigm has occupied the mainstream of psychology (Michell, 2003), and logical positivism has profoundly influenced methodological thinking in psychology (Tolman, 1992). This is because earlier researchers believed that a satisfactory degree of knowledge had been achieved when it was possible to take measurements and therefore express the knowledge in numbers (Merton, Sills & Stigler, 1984), and they assumed that all psychological attributes were fundamentally quantitative (Huffman, 1999). Meanwhile, researchers who were advocates of the qualitative paradigm based on interpretivism claimed that the positivist

quantitative paradigm did not reflect the interactive links between the investigator and the investigated, which meant that findings mutually created within the context of the situation which shaped the inquiry would be overlooked (Guba & Lincoln, 1994). However, the competing paradigms were judged incommensurable (Kuhn, 1970), as the society in which we live cannot be understood in only an objective or a subjective way, and the two approaches share some commonalities and overlap in various ways (Bryman, 2001). Nonetheless, I maintain that researchers in the social sciences require objective perspectives to explain the context in which specific phenomena have occurred. This being the case, I adopted the positivists' historically considered methodological tool developed for work in psychology and statistics as the appropriate one for the thesis.

### 5.3. Research Design

A cross-sectional paper survey collects data using a paper questionnaire. As the major respondents in this study were to be team members on production lines, an on-line survey was not employed. Cross-sectional survey design is undertaken 'when groups are formed on the basis of existing differences rather than by creating groups and then making them different by means of an intervention' (de Vaus, 2002: 298). This type of survey design would be a particularly appropriate research method, given that the study was being undertaken to look at the differences and similarities between commitment theory in a South Korean context and commitment theory in a western context, and to see whether earlier findings from a western culture could be generalized to an eastern one.

Occupational psychologists tend to use a survey design that allows researchers to gather quantitative data (Arnold et al., 2005). All the variables to be examined in this study were concerned with psychological states – latent variables that needed objective proxy items to measure. Otherwise, the interpretation of employees' psychological states would be subjective opinions. The numerical information would provide the respondents' psychological attributes and make it possible to draw concise conclusions about the social exchange mechanism in the workplace.

In the cross-sectional, self-report survey that was designed, there were potential common method biases, as this research would be conducted at a single point with common raters.

Podsakoff et al. (2003) summarise the four potential sources of common method biases: common rater effects, item characteristic effects, item context effects and measurement context effects. As the items that this survey questionnaire would use consisted of well-developed and previously validated items and popularly used proxy items, two of these effects – common rater effects and measurement context effects – needed to be considered in the design of the research.

The ability of a cross-sectional survey to describe cause-and-effect relationships is limited, because it is executed at a single point in time. Although longitudinal research is useful for observing changes in employees' psychological states, this requires considerable time and financial outlay. Furthermore, participants' continuous involvement and the continuous cooperation of management cannot be guaranteed. Considering that this would be a one-off survey, one of the potential common method biases, measurement context effects, was reduced by having two stages of testing. A

pre-test and pilot-test, prior to the main survey, were planned to check on implementation and to reduce the possibility of making mistakes (the pre-test and pilot-test will be discussed in detail later in this Chapter). This was also intended to help avoid vague concepts, and was expected to improve respondents' comprehension.

Although self-report surveys are the most common form of data collection in the social sciences, including psychology and organisational research (Malhorta, Kim & Patil, 2006), the effects of common method biases are not negligible. In order to overcome common rater effects, I tried to obtain different sources of criterion variables, using at least one construct, for example OCB to the organisation (OCBO), to control method variance.

However, it was impossible for me to do this because of the companies where the data for this research would be collected. The problems were similar to those that Podsakoff et al. (2003) suggest will arise when data is collected from different sources. As the data sources were to be different, the questionnaires had to link the team leader (or supervisor) and team members. Therefore, anonymity might not be completely respected, which might lead to respondents giving socially desirable answers, and to numerous missing variables.

As the companies wanted to get information about their employees' real attitudes and behaviour, rather than socially desirable answers, they hesitated to accept this procedure. The companies were also concerned about the amount of their employees' time that the survey would involve. Consequently, neither of the companies cooperated in obtaining their supervisors' ratings. But in the end, although a single-rater survey would lead to



only limited results, this type of self-report survey was unavoidable if the research was to be completed.

Instead, the following procedural remedy recommended by Podsakoff et al. (2003) would be emphasized in order to compensate for self-report bias. This way of reducing method bias involved providing a clear cover letter. The cover letter would promise the respondents anonymity, and emphasize the survey's confidentiality, in bold font type, in order to reduce method bias. The cover letter would also provide guidelines to deflect the respondents from providing socially desirable answers, saying, 'There is no correct answer' and 'Please circle the number closest to your thoughts and feelings. We are not testing your ethical values'.

In addition to the procedural remedy, a statistical remedy would be conducted after data collection, as Podsakoff et al. (2003) and Malhorta et al. (2006) advise. Harman's single-factor test would be conducted, and this testing is discussed in Chapter 7. Harman's single factor test has two approaches: exploratory factor analysis (EFA); and confirmatory factor analysis (CFA). This research would use both types of testing to try to overcome the aforementioned potential sources of common method biases. The EFA remedy procedure would be followed according to Podsakoff and Organ (1984), as Podsakoff et al. (1986) recommend (see Section 7.5 in Chapter 7 for more details); and the CFA remedy procedure would be followed as Malhorta et al. (2006) and Podsakoff et al. (2003) suggest (see Section 7.8 in Chapter 7 for more detail).

#### 5.4. Research Methods

This section describes the measurement techniques employed for each construct to be examined. After an explanation, the structure of the survey questionnaire is discussed. Then, the validity and reliability checks that the study would use are discussed, followed by a discussion of sampling.

#### 5.4.1. Measurement

Michell (2003) argues that the objectives of most attempts at psychological measurement, such as attitude measurement, suit quantitative forms of measurement and operationism. Most psychological measurement aspires to create an interval scale in the ordinary sense of the word as it relates to quantitative research (Stevens, 1946). For a numerical scale relating to an attribute, five to seven categories are the best fit for the possible number of degrees of psychological discrimination (Miller, 1956; Rossiter, 2002) and a five-point scale is the most commonly used in survey instruments (Zikmund, 2003). Lissitz and Green (1975) suggest that scales do not increase their usefulness by going above five categories because the coefficient alpha reliability increases up to five points but then levels off sharply, so that a seven-point scale is not an optimal option. A five-point scale reduces the work required of the respondents and reduces the instrument's perceived complexity (Neuman, 2004). In view of these considerations, a five-point Likert type scale was to be employed in this study, with degrees of agreement ranging from 'Strongly disagree (1)' to 'Strongly agree (5)', assuming equal-interval scaling. Scale values would be: 'Strongly disagree' (-2), 'Disagree' (-1), 'Neither agree nor disagree' (0), 'Agree' (+1) and 'Strongly agree' (+2).

According to Baumgartner and Homburg (1996), three or four indicators per factor are required for a confirmatory factor model to be established and for estimation problems to be minimized. All the latent constructs to be used in this study had been validated in previous studies, and they had at least three proxy items per factor. The followings are the measurement techniques selected for each construct:

#### (1) Psychological Empowerment

From the point of view of social exchange theory's reciprocal orientation, psychological empowerment is the closest notion among the three empowerment conceptualizations: psychological, structural and sociostructural empowerment. In organisational psychology research, Spreitzer's (1995) psychological empowerment scale (see Table 5.1) is the representative scale, and this is composed of meaning, competence, self-determination and impact. Given this, the present study uses Spreitzer's (1995) 12-item psychological empowerment measurement. This comprises four dimensions: 1) meaning, which means the value of the work goal; 2) competence, which means self-efficacy; 3) self-determination, which reflects autonomy; and 4) impact, the degree of influence on the team that each employee belongs to. This study refers to impact as 'impact on team', as this concerns team members rather than any other colleagues.

#### (2) Organisational Commitment

Considering this thesis's aims, Allen and Meyer's three-component model would be employed to test the generalizability of organisational commitment in a South Korean context. However, there were other reasons for choosing this scale.

Porter et al.'s (1974) OCQ scale had recently been criticized in terms of the homogeneity of the scale and the ambiguity of several items (Benkhoff, 1997). Apart from Porter et al.'s OCQ scale's debatable validity issues, there were other reasons to employ three-component models of organisational commitment in this study. A great deal of research had argued that affective organisational commitment (Allen & Meyer) or attitudinal commitment (Porter et al.) was the most closely related to work outcomes. However, Sinclair et al.'s (2005) study had demonstrated that affective and continuance commitment profiles were critical to predict employees' in-role and extra-role performance. In view of this, it was thought worthwhile to examine continuance commitment. In addition, normative organisational commitment had significant influence on collective cultures (Meyer, Stanley & Parfyonova, 2012).

In light of the above, it was considered justifiable for this study to use Meyer and Allen's three-component organisational commitment scale. Among several versions of this scale, this study adopted Allen and Meyer's (1990) original organisational commitment scale to measure Korean employees' organisational commitment.

### (3) Team Identity

As team commitment was an essential construct of this study, it was important to ensure that the team that respondents thought of as their team was the one that this study operationalised. To this end, three items of team identity were added prior to team commitment items. Reflecting the characteristics suggested by Kirkman et al. (see section 4.6.3 in Chapter 4), respondents' interdependence in teams, their accountability for shared common goals and their boundedness/attachment to their teams were investigated, using Henry, Arrow and Carini's (1999) group identification scale.

#### (4) Team Commitment

Team commitment is a new work commitment form; therefore, few techniques of measurement for it had been researched prior to the present study. The most frequently used scale was created by borrowing an affective (or attitudinal) organisational commitment form and using it by replacing organisation with team. For the specific measurement of team commitment, the scales of Randall and Cote (1991) and Ellemers et al. (1998) were commonly used. However, we identified that Randall and Cote's scale leaned toward the social aspect, because 'three of the six items of their scale were taken from Sheldon's (1971) social involvement scale' (Cohen, 2003: 39). Therefore, this study would use the seven-item scale of team commitment developed by Ellemers et al. (1998) as an indicator of team commitment.

#### (5) Organisational Citizenship Behaviour

Previous research in the field of organisational psychology had considered employees' behaviour as performance, setting task performance as employees' in-role behaviour and citizenship behaviour as their extra-role behaviour (Sinclair et al., 2005; Tremblay et al., 2010).

Drawing on a target-focused two-factor framework, organisational citizenship behaviour (OCB) would be measured in the study by being divided into OCB toward individuals and OCB toward the organisation, in order to examine how the effects of team commitment and organisational commitment differed, depending on their target. Two recent meta-analytic studies (Hoffman et al., 2007; LePine et al., 2002) had suggested that a single-factor model of OCB might have greater construct validity than either a behaviourally focused five-factor framework (e.g. altruism, sportsmanship, etc.) or a target-focused two-factor framework (e.g. OCBI/OCBO). However, Ilies et al.

(2009) had supported the construct validity of a target-focused framework with OCBI and OCBO, and demonstrated differential validities in predicting relationships. They categorized the OCB factors into two categories. Measures of conscientiousness, sportsmanship, compliance and civic virtue were categorized as OCBO; while measures of altruism, helping, cooperative behaviour, personal support, prosocial behaviour and courtesy were categorized as OCBI. Yoon and Suh's (2003) study in a Korean context had also demonstrated that the multiple facets of OCBs created more detailed relationships with job satisfaction and trust than those of a global (single-factor model of) OCB.

Most OCB is measured by supervisor-rating, and William and Anderson's (1991) scale is frequently adopted to measure OCBI and OCBO. However, rating of OCB by others may be biased downward, due to the limited observational opportunities of those doing the rating. Ilies et al.'s (2009) study suggests that self-rating may reasonably assess OCBI, rather than this requiring a different source of rating. Given this, OCBs in this study would be measured by self-rating.

Considering Ilies et al.'s (2009) target-focused categorization and Podsakoff et al.'s (2000) seven OCB categorization, four definitions of OCB were selected for this study. Among the seven OCB categorizations, Podsakoff et al. (2000) warned that organisational loyalty and self-development were needed to establish empirical validity (see Section 3.3 in Chapter 3). Further, there was a possibility that respondents could be confused between organisational loyalty and commitment. Individual initiative was not considered, as it was not easily differentiated from task performance (Organ, 1988; Van Scotter & Motowidlo, 1996). Sportsmanship was not employed, given that Korean culture under the influence of Confucianism and Buddhism, traditionally considered

tolerance and sacrifice a great virtue. Judging that this aspect of Korean culture might significantly influence answers related to sportsmanship, question items for sportsmanship were not considered for OCBO.

Given this, altruism and courtesy were chosen from helping behaviour to measure OCBI, as Podsakoff et al. (2000) had indicated that these two concepts loaded onto a single factor, which was empirically confirmed (Podsakoff et al., 1997; Podsakoff & Mackenzie, 1994). For measuring OCBO, compliance and civic virtue were employed, since compliance was a traditional citizenship behaviour area, as an impersonal form of conscientiousness (Podsakoff et al., 2000), and civic virtue represented a macro-level of organisational commitment that could be expected to have more relationships with commitment. All the selected four dimensions of OCB were the dimensions that had been frequently used in OCB research.

With four factors of OCB, this study adopted William and Shiaw's (1999) self-rating OCB scale, after dropping the reversed questions; six items of consideration (helping behaviour), measuring altruism and courtesy, to measure OCBI; and three items of civic virtue and three items of conscientiousness to measure OCBO. Face validity was used by the author to select three OCB proxies: consideration for OCBI; and civic virtue and conscientiousness for OCBO. This was in an effort to maintain consistency with the extra-role behaviour scales from Williams and Anderson's (1991) study.

#### 5.4.2. Survey Questionnaire Structure

Table 5.1 summarizes all the measurements that were used in this study; and Figure 5.1 illustrates them in a hypothesized model. The survey consisted of three sections: cover

page, Section A, ‘About Your Work’; Section B, ‘About Your Views’; and Section C, ‘General Information’ (see Appendix 1).

As the survey was intended to examine the relationships between respondents’ job attitudes and their perceptions, we could not obtain the information from alternative sources. Moreover, if the survey questionnaire contained identifiable variables for OCB’s supervisor ratings, these concerned low participation, or changes in the nature of respondents’ responses, or increases in missing data. Thus, the self-rating survey was prepared.

As the questionnaire would be self-rated, common method biases were considered. As Section 5.3 states, in line with the procedural remedies for common method biases suggested by Podsakoff et al. (2003), the questionnaire was designed to protect respondents’ anonymity and reduce evaluation apprehension: for example, the survey would allow respondents to answer anonymously, and assured them that there were no right or wrong answers and it was their honest answers that were required. The cover page of the survey questionnaire contained all these statements (see Appendix 1). The statistical remedies for common method biases are discussed in Sections 7.5 and 7.8 of Chapter 7.

Another procedural remedy for common method biases recommended by Podsakoff et al. (2003) was to counterbalance the order of the scales of the predictor (independent) and criterion (dependent) variables. The items in Section A and Section B partially reflected Podsakoff et al.’s suggestion. Rather than following the logical flow, independent variables – mediating variables – dependent variables, the questionnaire



Table 5.1. Survey Questionnaire Structure

<b>Section A. Your Work</b>				
<b>A1. About Your Work</b>				
Construct	Facets		Item No.	Source
Psychological Empowerment	Meaning		1-3	Spreitzer's (1995) scale
	Competence		4-6	
	Self-determination		7-9	
	Impact on Team		See B2.	
OCB	OCB-I	Consideration	10-15	William & Shiaw's (1999) scale
		Civic virtue	16-18	
	OCB-O	Conscientiousness	19-21	

Section B. Your Views			
B1. About Your Company			
Construct	Facets	Item No.	Source
Organisational Commitment (OC)	Affective OC	1-8	Allen & Meyer’s (1990) scale
	Normative OC	9-16	
	Continuous OC	17-24	
B2. About the Team You Belong To			
Team	Team sense of belonging	-	n.a.
	Team tenure	B2.1.	n.a.
	Team size	B2.2.	n.a.
Team Identity	Interdependence	25	Henry, Arrow & Carini’s (1999) scale
	Shared common goals	26	
	Boundedness	27	
Team Commitment		28-34	Ellemers et al.’s (1998) scale
Psychological Empowerment	Impact on Team	35-37	Spreitzer’s (1995) scale

<b>Section C. General Information</b>		
Construct	Facets	Item No.
Demographical Information	Sex	1
	Age	2
Organisational tenure		3
Employment type		4
Job type		5

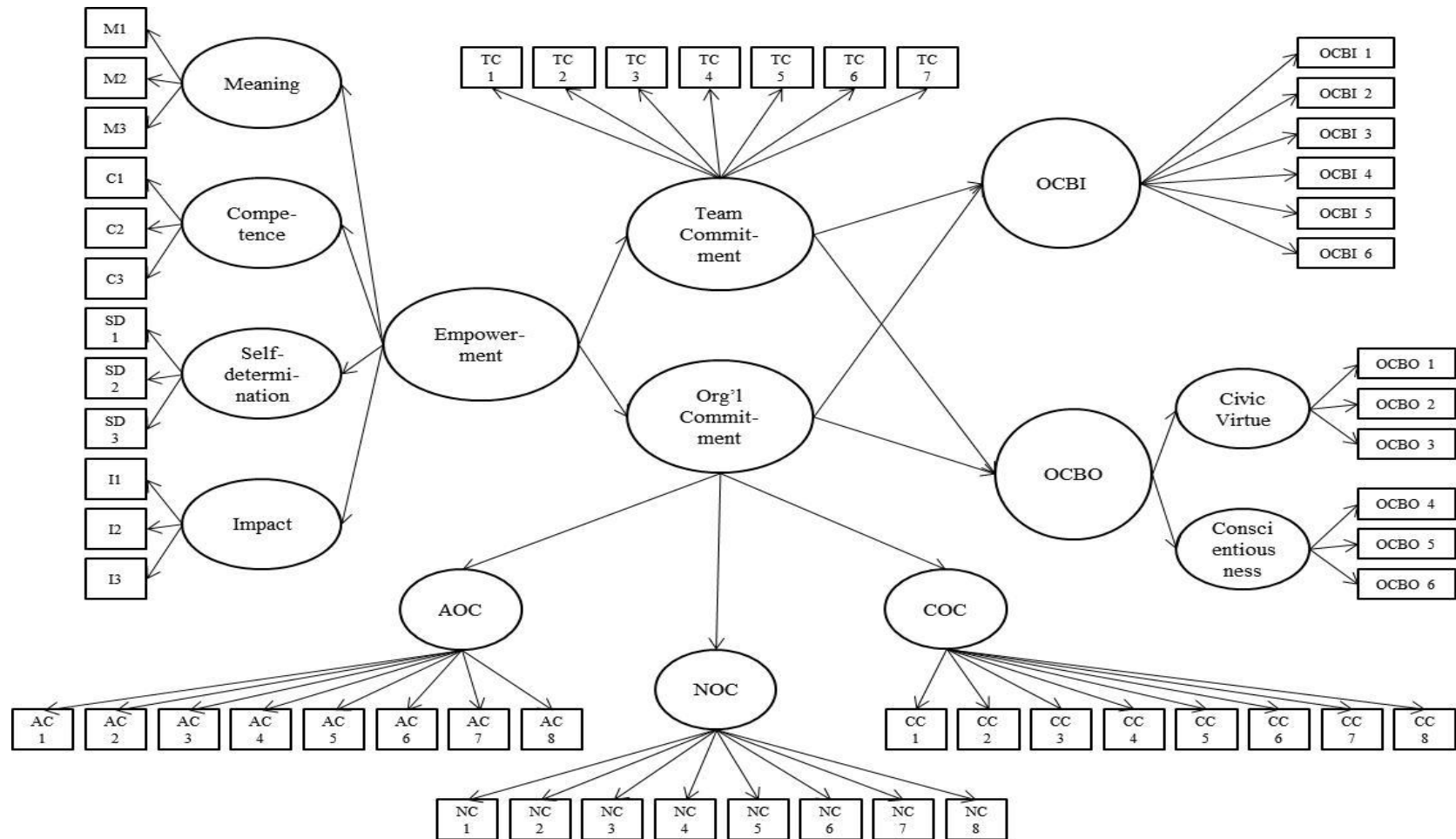


Figure 5.1. A Hypothesized Model with Proxy Items

was organized as independent – dependent – mediating – demographic – mediating – independent – demographic variables. Section A under the heading ‘Your Work’ comprised three sub-factors of psychological empowerment (independent variable) and OCBs (dependent variable). Section B, under the heading ‘Your Views’, consisted of three sections: the first section was about organisational commitment (mediating variable); the second dealt with demographic variables, as a reminder that this survey was only for team members; and the third section dealt with team commitment (mediating variable) and impact on team (independent variable). The survey concluded by asking for general information (demographic variable).

The details of each section of the questionnaire were as follows:

The first section, Section A, asked about respondents’ work. Respondents were asked about their psychological empowerment (12 items) and OCBs (12 items) in their workplace. Following the indications of the pre-testing stage, three items of the ‘impact on team’ factor were eventually moved to Section B2 (‘About the Team You Belong To’), as this was more related to the respondents’ team than their work. This was to produce consistency on the subject of the team.

The second section, Section B, entitled ‘About Your Views’, mainly asked about respondents’ commitment. Section B1 asked their views on their company, focusing on three components of organisational commitment (24 items): affective (8 items), normative (8 items) and continuance (8 items), in order. In Section B2 respondents were asked about the team they belonged to. Before the questionnaire was used to ask about respondents’ team commitment, the definition of team was stated, to clarify the concept. This was also to reduce the common method biases brought up by Podsakoff

et al. (2003) and Tourangeau, Rips and Rasinski (2000), ‘avoiding vague concepts and provide examples when such concepts must be used’. After that, the respondents were asked if they worked in a team. This was a basic filter to screen non-team members. This was followed by questions about respondents’ team size and their team tenure. Then, respondents’ team identity was asked about, prior to questions about team commitment. This was to detect whether the teams, according to the respondents, had team characteristics, and to enable the researcher to be sure that the answers about team commitment that the respondents were about to give would be reliable. Next, seven items of team commitment were asked about, followed by questions on three items of psychological empowerment in terms of impact on team.

Finally, Section C consisted of general demographic information required for the purpose of statistics, such as sex, age, organisation tenure, employment status (temporary, contract, full-time, part-time and other) and job type (production, office and administration, sales and R&D). Becker’s (2009) study and Meyer et al.’s (2002) study demonstrate that demographics have little association with team commitment and organisational commitment, except for age and organisational tenure (see Table 2.3 in Chapter 2). Highly educated professionals in Korea are less associated with organisational commitment but more with professional commitment (Chang & Choi, 2007). However, respondents would not be asked about their education, given that the majority of respondents would be production workers. Sommer, Bae and Luthans’ (1996) study about the effect of Korean employees’ antecedents on organisational commitment demonstrates that education is not an associated factor. As the survey was to be conducted in the Korean language, all foreign workers at the factory [factories?] were to be excluded, despite the presence of a sizeable foreign labour force in the

Korean manufacturing industry. So, the ethnicity of all the respondents to the survey would be Korean, and questions related to ethnicity were not included in the questionnaire.

#### 5.4.3. Reliability and Validity Tests

All the variables in this research were latent variables. Since multiple measures of the same underlying construct represented latent variables, it was important to validate these and maximize measurement reliability, whilst minimizing random measurement error (Churchill, 1979). The following paragraphs explain the type of reliability and validity that this study would examine.

##### (1) Reliability

Churchill (1979) suggests that coefficient alpha, which is known as Cronbach's alpha, is a basic statistic for measuring internal consistency. Therefore, each factor's internal reliability, as represented by Cronbach's alpha, would be reported in this study. This would be accompanied by inter-item correlation analysis, which is good for item discrimination. This is because we can improve the internal reliability of investigations by examining the inter-item correlation matrix. Items that are highly correlated with other items cause multicollinearity problems; and items unrelated to others reduce internal consistency. Therefore, we could expect to improve the scale reliability by dropping those inappropriate items detected via the inter-item correlation matrix.

Although reliability is necessary, reliability in itself is not sufficient to establish constructs' validity (Churchill, 1979). This is because the coefficient alpha test does not

count external error variance. Hence, another measure would be taken to check construct validity. Hair et al. (2006) suggest that content, convergent, discriminant and nomological validity are the most widely accepted forms of construct validity. Taking up Hair et al.'s suggestion, the aforementioned four types of validities would be examined to look at the construct validity of the selected scales.

## (2) Content Validity

This validity is concerned with the degree to which scale items represent the domain of the concept under study (Davis, 2004). The following are the actions that were taken to meet Davis's (2004: 172) requirement for content validity:

- ① *Conduct an exhaustive search of the literature for all possible items:* Based on the literature review, all variables were selected from the established and validity-proven measurements in previous studies.
- ② *Solicit expert opinions on the inclusion of items:* The prepared survey questionnaire was reviewed by subject-matter experts. Subject-matter experts included an HR manager who held an HR-related doctoral degree and an academic researcher with knowledge of the area.
- ③ *Pre-test the scale on a set of respondents similar to the population:* After the reviews by subject-matter experts, a pilot test with a refined questionnaire was conducted with respondents similar to the main study's population (see Section 5.7 for details).

- ④ *Modify as necessary*: According to the outcomes of stages ② and ③, the questionnaire was adequately modified.

### (3) Convergent Validity and Discriminant Validity

There are two approaches to establishing the statistical aspect of construct validity: convergent validity and discriminant validity. Convergent validity indicates how a specific construct shares a high proportion of variances with other constructs; while discriminant validity shows whether a construct is significantly separate from other constructs (Hair et al., 2006). There are three ways to examine convergent validity: through factor loadings, average variance extracted (AVE), and composite reliability. In this study, this examination would be conducted following Hair et al.'s guideline (see Section 7.7 in Chapter 7 for further discussion for AVE). Through two stages of factor analysis, exploratory factor analysis and confirmatory analysis, the measurement model fit across all the scales would be examined. This would demonstrate the discriminant validity of each latent construct's scale (see Section 7.8 in Chapter 7).

### (4) Nomological Validity

Nomological validity is achieved by examining a construct's correlations (Hair et al., 2006). To establish prior construct reliabilities and validities, all the constructs that would be used in the main analysis would be examined in the correlation matrix (see Section 8.2 in Chapter 8).

#### 5.4.4. Sampling

One important issue in research design is the determination of the size of sample necessary to achieve adequate power in carrying out the planned hypothesis test (MacCallum, Browne & Sugawara, 1996). Model fit can be achieved through getting the necessary sample size ( $N$ ) with the desired level of power ( $\pi$ ). MacCallum et al. (1996) describe how to determine the necessary  $N$ , given the confidence interval ( $\alpha$ ), the degrees of freedom ( $df$ ), the null value of the root-mean-square error of approximation [RMSEA] ( $\varepsilon_0$ ), and the alternative value of RMSEA ( $\varepsilon_a$ ). MacCallum et al. recommend a medium range of statistical power, where  $\pi = 0.60\text{--}0.80$ , and they themselves used the level of power  $\pi = 0.80$ , which is also recommended by Cohen (1988). McQuitty (2004) also suggests that a statistical power over 0.90 is greater than necessary. Therefore, this study planned to test the null hypothesis of close fit, as recommended by MacCallum et al. as below:

**$H_0$ :  $\varepsilon_0 \leq 0.05$  when  $\varepsilon_a = 0.08$ , using  $\alpha = 0.05$  and a desired power  $\pi_d = 0.80$**

[The null hypothesis,  $H_0$ , would be tested when confidence interval  $\alpha = 0.05$  with a desired statistical power  $\pi_d = 0.80$ . The model fit would be examined under the conditions RMSEA  $\varepsilon_0 \leq 0.05$  and the alternative RMSEA  $\varepsilon_a = 0.08$ .]

Table 5.2 demonstrates the minimum sample sizes required to achieve specified statistical power. Therefore, the target estimated sample size for this study would be between 214 and 365, assuming a range of degrees of freedom ( $df$ ) between 30 and 50. However, suitable sample size is somewhat different from the perspective of factor analysis. Some researchers advocate sample sizes of 300 (Kass & Tinsley, 1979; Tabachnick & Fidell, 2012) or 200 (Gorsuch, 1997). Nunally (1978) recommendsA



Table 5.2. Minimum Sample Sizes Required to Achieve Specified Statistical Power

$df$	$\pi = 0.60, N \geq$	$\pi = 0.70, N \geq$	$\pi = 0.80, N \geq$ <i>test of close fit</i>	$\pi = 0.80, N \geq$ <i>test of not-close fit</i>	$\pi = 0.90, N \geq$
5	885	1132	1463		1994
10	486	613	782	750	1050
15	350	436	550		732
20	280	346	435	474	572
30	207	254	314	366	410
40	168	205	252	307	325
50	145	175	214	268	274
75	111	133	168	210	204
100	92	110	132	178	165
125	80	95	114		142
150	72	85	101		125
200	61	71	84		104
250	53	62	74		90
300	48	56	66		81
400	41	48	56		68

Note.  $\pi$ : test of close fit. For all analyses,  $\alpha = 0.05$ . For the test of close fit,  $\varepsilon_0 = 0.05$  and  $\varepsilon_a = 0.08$ , where  $\varepsilon_0$  is the null value of RMSEA and  $\varepsilon_a$  is the alternative value of RMSEA. For the test of not-close fit,  $\varepsilon_0 = 0.05$  and  $\varepsilon_a = 0.01$ .

\*Table 5.2 was developed using MacCallum et al.'s (1996) Table 4 and McQuitty's (2004) Table 5.

having a participant to items ratio of 10:1; Hair et al (2006) suggest a minimum ratio of 5:1; whilst Kass and Tinsely (1979) consider between five and ten items per respondent up to 300 as appropriate. (Taken together, a sample size of 358 and a data set with 58 items would be suitable for analysis.)

## 5.5. Data Collection

Since the researcher had identified that previous studies on commitment had mainly been conducted in hospitals or manufacturing companies, and that teams in manufacturing industry in Korea had been understudied, the study data was to be collected from one auto-parts manufacturing firm and one motorbike manufacturing

firm. Both firms belonged to the category small and medium enterprises (SMEs). As mentioned earlier in the thesis, teamworking has been particularly prevalent in automotive manufacturing and auto-parts manufacturing in South Korea. Auto parts manufacturing in Korea has sustained a stable annual growth of 10% on average, and it has a small and medium-sized industry structure (KOTRA, 2005). Therefore, this sampling strategy would help to support the research findings as the study would examine the organisational behaviour of employees in SMEs.

After acquiring contact information from the Small and Medium Businesses Administration in Korea, letters were sent to the CEOs of ten growing medium-sized transport-related manufacturing firms with an explanation of the research. In order to increase their interests, short research reports after the survey were suggested, to help them plan their human resource management strategies. As a result of the letters, two growing medium-sized transport-related manufacturing firms agreed to participate in the survey: one was a motorbike manufacturing company, the other an auto parts manufacturing company, and both were located in high-density factory areas. The questionnaires were distributed to all the employees of the above two companies. From the offices and the production and assembly lines, those working in lean teams were surveyed between April and May 2011: Delbridge, Lowe and Oliver (2000) define lean teams as those that have a hierarchically distinct team leader who is part of the team; have a tight span of control; possess a formal and relatively stable membership; and work on production tasks in an identifiable area of the plant. According to Delbridge et al.'s definition, the teams examined to be in the two companies would be described as lean teams.

As more than half the employees of each company were production-line workers, a paper survey was conducted. The HR managers of each company cooperated in the distribution and collection of the survey forms. The respondents were informed of the purpose of the survey, and participation was voluntary. The cover letter with the questionnaire explained and highlighted ethical concerns, such as anonymity and confidentiality (for the cover letter, see Appendix 1).

The survey was well-executed. This may be because of the promise given to provide survey feedback. A total of 477 survey questionnaires were distributed to workers in the two companies. Of these, 366 questionnaires were returned: 213 questionnaires were returned from the 257 distributed in *A* company (a returned response rate of 82.9%); and 153 questionnaires were returned from the 220 distributed in *B* company (a returned response rate of 69.5%). The overall returned response rate was 76.7%. Among the returned questionnaires, eight (two from *A* company and six from *B* company) were unusable, due to the respondents having left blank the demographic information section or not having completed the questionnaire. Overall, therefore, the usable response rate was 75.1%.

The response rate for this study was very good compared to average response rates for individual (employees') paper surveys. Baruch and Holtom's (2008) study, with 1,607 studies, published in the years 2000 and 2005 in 17 refereed academic journals, suggests that about 53%, with a standard deviation of around 20, is the average response rate for individual paper surveys in organisational research, and this is also the average rate of response for production-sector surveys. Thus the response rate for this study is within a standard deviation from the average rate. Although a 75% usable response rate is not as

good as the maximum response rate of over 90% that Baruch and Holtom achieved, this high response rate will help the research findings to have greater credibility.

The following sections give further information to help understand the research context: South Korean manufacturing industry; the automobile manufacturing industry; and the two manufacturing companies. Research on the motorbike industry in Korea was quite weak. The motorbike manufacturers' association was relatively inactive, unlike the automobile manufacturers' association. From this reason, statistic data, articles, and research reports on the motorbike industry were limited, and most of research on this industry had focused on mechanical engineering perspectives. For this reason, background information on the motorbike industry of South Korea is not provided.

#### 5.5.1. Research Context: Manufacturing Industry in South Korea

Manufacturing industry in South Korea makes a considerable contribution to South Korean GDP. For example, the industry's contribution to GDP in 2010 was 27.5% (Bank of Korea, 2011). There was a 6.3% GDP growth in 2010 and the contribution to the annual nominal GDP growth rate of manufacturing industry was 3.8% P (Bank of Korea, 2011). This suggests that manufacturing industry rather than service industry is the important industry sector in South Korea. Above all, by the end of 2010, South Korean automobile manufacturers ranked fourth in the world in terms of production volumes, according to figures from the International Organisation of Motor Vehicle Manufacturers (OICA). Therefore, the auto parts manufacturing industry, which is essential to the automobile manufacturing industry, is one of the important industries in

South Korea. With its strong standing in the national as well as the global market, the South Korean auto parts industry is well worth investigating.

#### 5.5.2. Research Context: Automobile Manufacturing Industry in South Korea

As mentioned above, the auto parts industry plays an essential role in the automobile industry's development. This industry is composed of multi-level specialized divisions using the simplest to the highest technology. The materials and technologies used in this industry vary widely across the products. The auto parts industry in South Korea largely consists of small and medium-sized companies, ranging from fewer than 50 employees in small companies to fewer than 300 employees in medium-sized companies (Yi & Jung, 2006). The automobile industry, including the auto parts industry, is an influential industry in the South Korean national economy because it contributes a value-added output of 36 trillion KRW (11 % of the entire manufacturing industry, as of 2006). This industry is also leading the Korean national economy in terms of production and exports by accounting for 3.5% of the entire number of manufacturing companies, 9.1% of employment, 11.8% of output values in 2006 and 13.4% of exports in 2007 (Ahn, 2008).

However, the global economy has been undergoing an economic recession since the financial crisis of 2008. Unsurprisingly, the automobile manufacturing industry has experienced a sharp decrease in sales. The external market environment, with its reduced demand, over-supply, stronger environmental regulation, strict security regulation and so on, demands that auto manufacturers seek a new kind of sustainability and flexibility in this depressed market. In this respect, this study expects to provide

some practical strategies to increase this industry's sustainability in the current competitive business environment.

The economy has been slow to recover, and there have been employee redundancies; therefore labour attitudes in automobile and auto parts companies have become rigid. The labour union involved has fought strongly to maintain job security and benefits, while the management has sought ground on which to negotiate. As a result, full-time employees' job security has been established by the labour union, but the numerical flexibility of the workforce has declined significantly in the automobile and auto parts industry. Also, instead of flexible labour systems such as job rotation, a more automated manufacturing system has been introduced, since negotiation between management and the union over job rotation takes a long time, for example more than three months (Cho, 2009).

The more automated procedures have reduced the number of employees required. As employees may have less contact with co-workers than before, managements have increasingly needed to encourage employees' identity, commitment and autonomous behaviour. In this context, the management of human resources is more critical than ever and this atmosphere calls for thinking about employees' empowerment, attitude and behaviour. This gives particular meaning to the present study, since this is research on employees' commitment to their organisation and their teams, and on their perceived empowerment and behaviour, in the automobile manufacturing sector.

#### 5.5.3. Research Context: Two Transport-Related Manufacturing Companies

This study would collect data from two transport-related manufacturing companies: one an auto parts manufacturer, the other a motorbike manufacturer. There were similarities in the sizes and business strategies of the two manufacturing companies. Both were medium-sized, with just under 300 employees. The motorbike manufacturer took 32.61% of the Korean motorbike market in 2011 (KOMIA, 2012), while the auto parts manufacturer was joint first among suppliers to Korean car manufacturers, and also one of the suppliers of a big Korean auto parts company that ranked within the top 100 globally. Moreover, both companies had overseas branches to diversify their sale routes, and both were increasing investment in R&D.

The motorbike manufacturing company came under a holding company (parent company) that had several affiliates and subsidiaries. The parent company and one of the affiliates were auto parts manufacturers, and the CEO of that affiliate company and the CEO of the motorbike manufacturing company were one and the same person. This suggested that we could expect this motorbike manufacturing company to have similar characteristics to those of its affiliate company, the auto parts manufacturer.

## 5.6. Procedure for Data Analysis

This study would examine latent variables, which are not directly measured. Instead, they are normally examined with covariance analysis, in order to measure the extent of two variables' association or to understand the relationships among several constructs. In the latter case, more complicated relationships between latent variables are frequently examined using structural equation modelling (Kline, 2011).

This study would explore the mediation effects of team commitment and organisational commitment. Structural equation modelling, in other words covariance structural analysis (Kline, 2011), is recommended for examining mediation effects, because a structural equation model makes it possible to estimate the mediation effect directly controlling measurement error (Preacher & Hayes, 2004). In this case, total effect, direct effect, mediation effect, and the standard errors of these could be calculated by covariance structure modelling programs like EQS, LISREL or Mplus (Kline, 2011). This study would examine the two mediators' mediation effects. The two mediators could be tested either simultaneously or separately. Simultaneous testing of mediation would allow the researcher to learn whether a particular mediation was independent of the effect of the other mediators (Kenny, 2012; Mackinnon, Fairchild & Fritz, 2007). In cases where simultaneous testing of mediation is conducted, Kenny (2012) suggests using structural equation modelling, as the entire model can thus be estimated. Following Kenny's (2012) suggestion, this study would conduct simultaneous testing of mediation to see the two mediators' effects, using structural equation modelling.

Kenny (2012) and Kenny, Kashy and Bolger (1998) advise that researchers should make sure that the different mediators are conceptually distinct and not too highly correlated. Prior to the analysis of multiple mediation, therefore, conceptual distinctiveness between team commitment and organisational commitment would be examined in the context of SME manufacturing teams in South Korea. The level of correlation between the two mediators (team commitment and organisational commitment) would also be examined. Chapter 6 specifically presents this analysis.



Each construct's measurement model would be examined using factor analysis, both exploratory and confirmatory. Exploratory factor analysis would be conducted in a traditional perspective, which uses it as a procedure of measure purification (see Section 7.5). Confirmatory factor analysis for a measurement model would then be conducted for a confirmatory assessment of dimensionality, convergent validity, reliability, and discriminant validity, according to the principles of SEM, using LISREL software (see sections 7.6 through 7.8).

Prior to analysing the proposed mediating model, tests for construct validity (Hypotheses 1, 2a/2b, 3a and 4) and significant relations and effects between constructs (Hypotheses 3b, 5a/5b, 6a/6b, 7 and 8a/8b) would be conducted as prerequisites for testing the mediating model. After that, the mediating effects of the two commitment forms (Hypotheses 9a/9b and 10a/10b) would be analysed in a South Korean context.

#### 5.6.1. Analysis Model

As seen in Figure 5.2, mediation effects can be measured by examining direct effects (a thin line, Path c), indirect effects (dotted lines, Path a and Path b) and total effects (a bold line, Path c).

The mediating effects (in other words, indirect effects) could be calculated as below (Baron & Kenny, 1986):

$$\text{Total Effect } (\gamma) = \text{Direct Effect } (\gamma') + \text{Indirect Effect } (\alpha \times \beta)^*$$

*Note.* \* The Indirect Effect is the same as 'Total Effect – Direct Effect ( $\gamma - \gamma'$ )'.

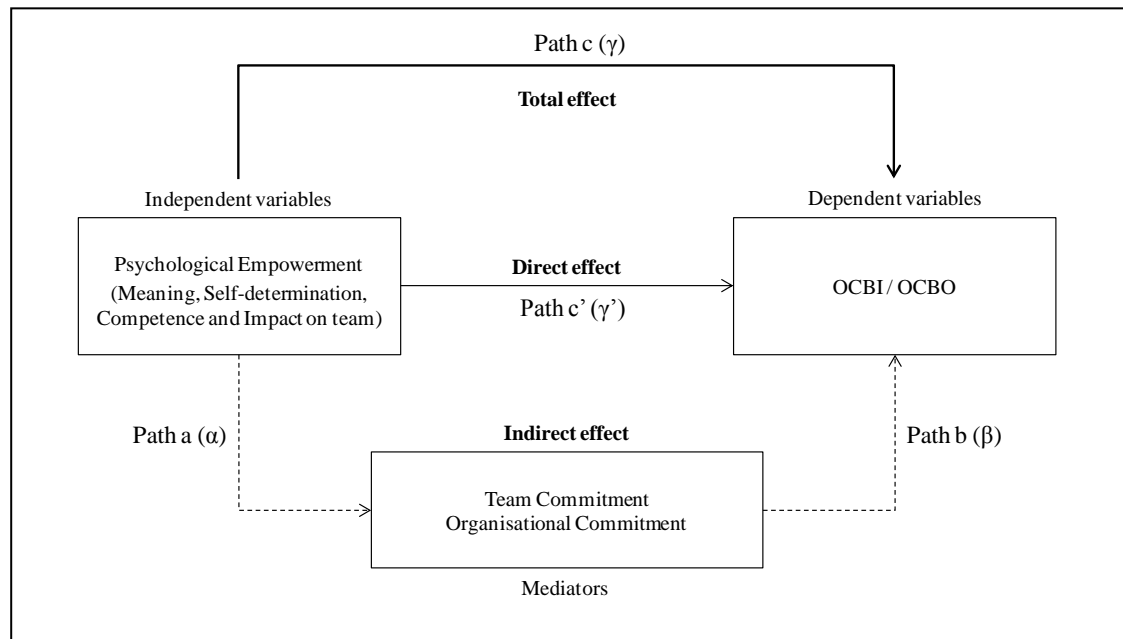


Figure 5.2. A Mediating Analysis Model

Baron and Kenny (1986) describe four steps to look at mediation effects: (Step 1) show the significant correlation between initial variables and outcomes; (Step 2) show the significant correlation between initial variables and mediators; (Step 3) show the mediators' influence on outcomes; and (Step 4) zero effect from initial variables to outcomes establishes the mediators' complete mediation. The literature review in Chapter 3 identified the first three steps: significant correlations between initial variables (psychological empowerment), mediators (team and organisational commitment) and outcomes (OCBI and OCBO). However, as this study was to be carried out in a different research context with different measurements from those used in previous studies, examination of construct validity and the above three-step analysis of independent variables, dependent variables and mediators would be conducted prior to the step 4 analysis stage (see Sections 7.5 to 7.8 in Chapter 7).

After finding significant relationships among the constructs, the effects of the proposed multiple mediating model would be examined through three models as seen in Figure 5.3 (see Section 8.3 in Chapter 8): (1) a direct model from independent variables to dependent variables without mediators' paths; (2) a full mediation model, controlling direct paths from independent variables to dependent variables; and (3) a partial mediation model, allowing direct paths from independent variables to dependent variables.

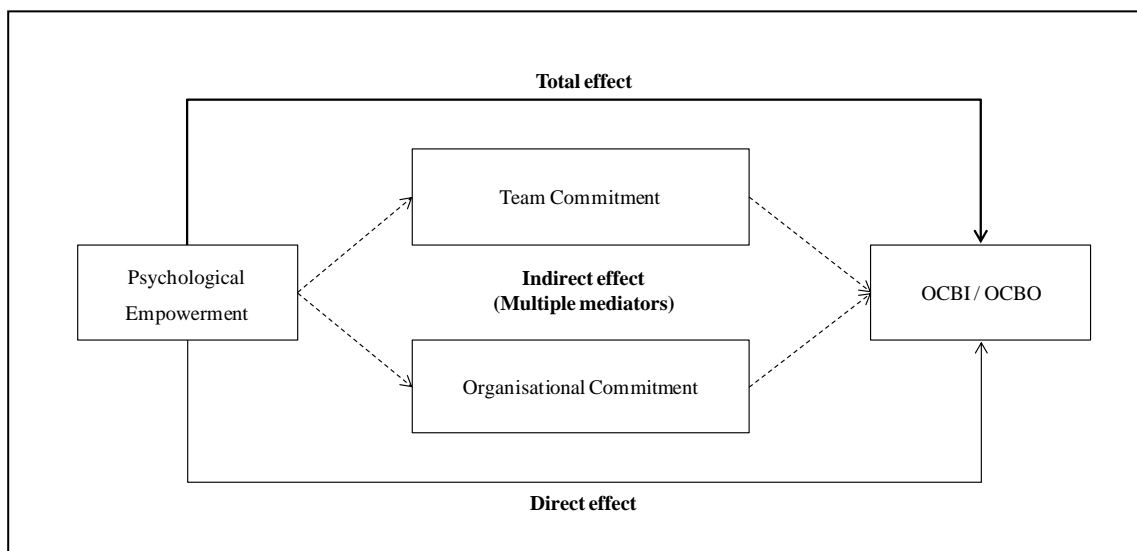


Figure 5.3. A Multiple Mediation Analysis Model

### 5.6.2. Fit Indices

Fit refers to the ability of a model to reproduce the data (Kenny, 2011). The fit of measurement models and structural models in this study would be examined through confirmatory factor analysis using LISREL software. The study would employ five fit indices to assess each measurement model and structural model for fit. The five indices

would include three absolute fit indices and two incremental fit indices. The following are the explanations of each index from Hair et al. (2006: 745-749) and Kenny (2011):

#### (1) Absolute Fit Indices

Absolute fit indices are a direct measure of how well the model, as specified by the researcher, reproduces the observed data. They provide the most basic assessment of how well a theory fits the sample data. In this study, three absolute fit indices would be used. An absolute measure of fit presumes that the best fitting model has a fit of zero.

##### ***Chi-square***

The Chi-square ( $\chi^2$ ) statistic is the most fundamental absolute fit index. This is different from the  $\chi^2$  statistic used in cross-classification, in order to examine whether a relationship exists between two nonmetric measures. The chi-square ( $\chi^2$ ) statistic is used in structural equation modelling (SEM) and prompts the researchers to check that there are no differences between the matrices and thus support the model as representative of the data. This means that the  $p$ -value for the  $\chi^2$  goodness-of-fit test in the SEM needs to be statistically insignificant. If the suggested theory is to be supported by the test, there will be a small  $\chi^2$  value and corresponding large  $p$ -value.

##### ***Root Mean Square Error of Approximation (RMSEA)***

The RMSEA tries to correct for model complexity and sample size. Lower RMSEA values indicate better fit. A good value of RMSEA is debatable, but typically values are below 0.10 for most acceptable models. MacCallum et al. (1996) used 0.01, 0.05, and 0.08 to indicate excellent, good, and mediocre fit respectively. The RMSEA is the least

affected index and is not sensitive to sample size for samples of over 200 (Sharma et al., 2005).

### ***Standardized Root Mean Square Residual (SRMR)***

The SRMR is defined as the standardized difference between the observed correlation and the predicted correlation. It is a standardized value of root mean square residuals (RMSR), which is the average residual covariance and is expressed in terms of the scale range of the measures. Thus the SRMR is more useful for comparing fit. The SRMR has no penalty for model complexity. A value less than .08 is generally considered a good fit (Hu & Bentler, 1999).

## **(2) Incremental Fit Indices**

Incremental fit indices are different from absolute fit indices in that they assess how well a specified model fits relative to some alternative baseline models. The most common baseline model is referred to as a null model, which implies that no data reduction could possibly improve the model because it contains no multi-item factors.

### ***Tucker-Lewis Index (TLI)***

The TLI depends on the average size of the correlations in the data. If the average correlation between variables is not high, then the TLI will not be very high. The TLI is not normed and thus its values can fall below 0 or above 1. Typically, models with good fit have values that approach 1 and a model with a higher value suggests a better fit than a model with a lower value.

### *Comparative Fit Index (CFI)*

The CFI is the most widely used index because the CFI has many desirable properties, including its relative insensitivity to model complexity. Less than .90 values of CFI are not usually associated with a model that fits well. If the CFI is less than one, then the CFI is always greater than the TLI.

Bearing in mind the attributes of the above indexes, three absolute indices ( $\chi^2$ , RMSEA and SRMR) would be used to assess each model's fit, and the remaining two incremental indices (CFI and TLI) would act as a guide for comparison between the models to find the best model.

## 5.7. Pretesting and Piloting the Survey

As the cross-sectional survey would be conducted at one time, pretesting and pilot testing would be carried out to refine the scales and to check the feasibility of the study.

### 5.7.1. Pretesting

First, a draft of the English version of the survey was distributed to four doctoral students at Birmingham Business School who were not familiar with the details of this research. This approach followed that of Walsh and Beatty (2007) to assess the reliability of items selected for a survey. At this stage, the doctoral students reported that the wording of some items on the psychological empowerment scale seemed

similar, for example: ‘The work I do is very important to me’ and ‘The work I do is meaningful to me’; ‘my job activities’ and ‘the work’; ‘autonomy in determining how I do my job’ and ‘decide on my own how to go about doing my work’.

After taking these comments into consideration, a translation from English into Korean was carefully made. The translation was done by the researcher with the help of a British-educated bilingual person fluent in both Korean and English. Then, back-translation was carried out, whereby the Korean version was translated back into English. This was done by another UK-educated postgraduate school student bilingual in Korean and English. The result was almost the same as the English of the original questionnaire.

Next, the Korean version of the questionnaire was distributed to five Korean postgraduate students and one Korean visiting scholar at the University of Birmingham. As all of them were from Korean government organisations, they advised the use of more formal and polite Korean phrases for some items. Through this process, the wording of the Korean-version questionnaire was refined and the time needed to complete the survey was tested and found to be around ten minutes.

Finally, the survey questionnaire was examined by two subject matter experts in Korea. One was a senior manager in the leadership centre of a global company and the other was an academic researcher in this subject area. These experts advised the researcher to move psychological empowerment’s impact-on-team factor into the team-related section for the sake of consistency, and the researcher followed their advice.

### 5.7.2. Pilot Testing

To pilot test the survey, the questionnaires that had been refined in the pretesting stage were distributed to 35 MBA students who worked at companies and attended *K* University in Seoul, Korea. The students were informed about the purpose of the study and the cover letter with the questionnaire explained and highlighted ethical concerns. Of the original 35 questionnaires, 31 (response rate, 88.6%) were collected.

The average age of the participants was 44. Seventeen participants were male, while 14 were female. In terms of employment position, office and administrative jobs were the most common, being held by 48.4% of the participants. Average organisation tenure was 30.3 years and average team tenure was 23 years. Twenty-six (83.9%) of the participants were full-time employees. The range of team size was from 3 to 35. Regardless of team size, more than 70% of the participants indicated agreement (agree and strongly agree) with team identity across all three items: team members' accountability toward common goals at 83.9%, teams' interdependence at 74.2% and team boundedness at 74.2%.

Through this pilot test, it was found that the team system in Korea operated differently from those in western countries and that the size of team was rather large, since it went up to 35. This large size might be a characteristic specific to Korean team structure. From this, it was recognized that it was necessary to clarify what a team was, considering the fact that production lines in manufacturing companies tended to be large. Similarly, Pagell and LePine (2002: 623) found 'cases where teams were teams in name only'. Pagell and LePine (2002) identified that managers' definition of a team in manufacturing organisations varied, and that their definitions did not correspond to



what was normally considered a team. Given this situation, the definition of a team by Kirkman et al. (2004) was added to the survey questionnaire, before team-related questions were asked.

The pilot study offered support for the (face) validity and (user) reliability of the questionnaire, and a table in Appendix 2 describes the basic statistics of this pilot study. In this table, team size and team tenure were excluded because the size of teams was larger and the length of tenure was longer than normally expected. Following the decision to exclude these two variables, the correlation analysis examined the relationships between the constructs and the rest of the variables. As mentioned, after the researcher recognized the variety of possible answers on team size, and the possibility of equating length of organisational tenure with length of team tenure, for the main survey, a definition of team was added before the questions on teams began, and a statement that team tenure was not necessarily same as organisational tenure was added under the question on team tenure.

Factor analysis detected that each of the three components of organisational commitment had more than two sub-factors. Since this correlation analysis was for testing purpose, all eight items of each component of organisational commitment were included, rather than dropping weakly-loaded or cross-loaded items to boost the validity and reliability.

As a result of this procedure, the table demonstrates an interesting phenomenon. The general form of organisational commitment (OC) did not have any significant relationship with any psychological empowerment factors; and while affective organisational commitment (AOC) and team commitment were not significantly

associated with OC, continuance organisational commitment (COC) and normative organisational commitment (NOC) were significantly associated with OC.

While AOC and team commitment had significant relationships with all psychological empowerment factors, NOC and COC did not have any. Further, OCBI and OCBO had significant relationships with team commitment but not with any organisational commitment factors. Their significant relationships with psychological empowerment varied depending on empowerment's sub-factors.

Given this result, the researcher concluded that there was a need to scrutinize the validity of the three components of organisational commitment in a South Korean context. This initial pilot study offered some limited support for the idea that team commitment and organisational commitment were strongly associated with each other, but not with continuance commitment. Moreover, team commitment had stronger effects on psychological empowerment and OCB than organisational commitment did. The results from this small sample also suggested that psychological empowerment might offer some basis for predicting employees' work performance and their extra-role behaviour, OCB.

## 5.8. Conclusion

This chapter has provided an overview of the study's research methodology: a quantitative paradigm based on positivism; a cross-sectional survey design with procedural remedies for common method biases from self-raters' assessment; and research methods that would include the structuring of a questionnaire, sampling, and the testing of the validity and reliability of the selected measurements. After discussion

of the decision on an appropriate sample size, the data collection process to be used for the main study was described in the context of the relevant research. Then, the chapter discussed why the technique of structural equation modelling was chosen for a simultaneous analysis of a multiple mediating model, and this was accompanied by an explanation of five fit indices as a tool to evaluate the measurement models and structural models that would be essential to interpret the structural equation modelling. Finally, the chapter has described how this study used pretesting and pilot testing in order to compensate for the limitations of cross-sectional survey design. Pretesting helped refine and clarify the survey questionnaire; and the findings of pilot testing, as presented at the end, suggested the reliability of the survey questionnaire as well as the feasibility of this study as a whole.

## **CHAPTER 6.**

### **APPLICATION OF THE ORIGINAL VERSION OF THE THREE-COMPONENT MODEL TO SOUTH KOREA**

#### **6.1. Introduction**

As discussed in Chapter 4, at the time this research was undertaken, Allen and Meyer's (1990) original three-component model (TCM) of commitment had not yet established its validity in a Korean context. In order to produce an accurate assessment, this chapter describes how the model's validity was tested using a different approach from the main analysis used in this study, which will be presented in Chapter 7. This is necessary as commitment is the major construct examined in this study. The establishment of the TCM's validity in a Korean context would introduce the possibility of using multiple bases of team commitment, rather than confining the study to a single base, affective team commitment.

This chapter also compares the findings produced by revised versions of the TCM in two previous studies based on Korean samples. Following the two previous studies, by Ko et al. (1997) and Lee et al. (2001), the chapter describes how separate analyses of the two data sets were conducted. This was in the belief that it would be beneficial to compare the results of the two previous studies with the findings from the main analysis of this study, (see Chapters 7 and 8), which would be produced using the merged data set.

Firstly, this chapter presents the research gap (6.2) and explains the differences between the original TCM version and the revised versions (6.3), followed by an indication of the issues involved in the previous two studies conducted with Korean samples (6.4). Then, the hypotheses this chapter examines are addressed. Because this chapter conducts separate analyses of the data sets, respondents' information contained in the two data sets is separately stated (6.5). For the analyses (6.6), exploratory factor analysis is conducted to identify cross-load items, followed by confirmatory factor analysis. Then, the interrelationships between the components are compared across the two previous studies and the findings of this chapter. Finally, the chapter concludes with a discussion of the findings (6.7).

## 6.2. Research Opportunity

Organisational commitment is the representative form of commitment used in commitment research. There are three scales frequently used in such research in order to measure employees' organisational commitment: Allen and Meyer's (1990, 1993) Three-Component Model (TCM); Porter et al.'s (1974) Organisational Commitment Questionnaire (OCQ); and Cook and Wall's (1980) British Organisational Commitment Scale (BOCS). While Cook and Wall's BOCS is mainly used in the UK, Allen and Meyer's TCM and Porter et al.'s OCQ are widely employed in research across cultures and countries. Therefore, the translation of TCM or OCQ is inevitable if they are to be used in research in non-English speaking countries. Since both TCM and OCQ are constructed from the point of view of North American culture, there have been validity issues with their scales: that of TCM has been called into question from the perspective

of cultural and translational issues (Meyer et al. 2012), and that of OCQ from the point of view of reliability (Benkoff, 1997; Bozeman & Perrewé, 2001; Cohen, 2003).

Commitment research in South Korea is no exception in this regard. Findings from one of the Korean research databases showed that organisational commitment had been actively researched in Korea, but that the scales for measuring organisational commitment had been rather loosely employed. As expected, the organisational commitment scales most often used had been those of Porter et al.'s OCQ or of the original or the revised version of Allen and Meyer's TCM. Although there are big differences between the original and the revised versions of the TCM, especially in the normative commitment scale, the researchers using Allen and Meyer's TCM had not explained why they had employed either the original version or the revised version.

On the validity issues of the TCM, there had been two studies made in a Korean context: Ko, Price and Mueller (1997) and Lee, Allen, Meyer and Rhee (2001). However, both studies had examined the validity of the TCM using Meyer, Allen and Smith's (1993) revised version. Ko et al. claimed that normative commitment and continuance commitment were doubtful concepts for application to Korea. Lee et al. acknowledged the considerable overlap between normative commitment and affective commitment in Meyer et al.'s (1993) TCM version, but established TCM validity in a Korean context based on Meyer, Barak and Vandenberghe's (1996) simplified version.

Recently, Meyer et al. (2012) have acknowledged that the different measures of normative commitment have resulted in different findings. Although the mean values of the original and the revised normative commitment scales are similar in Confucian Asia, the revised normative commitment scale reacts significantly better to various

cultural indexes than did the original. Given the different implications of the two normative commitment scales, they advise researchers to be sensitive to the differences between the two and to take care that they interpret their findings accordingly.

Prior to Meyer et al.'s (2012) study, Meyer et al. (2002) conducted their analyses dividing their work between the original TCM from Allen and Meyer (1990) and the revised TCM from Meyer et al. (1993). This is because there is a big difference in the revised normative commitment scale, reflecting "employees' sense of obligation to remain in an organisation more generally and place less emphasis than the original version on social obligation" (Meyer et al. 2002:27). From their study results, Meyer et al. (2002) suggested that the high correlation between affective and normative commitment could be decreased by using the eight-item original scale rather than the six-item revised one.

Before I started my work on establishing the validity of the original TCM version in a Korean context, I confirmed that there had as yet been no research on this, although both the original and the revised measures of the TCM had been extensively used in Korean research.

### 6.3. Differences in the TCM Versions

Meyer et al. (1993) explained how they revised the original TCM. The original version had eight items for each component, whereas the revised version had six. To achieve this, they deleted two weakly loaded items of affective commitment from the original version. They removed three original items of continuance commitment, including two reversed items, and added a new modified occupational commitment item in the

continuance commitment scale. They then rewrote the normative commitment items. Hence, the changes in the normative commitment scale were extensive (Meyer et al., 2002, 2012; Meyer & Parfyonova, 2010). They revised the normative commitment scale to focus on employees' generalized obligation, reflecting "obligation based on the need to reciprocate benefits received from the organisation" (Meyer et al. 2012:241), whereas the original eight-item normative commitment scale focused on social obligation.

Lee et al. (2001) tried the simplified version of the revised TCM in a Korean context after producing results similar to those of Ko et al., which suggested that the use of normative and continuance commitment in Korea was questionable. Based on Meyer et al.'s (1996) scale, Lee et al. constructed nine items on a normative and continuance commitment scale. They describe how those new commitment items were shortened and simplified to increase translatability and to minimize the cultural aspects of certain North American expressions. They then explain that some of the items in their new TCM version are very similar to those of the original TCM version. Having produced a new version of the TCM to take account of Korean culture, they verified its scale validity in a Korean context.

#### 6.4. Issues for the TCM in a South Korean Context

As the TCM has been increasingly used outside North America, this has raised two issues: the validity of normative commitment; and the dimensionality and validity of continuance commitment.



#### 6.4.1. Issues in Ko et al. (1997) and Lee et al. (2001)

The studies of Ko et al. (1997) and Lee et al. (2001) deal with how the two revised TCM versions have been applied to a Korean context. Ko et al. studied employees' organisational commitment measured by Meyer et al.'s (1993) revised version: one sample is from their own research institute; and the other is from the Korean airline company. Ko et al. argue that the normative commitment scale has a considerable overlap with the affective commitment scale, hence the use of the normative commitment scale is questionable in Korea.

In addition, they claim that their testing for the dimensionality of continuance commitment showed that continuance commitment is unidimensional. Although a four-factor model of organisational commitment shows a better model fit than that of a three-factor model, they suggest that a three-factor model should be used in Korea because the degree of improvement from a three-factor model to a four-factor model is modest, and the two sub-dimensions of continuance commitment are highly correlated, which suggests that those two sub-dimensions are not independent constructs. They also argue that continuance commitment has a very weak correlation within the three components, and even that it does not have consistent relationships with work outcomes.

As a follow-up to Ko et al.'s study, Lee et al. (2001), in their first study, also examined Meyer et al.'s (1993) TCM, to compare the results with those of Ko et al. This first study gave them a similar pattern of factor loading, in which some normative and continuance commitment items were weakly loaded as regarded their intended theoretical factors. Just as Ko et al. claim a considerable overlap between affective and normative commitment, Lee et al. acknowledge the overlap between the two

commitment forms. They also report a poor fit for Meyer et al.'s (1993) TCM and suggest that this goes beyond the translation issue.

For their second study, Lee et al. examined their own newly constructed TCM against Meyer et al.'s (1996) revised TCM, considering cultural issues. By doing this they established the validity of their own TCM. Across the two separate studies, however, Lee et al. argue that a four-factor model, which allows bidimensionality of continuance commitment, is better than a three-factor model, which indicates unidimensional continuance commitment. Lee et al. suggest that it is justifiable to view continuance commitment as having two sub-dimensions, high-sacrifice (CC:HiSac) and low-alternative (CC:LoAlt), as their findings demonstrated that these two sub-dimensions predicted employees' turnover intentions with a different magnitude.

#### 6.4.2. Issues from the Two Previous Studies

The studies of both sets of researchers show that there are no problems in using the affective commitment scale in Korea. One item, "This organisation has a great deal of personal meaning for me", proved an exception; but the other five affective commitment items were well loaded onto their theoretical factor in Ko et al.'s study. In Lee et al.'s study, the aforementioned item was the one that produced the lowest factor loading value in their first study; but it was not the lowest in the second study. Overall, the appropriateness of the affective commitment scale was validated. No statements in the revised affective commitment scale were changed from the original; although two items were dropped. Therefore, I expected that the original TCM version of the affective commitment scale would be acceptable in a Korean context.

So, the use of Meyer et al.'s (1993) version of the normative commitment scale is questionable; but Lee et al.'s normative commitment scale based on Meyer et al.'s (1996) version is acceptable. As mentioned earlier, Meyer et al. (2012) have recognized differences between the implications of the normative commitment scales in the original version and those of the revised versions. Although Lee et al. state that the newly constructed scale in their second study has similar items to the original TCM version, the items presented, after factor loading analysis, are much closer to those of the revised version, especially as regards the normative commitment scale. Given this, we needed to validate the original version of the normative commitment scale, which focused on social obligation and would therefore have different implication from the revised scale.

In addition, the two studies' findings are contradictory on continuance commitment. Ko et al. suggest a three-factor model of organisational commitment, which supports unidimensional continuance commitment; whereas Lee et al. suggest a four-factor model, which supports bidimensional continuance commitment.

Given the inconsistent findings from the TCM and the failure to establish the validity of the original TCM in South Korea, the research described in this chapter examined the validity of the eight-item original TCM version. As Lee et al. stated that their new version of the scale had similar items to the original version before factor analysis, I assumed that the three components of organisational commitment would establish their validity; and, moreover, that the multidimensionality of continuance commitment would be supported in a Korean context. As proposed in Chapter 4, the hypotheses are as below:

H1. *The normative organisational commitment scale of Allen and Meyer (1990) has validity for application in a South Korean context.*

H2a. *Continuance commitment has two sub-dimensions in a South Korean context.*

H2b. *Hence, a four-factor model of organisational commitment, comprising affective organisational commitment, normative organisational commitment, continuance organisational commitment (Low Alternative) and continuance organisational commitment (High Sacrifice) is supported.*

## 6.5. Method

Adopting a different approach from the main analysis procedures, the research described in this chapter examined the data in relation to the organisation in which they were collected, in order to replicate the procedures of the two previous studies. The details of each sample are as follows.

### 6.5.1. Sample

**Sample 1.** The study used data from 82.10% of the 257 survey respondents, yielding a total sample size of 211 (average age = 42.09 years, men = 88.2%, full-time employees = 89.6%, production workers = 64.5%, average organisational tenure = 16.34 years).

**Sample 2.** Usable data were obtained from 147 respondents (average age = 34.78 years, men = 71.5%, full-time employees = 94.7%, production workers = 66%, average organisational tenure = 3.20 years, response rate = 66.82 %).

### 6.5.2. Measurement

***Organisational Commitment.*** The original 24 items of the organisational commitment scale from Allen and Meyer (1990) were adopted (see Section 5.3.1 for details in Chapter 5).

## 6.6. Results and Discussion

To examine the validity of the original TCM (Allen & Meyer, 1990) in a Korean context, two stages of factor analysis were conducted: exploratory factor analysis using SPSS 19 and confirmatory factor analysis using LISREL 8.51 with maximum likelihood. In order to clarify the items being validated for each component, the measurement model fit of each component was tested. Then, organisational commitment as a unified second-order structure was examined. As the dimensionality of continuance commitment included issues such as its being a unidimensional or multidimensional construct, the overall organisational commitment measurement fit was also examined, being divided into a three-factor model and a four-factor model.

### 6.6.1. Exploratory Factor Analyses

Before confirmatory factor analyses were conducted, exploratory factor analyses (EFA) were made. The results of factor analyses with oblique rotation for organisational commitment (OC) are shown below.

#### 6.6.1.1. EFA Results of Sample 1

Each component of organisational commitment had more than two factors, as shown in Tables 6.1 to 6.3. The factor loading results for affective OC were the same as those of Meyer et al. (1993). Meyer et al. (1993) showed that two affective OC items were weakly loaded, and these were dropped in the new version. Consistent with Meyer et al.'s (1993) study, the same two items were found to be weakly loaded in this study. The internal reliability was acceptable, at Cronbach Alpha,  $\alpha = .74$ . However, after dropping the two items AOC2 and AOC4, the internal reliability was improved to  $\alpha = .80$ .

Table 6.1. Sample 1: Factor Loading for Affective Organisational Commitment

Item no.	Questions	Factor 1	Factor 2
AOC8	I do not feel a strong sense of belonging to my organisation	.780	.067
AOC6	I do not feel “emotionally attached” to this organisation	.671	.082
AOC7	This organisation has a great deal of personal meaning for me	-.640	.139
AOC3	I really feel as if this organisation's problems are my own	-.622	.334
AOC5	I do not feel like “part of the family” in my organisation	.602	.160
AOC1	I would be very happy to spend the rest of my career with this organisation	-.541	.256
AOC2	I enjoy discussing my organisation with people outside it	-.225	.461
AOC4	I think that I could easily become as attached to another organisation as I am to this one	.088	.354

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. All-item scale reliability: Cronbach Alpha,  $\alpha = .736$ , KMO = .795

In the case of normative OC, there were three factors (see Table 6.2). The first represented a personal obligation; the second was elicited with two reversed questions;

and the third represented a social obligation. The internal reliability of normative OC was below an acceptable level, at Cronbach Alpha,  $\alpha = .57$ . Following Field's (2009) suggestion that loadings below 0.4 are not significant for interpretation, I dropped three items: NOC1, NOC7 and NOC5. This increased the internal reliability to  $\alpha = .65$ .

Table 6.2. Sample 1: Factor Loading of Normative Organisational Commitment

Item no.	Questions	Factor 1	Factor 2	Factor3
NOC4	One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain	.800	-.342	.138
NOC6	I was taught to believe in the value of remaining loyal to one organisation	.673	-.322	.075
NOC3r	Jumping from organisation to organisation does not seem at all unethical to me	-.542	.111	.029
NOC5	If I got the offer of a better job elsewhere I would not feel it was right to leave my organisation	.255	.070	.083
NOC8r	I do not think that wanting to be a 'company man' or 'company woman' is sensible anymore	-.094	.565	-.277
NOC2r	I do not believe that a person must always be loyal to his or her organisation	-.210	.543	.094
NOC1	I think that people these days move from company to company too often	.000	.004	.403
NOC7	Things were better in the days when people stayed with one organisation for most of their careers	.286	-.192	.372

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. All= item scale reliability: Cronbach Alpha,  $\alpha = .574$ , KMO = .689

Continuance commitment produced two sub-factors (see Table 6.3). However, neither of these could be labelled high sacrifice or low alternative. Culpepper (2000) classified continuance commitment from the original TCM into two sub-factors. According to his classification, items COC1, COC5, COC6 and COC7 could be labelled as the 'Low

Alternative' factor and the rest of the items, COC2, COC3, COC4 and COC8 are labelled as 'High Sacrifice' factor. As shown in Table 6.3, the items were mixed up across two factors. Contrary to the two previous studies, the internal reliability of continuance OC in this study was much better than that of normative OC and even better than affective OC at Cronbach Alpha,  $\alpha = .76$ . After dropping COC5 as this item's factor loading value is below .40, the internal reliability was slightly improved at  $\alpha = .77$ .

Table 6.3. Sample 1: Factor Loading of Continuance Organisational Commitment

Item no.	Questions	Factor 1	Factor 2
COC3	Too much in my life would be disrupted if I decided I wanted to leave my organisation now	.735	.408
COC4r	It wouldn't be too costly for me to leave my organisation now ['I wouldn't lose too much money by leaving my organisation now.'? or 'It wouldn't too hard for me . . .'? Cost doesn't necessarily mean money.]	-.590	-.324
COC2	It would be very hard for me to leave my organisation right now, even if I wanted to	.513	.384
COC1r	I am not afraid of what might happen if I quit my job without having another one lined up	-.440	-.309
COC5	Right now, staying with my organisation is a matter of necessity as much as desire	.256	.162
COC7	One of the few serious deterrents to leaving this organisation is the scarcity of available alternatives	.443	.843
COC6	I feel that I have too few options to consider leaving this organisation	.494	.657
COC8	One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice — another organisation might not match the overall benefits I have here	.559	.642

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. All-item scale reliability: Cronbach Alpha,  $\alpha = .759$ , KMO = .805



When all the 24 items were examined under organisational commitment, patterns were different for each component and it was not easy to label each factor according to the theory. Table 6.4 presents the results for all the organisational commitment items from Sample 1.

Table 6.4. Sample 1: Factor Loading of OC with All 24 Items

Item no.	Factor 1	Factor 2	Factor3	Factor 4	Factor 5	Factor 6	Factor7
AOC8r	-.801	-.056	-.238	-.106	-.041	-.209	.049
AOC5r	-.691	-.039	-.042	.099	-.214	-.161	.129
AOC6r	-.677	-.034	-.178	-.095	-.114	-.146	.082
AOC7	.592	.108	.130	.109	.212	.544	-.391
NOC8r	-.492	-.086	.118	-.072	-.428	-.215	.150
NOC2r	-.473	-.139	-.165	-.082	-.266	-.208	.159
COC8	-.012	.730	-.054	-.066	.141	.334	.090
COC6	.033	.704	.203	-.002	.171	.241	-.086
COC7	.061	.678	.120	-.017	.209	.245	-.079
COC2	.151	.442	.054	-.153	.289	.375	-.108
COC1r	-.200	-.415	.173	.037	.010	-.305	-.010
AOC2	.099	-.044	.596	-.032	.028	-.135	-.347
AOC1	.412	.263	.591	-.047	.310	.502	-.011
NOC3r	-.169	-.236	-.526	.281	-.244	.015	.075
AOC3	.520	.080	.319	.613	.340	.244	-.387
NOC5	.030	-.026	.155	-.392	.131	-.023	-.048
NOC4	.318	.327	.564	-.324	.576	.148	-.303
NOC6	.219	.316	.423	-.199	.555	.103	-.191
NOC7	.064	.204	.039	-.123	.449	.308	-.013
COC3	.134	.498	-.061	-.035	.112	.733	-.057
COC4r	-.324	-.405	.019	.149	-.267	-.522	.179
NOC1	.032	.083	-.023	.033	.088	.189	.025
COC5	.232	.173	.066	.038	.122	.204	-.488
AOC4r	-.114	-.081	.082	-.001	.001	-.133	-.379

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. All-item scale reliability: Cronbach Alpha,  $\alpha = .810$ , KMO = .792

Unexpectedly, continuance commitment items were generally loaded onto their intended factor (see 'Factor 2' in Table 6.4). It was noted that the three items of affective commitment (AOC1, AOC2 and AOC3) were cross-loaded with normative commitment (see 'Factor 3' and 'Factor 4'). Normative commitment items were weakly loaded (see 'Factor 5' in the table) or cross loaded across the factors. Even two reversed items of normative commitment were loaded under the affective commitment factor (see 'Factor 1' in the table). Nevertheless, the internal reliability of organisational commitment was better than that of each individual component, with Cronbach Alpha  $\alpha = .81$ .

#### 6.6.1.2. EFA Results of Sample 2

The factor loading patterns for Sample 2 were quite different from those for Sample 1 (see Appendix 3). Only continuance commitment had a similar factor-loading result. Affective commitment presented three sub-factors, and the grouped items within an extracted factor were different from those found in the results for Sample 1 or for Meyer et al.'s (1993) research. Normative commitment factor analysis results were similar to affective commitment results. Although three factors were extracted, the grouped items were different from those in the results for Sample 1. Again, the normative commitment scale had the lowest internal reliability among the three components, with Cronbach's Alpha  $\alpha = .66$ ; and the continuance commitment scale had the highest reliability, with Cronbach's Alpha  $\alpha = .76$ .

However, the organisational commitment EFA results for Sample 2 presented clearer factor loadings than those for Sample 1. Affective commitment (Factor 1 in Table 4 in

Appendix 3), continuance commitment (Factor 2 in Table 4) and normative commitment (Factor 4 in Table 4 in Appendix 2) were visibly extracted with five items each. Moreover, the grouped proxy items within the three extracted factors were similar to items from Sample 1 (see Table 6.4 for comparison).

#### 6.6.1.3. Review of the Two Samples' EFA Results

From the EFA results for Samples 1 and 2, the core proxy items for each three-component commitment were identified, which means that the items did not cross-load onto another factor in either sample: four items of affective commitment (AOC5, AOC6, AOC7 and AOC8), four items of continuance commitment (COC2, COC6, COC7 and COC8) and two items of normative commitment (NOC4 and NOC6). Considering that the original TCM had eight items for each component, only half of the affective and continuance commitment scales represented each construct; and only 25 per cent of the normative commitment scale represented its construct. These degrees of representativeness have already been reflected in the values of Cronbach's alphas.

The internal reliability of the affective and continuance commitment scales were acceptable, as both scales' Cronbach's alphas were above .7, thus according with Field's (2009: 675) suggestion that "the value of .7 to .8 is an acceptable value for Cronbach's alpha; values substantially lower indicate an unreliable scale." However, the normative commitment scale was not acceptable in either sample as Cronbach's alphas were below .7 and even below .6.

The two samples' scale reliability results were very similar, but they were different from those reported for the previous two studies, which had employed the revised version of

the TCM: *Sample 1*. Cronbach's alphas: affective commitment scale (ACS) = 0.74, normative commitment scale (NCS) = 0.57, continuance commitment scale (CCS) = 0.76; *Sample 2*. Cronbach's alphas: ACS = 0.75, NCS = 0.66, CCS = 0.76. Unexpectedly, the internal reliability of the original normative commitment scale was the lowest in either sample, whereas the revised six-item TCM, which Ko et al. and Lee et al. examined, provided the lowest reliability, with 0.58-0.64 for continuance commitment and 0.74-0.78 for normative commitment.

Given these results from two independent samples, *Hypothesis 1 was not* supported, since the level of internal reliability of normative commitment was not acceptable. Although the internal reliability of affective and continuance commitment was acceptable, it would be advisable for researchers who used the original TCM's affective and continuance commitment scales to choose the items carefully through factor analysis in order to arrive at correct results.

#### 6.6.2. Confirmatory Factor Analysis

After the cross-loaded items had been detected, based on EFA results, confirmatory factor analysis (CFA) was conducted to identify and confirm the results of EFA. Again, the two samples were separately analysed.

In order to be consistent with Ko et al. and Lee et al., the model fit was tested from a one-factor model to a four-factor model. However, not all the models used an oblique factor rotation as the two previous studies had done. This was because our two samples did not provide the expected loading results. When a two-factor oblique model was

tried, normative commitment and continuance commitment gave mixed loadings. This was similar to Lee et al.'s Study 1 with Meyer et al.'s (1993) scale.

In Sample 1, especially, normative commitment items were vaguely loaded: some were loaded onto the first factor or the second factor; but some were almost evenly loaded onto both factors. The average organisational tenure and age for respondents in Sample 1 were 16.34 years and 42.09 years respectively. These respondents had already given their loyalty to the company for a long time, so this normative commitment might not appeal to them.

Sample 2 factor loadings presented a different pattern, but gave a similar result when a two-factor oblique model was tried. All the normative and affective items except for one affective item (AOC2) were loaded onto the first factor. However, three items of continuance commitment (COC1, COC4 and COC5) were also loaded onto the first factor.

Given this lack of a clear result for factor loading, the model fit of the TCM was measured, following the guidelines of Ko et al. and Lee et al.: a two-factor model indicated affective and normative commitment as one factor and continuance commitment as another factor. In order to test a four-factor model fit, two approaches were adopted: one used all the original eight items for continuance commitment in a comparison with the other factor models for consistency in item-loading numbers (this classification is same as the one Culpepper (2000) did); and the other used six items based on the suggestions of Meyer et al. (2002) and McGee and Ford (1987), and showed that CC:LoAlt and CC:HiSac were each defined by three items.

Table 6.5 shows the overall fit indices for the five different models resulting from the confirmatory factor analyses done with all 24 items. The results for Sample 1 and Sample 2 are separately presented in the table. The results suggest that a four-factor version of the TCM is the best model. However, the other four fit indices (RMSEA, TLI, CFI and SRMR) indicate that a three-factor model is better than a four-factor model, although there were statistically significant changes in Chi-square figures at the 0.01 level when a three-factor model was compared with two four-factor models.

Table 6.5. Overall Fit Indices for the Three-Component Model<sup>1</sup>

Measure- ment	$\chi^2(df)$		RMSEA		TLI		CFI		SRMR	
	S1	S2	S1	S2	S1	S2	S1	S2	S1	S2
One-factor	1096.47 (252)	670.72 (252)	.127	.111	.470	.626	.516	.659	.108	.100
Two-factor	754.35 (250)	604.85 (250)	.098	.103	.632	.671	.667	.702	.096	.098
Three-factor	631.90 (249)	596.14 (249)	.086	.102	.690	.682	.720	.730	.095	.097
Four-factor <sup>1</sup>	621.13 (248)	621.09 (248)	.085	.106	.666	.650	.700	.685	.109	.098
Four-factor <sup>2</sup>	509.32 (205)	479.69 (205)	.084	.100	.681	.693	.717	.727	.114	.116

*Note.* S1= Sample 1 ( $N = 209$ ), S2 = Sample 2 ( $N = 135$ );  $\chi^2$  = normal theory weighted least squares Chi-Square,  $df$  = degree of freedom, RMSEA = root mean square error of approximation, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual; Three-Component Model<sup>1</sup> = 24 items of all AOC, NOC and COC; Four-factor<sup>1</sup> = AOC, NOC, CCLoAlt (CC1,5,6,7)  $\alpha_{S1} = .536$ ,  $\alpha_{S2} = .551$  and CCHiSac (CC2,3,4,8)  $\alpha_{S1} = .686$ ,  $\alpha_{S2} = .638$ ; Four-factor<sup>2</sup> = AOC, NOC, CCLoAlt (CC5,6,7)  $\alpha_{S1} = .538$ ,  $\alpha_{S2} = .583$  and CCHiSac (CC2,3,8)  $\alpha_{S1} = .634$ ,  $\alpha_{S2} = .624$ .

This result is similar to Ko et al.'s findings which present a four-factor model as the best. However, they suggest that a three-factor model is better because the two sub-dimensions of continuance commitment are highly correlated and not independent.

Given this result, the finding of this study supports a unidimensional continuance commitment, since a three-factor model is preferable to a four-factor one.

Given that a three-factor oblique model is optimal, a three-factor oblique rotation factor analysis was conducted, as shown in Table 6.6. Factor-loading results show that affective commitment and continuance commitment generally loaded onto their construct in both samples, while normative commitment items demonstrated weak loadings as well as mixed loadings. I inferred that normative commitment's cross loading was the result of value difference, for example between social obligation (NOC1, NOC7, NOC8) and personal obligation (NOC3, NOC4, NOC6). It shows that items related to personal obligation were more strongly loaded onto normative commitment than others. This is in line with the revised normative commitment scale, which better reflects employees' sense of obligation. Besides, NOC2 is a reversed-question item, and NOC5 relates more to turnover intention.

Sharma et al. (2005) suggest that RMSEA is an indicator that is not sensitive to sample sizes of over 200, and that TLI is good for models with factor loadings of 0.5 or above and with sample sizes of 200 or above. Working with this idea, I conducted CFA again using only Sample 1, because the size of Sample 2 is small and normative commitment has only two items whose factor loading is above 0.5. According to Sharma et al.'s (2005) results, the percentage of times the models would be accepted as true for Sample 2 was 59.7%. In addition, the RMSEA values of Sample 2 in Table 6.5 present too poor a fit to be acceptable across all the five models, as all the RMSEA results are above .100.

Table 6.6. Factor Loadings of the Commitment Items for the Three-Factor Oblique Models (Completely Standardised Solution)

Item		AC		CC		NC	
		S1	S2	S1	S2	S1	S2
AOC1	I would be very happy to spend the rest of my career with this organisation	<b>.36</b>	<b>.45</b>				
AOC2	I enjoy discussing my organisation with people outside it				.16	.51	
AOC3	I really feel as if this organisation's problems are my own	<b>.58</b>	<b>.53</b>				
AOC4	I think that I could easily become as attached to another organisation as I am to this one	-.09	<b>.18</b>			.16	
AOC5	I do not feel like 'part of the family' at my organisation	<b>.65</b>	<b>.83</b>				
AOC6	I do not feel 'emotionally attached' to this organisation	<b>.69</b>	<b>.61</b>				
AOC7	This organisation has a great deal of personal meaning for me	<b>.68</b>	<b>.71</b>				
AOC8	I do not feel a strong sense of belonging to my organisation	<b>.78</b>	<b>.83</b>				
COC1	I am not afraid of what might happen if I quit my job without having another one lined up		.37	<b>.45</b>	.27		
COC2	It would be very hard for me to leave my organisation right now, even if I wanted to			<b>.47</b>	<b>.46</b>		
COC3	Too much in my life would be disrupted if I decided to leave my organisation now			<b>.63</b>	<b>.68</b>		
COC4	It wouldn't be too costly for me to leave my organisation now		.57	<b>.46</b>	.15		
COC5	Right now, staying with my organisation is a matter of necessity as much as desire	.25	.55	.14	.28		
COC6	I feel that I have too few options to consider leaving this organisation			<b>.62</b>	<b>.68</b>		
COC7	One of the few serious consequences of leaving this organisation is the scarcity of available alternatives			<b>.63</b>	<b>.72</b>		
COC8	One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice — another organisation may not match the overall benefits I have here			<b>.76</b>	<b>.48</b>		
NOC1	I think that people these days move from company to company too often			.15		-.06	<b>.30</b>
NOC2	I do not believe that a person must always be loyal to his or her organisation	.47	.51			.10	.31
NOC3	Jumping from organisation to organisation does not seem at all unethical to me					<b>.57</b>	<b>.41</b>
NOC4	One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain					<b>.73</b>	<b>.73</b>
NOC5	If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation					<b>.25</b>	<b>.35</b>
NOC6	I was taught to believe in the value of remaining loyal to one organisation					<b>.61</b>	<b>.56</b>
NOC7	Things were better in the days when people stayed with one organisation for most of their careers		.19	.27		.16	.16
NOC8	I do not think that wanting to be a 'company man' or 'company woman' is sensible (anymore)	.49	.72			-.04	.03



*Notes.* AOC = affective organisational commitment; COC = continuance organisational commitment; NOC = normative organisational commitment; S1 = *Sample 1*; S2 = *Sample 2*

Following Sharma et al.'s (2005) suggestion, 12 items whose factor loadings were above 0.5 were selected from Sample 1 (see Table 6.6): five items of affective commitment (AOC3, AOC5, AOC6, AOC7 and AOC8); four items of continuance commitment (COC3, COC6, COC7 and COC8); and three items of normative commitment (NOC3, NOC4 and NOC6).

Then CFA was conducted again to compare the three- and four-factor models as shown in Table 6.7. From the selected continuance commitment items, I allocated two items each to CC:LoAlt and CC:HiSac for an oblique four-factor model. I then worked back from the oblique four-factor model to the oblique three-factor models, as TCM model with all 24 items suggested that a three-factor model was better as seen in Table 6.5.

Table 6.7. The Model Fit with the Selected TCM Items from Sample 1

Model+	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	p-value	RMSEA	TLI	CFI	SRMR
Four-factor oblique	99.06(50)		.000	.069	.892	.919	.092
Three-factor <sup>1</sup> oblique	83.98(51)	15.08(1)	.003	.056	.927	.944	.059
Three-factor <sup>2</sup> oblique	51.60(41)	32.38(10)	.124	.035	.980	.985	.047

*Note.* Sample size = 209;  $\chi^2$  = Normal Theory Weighted Least Squares Chi-Square, *df* = degree of freedom, RMSEA = Root Mean Square Error of Approximation, GFI = Goodness of Fit Index, TLI = Tucker-Lewis Index, CFI= Comparative Fit Index, SRMR = Standardized Root Mean Square Residual; Cronbach's alphas: ACS = 0.79, NCS = 0.71, CCS = 0.74, CCLoAlt = 0.71 and CCHiSac = 0.53.

+ Four-factor = AOC (3,5,6,7,8) items, NOC (3,4,6) items and COC (LoAlt: 6,7/ HiSac: 3,8) items

Three-factor<sup>1</sup> = AOC (3,5,6,7,8) items, NOC (3,4,6) items and COC (3,6,7,8) items

Three-factor<sup>2</sup> = AOC (3,5,6,7,8) items, NOC (3,4,6) items and COC (6,7,8) items

They demonstrated statistically significant changes with respect to the Chi-square fit as well as the other fit indices. With the selected items, a three-factor<sup>1</sup> oblique model gave

a better fit than a four-factor oblique model across the fit indices. Further, the best fit was achieved after I dropped one more continuance commitment item to produce a three-factor<sup>2</sup> oblique model: all five fit indices showed this model as a close fit. Consistent with all the original items of the TCM model, the selected TCM items clearly supported a unidimensional continuance commitment. Therefore, *Hypothesis 2a* and *Hypothesis 2b* were not supported.

With the selected 12 items from Sample 1, based on the CFA result, the scale reliability of normative commitment became acceptable, as it was significantly improved compared to the original scale, from Cronbach's Alpha  $\alpha = .57$  to  $\alpha = .71$ . CC:LoAlt was also significantly improved compared to the original scale, from  $\alpha = .54$  to  $\alpha = .71$ , whilst the reliability of CC:HiSac declined from  $\alpha = .63$  to  $\alpha = .53$ . However, the two continuance sub-dimensions' correlation was moderate, at 0.55.

### 6.6.3. Comparison between the Original TCM and the Revised TCM

Since Ko et al. claim that continuance commitment is weakly related to the other two commitment components, and affective commitment and normative commitment are highly correlated, I compared the three components' correlations by version. Table 6.8 illustrates in detail the inter-relationships between the commitment components. Since a bidimensional continuance commitment was not supported in this study, Table 6.8 shows the result of examining a unidimensional continuance commitment. The study's findings reflect the correlations of the original TCM, while Ko et al.'s study reflects the correlations of Meyer et al.'s (1993) TCM and Lee et al.'s study reflects those of Meyer et al.'s (1996) TCM.

Table 6.8. Correlations between the Three Components

<div> <div>Source</div> <div>Relation- ships</div> </div>	Ko et al. (1997) <sup>1</sup> : Revised, 18 items		Lee et al. (2001): Revised, 15 selected items	Original TCM: All 24 original items	Original TCM: 12 selected items <sup>2</sup>
	<u>Sample 1</u> Meyer et al. (1993)	<u>Sample 2</u> Meyer et al. (1993)	<u>Study 2</u> Meyer et al. (1996)	<u>Sample 1</u> Allen & Meyer (1990)	<u>Sample 1</u> Allen & Meyer (1990)
AOC - NOC	.73	.84	.53**	.49**	.32**
AOC - COC	.19	-.10	.06	.24**	.06
NOC - COC	.29	.06	.18*	.38**	.31**

*Note.* AOC = affective organisational commitment, NOC = normative organisational commitment, COC = continuance organisational commitment. \*  $p < 0.05$ . \*\*  $p < 0.01$ .

Ko et al. (1997)<sup>1</sup> did not provide the significant level but stated that all the results, except NC-CC from Sample 2, are all significant.

12 selected items: AOC five (3,5,6,7,8) items, NOC three (3,4,6) items and COC four (3,6,7,8) items.

The table indicates that Allen and Meyer's (1990) original TCM provides moderate correlations between the components in a Korean context, compared to the two revised scales. This result is consistent with the findings of Meyer et al. (2002). The noticeably high correlation between affective and normative commitment in Meyer et al.'s (1993) TCM version, was significantly lower in the original eight-item TCM version; and even the items selected from the original version, which included more personal obligation in the normative commitment scale, presented much lower correlations, while these were still significant.

Further, continuance commitment shows moderately stable and stronger relationships with affective and normative commitment in the original scale. However, the TCM selected from the original scale, which contains similar items of continuance commitment to Meyer et al.'s two revised scales (1993 and 1996), showed only

insignificant relationships between affective and continuance commitment. This result was, surprisingly, the same as that of Lee et al.'s second study, but different from that of Ko et al.

## 6.7. Conclusion

The research described in this chapter has confirmed that the scale for affective commitment is the most reliable in Allen and Meyer's TCM, regardless of whether this is in the original or the revised versions. The five items selected from the original affective commitment scale were identical to the ones from Meyer et al.'s (1996) version used in Lee et al.'s second study. Therefore, it is recommended that researchers working in a Korean context use these five verified affective items.

However, care should be taken by researchers when working with normative commitment in a Korean context. The original eight items of the normative commitment scale did not establish the scale's validity in a Korean context. However, it was noticed that the internal reliability of the scale was improved when the normative commitment scale was more focused on personal obligation than on generalized, social obligation. It is therefore advisable for researchers to use the revised normative commitment scale when working in a Korean context.

Contrary to what was the case in applying the normative commitment scale in a Korean context, researchers are advised to use the original scale of continuance commitment to measure Korean employees' commitment, given that its internal reliability is better than that of the revised continuance commitment scale. Moreover, when all the eight items of continuance commitment were employed, the scale's inter-relationships with

normative commitment and affective commitment were significantly enhanced. In addition, this study supports Ko et al.'s findings that continuous commitment would be better to be treated as unidimensional in a Korean context.

The findings reported in this chapter are a meaningful guide to what the researcher should use to measure employees' commitment in a Korean context. Normative commitment's overlap with affective commitment was considerably decreased by employing the original TCM, in line with the Meyer et al.'s (2002) suggestion. However, its internal reliability cannot be guaranteed when all the eight items are employed for measurement in a Korean context. As briefly mentioned earlier in this chapter, this could be because the more generalized social obligation is closely connected to Korean Confucian culture, which teaches that the loyalty is one of the social virtues. Therefore social obligation is not an additional meaningful driver for Korean employees' commitment, because it has been unconsciously internalized.

To conclude, the findings reported in this chapter are mixed. Although the normative commitment scale did not prove its internal reliability in a Korean context, a three-factor model was preferable to a two-factor model. Since the bi-dimensionality of continuance commitment was not supported, a three-factor model was also found to be better than a four-factor model. Although these findings should be borne in mind, the research reported in the following chapters was conducted quite independently of the research reported in this one. It is not until the results from the main analysis have been considered that the findings from this chapter shall be discussed alongside the main analysis findings.

This chapter has described the separate analyses of the two companies. The exploratory factor analysis found that the extracted proxy items for each commitment were similar for the two companies. The model fit indices from the confirmatory factor analysis suggested that the two companies' commitment patterns were similar (see Table 6.5). Whilst this chapter has dealt with separate analyses for the two companies, which have presented similar results, the main analysis of the following chapters focuses on the results for the merged data of the two companies.

## **CHAPTER 7. ANALYSIS I**

### **7.1. Introduction**

This chapter explores the data and focuses on the measurement validity of the analysis needed to proceed with the main structural model analysis. Firstly, the descriptive statistics for demographic factors are examined. This is to help us understand the research context. After considering the demographic description, a normality test of the data is carried out, followed by a homogeneity test.

One of the aims of this study is to test the validity of measurement scales in a Korean context, with particular emphasis on scales measuring organisational commitment and psychological empowerment. Examination of the construct validity is conducted in three stages: inter-item correlation analysis for the internal reliability test, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA). Inter-item correlation analysis provides basic information to be used at the next stage, EFA. Two kinds of factor rotation, varimax and oblique, are undertaken in EFA: varimax rotation assumes that variables are not correlated, while oblique rotation assumes that all the variables are correlated. This is to confirm the factor-loading results and to produce clear guidance for CFA, the following stage. During this procedure, Harman's single-factor test, as one of the statistical remedies for common method biases, is discussed.

With the results of the inter-item correlations and EFA, CFA is conducted to confirm the previous results. The convergent validity and composite reliability of each latent construct are then tested to establish their construct validity. Then, all the validated



proxy items for each latent construct are presented, so that they can be used for the next stage of analysis: structural equation modelling analysis. With the refined, selected proxy items, the measurement model fit is finally presented.

## 7.2. Exploring the Data

This section looks at demographic information about the research respondents (a total of 358 questionnaires were collected from 477 distributed, yielding a 75.1% usable response rate, see Section 5.5 in Chapter 5 for details). This is to help us understand the characteristics of these employees. Two basic types of statistics, frequency distribution and descriptive statistics, are employed to examine the demographic information. After obtaining the general information, a normality test is conducted on the data. A homogeneity test is then discussed on the basis of the result of the normality test.

### 7.2.1. Descriptive Statistics

This section presents general information about the respondents. The samples were collected from the two Korean manufacturing companies already mentioned: an auto parts manufacturing company and a motorbike manufacturing company. Over half of the respondents were workers in production (65.1%). Tables 7.1 to 7.7 present the pattern of respondents' demographic information in detail. As seen in the tables, the percentage of missing variables, such as age, organisational tenure and team tenure, is quite high, although the survey promised anonymity.

As in other studies which used samples drawn from manufacturing employees, male respondents predominated, at 79.3% (Table 7.1).

Table 7.1. Respondents' Sex

	Frequency	Percent (%)*
Male	284	79.3
Female	46	12.8
Total	330	92.2
Missing	28	7.8
TOTAL	358	100.0

*Note.* \* Percentage estimates may not add up to total, due to rounding.

More than 50% of respondents were aged between 31 and 50. The average age was 39.28, with the youngest worker being 18 and the oldest 56. The age group between 41 and 50 formed the largest section. However, the age group following that, the one between 51 and 60, presented a sharp decrease, revealing itself to be the second lowest group.

This reflects the retirement age in Korea. The retirement pattern in Korea is quite different from those of most other OECD nations (Klassen, 2011). Under Korean law, the usual retirement age varies according to sector: 65 for university professors, 61 for teachers, 60 for civil servants, 58 in the financial sector, lower in the public sector and even lower in the manufacturing sector. In addition, workers in Korea are sometimes faced with having to take early retirement from the job they have spent most of their life doing (Klassen, 2011). Given the retirement age in the manufacturing sector and the possibility of early retirement, we can infer that a large number of employees in the 51

to 60 age group have retired; or the companies tend not to hire employees from this age group.

Table 7.2. Respondents' Age

	Frequency	Percent (%)*
≤ 20	7	2.0
21-30	54	15.1
31-40	91	25.3
41-50	116	32.5
51-60	28	7.8
Total	296	82.7
Missing	62	17.3
<b>TOTAL</b>	<b>358</b>	<b>100.0</b>

*Note.* \* Percentage estimates may not add up to total, due to rounding.

As shown in Table 7.3, 88% of the respondents were full-time employees, whilst 2.3% were temporary or contractual employees. In Korea, a great many retired workers, including those taking involuntary early-retirement, work on contracts. Given this situation, the fact that these two companies have no part-time employees, tells us that they have quite a stable workforce structure.

Table 7.3. Respondents' Employment Type

	Frequency	Percent (%)*
Temporary	2	0.6
Contract	6	1.7
Full-time	315	88.0
Part-time	0	0.0
Others	1	0.3
Total	324	90.5
Missing	34	9.5
<b>TOTAL</b>	<b>358</b>	<b>100.0</b>

*Note.* \* Percentage estimates may not add up to total due to rounding.

As Table 7.4 shows, 65% of the respondents belonged in the blue-collar category. The respondents were classified into job categories according to their physical workplace environment. Hence not all the production-quality (or quality control) teams would be obvious blue-collar workers, but they were included in the ‘production’ category. The job category with the largest group was ‘production’, followed by ‘office and administration’, ‘research and development’ and ‘sales’. As can be seen in Table 7.4, the percentage of respondents who had sales jobs was very small, at 0.8%. This is because these two auto-part manufacturers have an ongoing relationship with automobile manufacturers or upper-tier auto-part manufacturers, which gives them established supplier status.

Table 7.4. Respondents’ Job Category

	Frequency	Percent (%)*
Production	233	65.1
Office & Admin.	108	30.2
Sales	3	0.8
R&D	13	3.6
Total	357	99.7
Missing	1	0.3
<b>TOTAL</b>	<b>358</b>	<b>100.0</b>

*Note.* \* Percentage estimates may not add up to total due to rounding.

Before the team-related questionnaires were given out, survey respondents were asked whether they belonged to any team (See Appendix 1). If the respondents ticked yes, questions on the size of team and their team tenure followed.

Of the respondents, 98.9% ( $N = 354$ ) answered that they belonged to a team. Among the respondents, one respondent answered that he/she did not belong to any teams; and three respondents did not answer any team-related questions. As the number of

respondents who did not belong to any team was quite small, at 1.1% ( $N=4$ ), further analysis, such as the differences between team members and non-team members, was not considered. The team size varied from 2 to a maximum of 52, whilst the most frequent team size was 12 and the average was 13.77. The existence of large teams, for example with 52 members, was expected from the pilot study (see Chapter 5) considering the characteristics of the manufacturing industry, although West et al. (2001) suggest that a work group in practice would be smaller than approximately 20 members.

However, the team size in this company's production section was very similar to those reported in Stewart's (2006) study. In his meta-analytic review of 93 studies, Stewart claims that the optimal size for a team differs according to the purpose and responsibilities of the team. In his review, production teams have an average of 12 members and project teams have an average of seven members. The most frequent team size in this study (see 'Mode' in Table 7.5) – 12 – matched that in Stewart's meta-analytic review.

Table 7.5. Team Size

	Mean	Mode	Min.	Max.
Production ( $N^* = 153$ )	16	12	2	52
Office environment ( $N^* = 104$ )	10.48	12	2	30
Total ( $N^* = 257$ )	13.77	12	2	52

*Note.* \* = Valid team size. Number of missing variables for team size is 101.

The questions relating to team identity were added before asking about team commitment. This was to identify genuine team members, as team commitment is the

main construct in this study. Three questions relating to team identity were asked: ‘I enjoy interacting with the members of this team (interdependence)’, ‘All members of the team need to contribute if we are to achieve the team’s goals (accountability for common goals)’, and ‘I think of membership of this team as a part of who I am (boundedness).’

The results relating to respondents’ team identity, the level of interdependence between team members, team members’ accountability in pursuit of the team’s shared goal, and their boundedness to the team, were predominantly positive, demonstrating a strong team identity among respondents (see Table 7.6). More than 50% of the respondents answered ‘Agree’ in all three items, and 64-65% answered either ‘Agree’ or ‘Strongly agree’ for team interaction and team attachment. Over 78% of the respondents recognized the importance of individuals’ contribution to the teams’ goal. Fewer than 5% of respondents expressed very weak team identity.

Table 7.6. Team Identity

	Team interaction		Team goal		Team attachment	
	Frequency (N)	Percent* (%)	Frequency (N)	Percent* (%)	Frequency (N)	Percent* (%)
Strongly disagree	2	0.6	2	0.6	4	1.1
Disagree	8	2.2	5	1.4	11	3.1
Neither ... nor	113	31.6	65	18.2	101	28.2
Agree	193	53.9	226	63.1	203	56.7
Strongly agree	37	10.3	55	15.4	33	9.2
Total	353	98.6	353	98.6	352	98.3
Missing	5	1.4	5	1.4	6	1.7
TOTAL	358	100.0	358	100.0	358	100.0

Note. \* Percentage estimates may not add up to total due to rounding.

Table 7.7 presents the respondents' organisational tenure and team tenure. The respondents' tenure varied from one month to 31 years. The largest tenure group in both organisation and team was the less-than-one-year tenure group. The average organisational tenure was 11.29 years and about 45% of the respondents had less than 10 years' organisational tenure. One third of respondents had less than three years' organisational tenure, and another one third had more than 20 years' organisational tenure.

Team tenure showed a similar pattern to organisational tenure. The average team tenure was 8.98 years and it varied from one month to 31 years. Compared to organisational tenure, the length of team tenure was slightly shorter. For example, about 38% of respondents had below three years' team tenure, whilst organisational tenure was 28.2%.

Table 7.7. Respondents' Organisational Tenure and Team Tenure

Years	Organisational tenure		Team tenure	
	Frequency	Percent(%)*	Frequency	Percent(%)*
0-1	66	15.6	76	21.3
≤ 3	44	12.6	60	17.1
≤ 5	17	5.0	20	5.8
≤ 10	34	9.9	31	8.9
≤ 15	23	6.8	19	5.5
≤ 20	41	11.8	33	9.5
≤ 25	73	21.0	50	14.5
≤ 30	9	2.7	7	2.1
Above 30	5	1.5	5	1.5
Total	302	84.4	301	84.1
Missing	56	15.6	57	15.9
<b>TOTAL</b>	<b>358</b>	<b>100.0</b>	<b>358</b>	<b>100.0</b>

*Note.* \* Percentage estimates may not add up to total due to rounding.

The team system in South Korea was introduced at the end of 1980s and actively promoted throughout industry in the late 1990s (Park, 2007). Given these introduction and activation times for the team system, we can assume that the 18% of the respondents whose team tenure was more than 20 years had worked in a team as a work unit from the time when the team system was first introduced and activated in Korea.

### 7.3. Exploring the Assumptions

#### 7.3.1. Normality Test

The normality assumption was tested for all items, since structural equation modelling with maximum likelihood assumes multivariate normality (Kline, 2011). As Table 7.8 shows, all the items, in both Kolomogorov-Smirnov (K-S) and Shaprio-Wilk (S-W) tests, were significant at  $p < .000$ . This indicates that the scale items were not normally distributed. In addition to this, a univariate normality test was conducted in LISREL that assumed multivariate normality (see Appendix 4). Kline (2011) suggests, as a rule of thumb when judging data normality, that variables with absolute values of Skewness  $> 3.0$  are described as ‘extremely’ skewed and absolute values of Kurtosis  $> 10.0$  suggest a problem. According to Kline’s rule, skewness seems problematic, as skewnesses with values over 3.0 are frequently presented as a result of a univariate normality test.

However, it is unusual for Likert scales to follow a normal distribution (Clason & Dormody, 1994; Malthous, 2001; Nunally, 1978). Moreover, researchers claim that in practice real data are seldom normally distributed (Bentler & Yaun, 1999; Yaun, Bentler



& Zhang, 2005). Besides, it is common to observe significant results in large samples when only small normality deviations exist (Cudeck, 2001; Field, 2009). The sample size of this study is 358. Hair et al (2006) suggest that a sample size of 200 or more is ‘large’, and the sample size of this study falls into that category.

However, the score was to be transformed into a normal score in LISREL software for further analysis, following Kline’s (2011) suggestion that corrective action should be taken to analyse non-normal data with a normal theory method such as maximum likelihood. Kline (2011) describes the effects of transformation as below:

‘the original scores are converted with a mathematical operation to new ones that may be more normally distributed...The effect of applying a transformation is changing its shape but not the rank order of the scores (Kline, 2011: 63)’

All analyses using LISREL were therefore conducted with transformed normal scores, following Kline’s (2011) suggestion.

Table 7.8. Assessment of Data Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Meaning1	.255	323	.000	.808	323	.000
Meaning2	.294	323	.000	.843	323	.000
Meaning3	.319	323	.000	.823	323	.000
Compete1	.280	323	.000	.848	323	.000
Compete2	.269	323	.000	.837	323	.000
Compete3	.279	323	.000	.846	323	.000
Selfdeterm1	.230	323	.000	.867	323	.000
Selfdeterm2	.240	323	.000	.877	323	.000
Selfdeterm3	.222	323	.000	.886	323	.000
Impact1	.246	323	.000	.857	323	.000
Impact2	.276	323	.000	.862	323	.000
Impact3	.270	323	.000	.872	323	.000
AOC1	.205	323	.000	.894	323	.000
AOC2	.214	323	.000	.882	323	.000
AOC3	.277	323	.000	.849	323	.000
AOC4	.259	323	.000	.871	323	.000
AOC5	.262	323	.000	.846	323	.000
AOC6	.271	323	.000	.859	323	.000
AOC7	.223	323	.000	.884	323	.000
AOC8	.251	323	.000	.868	323	.000
NOC1	.220	323	.000	.881	323	.000
NOC2	.214	323	.000	.879	323	.000
NOC3	.199	323	.000	.887	323	.000
NOC4	.229	323	.000	.885	323	.000
NOC5	.227	323	.000	.892	323	.000
NOC6	.274	323	.000	.860	323	.000
NOC7	.271	323	.000	.843	323	.000
NOC8	.231	323	.000	.864	323	.000
COC1	.211	323	.000	.889	323	.000
COC2	.237	323	.000	.860	323	.000
COC3	.225	323	.000	.858	323	.000
COC4	.211	323	.000	.884	323	.000
COC5	.286	323	.000	.842	323	.000
COC6	.234	323	.000	.876	323	.000
COC7	.229	323	.000	.868	323	.000
COC8	.239	323	.000	.877	323	.000
TC1	.341	323	.000	.780	323	.000
TC2	.293	323	.000	.832	323	.000
TC3	.295	323	.000	.829	323	.000
TC4	.362	323	.000	.751	323	.000
TC5	.280	323	.000	.840	323	.000
TC6	.287	323	.000	.822	323	.000
TC7	.314	323	.000	.798	323	.000
OCBI1	.249	323	.000	.845	323	.000
OCBI2	.281	323	.000	.837	323	.000
OCBI3	.325	323	.000	.813	323	.000
OCBI4	.338	323	.000	.780	323	.000
OCBI5	.353	323	.000	.784	323	.000
OCBI6	.268	323	.000	.845	323	.000
OCBO1	.334	323	.000	.785	323	.000
OCBO2	.353	323	.000	.770	323	.000
OCBO3	.350	323	.000	.784	323	.000
OCBO4	.273	323	.000	.865	323	.000
OCBO5	.308	323	.000	.811	323	.000
OCBO6	.245	323	.000	.784	323	.000

### 7.3.2. Homogeneity Test

Levene's test for the homogeneity test was conducted. If Levene's test is significant at  $p \leq .05$ , the variances are significantly different, which means that the homogeneity of variance assumptions is violated (Field, 2009). Levene's test assumes the normality of the data set. However, this study does not support the normal distribution. The result of a normality test from K-S and S-W showed that all the variables had a significantly skewed distribution and the univariate normality test in LISREL also demonstrated this skewness. However, as Field (2009: 150) pointed out, 'When the sample size is large, small differences in group variances can produce a Levene's test that is significant because the power of the test is improved'.

Considering the result of the normality test showed that the variables were not normally distributed, the result of this homogeneity test was not too bad, with about 35 out of 55 items being found not to be significantly different. Given this, use of the merged data set in structural equation modelling was justified.

Table 7.9. Homogeneity Test of Two Data Sets

		Levene Statistic	df1	df2	Sig.
Meaning1	Based on Mean	2.139	1	321	.145
Meaning2	Based on Mean	2.037	1	321	.154
Meaning3	Based on Mean	3.361	1	321	.068
Compete1	Based on Mean	.098	1	321	.754
Compete2	Based on Mean	.097	1	321	.756
Compete3	Based on Mean	.082	1	321	.774
Selfdeterm1	Based on Mean	2.967	1	321	.086
Selfdeterm2	Based on Mean	4.435	1	321	.036
Selfdeterm3	Based on Mean	3.871	1	321	.050
Impact1	Based on Mean	9.730	1	321	.002
Impact2	Based on Mean	10.797	1	321	.001
Impact3	Based on Mean	18.902	1	321	.000
AOC1	Based on Mean	.427	1	321	.514
AOC2	Based on Mean	2.851	1	321	.092
AOC3	Based on Mean	.657	1	321	.418
AOC4	Based on Mean	.080	1	321	.778
AOC5	Based on Mean	.415	1	321	.520
AOC6	Based on Mean	2.048	1	321	.153
AOC7	Based on Mean	6.239	1	321	.013
AOC8	Based on Mean	.843	1	321	.359
NOC1	Based on Mean	1.661	1	321	.198
NOC2	Based on Mean	.015	1	321	.904
NOC3	Based on Mean	2.259	1	321	.134
NOC4	Based on Mean	.202	1	321	.654
NOC5	Based on Mean	1.087	1	321	.298
NOC6	Based on Mean	.152	1	321	.697
NOC7	Based on Mean	2.335	1	321	.128
NOC8	Based on Mean	1.351	1	321	.246
COC1	Based on Mean	1.434	1	321	.232
COC2	Based on Mean	6.594	1	321	.011
COC3	Based on Mean	.859	1	321	.355
COC4	Based on Mean	.113	1	321	.737
COC5	Based on Mean	4.895	1	321	.028
COC6	Based on Mean	.002	1	321	.963
COC7	Based on Mean	.223	1	321	.637
COC8	Based on Mean	4.370	1	321	.037
TC1	Based on Mean	6.379	1	321	.012
TC2	Based on Mean	.501	1	321	.480
TC3	Based on Mean	3.647	1	321	.057
TC4	Based on Mean	5.529	1	321	.019
TC5	Based on Mean	15.293	1	321	.000
TC6	Based on Mean	.791	1	321	.375
TC7	Based on Mean	12.956	1	321	.000
OCBI1	Based on Mean	1.939	1	321	.165
OCBI2	Based on Mean	4.342	1	321	.038
OCBI3	Based on Mean	12.032	1	321	.001
OCBI4	Based on Mean	.466	1	321	.495
OCBI5	Based on Mean	6.835	1	321	.009
OCBI6	Based on Mean	.874	1	321	.351
OCBO1	Based on Mean	6.212	1	321	.013
OCBO2	Based on Mean	4.179	1	321	.042
OCBO3	Based on Mean	23.451	1	321	.000
OCBO4	Based on Mean	7.198	1	321	.008
OCBO5	Based on Mean	9.737	1	321	.002
OCBO6	Based on Mean	7.147	1	321	.008

#### 7.4. Reliability Analysis

Before conducting exploratory factor analysis, reliability testing for each construct was carried out with an inter-item correlation matrix. In order to extract the items which explained the latent constructs, each construct was scrutinized using the inter-item correlation matrix. This is because an inter-item correlation matrix illustrates the correlations between items and helps indicate any particular item that does not correlate well with the overall scale. Field (2009) suggests that values approximately below .3 in the inter-item correlation matrix are better dropped, in order to detect the unrelated items, and values over .9 also can also be dropped to avoid multicollinearity problems. This suggestion will be followed in considering the results in this section.

For psychological empowerment and organisational commitment, reliability testing was also conducted for each sub-factor.

##### 7.4.1. Psychological Empowerment

Psychological empowerment is composed of four sub-factors: meaning, competence, self-determination and impact on team. Tables from 7.10.1 to 7.10.4 present the results of each sub-factor's inter-item correlation, and Table 7.10.5 presents the results for the whole constellation of factors that make up psychological empowerment.

Overall, all the sub-factors showed good internal reliability. None of the four sub-factors presented values under .3 or over .9. Cronbach's alphas showed a good degree of internal reliability at  $\alpha = .86$  for 'Meaning',  $\alpha = .87$  for 'Competence',  $\alpha = .81$  for 'Self-determination' and  $\alpha = .83$  for 'Impact on team'.

When the four sub-factors were tested as one construct, psychological empowerment, all three items of ‘meaning’ had moderately weak correlations with other factors. Similarly, relatively weak correlations were identified between ‘competence’ and ‘impact on team’. However, Cronbach’s alpha for psychological empowerment was good at  $\alpha = .86$ .

Table 7.10.1. Inter-Item Correlation Matrix: Meaning

	Meaning 1	Meaning 2	Meaning 3
Meaning1	1.00		
Meaning2	.60	1.00	
Meaning3	.63	.80	1.00

*Note.* Cronbach’s alpha,  $\alpha = .862$

Table 7.10.2. Inter-Item Correlation matrix: Competence

	Competence 1	Competence 2	Competence 3
Competence1	1.00		
Competence2	.75	1.00	
Competence3	.65	.66	1.00

*Note.* Cronbach’s alpha,  $\alpha = .867$

Table 7.10.3. Inter-Item Correlation Matrix: Self-determination

	Selfdeterm 1	Selfdeterm 2	Selfdeterm 3
Selfdeterm1	1.00		
Selfdeterm2	.57	1.00	
Selfdeterm3	.66	.56	1.00

*Note.* Cronbach’s alpha,  $\alpha = .814$

Table 7.10.4. Inter-Item Correlation Matrix: Impact on Team

	Impact 1	Impact 2	Impact 3
Impact1	1.00		
Impact2	.51	1.00	.78
Impact3	.53	.78	1.00

Note. Cronbach's alpha,  $\alpha = .825$

Table 7.10.5. Inter-Item Correlation Matrix: Psychological Empowerment

	Mean 1	Mean 2	Mean 3	Comp 1	Comp 2	Comp 3	Selfd 1	Selfd 2	Selfd 3	Impact 1	Impact 2	Impact 3
Mean1	1.00											
Mean2	.60	1.00										
Mean3	.63	.79	1.00									
Comp1	.32	.28	.28	1.00								
Comp2	.34	.30	.28	.75	1.00							
Comp	.20	.16	.15	.67	.67	1.00						
Selfd 1	.26	.26	.23	.30	.31	.35	1.00					
Selfd2	.25	.26	.23	.30	.36	.37	.56	1.00				
Selfd3	.26	.27	.24	.29	.26	.33	.66	.55	1.00			
Impact 1	.31	.37	.33	.31	.21	.25	.32	.31	.34	1.00		
Impact 2	.16	.26	.21	.18	.11	.15	.36	.34	.37	.53	1.00	
Impact 3	.21	.29	.23	.17	.16	.15	.40	.36	.43	.54	.78	1.00

Note. Cronbach's alpha,  $\alpha = .860$

#### 7.4.2. Organisational Commitment

In the same way that a reliability test for psychological empowerment was carried out, the internal reliability of each of the three sub-factors of organisational commitment (OC) was also separately examined, alongside organisational commitment as a single construct. The results demonstrated that there were no highly correlated items, as there was no value exceeding .9.

However, some unrelated items, with values below .3, were detected from all three sub-factors of commitment (see Tables 7.11.1 to 7.11.4): AOC2 and AOC4 in the affective OC's inter-item correlation matrix (Table 7.11.1); NOC1, NOC5 and NOC7 in the normative OC's inter-item correlation matrix (Table 7.11.2); and COC5 in the continuance OC result (Table 7.11.3). However, NOC7 will be examined more carefully at a later stage, since its value – .294 with NOC6 – was shown to be too unclear for judgment.

Unexpectedly, the results of Cronbach's alphas were different from those of the previous two studies carried out with Korean samples, Ko et al. (1997) and Lee et al. (2002). Both studies reported that the continuance OC scale presented the lowest internal reliability, whilst affective OC presented the highest. Contrary to the previous findings, however, continuance OC here presented the highest reliability at  $\alpha = .754$ , followed by affective OC  $\alpha = .749$  and normative OC at  $\alpha = .635$ .

The correlation result of a unified form of OC was similar to the above results of each sub-commitment form, although there were slight changes in values (see Table 7.11.4). Consistent with the results for each of the three commitment forms, the items that could potentially be dropped for factor analysis were similar to AOC2 and AOC4 of affective OC and NOC1 and NOC5 of normative OC. In the case of NOC7, the inter-item correlation value was .289 with NOC6. Hence NOC7 would be retained for factor analysis, as this value was about .30. From the continuance OC scale, all eight items were reserved for the next stage of factor analysis, as all eight had values above .3, even COC5. The internal reliability of a unified factor of organisational commitment was boosted up to at  $\alpha = .83$ .



Table 7.11.1. Inter-Item Correlation Matrix: Affective Organisational Commitment

	AOC1	AOC2	AOC3	AOC4	AOC5	AOC6	AOC7	AOC8
AOC1	1.00							
AOC2	.28	1.00						
AOC3	.45	.22	1.00					
AOC4	.00	-.12	-.12	1.00				
AOC5	.29	.01	.38	-.01	1.00			
AOC6	.30	.17	.37	.09	.46	1.00		
AOC7	.47	.10	.58	-.09	.47	.40	1.00	
AOC8	.45	.13	.45	.05	.58	.58	.52	1.00

Note. Cronbach's alpha,  $\alpha = .749$ . Reversed items AOC4, 5, 6 and 8 were recorded.

Table 7.11.2. Inter-Item Correlation Matrix: Normative Organisational Commitment

	NOC1	NOC2	NOC3	NOC4	NOC5	NOC6	NOC7	NOC8
NOC1	1.00							
NOC2	.05	1.00						
NOC3	.10	.25	1.00					
NOC4	.16	.35	.38	1.00				
NOC5	-.01	-.07	.13	.16	1.00			
NOC6	.12	.29	.31	.60	.16	1.00		
NOC7	.19	.10	.06	.22	.03	.29	1.00	
NOC8	.15	.33	.10	.28	-.07	.27	.22	1.00

Note. Cronbach's alpha,  $\alpha = .635$ . Reversed items NOC2, 3 and 8 were recorded.

Table 7.11.3. Inter-Item Correlation Matrix: Continuance Organisational Commitment

	COC1	COC2	COC3	COC4	COC5	COC6	COC7	COC8
COC1	1.00							
COC2	.22	1.00						
COC3	.30	.46	1.00					
COC4	.39	.30	.34	1.00				
COC5	.12	.27	.20	.29	1.00			
COC6	.24	.26	.38	.19	.14	1.00		
COC7	.17	.26	.35	.16	.12	.54	1.00	
COC8	.21	.25	.36	.22	.12	.35	.50	1.00

Note. Cronbach's alpha,  $\alpha = .754$ . Reversed items COC1 and 8 were recorded.

Table 7.11.4. Inter-Item Correlation Matrix: Organisational Commitment

	AC1	AC2	AC3	AC4	AC5	AC6	AC7	AC8	NC1	NC2	NC3	NC4	NC5	NC6	NC7	NC8	CC1	CC2	CC3	CC4	CC5	CC6	CC7	CC8
AC1	1.0																							
AC2	.29	1.0																						
AC3	.45	.22	1.0																					
AC4	.02	-.12	-.11	1.0																				
AC5	.29	.02	.38	-.01	1.0																			
AC6	.31	.19	.39	.08	.47	1.0																		
AC7	.47	.10	.58	-.08	.47	.41	1.0																	
AC8	.47	.15	.48	.03	.60	.57	.53	1.0																
NC1	.09	.00	.14	-.01	.08	-.02	.19	.10	1.0															
NC2	.36	.08	.41	-.02	.35	.33	.39	.47	.06	1.0														
NC3	.32	.20	.16	.01	.08	.10	.12	.16	.10	.26	1.0													
NC	.45	.28	.37	-.05	.31	.27	.36	.31	.15	.35	.39	1.0												
NC5	.08	.11	-.15	.04	.01	.05	-.05	-.02	-.01	-.07	.13	.15	1.0											
NC6	.38	.15	.34	-.07	.25	.21	.26	.28	.12	.29	.32	.60	.15	1.0										
NC7	.24	-.04	.14	-.01	.15	.03	.15	.03	.20	.10	.06	.22	.02	.29	1.0									
NC8	.24	.00	.39	-.05	.46	.35	.41	.45	.15	.34	.09	.28	-.08	.28	.22	1.0								
CC1	.11	-.13	.15	.07	.22	.10	.25	.18	.12	.11	.06	.04	-.14	.08	.09	.16	1.0							
CC2	.27	.04	.17	.04	.16	.10	.25	.19	.16	.25	.13	.27	-.02	.24	.14	.22	.23	1.0						
CC3	.32	-.02	.20	.11	.11	.05	.34	.18	.13	.14	.08	.15	-.06	.13	.18	.10	.31	.46	1.0					
CC4	.42	.05	.27	-.04	.29	.25	.44	.37	.09	.31	.14	.33	.06	.29	.24	.41	.39	.29	.34	1.0				
CC5	.18	.15	.32	-.14	.25	.21	.40	.29	.05	.26	.07	.19	-.03	.23	.12	.28	.12	.28	.21	.30	1.0			
CC6	.16	.11	.16	.04	-.04	.03	.09	.00	.02	.07	.24	.20	.02	.22	.09	.01	.24	.26	.38	.18	.14	1.0		
CC7	.12	.01	.14	-.02	.01	-.07	.10	.03	.05	.05	.07	.14	-.03	.14	.07	.02	.17	.26	.35	.15	.12	.54	1.0	

	AC1	AC2	AC3	AC4	AC5	AC6	AC7	AC8	NC1	NC2	NC3	NC4	NC5	NC6	NC7	NC8	CC1	CC2	CC3	CC4	CC5	CC6	CC7	CC8
CC 8	.10	-.10	.03	.03	-.04	-.06	.04	.04	.10	.05	.06	.13	-.04	.08	.07	-.04	.22	.25	.36	.23	.12	.35	.50	1.0

*Note.* Cronbach's alpha  $\alpha = .831$

#### 7.4.3. Team Commitment

The inter-item correlation matrix for team commitment suggested that this scale was composed of generally good proxy items. The result showed that all seven team commitment items, taken as a whole, were neither highly related nor unrelated. The internal reliability was very good at Cronbach's alpha,  $\alpha = .91$ .

Table 7.12. Inter-Item Correlation Matrix: Team Commitment

	T1	T2	T3	T4	T5	T6	T7
T1	1.00						
T2	.52	1.00					
T3	.63	.53	1.00				
T4	.65	.42	.68	1.00			
T5	.58	.43	.67	.59	1.00		
T6	.57	.55	.64	.65	.60	1.00	
T7	.64	.46	.60	.68	.50	.72	1.00

*Note.* Cronbach's alpha  $\alpha = .907$

#### 7.4.4. Organisational Citizenship Behaviour

The inter-item correlation for organisational citizenship behaviour (OCB) was examined separately for OCBI (see Table 7.13.1) and OCBO (see Table 7.13.2). All the scale items for both OCBI and OCBO were generally well inter-correlated. Therefore, all twelve items of OCB would be carried forward for exploratory factor analysis. Cronbach's alphas for OCBI and OCBO were good at  $\alpha = .79$  and  $\alpha = .74$ , respectively.

Table 7.13.1. Inter-Item Correlation Matrix: OCBI

	OCBI1	OCBI2	OCBI3	OCBI4	OCBI5	OCBI6
OCBI1	1.00					
OCBI2	.54	1.00				
OCBI3	.34	.40	1.00			
OCBI4	.30	.37	.66	1.00		
OCBI5	.18	.27	.56	.62	1.00	
OCBI6	.40	.36	.32	.28	.30	1.00

*Note.* Cronbach's alpha  $\alpha = .790$

Table 7.13.2. Inter-Item Correlation Matrix: OCBO

	OCBO1	OCBO2	OCBO3	OCBO4	OCBO5	OCBO6
OCBO1	1.00					
OCBO2	.74	1.00				
OCBO3	.45	.52	1.00			
OCBO4	.21	.24	.28	1.00		
OCBO5	.34	.29	.15	.35	1.00	
OCBO6	.32	.30	.12	.10	.61	1.00

*Note.* Cronbach's alpha  $\alpha = .740$

## 7.5. Exploratory Factor Analysis

Exploratory factor analysis (EFA) was conducted using SPSS 19 based on the results of the internal reliability test with the inter-item correlation analysis. Inter-item correlation analyses conducted prior to EFA are expected to help control the method effect of common-raters [the effect of common-raters on the method?]. As Malhorta et al. (2006) and Podsakoff et al. (2003) advise using Harman's single-factor test as a statistical control of common method biases, this section presents the testing of common method biases as well as the refinement of proxy items. The procedure for Harman's single-factor testing followed Podsakoff and Organ's (1984: 35) study, as shown below:

- First, an unrotated principal component factor analysis was conducted to ascertain the necessary number of factors using a traditional eigenvalue cutoff point, 1.0. From this, twelve factors were extracted.
- These factors were then rotated using varimax rotation as well as oblique rotation (see Tables 7.14.1 and 7.14.2).
- In addition to Podsakoff and Organ's (1984) EFA single-factor testing, this research examined the confirmatory factor analysis one-factor model fit (see Table 7.25). [this research used confirmatory factor analysis to examine one-factor model fit?]
- Following these factor analyses, the means, standard deviations, and coefficient of internal consistency reliability were computed and analyzed (see Table 8.1 in Chapter 8).

Bearing in mind the above the procedure used to carry out Harman's single-factor test, the results of testing were discussed. There should have been some relationships between variables on which to conduct factor analysis. Bartlett's test of sphericity examines whether there are any relationships between variables on which to conduct factor analysis (Field, 2009). The test should be significant at less than .05. For these data, Bartlett's test was highly significant at  $p = .000$ . In addition, the sampling adequacy was excellent, at  $KMO = .901$  (Hutcheson & Sofroniou, 1999). For the interpretation of factor scores, I followed suggestions that loadings greater than 0.4 should be treated as substantive (Field, 2009; Stevens, 2002) and that factors with Eigenvalues greater than 1 should be retained (Kaiser, 1960).

First, all the items were examined to compare and confirm the results of the inter-item correlation analysis. The results of EFA with principal component analysis and varimax rotation reflected the results of the inter-item correlation analysis (see Appendix 5). The results suggested that AOC2 and NOC5 were extracted as one factor, while AOC4 and COC5 were grouped as another factor. The suspicious item, NOC7, was represented as a standalone factor. The item NOC 1, shown as an unrelated item on the normative OC scale, was loaded into the OCBI factor and poorly loaded onto the normative OC factor.

Given this result, EFA was reconducted to examine whether each proxy item fell into its own theoretically based factor after dropping the following six items: AOC2 and AOC4; NOC1, NOC5 and NOC7; and COC5. In order to get a more objective judgement for the results, two factor analysis techniques were used. First, principal component analysis (PCA) was conducted with orthogonal rotation (varimax), assuming that the components were not correlated with each other (see Table 7.14.1). Then, principal axis factoring (PAF) with oblique rotation was conducted, and this assumed that all the variables were correlated (see Table 7.14.2).

As with the result of the unrotated factor analysis, twelve factors were extracted. Although the orders of the factors extracted by PCA and PAF were different, the extracted factors in both results were the same. There was no single factor explaining the majority of the variance in the variables. The results of PCA are as follows (see Table 7.14.1). The scales of the four sub-factors of psychological empowerment and team commitment were clearly loaded onto their intended factors: component4 denotes ‘meaning’; component5 denotes ‘competence’; component7 denotes ‘self-determination’; component8 denotes ‘impact on team’; and component1 denotes

Table 7.14.1. EFA: Principal Component Analysis with Varimax Rotation

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
Mean1				.739								
Mean2				.798								
Mean3				.793								
Comp1					.854							
Comp2					.804							
Comp3					.790							
Selfd1							.820					
Selfd2							.704					
Selfd3							.769					
Impact1								.640				
Impact2								.789				
Impact3								.809				
AC1		.366							.359			
AC3		.528										
AC5		-.712										
AC6		-.716										
AC7		.557										
AC8		-.750										
NC2		-.583							-.294			
NC3									-.690			
NC4									.674			
NC6									.657			
NC8		-.581							-.042			
CC1			-.504									
CC2			.497									
CC3			.689									
CC4			-.455									
CC6			.707									
CC7			.746									
CC8			.701									
T1	.659											
T2	.655											
T3	.763											
T4	.722											



T5	.702											
T6	.678											
T7	.639											
OCBI1											.715	
OCBI2											.626	
OCBI3						.697						
OCBI4						.782						
OCBI5						.799						
OCBI6											.592	
OCBO1												.438
OCBO2												.598
OCBO3												.655
OCBO4										.304		.377
OCBO5										.828		
OCBO6										.757		

*Note.* Items, AC2, AC4, NC1, NC5, NC7 and CC5, were excluded for the analysis. Extraction method: principal component analysis. Rotation method: varimax with Kaiser normalization. The result is from the rotated component matrix. Rotation converged in 8 iterations. All the extracted factors reported in this table have Eigen values over 1.

Extracted factors:

1. Team commitment
2. Affective OC
3. Continuance OC
4. Meaning,
5. Competence
6. OCBI-courtesy
7. Self-determination
8. Impact on team
9. Normative commitment
10. OCBO-conscientiousness
11. OCBI-helping
12. OCBO-civic virtue

Table 7.14.2. EFA: Principal Axis Factoring with Oblique Rotation

	Component											
	1	2	3	4	5	6	7	8	9	10	11	12
Mean1							-.663					
Mean2							-.864					
Mean3							-.864					
Comp1				.865								
Comp2				.760								
Comp3				.707								
Selfd1											-.831	
Selfd2											-.599	
Selfd3											-.712	
Impact1					.523							
Impact2					.780							
Impact3					.874							
AC1									-.253			
AC3									-.408			
AC5									-.631			
AC6									-.649			
AC7									-.445			
AC8									-.717			
NC2								.199	-.478			
NC3								.479				
NC4								.608				
NC6								.570				
NC8								.014	-.451			
CC1		.407										
CC2		.413										
CC3		.626										
CC4		.384										
CC6		.658										
CC7		.698										
CC8		.617										
T1	.511											
T2	.521											
T3	.702											
T4	.640											

T5	.572											
T6	.585											
T7	.541											
OCBI1												-.596
OCBI2												-.522
OCBI3			.655									
OCBI4			.796									
OCBI5			.746									
OCBI6												-.414
OCBO1										-.438		
OCBO2										-.661		
OCBO3										-.446		
OCBO4						.220				-.221		
OCBO5						1.007*						
OCBO6						.581						

*Note.* Items, AC2, AC4, NC1, NC5, NC7 and CC5, were excluded from the analysis; \* PFA, unlike PCA, represents the proportion of variance in each measured *X* variable, and the value can be more than 1.00. Extraction method: principal axis factoring. Rotation method: oblimin with Kaiser normalization. The result is from the pattern matrix. Rotation converged in 11 iterations. All the extracted factors shown in this table have Eigen values over 1.

Extracted factors:

1. Team commitment
2. Continuance OC
3. OCBI-courtesy
4. Competence
5. Impact on team
6. OCBO-conscientiousness,
7. Meaning
8. Normative OC
9. Affective OC
10. OCBO-civic virtue
11. Self-determination,
12. OCBI-helping

‘team commitment’. However, the factor loadings of OC components were somewhat different. The seven items of the continuance OC scale, after dropping COC5, were clearly loaded onto component3, as can be seen in Table 7.14.1, with strong factor loadings for COC3, COC6, COC7 and COC8. On the other hand, affective OC and normative OC showed some mixed or weak loadings. With a weak loading of AOC 1 at 0.354, the tested six affective OC items were extracted as one factor (component 2). Unexpectedly, however, two normative OC items, NOC2 and NOC8, were also loaded here, showing as affective OC rather than normative OC. Their loadings onto normative OC were very weak at NOC = -.294 and NOC8 = .042. Given this result, we can say that only three items, NOC3, NOC4 and NOC6, were normative OC items (component9).

The sub-factors of OCB were separately extracted. As explained in the previous chapter (Chapter 5), both OCBO and OCBI have two sub-factors. The two sub-factors of OCBI were visibly well-extracted. However, one item of OCBO, OCBO4, presented mixed loadings onto two factors: it loaded weakly loaded onto its theoretical factor, OCBO-conscientiousness (component 10); and it showed similar factor scores on another of OCBO’s sub-factors, civic virtue (component 12).

Meanwhile, the PFA results (see Table 7.14.2) were similar to those of PCA and reconfirmed the PCA extractions (the extracted factors are listed in the *Note* under the Table 7.14.2). As with the PCA results, the four sub-factors of psychological empowerment (component4, component5, component7 and component11), team commitment (component1) and OCBI were clearly loaded onto their expected factors (component3 and component12). As with the PCA result, NOC2 and NOC8 were loaded onto affective OC (component9) and AOC1 was very weakly loaded onto

affective OC. Considering that values below 0.4 are not statistically significant, AOC1 would be a candidate for deletion for the measurement fit test in the next stage of analysis. Consistent with the PCA results, four items – COC3, COC6, COC7 and COC8 – were strongly loaded onto continuance OC. Since COC4's loading value was less than 0.4, this item was a candidate for deletion, like the item AOC1.

Again, OCBO4 was mixed and was weakly loaded onto two OCBO sub-factors. Although the strongest loading values of this item fell within the categories of OCBO, the values were weak at 0.220 (OCBO-conscientiousness, component6) and -0.221 (OCBO-civic virtue, component10).

Given the above results, four items for OC, including AOC1, NOC2, NOC8 and COC4, and OCBO4 would be carefully examined at the next stage of confirmatory factor analysis for the measurement fit test.

## 7.6. Confirmatory Factor Analysis

Taking the results of the EFA into consideration, confirmatory factor analysis (CFA) with maximum likelihood was used to examine the measurement fit for each latent construct using LISREL 8.51 software. When using maximum likelihood, there is a possibility that non-normal data will produce an incorrect standard deviation or Chi-square ( $\chi^2$ ) value. To counter this, Kline (2011) suggests that corrective action should be taken. Normal scores provide an effective way of normalizing a variable for which the origin and unit of measurement have no intrinsic meaning, such as test scores (Du Toit et al., 2012; Jöreskog et al., 1999). As this study's data sets showed non-normality

in the previous section, all the proxy items were transformed into normal scores in LISREL software, following Kline's suggestion.

#### 7.6.1. Psychological Empowerment

The CFA results were consistent with those of EFA, showing clear factor loadings. The four sub-factors of psychological empowerment gave a good model fit, as seen in Table 7.15. When the four sub-factors were combined into a higher-order of latent construct, psychological empowerment, the measurement model fit (see PsyEmpower<sup>1</sup> in table) was quite good ( $\chi^2 = 116.38$ , RMSEA = .06, SRMR = .07). Although the *p*-value showed as significant at .000, which meant that the suggested measurement model might not represent the data, RMSEA and SRMR resulted in a good fit and the other fit indices were very good at TLI = .955 and CFI = .966.

Table 7.15. Measurement Model Fit: Psychological Empowerment

Measurement	$\chi^2 (df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
Meaning	10.16(1)	.001	.169	.926	.975	.028
Competence	4.31(1)	.038	.101	.976	.992	.018
Self-determination	0.59(1)	.441	.000	1.00	1.00	.008
Impact	5.49(1)	.019	.118	.961	.987	.022
PsyEmpower <sup>1</sup> (2 <sup>nd</sup> -order, 4 factors)	124.53 (50)	.000	.068	.966	.974	.069
PsyEmpower <sup>2</sup> (1 <sup>st</sup> -order, 1 factor)	1205.28 (54)	.000	.257	.373	.487	.148

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual. PsyEmpower<sup>1</sup> = a unified second order factor model of meaning (3-item), competence (3-item), self-determination (3-item) and impact (3-item); PsyEmpower<sup>2</sup> = all 12 items as one factor.

In contrast to the second-order factor structure, PsyEmpower<sup>1</sup>, a one-factor psychological empowerment structure, PsyEmpower<sup>2</sup>, in which all 12 items were grouped as one factor without separating the four latent sub-factors, hugely decreased the model fit, showing a very poor fit for all fit indices. This result was consistent with the findings of Aryee and Chen's (2006) study.

#### 7.6.2. Organisational Commitment

Initially, all 24 items of the OC scale were looked at to confirm the results of the previous two stages' analyses, inter-item correlation analysis and EFA. After the three components of measurement model fit were tested, a second-order structure of OC in which the three components of OC, affective, normative and continuance OC, were grouped into a higher-order latent factor, OC, was looked at. As the dimensionality of the continuance OC of Allen and Meyer (1990) has been a debatable issue in terms of whether it is a unidimensional or bi-dimensional construct (high sacrifice and low alternative), the overall organisational commitment measurement fit was also looked at, by being divided into a three-factor model, considering continuance OC as unidimensional, and a four-factor model, considering continuance OC as bi-dimensional.

##### 7.6.2.1. Affective Organisational Commitment

The CFA results, shown in Table 7.16.1, were slightly different from the EFA results (to compare, see Table 7.11.1). As expected from the EFA results, the first model, AOC (8-item), which was composed of all eight items' affective OC scales, did not provide a good fit. AOC 4 and AOC 2 provided poor factor loading in the same way as

in the results of the inter-item correlation. The second model, AOC(6-item), showed the model fit without the two items AOC 2 and AOC4. From the eight-item model, there were statistically significant changes in Chi-square value from  $\chi^2(df) = 96.27(20)$  to  $\chi^2(df) = 44.73(9)$  and in TLI, CFI and SRMR. However, RMSEA was still poor as the value was over 1.00. Therefore, a third model, AOC(5-item)<sup>1</sup>, was tested after dropping the suspicious item, AOC1, from the previous factor analysis. The AOC(5-item)<sup>1</sup> model did not produce a substantial change.

Table 7.16.1. Measurement Model Fit: Affective OC

Measurement model	$\chi^2(df)$	$\Delta \chi^2(\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
AOC(8-item)	96.27(20)		.000	.109	.859	.899	.061
AOC(6-item)	44.73(9)	51.54 (11)	.000	.111	.921	.953	.042
AOC(5-item) <sup>1</sup>	30.37(5)	14.36 (4)*	.000	.126	.914	.957	.041
AOC(5-item) <sup>2</sup>	13.94(5)	30.79 (4)*	.016	.075	.962	.981	.034
AOC(4-item)	0.38(2)	13.56 (3)	.827	.000	1.013	1.000	.006

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual; AOC (8-item): all AOC items, AOC (6-item): dropping AOC2 and AOC4, AOC (5-item)<sup>1</sup>: dropping (AOC 2 and AOC 4) +AOC 1, AOC (5-item)<sup>2</sup>: dropping (AOC 2 and AOC 4) + AOC 7, AOC (4-item): dropping (AOC 2 and AOC 4) + (AOC1 and AOC 7). \* Change in model fit compared with AOC (6-item).

Ignoring the EFA findings, a fourth model, AOC(5-item)<sup>2</sup>, was tested, dropping AOC7 instead of AOC1, since AOC7 caused the largest standardized residual combinations in the CFA output. The model fit of AOC(5-item)<sup>2</sup> from an AOC (6-item) model improved much more across all the fit indices ( $\chi^2 = 13.94$ , TLI = .962, CFI = .981 and SRMR = .034) compared to those of AOC(5-item)<sup>1</sup>. Moreover, RMSEA value was



acceptable as a good fit at 0.075. However, the model fit was much more satisfactory when the four items AOC2, AOC4, AOC1 and AOC7 were not included. In addition, the Chi-square fit was insignificant, which meant that this model (a 4-item model with AOC3, AOC5, AOC6 and AOC8) represented the data set.

#### 7.6.2.2. Normative Organisational Commitment

As with affective OC, work on normative OC began with a look at all eight items, to find good proxy items. Working through the eight items, the items which had the largest standardized residual were dropped one by one. The order in which items were dropped was NOC5, NOC1 and NOC7. The models in Table 7.16.2, from an NOC(7-item) model to an NOC(4-item) model, are shown in order.

Table 7.16.2. Measurement Model Fit: Normative OC

Measurement model	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
NOC(8-item)	57.41(20)		.000	.076	.859	.900	.059
NOC(7-item)	41.57(14)	15.84 (6)	.000	.078	.876	.918	.055
NOC(6-item)	28.71(9)	12.86 (5)	.000	.082	.895	.937	.051
NOC(5-item)	16.59(5)	12.12 (4)	.005	.085	.914	.957	.046
NOC(4-item)	1.01(2)	15.58 (3)	.604	.000	1.013	1.000	.014
NOC(3-item)	0.01 (1)	1.00 (1)	.942	.000	1.016	1.000	.001

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual; NOC(8-item): all NOC items, NOC(7-item): dropping NOC5, NOC(6-item): dropping NOC5 and NOC1, NOC(5-item): dropping (NOC5 and NOC1) + NOC7, NOC(4-item): dropping (NOC5 and NOC1 and NOC7) + NOC8, NOC(3-item): dropping (NOC5 and NOC1 & NOC7) + (NOC8 and NOC2).

When the model was changed from the previous model to the next, there were significant changes in the Chi-square fit. An NOC(5-item) model, consisting of NOC2, NOC3, NOC4, NOC6 and NOC8, showed a good model fit at RMSEA = .085, TLI= .914, CFI = .957 and SRMR = .046, although Chi-square ( $\chi^2 = 16.59$ ) was significant.

However, the measurement models were tested further after the exclusion of two items suggested by the EFA results, and this showed that NOC2 and NOC8 were strongly loaded onto affective OC (see Table 7.14.1-2). In the LISREL output, the combination of NOC2 and NOC8 produced the largest standardized residual, at 3.485. A four-item model, for which only NOC 8 was dropped, was conducted first, since NOC8 produced more combinations of the large standardized residuals than did NOC 2. The model fit of an NOC(4-item) model (NOC2, NOC3, NOC4 and NOC6) was close to perfect. Considering the issue that had been discussed, of the scales of normative OC and affective OC overlapping considerably, an NOC(3-item) model without both NOC2 and NOC8 was tested. This three-item model, consisting of NOC3, NOC4 and NOC6, showed a near perfect fit on the normative OC scale.

#### 7.6.2.3. Continuance Organisational Commitment

In order to look at the dimensionality of continuance OC for the testing of proposed Hypothesis 2a, two models were tested: a unidimensional one-factor model and a bi-dimensional two-factor model, divided into CC: High Sacrifice (CC:HiSac), meaning that employees stayed with the organisation because the sacrifice leaving represented would be too high; and CC: Low Alternatives (CC:LoAlt), meaning that employees stayed with the organisation because of the few alternatives available to them.

Table 7.16.3 presents the results of a one-factor model of continuance OC. The first model, COC(8-item), produced a poor fit. As COC5 was the lowest loaded factor amongst the eight COC items that were concordant with the results of EFA, COC5 was dropped in the second model, COC(7-item). Although there was a significant change in Chi-square value from  $\chi^2(df) = 129.52(20)$  to  $\chi^2(df) = 107.15(14)$ , RMSEA value became worse, whilst the other fit indices showed a small improvement. Up until the COC(5-item) model, the model fit was not greatly improved, except for the statistically significant changes in Chi-square fit.

After dropping another two items, COC4 and COC1, due to low factor loadings, and another item, COC3, from the largest standardized residual, a COC(4-item), one-factor model presented a good model fit at  $\chi^2 = 2.23$  with an insignificant  $p$ -value, RMSEA = .019, TLI = .997, CFI = .999 and SRMR = .018. The remaining four continuance OC items were COC2, COC6, COC7 and COC8.

Table 7.16.3. Measurement Model Fit: One-Factor Continuance OC

Measurement Model	$\chi^2(df)$	$\Delta \chi^2(\Delta df)$	$p$ -value	RMSEA	TLI	CFI	SRMR
COC(8-item)	129.52 (20)		.000	.130	.749	.821	.074
COC(7-item)	107.15 (14)	22.37 (6)	.000	.144	.754	.836	.074
COC(6-item)	56.68 (9)	50.47 (5)	.000	.128	.821	.892	.061
COC(5-item)	41.04 (5)	15.64 (4)	.000	.150	.806	.903	.063
COC(4-item)	2.23 (2)	38.81 (3)	.328	.019	.997	.999	.018

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square,  $df$  = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual; COC(8-item): all COC items, COC(7-item): dropping COC5, COC(6-item): dropping COC5 and COC4, COC(5-item): dropping (COC5 and COC4) + COC1, COC(4-item): dropping (COC5 and COC4 and COC1) + COC3.

Tables 7.16.4a and 4b show the results of a two-factor continuance OC model. The classification of eight items into two categories (high sacrifice and low alternative) drew on Culpepper's (2000) study, where four items of COC1, COC5, COC6 and COC7 were grouped as CC: Low Alternative (CC:LoAlt) and the remaining four items, COC2, COC3, COC4 and COC8, were grouped as CC: High Sacrifice (CC:HiSac). Prior to testing a two-factor continuance OC model, each model of CC:LoAlt and CC:HiSac was examined, as seen in Table 7.16.4a. This was to find the three optimal items of each factor for this study, as the revised version (Meyer et al., 1993) had six items rather than eight items of continuance OC. This would make it possible for the findings to be more easily compared with the findings of Meyer et al. (2002) and McGee and Ford (1987), which have been produced using Meyer et al.'s revised version of the six-item scale.

Table 7.16.4a. Measurement Model Fit: Separate Analyses for CC:LoAlt and CC:HiSac

Measurement model	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	p-value	RMSEA	TLI	CFI	SRMR
CCA: 4 items	2.26(2)		.322	.020	.994	.998	.024
CCA: 3 items	12.83(1)	10.57(1)	.000	.192	.701	.900	.086
CCS: 4 items	1.96(2)		.375	.000	1.00	1.00	.017
CCS: 3 items	5.21(1)	3.25(1)	.023	.114	.891	.964	.036

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square,  $df$  = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual; CCA = CC:LoAlt, CCS = CCHiSac, CCA: 4 items-COC1, COC5, COC6 and COC7; CCA: 3 items-COC5 (or COC1), COC6 and COC7; CCS: 4 items – COC2, COC3, COC4 and COC8; CCS: 3 items – COC2, COC3, COC8.

Before a whole set of two-factor continuance OC measurements were produced, individual two-sub-factor models were tested separately, as above. The two individual

sub-factors showed a very good model fit, regardless of the number of items. For the three items of the CC:LoAlt scale, CC5, CC6 and CC7 were included, following the suggestions of Meyer et al. (2002) and McGee and Ford (1987). However, as this study's data had already suggested that COC5 was an unrelated item, it was replaced by COC1, since this was in accordance with the previous stages of results and Culpepper's (2000) study.

Interestingly, the results suggested that the original scale of continuance OC worked better with four items for CC:LoAlt and CC:HiSac, if continuance OC was taken as having two factors. For a CC: LoAlt model, a four-item model (CCA: 4 items) showed itself to be better, showing significant changes in Chi-square fit, even though the degree of freedom was increased from  $df = 1$  to  $df = 2$ . For a CC:HiSac model, the  $p$ -value showed four items of CC:HiSac suggesting the data set was insignificant at 0.375.

Table 7.16.4b. Measurement Model Fit: Two-Factor COC

Measurement Model	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	$p$ -value	RMSEA	TLI	CFI	SRMR
CC(8)	129.52 (20)		.000	.130	.749	.821	.074
CCA(4) + CCS(4)	115.65 (19)	13.87 (1)	.000	.126	.763	.839	.079
CC(6)	56.68 (9)		.000	.128	.821	.892	.061
CCA(3) + CCS(3)	44.34 (8)	12.34 (1)	.000	.119	.845	.917	.058

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square,  $df$  = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis Index, CFI = comparative fit index, SRMR = standardized root mean square residual; CC (8): all COC items; CCA(4) + CCS(4) = (COC 1, 5, 6, 7) + (COC 2, 4, 6, 8); CC (6): COC 1, 2, 3, 6, 7, 8; CCA (3) + CCS (3) = (COC 1, 6, 7) + (COC 2, 3, 8)

Bearing in mind the findings of the testing of two separate factors, the dimensionality of continuance OC was examined. As seen in Table 7.16.4b, the tests were conducted in two ways, 8 items as against 6 items. This was to make it easy to compare the findings with those of the previous studies, which used a revised six-item scale. The results suggested that continuance OC was better measured with a two-factor model [CCA(4) + CCS(4) or CCA(3) + CCS (3)] than with a one-factor model [CC(8) or CC(6)] regardless the number of items. Moreover, a six-item continuance OC model proved a better model than an eight-item model, regardless of the dimensionality, although four items of CC:LoAlt and CC:HiSac were suggested as being better models for their independent scales.

Incorporating the results of on the continuance OC scale into this data set, we can say that a one-factor scale with four items (COC2, COC6, COC7 and COC8) is preferable for measuring continuance OC. However, if a four-item continuance OC scale is not used, it is advisable to consider a two-factor continuance OC scale such as Allen and Meyer's (1990) original scale; but in this case, a six-item scale is preferable to an eight-item one. Therefore, supporting Hypothesis 2a about the two-factor structure of continuance OC depends on the number of items used to measure continuance OC. Hypothesis 2a was not supported for a four-item continuance OC scale, but Hypothesis 2a was supported for a six-item continuance OC scale.

#### 7.6.2.4. Organisational Commitment

This section presents the testing of a second-order factor model of OC with three components of commitment constructs tied to a higher latent construct: OC. In order to

be consistent with previous OC validity studies carried out with Korean samples (Ko et al., 1997; Lee et al. 2001), the model fit was tested from a one-factor model to a four-factor model. Because a two-factor continuance OC model provided a better fit than a single-factor model only when a six-item continuance OC scale was used, a three-factor OC model was re-examined. Table 7.16.5 shows the remaining items for OC from the results of the CFA measurement model fit testing. With these selected items, the overall OC measurement model fit was examined.

Table 7.16.5. Remaining Items of Organisational Commitment

Commitment forms		No. of remaining items	Items	Reference
Affective OC		4	AOC3, AOC5, AOC6, AOC8	Table 7.16.1
Normative OC		3	NOC3, NOC4, NOC6	Table 7.16.2
Continuance OC (1-factor)		4	COC2, COC6, COC7, COC8	Table 7.16.3
Continuance OC (2-factor)	LoAlt	3	COC1, COC6, COC7	Table 7.16.4a
	HiSac	3	COC2, COC3, COC8	Table 7.16.4a

For a one-factor model, it was necessary to extract all three components into one factor. For a two-factor OC oblique model, affective and normative OC were grouped as one factor and continuance OC was grouped as another factor, as done by Ko et al. (1997) and Lee et al. (2001). As models were changed from one-factor to two-factor oblique and from two-factor oblique to three-factor oblique, the model fit was hugely and significantly improved, as seen in Table 7.16.6. The three-factor oblique models (3-factor OC<sup>1</sup> oblique and 3-factor OC<sup>2</sup> oblique) showed good fits. Since continuance OC measurement did not give a clear result, Table 7.16.6 shows two three-factor models

using both four-item (3-factor OC<sup>1</sup> oblique) and six-item (3-factor OC<sup>2</sup> oblique) continuance OC.

Four-factor oblique models also offered two models: one using four- and one using six-item continuance OC scales. The first model, 4-factor OC<sup>1</sup> oblique, in the above table represents the OC model using four items of continuance OC considering the optimal, one-factor continuance OC model's scale items, whereas the second one, 4-factor OC<sup>2</sup> oblique, shows the OC model using six items of continuance OC, reflecting the optimal two-factor continuance OC model.

Table 7.16.6. Measurement Model Fit: Organisational Commitment

Measurement model+	$\chi^2 (df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
1-factor OC	556.12 (44)	.000	.190	.465	.572	.134
2-factor OC oblique	258.53 (42)	.000	.127	.749	.808	.097
3-factor OC <sup>1</sup> oblique	79.11 (41)	.000	.054	.941	.956	.062
4-factor OC <sup>1</sup> oblique: CCA(2)+CCS(2)	126.80 (40)	.000	.082	.868	.904	.107
3-factor OC <sup>2</sup> oblique	165.51 (62)	.000	.072	.924	.939	.067
4-factor OC <sup>2</sup> oblique: CCA(3)+CCS(3)	185.20 (61)	.000	.080	.842	.876	.098

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual.

- + 1-factor OC: organisational commitment  
 2-factor OC: attitudinal AOC + NOC [AOC3 , 5, 6, 8 and NOC 3, 4, 6], COC [COC 2, 6, 7, 8]  
 3-factor OC<sup>1</sup> oblique: AOC [AOC 3, 5, 6, 8], NOC [NOC 3, 4, 6], COC [COC 2, 6, 7, 8]  
 4-factor OC<sup>1</sup> oblique CCA(3) + CCS(3): AOC, NOC, CCA [COC 6, 7], CCS [COC 2, 8]  
  
 3-factor OC<sup>2</sup> oblique: AOC, NOC, COC [COC 1, 2, 3, 6, 7, 8]  
 4-factor OC<sup>2</sup> oblique CCA(2) + CCS(2): AOC, NOC, CCA [COC 1, 6, 7], CCS [COC 2, 3, 8]



The two-item continuance OC scale is supported by Gill et al.'s (2011) study that used two-dimensional continuance OC, CC:Loalt and CC:HiSac. During the analysis, these researchers found that one item from each of continuance OC dimensions was not appropriate for a Korean context and conducted analyses with two-item scales of CC:LoAlt and CC:HiSac. The remaining four items of continuance OC in Gill et al.'s study were exactly same as the two items of CC:LoAlt and another two items of CC:HiSac in this study.

Among the models produced by the scale items from Table 7.16.5, the 3-factor OC<sup>1</sup> oblique model looked to be the best model at  $\chi^2 = 79.11$ , RMSEA = .054, TLI = .941, CFI = .956 and SRMR = .062. Table 7.16.6 shows the alternative models, 3-factor OC<sup>2</sup> oblique and 4-factor OC<sup>2</sup> oblique, which take account of continuance OC's bi-dimensionality. Unlike the results shown in continuance OC measurement testing, however, a three-factor OC model, with one-factor six-item continuance OC, showed itself in every fit index to be a better model than a four-factor OC model with CC:LoAlt and CC:HiSac two-factor continuance OC. For the overall OC scale, this result suggested a three-factor model was the best model when given the same number of scale items.

From this finding, we can say that this study's data set provides very mixed results for OC measurement and it depends on continuance OC. For the independent measurement of continuance OC, bi-dimensional continuance OC is preferable, and this is consistent with Lee et al.'s (2001) findings. Yet continuance OC as one of the OC sub-factors worked better with uni-dimensional structure, which is in line with Ko et al.'s (1997) findings. Therefore, Hypothesis 2b, proposing a four-factor OC model, was not supported.

### 7.6.3. Team Commitment

In contrast to the results from EFA and inter-item correlation, the seven items of team commitment did not provide a good fit of RMSEA, at 0.117. Given this poor RMSEA fit, further model testing was undertaken. Since TC7 produced large standardized residual combinations with other items, this item was dropped.

When compared with the 78.5% score for team goal achievement in team identity, the large residuals of the TC7 item seemed strange. However, this was in line with Bishop et al.'s (2005) findings. Bishop et al. used the short version of OCQ for their team commitment scale across the three different samples and found similar results for the item, 'I am willing to put in a great deal of effort beyond that normally expected in order for the team to be successful.' Hence, they dropped this item for further analysis. They inferred that this was because employees felt that 'effort on behalf the team is also on behalf of the organisation' (Bishop et al., 2005: 175). This study's results can also be interpreted as showing that this item does not clearly represent team commitment, as employees may think the team's success is same as the organisation's success and vice versa. After dropping the TC7 item, the model fit significantly improved, as seen in Table 7.17.

Table 7.17. Measurement Model Fit: Team Commitment

Measurement model	$\chi^2(df)$	$\Delta \chi^2(\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
TC(7-item)	75.55(14)		.000	.117	.927	.951	.037
TC(6-item)	31.94(9)	43.61 (5)	.000	.089	.957	.974	.031

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual; 7 items: all TC items; 6 items: dropping TC7.

#### 7.6.4. Organisational Citizenship Behaviour

##### 7.6.4.1. OCB toward Individuals (OCBI)

Podsakoff et al. (1997) and Podsakoff and Mackenzie (1994) proposed helping behaviour as a second-order latent construct containing dimensions of altruism (helping), courtesy, peacekeeping and cheerleading and validated it as a single factor. Podsakoff and Mackenzie's (1994) principal component factor analysis visibly demonstrated this: the aforementioned four dimensions clearly and highly loaded onto a single factor. Later Podsakoff et al. (2000) recognized that helping and courtesy could be regarded as a single factor.

Table 7.18. Measurement Model Fit: OCBI

Measurement	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
One-factor: OCBI	116.22 (9)		.000	.192	.746	.847	.093
Two-factor: OCBI	19.34 (8)	96.88 (1)	.013	.066	.966	.982	.036

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual.

However, a single-factor OCBI model unexpectedly failed to provide a good fit in this study, as seen in Table 7.18. Hence, a two-factor model was tested using the factors found as a result of previous EFA (see Table 7.14.1-2.): 'helping' (OCBI1, OCBI2 and OCBI6) and 'courtesy' (OCBI3, OCBI4 and OCBI5). The model fit was then significantly improved up to  $\chi^2 = 19.34$ , RMSEA = .066, TLI = .966, CFI = .982 and SRMR = .036, which represented a good model fit. However, when a unified second-

order structure was attempted for OCBI, these two factors did not converge into a unified OCBI. This result goes against the findings of Podsakoff et al. (1997, 2000) and Podsakoff and Mackenzie (1994). This convergence issue of OCBI will be re-examined later in this chapter.

#### 7.6.4.2. OCB toward the Organisation (OCBO)

As with the testing of OCBI, a one-factor OCBO model did not offer a good model fit. Instead, a two-factor OCBO model presented a much better fit (see Table 7.19). This was divided into ‘civic virtue’ (OCBO1, OCBO2 and OCBO3) and ‘conscientiousness’ (OCBO4, OCBO5 and OCBO6).

Table 7.19. Measurement Model Fit: OCBO

Measurement	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
One-factor: OCBO	153.86 (9)		.000	.224	.557	.734	.119
Two-factor <sup>1</sup> : OCBO	53.00 (8)	100.86 (1)	.000	.132	.868	.930	.069
Two-factor <sup>2</sup> : OCBO	15.27 (4)	37.73 (4)	.004	.094	.953	.981	.036

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual.

Even though a two-factor model significantly increased the model fit, RMSEA and TLI values were not good enough to be described as a good fit, as the RMSEA value was over 0.1. Therefore, a two-factor model was retested after dropping an item, OCBO4, which seemed suspicious from the EFA result, and which also caused the largest standardized residual. Once this had been done, OCBO’s two-factor model, ‘two-

factor<sup>2</sup>: OCBO' in the table, provided a better fit. In particular, SRMR improved considerably, as well as RMSEA and TLI. From this result, five items of two-dimensional OCBO would be employed for the structural equation modelling test: 'civic virtue' (OCBO1, OCBO2 and OCBO3) and 'conscientiousness' (OCBO5 and OCBO6). As with OCBI, the two sub-factors did not converge into a unified latent construct, OCBO. Together with OCBI, the convergent validity of OCBO will be looked at later in this chapter.

### 7.7. Convergent Validity

Before conducting the theoretical structural model analysis, composite validity and convergent validity were tested to establish construct validity. Hair et al. (2006: 776) explain convergent validity thus: 'The items that are indicators of a specific construct should converge or share a high proportion of variance in common'

There are three ways to examine this convergent validity: through factor loadings, variance extracted, and composite reliability. High factor loadings indicate convergence on some common point, and this should be .5 or higher, and ideally .7 or higher (Hair et al., 2006). The average variance extracted (AVE) is a summary indicator of convergence and, to put it differently, it is the average squared factor loading (Hair et al., 2006). All factors (including sub-factors) of composite reliability and average variance extracted (AVE) were calculated for construct validity.

Their formulas were as below:

Composite reliability

$$= \frac{(\sum \text{Standardised Loadings})^2}{(\sum \text{Standardised Loadings})^2 + (\sum \text{Measurement Error})}$$

AVE (Average Variance Extracted)

$$= \frac{(\sum \text{Squared Standardised Loadings})}{(\sum \text{Squared Standardised Loadings}) + (\sum \text{Measurement Error})}$$

Each construct's composite reliability and AVE were examined following the above formulas, based on the results of the measurement model fit (see Tables from 7.20 to 7.24).

#### 7.7.1. Psychological Empowerment

Psychological empowerment, including four sub-factors, provided good composite reliability with good factor loadings. Among the four sub-factors, self-determination presented the highest factor-loading onto psychological empowerment. This result was equivalent to Cho and Faerman's (2010) finding from a sample drawn from a South Korean government organisation and Spreitzer et al.'s (1997) finding from samples drawn from American manufacturing and insurance companies.

Table 7.20. Composite Reliability and AVE: Psychological Empowerment

Items	Standardized factor loading	Measurement error
<b>Meaning</b>		
Meaning1	0.684	0.532
Meaning2	0.865	0.252
Meaning3	0.916	0.161
Composite reliability	<b>0.865</b>	
AVE		<b>0.685</b>
<b>Competence</b>		
Compet 1	0.865	0.251
Compet 2	0.865	0.251
Compet 3	0.767	0.412
Composite reliability	<b>0.872</b>	
AVE		<b>0.695</b>
<b>Self-determination</b>		
Selfd1	0.835	0.303
Selfd2	0.684	0.532
Selfd3	0.788	0.379
Composite reliability	<b>0.814</b>	
AVE		<b>0.595</b>
<b>Impact</b>		
Impact1	0.614	0.623
Impact2	0.869	0.245
Impact3	0.896	0.197
Composite reliability	<b>0.842</b>	
AVE		<b>0.645</b>
<b>Psychological Empowerment</b>		
Meaning	0.494	0.756
Competence	0.526	0.724
Self-determination	0.844	0.287
Impact	0.636	0.595
Composite reliability	<b>0.726</b>	
AVE		<b>0.409</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs.

However, the AVE value of psychological empowerment as a unified second-order factor model was low, at 0.409, whilst the AVE of the four sub-factors was more than .5. They failed to have convergent validity for a unified latent construct of psychological empowerment. This goes against the findings of Aryee and Chen (2006) and Siebert et al. (2011). Hypothesis 4, proposing that psychological empowerment is better measured by a unitary second-order factor including four latent sub-factors than a

unitary first-order factor construct, was not supported. Given this result, all four sub-factors would be individually tested in the hypothesized structural model testing in the next chapter as it is better than a unitary single-factor model.

#### 7.7.2. Organisational Commitment

All the composite reliability values of organisational commitment (OC) were good at from 0.712 to 0.829, as seen in Table 7.21a. Nonetheless, the values of AVE were unexpectedly disappointing. Normative and continuance OC presented clear factor-loadings onto their theoretical factors and established good internal reliabilities, and their measurement fit testing showed good model fits. However, these two commitment forms failed to establish convergent validity, as both normative OC and continuance OC had less than .5 AVE values at .466 and .407, respectively. Furthermore, organisational commitment as a unified second-order structure presented unacceptable figures. The factor loading from normative OC was more than 1.00, at 1.402, and measurement error presented a negative value at -0.965.

Recently, Gill et al. (2011) stated that it was difficult to apply normative OC to Korean samples. With respect to this, their study used only two forms of OC, affective and continuance. As Gill et al. (2011) acknowledge, normative OC in this study did not succeed in establishing its convergent validity. Since the results of the preliminary pilot study in Chapter 5 predicted more than two factors of normative commitment, a two-factor normative OC model was attempted, with social obligation value set against personal obligation value, to try to get a better result. NOC1 and NOC5 were dropped



Table 7.21a. Composite Reliability and AVE: Organisational Commitment

Items	Standardized factor loading	Measurement error
<b>Affective OC</b>		
AOC3	0.600	0.640
AOC5	0.704	0.505
AOC6	0.675	0.545
AOC8	0.847	0.283
Composite reliability	<b>0.802</b>	
AVE		<b>0.507</b>
<b>Normative OC</b>		
NOC3	0.442	0.804
NOC4	0.829	0.313
NOC6	0.717	0.485
Composite reliability	<b>0.712</b>	
AVE		<b>0.466</b>
<b>Continuance OC (4 items)</b>		
COC2	0.387	0.850
COC6	0.703	0.505
COC7	0.807	0.348
COC8	0.577	0.667
Composite reliability	<b>0.721</b>	
AVE		<b>0.407</b>
<b>Organisational Commitment (OC)</b>		
AOC	0.364	0.867
NOC	1.402	-0.965
COC	0.249	0.938
Composite reliability	<b>0.829</b>	
AVE		<b>0.720</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs.

Table 7.21b. Composite Reliability and AVE: Two-Factor NOC

Items	Standardized factor loading	Measurement error
<b>NOC Personal obligation</b>		
NOC2	.470	.779
NOC3	.438	.808
NOC4	.802	.357
NOC6	.734	.461
Composite reliability	<b>.713</b>	
AVE		<b>.399</b>
<b>NOC Social obligation</b>		
NOC7	.429	.816
NOC8	.552	.695
Composite reliability	<b>.389</b>	
AVE		<b>.244</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs. / Model fits:  $\chi^2 = 16.18(4)$ , RMSEA = .097, TLI = .888, CFI = .955 and SRMR = .042.

Table 7.21c. Composite reliability and AVE: COC and Organisational Commitment

Items	Standardized factor loading	Measurement error
<b>Continuance OC (3 items)</b>		
COC6	0.670	0.551
COC7	0.859	0.263
COC8	0.560	0.687
Composite reliability	<b>0.744</b>	
AVE		<b>0.500</b>
<b>Organisational Commitment (OC)</b>		
AOC	0.337	0.893
NOC	1.564	-1.446
COC	0.203	0.959
Composite reliability	<b>0.915</b>	
AVE		<b>0.865</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs.

due to very weak factor loadings. Having done this it was possible to achieve a better model fit from a two-factor normative OC model, as seen in Table 7.21b ( $\chi^2 = 16.18(4)$ , RMSEA = .097, TLI = .888, CFI = .955 and SRMR = .042), than from a one-factor normative OC model (see the model fits of NOC(6-item) in Table 7.16.2). Nonetheless, this two-factor model still failed to achieve convergent validity and good composite reliability. Given this result, I would say that the original version of the normative OC scale is also not suitable to be applied in a Korean context, as Gill et al. suggest.

Normally, three proxy items are recommended for one construct (Hair et al., 2006). Given that there was an opportunity to test three items of continuance OC, the AVE of continuance OC was retested after dropping the item COC2, since its factor loading, at 0.387, was far less than .50. With the remaining three items of COC6, COC7 and COC8, continuance OC achieved an improved composite reliability, with an AVE of 0.744 and 0.500 (see Table 7.21c). Having achieved continuance OC's construct validity, a convergent validity test of OC was conducted again with the same two commitment forms. From the improved continuance OC construct, overall OC

composite reliability and AVE were upgraded, to 0.915 and 0.865, respectively. However, the factor loading of normative OC and its measurement error toward OC became worse: 1.564 and -1.446, respectively. As Ko et al. (1997) and Lee et al. (2001) raised this concern about normative OC's application to a Korean sample, this result was consistent with the previous two studies. Given this, we could infer that the validity issue of normative OC in a Korean context was not related to versions of the scale, original or revised. As the original version of Allen and Meyer's (1990) eight-item normative OC scale did not support a Korean context application, Hypothesis 1, proposing validity of the normative OC scale in a Korean context, and Hypothesis 2b about a four-factor OC model was not supported. Given this result, only affective OC and unidimensional continuance OC would be employed for the structural model testing reported in Chapter 8.

#### 7.7.3. Team Commitment

As seen in Table 7.22, both the composite reliability and AVE of team commitment were very good at 0.927 and 0.591, respectively. Team commitment proved that it was distinct from organisational commitment by establishing its construct validity with small and medium-sized samples drawn from Korean manufacturing team environment. Therefore, Hypothesis 3a was supported.

Table 7.22. Composite Reliability and AVE: Team Commitment

Items	Standardized factor loading	Measurement error
<b>Team commitment</b>		
TC1	0.774	0.401
TC2	0.608	0.630
TC3	0.839	0.296
TC4	0.813	0.338
TC5	0.771	0.406
TC6	0.786	0.382
Composite reliability	<b>0.927</b>	
AVE		<b>0.591</b>

*Note.* The figures of ‘Standardized factor loading’ and ‘Measurement error’ are from the ‘Completely standardized solution’ in LISREL outputs.

#### 7.7.4. Organisational Citizenship Behaviour

##### 7.7.4.1. OCB toward Individuals (OCBI)

Table 7.23a presents the first results for OCBI’s reliability and AVE. Two sub-factors, ‘helping’ and ‘courtesy’ presented good composite reliability at 0.704 and 0.828, respectively. However, the AVE value of ‘helping’ was not good enough to get convergent validity, at 0.446, whilst the value of the AVE of ‘courtesy’ was 0.617. Moreover, it did not converge into OCBI when it was tried as a unified factor, as noted in the confirmatory factor analysis. This is the reason for the problems found in OCBI second-order factor testing in section 7.6.4.1.

Given this result, a better model was sought in a unidimensional form (see Table 7.23b). As the sub-factor ‘helping’ failed to achieve its convergent validity, a one-factor model of OCBI comprising ‘helping’ and ‘courtesy’ (1-factor: OCBI(6) in table) did not give a good model fit, contrary to the previous studies (Podsakoff et al. 1997, 2000; Podsakoff & Mackenzie, 1994). During the process, two items of OCBI1 and OCBI6, the items

Table 7.23a. Composite Reliability and AVE: OCBI

Items	Standardized factor loading	Measurement error
<b>Helping</b>		
OCBI1	.699	.512
OCBI2	.738	.456
OCBI6	.553	.694
Composite reliability	<b>.704</b>	
AVE		<b>.446</b>
<b>Consideration</b>		
OCBI3	.798	.364
OCBI4	.836	.301
OCBI5	.719	.483
Composite reliability	<b>.828</b>	
AVE		<b>.617</b>
<b>OCBI</b>		
Helping	-	-
Consideration	-	-
Composite reliability	<b>n/a</b>	
AVE		<b>n/a</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs.

Table 7.23b. Seeking One-Factor OCBI

Measurement	$\chi^2$ (df)	$\Delta \chi^2$ ( $\Delta$ df)	p-value	RMSEA	TLI	CFI	SRMR
1-factor: OCBI(6)	116.22 (9)		.000	.192	.746	.847	.093
1-factor: OCBI(5)	25.42 (5)	90.8 (4)	.000	.113	.913	.957	.052
1-factor: OCBI(4)	5.44 (2)	19.98 (3)	.066	.073	.976	.992	.023

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, df = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual; OCBI(6): all 6 items, OCBI(5): 5 items after dropping OCBI1, OCBI(4): 4 items after dropping OCBI1 & OCBI6.

Table 7.23c. Composite Reliability and AVE: One-Factor OCBI

Items	Standardized factor loading	Measurement error
<b>OCBI</b>		
OCBI3	.775	.399
OCBI4	.848	.290
OCBI5	.732	.480
Composite reliability	<b>.829</b>	
AVE		<b>.618</b>

*Note.* The figures of 'Standardized factor loading' and 'Measurement error' are from the 'Completely standardized solution' in LISREL outputs.

comprising ‘helping’, were dropped as they produced large standardized residuals. The four items of OCBI (OCBI2, OCBI3, OCBI4 and OCBI5) then presented a very good fit at  $\chi^2 = 5.44$  with insignificance, RMSEA = .073, TLI = .976, CFI = .992 and SRMR = .023 (see 1-factor: OCBI(4) in the Table).

With a new OCBI model – ‘1-factor: OCBI(4)’ in Table 7.23b – composite reliability and AVE were retested. However, since OCBI2, an item of the sub-factor ‘helping’, gave a poor factor loading, it was eventually dropped. Following this, the AVE value improved to 0.618, as well as the composite reliability, which 0.829 (see Table 7.23c). Therefore, only the ‘courtesy’ factor would represent OCBI in the structural model testing.

#### 7.7.4.2. OCB toward the Organisation (OCBO)

Both sub-factors of OCBO, ‘civic virtue’ and ‘conscientiousness’, presented good values of AVE at 0.607 and 0.615, with good reliability at 0.816 and 0.762, respectively. Nonetheless, as was the case with OCBI, an OCBO model in the form of a unified second-order structure failed produce convergence, as can be seen in Table 7.24a.

Hence, the same process was implemented as for OCBI (see Table 7.24b). With three items (OCBO1, OCBO2, OCBO3) from ‘civic virtue’ and one item (OCBO6) from ‘conscientiousness’, the model fit was very good at  $\chi^2 = 3.43$ , RMSEA = .047, TLI = .986, CFI = .995 and SRMR = .016 with insignificance. This meant that this model represented the data (see 1-factor: OCBO(4) in table).

Table 7.24a. Composite Reliability and AVE: OCBO

Items	Standardized factor loading	Measurement error
<b>Civic virtue</b>		
OCBO1	.831	.309
OCBO2	.909	.175
OCBO3	.551	.696
Composite reliability	<b>.816</b>	
AVE		<b>.607</b>
<b>Conscientiousness</b>		
OCBO5	.785	.384
OCBO6	.784	.385
Composite reliability	<b>.762</b>	
AVE		<b>.615</b>
<b>OCBO</b>		
Civic virtue	-	-
Conscientiousness	-	-
Composite reliability	<b>n/a</b>	
AVE		<b>n/a</b>

*Note.* The figures of ‘Standardized factor loading’ and ‘Measurement error’ are from the ‘Completely standardized solution’ in LISREL outputs.

Table 7.24b. Measurement Model Fit: OCBO

Measurement	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
One-factor: OCBO(6)	153.86 (9)		.000	.224	.557	.734	.119
One-factor: OCBO(5)	19.34 (5)	134.52 (4)	.002	.094	.935	.968	.045
One-factor: OCBO(4)	3.43 (2)	15.91 (3)	.180	.047	.986	.995	.016

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual; OCBO(6): all 6 items, OCBO(5): 5 items after dropping OCBO5, OCBO(4): 4 items after dropping OCBO5 + OCBO4.

Table 7.24c. Composite Reliability and AVE: One-Factor OCBO

Items	Standardized factor loading	Measurement error
<b>OCBO: Civic virtue</b>		
OCBO1	0.785	0.383
OCBO2	0.960	0.079
OCBO3	0.545	0.703
Composite reliability	<b>0.818</b>	
AVE		<b>0.612</b>

*Note.* The figures of ‘Standardized factor loading’ and ‘Measurement error’ are from the ‘Completely standardized solution’ in LISREL outputs.

However, this newly created model failed to give good AVE at 0.425, although it presented good composite reliability, at 0.704. As with the OCBI results, therefore, I decided to go forward only with the three items of ‘civic virtue’ to indicate OCBO, which were about employees’ reaction to their organisation’s change and development. This model achieved good composite reliability and AVE at 0.818 and 0.612, respectively (see Table 7.24c).

This result can be explained by the underlying Confucian culture in Korea. Workers tend not to have extra time off work if their supervisor hasn’t taken the time off, which is a behaviour showing respect towards the senior person. Moreover, attendance and punctuality at work are highly important norms in Korean society. The survey results reflect this; 76% of respondents answered they did not have any extra time off work, whilst only 2.8% said they did. Likewise, 85% of the respondents replied that their attendance at work was above the norm, while only 2.5% answered negatively. This response rate proved that ‘conscientiousness’ is not as meaningful as ‘civic virtue’ in a Korean context.

## 7.8. Overall Measurement Model Fit

When the data screenings were carried out, the numbers of proxy items of each latent construct were reduced, due to the weak correlations with other items; cross or weak loadings onto the theoretical factors; large standardized residuals; failure to achieve convergent validity; and so on.



Table 7.25 synthesizes all the processes of measurement model analyses and confirms that a nine-factor measurement model was the best in this study, whilst demonstrating the statistically significant changes in every step.

Table 7.25. Overall Fit Indices for a Measurement Model

Measurement+	$\chi^2 (df)$	$\Delta \chi^2 (\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
1-factor	3240.66 (434)		.000	.142	.815	.827	.105
3-factor	2716.58 (431)	524.08 (3)	.000	.128	.847	.858	.096
4-factor	2468.90 (428)	247.68 (3)	.000	.122	.861	.872	.092
5-factor	2226.93 (424)	241.97 (4)	.000	.115	.876	.887	.088
8-factor	1011.99 (407)	1214.94 (17)	.000	.068	.948	.954	.077
9-factor	728.87 (398)	283.12 (9)	.000	.051	.969	.974	.056

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual.

+ 1-factor: All together

3-factor: Psychological Empowerment, Commitment and OCB

4-factor: Psychological Empowerment, Org'l commitment (OC), Team commitment (TC) and OCB

5-factor: Psychological Empowerment, OC, TC, OCBI and OCBO

8-factor: Meaning, Competence, Self-determination, Impact, OC, TC, OCBI and OCBO

9-factor: Meaning, Competence, Self-determination, Impact, Affective OC, Continuance OC, TC, OCBI and OCBO

Like the Harman's single-factor test used to assess common method bias, the CFA one-factor model fit test is another approach to EFA testing (Malhorta et al., 2006; Podsakoff et al., 2003). A one-factor model indicates a measurement model that deals with all the items as one latent construct. The hypothesized one-factor model presented very poor fit. Specifically, the fits of Chi-square, RMSEA and SRMR indicated that this model was not acceptable, considering that 0.08

RMSEA fit and less than 0.08 SRMR fit are regarded as mediocre and good fit, respectively (see Section 5.6.2 for model fit explanation). Moreover, the model fits were significantly improved as the model got more complicated, as seen in Table 7.25.

A three-factor model only indicates the three main constructs, treating all the latent constructs – psychological empowerment, commitment and OCB – as unidimensional. A four-factor model divides commitment into organisational commitment and team commitment. The hugely, statistically significant changes from a three-factor model to a four-factor model demonstrate that these two commitment forms or foci are different and distinct from each other.

A five-factor model represents OCB as divided into OCBI and OCBO, while presenting the other constructs in the same way as a four-factor model. An eight-factor model with two OCBs stands for psychological empowerment's four separate factors, as a unified second-order factor structure was not supported. Finally, a nine-factor model is the one replacing one OC latent construct with affective OC and continuance OC. As seen in the table, a nine-factor model showed good measurement model fit at  $\chi^2 = 728.87$ , RMSEA = .051, TLI = .969, CFI = .974 and SRMR = .056, showing that all nine latent constructs are different and distinct from one another: discriminant validity was established.

As this study was conducted by cross-sectional, self-report survey, it may contain common method biases. However, EFA and CFA, the two approaches of Harman's single-factor test, indicate that there are no substantial common method biases.

## 7.9. Conclusion

This chapter has focused on establishing construct validity for each latent construct, including sub-factors. In addition, the dimensionality issues of organisational commitment, psychological empowerment and OCB have been examined, and Harman's single-factor test to assess common method biases has been highlighted.

First, common method biases were assessed through Harman's single-factor test. EFA's factor analysis showed that one factor did not explain a majority of variances, and CFA's one-factor model fit testing showed that this one-factor model is a very poor model and that the nine-factor model is the best one for this study, which shows that the data for this study does not have substantial common method biases.

Secondly, the scale of organisational commitment proved to be different from the initial expectation. As Ko et al. (1997) and Lee et al. (2001) noted from their studies, normative OC scale was not successful in achieving construct validity in a Korean context. Therefore, *Hypothesis 1* was not supported in the sense that only affective and continuance organisational commitment established their construct validity in a Korean context.

The dimensionality of OC largely depended on the dimensionality of continuance OC, and this study did not support Hypothesis 2a in the sense that overall OC presented a better model fit when unidimensional continuance OC was employed. Eventually, only a two-factor OC model of affective and continuance OC was

eventually supported, after convergent validity testing. Therefore, *Hypothesis 2b* was not supported.

Thirdly, team commitment established its construct validity and proved that it was a distinct construct from organisational commitment even in small and medium-sized companies. Therefore, *Hypothesis 3a* was supported.

Then it was found that psychological empowerment did not support its unified second-order latent factor model. Although a separate four-sub-factor model showed significantly better fit than a one-factor model, it failed to converge into one single higher-order factor. *Hypothesis 4* was therefore not supported.

Finally, OCB brought convergence issues and suggested using a single factor of OCBI and OCBO. In the case of OCBI, ‘courtesy’ and ‘helping’ did not work as a single factor. Accordingly, ‘courtesy’, which established its construct validity in this study, would in future be employed for OCBI. In the case of OCBO, ‘civic virtue’ was found to be a better indicator of OCBO than ‘conscientiousness’.

Table 7.26 presents the remaining items which passed all the reliability tests, EFA, CFA and convergent analysis. These measurement items for the latent constructs would be employed for the test of a hypothesized structural model and the untested hypotheses, as described in the next chapter.

Table 7.26. List of Questionnaire Items after CFA Measurement Model Fit Test

Constructs		Variables	Questionnaire items
Psy. Emp ower ment	Meaning	Meaning1	The work I do is very important to me.
		Meaning2	My job activities are personally meaningful to me.
		Meaning3	The work I do is meaningful to me.
	Competence	Compet 1	I am confident about my ability to do my job.
		Compet 2	I am self-assured about my capabilities to perform my work activities.
		Compet3	I have mastered the skills necessary for my job.
	Self-determination	Selfd1	I have significant autonomy in determining how I do my job.
		Selfd2	I can decide on my own how to go about doing my work.
		Selfd3	I have considerable opportunity for independence and freedom in how I do my job.
OC	Affective OC	Impact1	My impact on what happens in my team is large.
		Impact2	I have a great deal of control over what happens in my team.
		Impact3	I have significant influence over what happens in my team.
		AOC3	I really feel as if this organisation's problems are my own.
	Continuance OC	AOC5	I do (not) feel like 'part of the family' at my organisation
		AOC6	I do (not) feel 'emotionally attached' to this organisation
		AOC8	I do (not) feel a strong sense of belonging to my organisation
		COC6	I feel that I have too few options to consider leaving this organisation.
Team Commitment		COC7	One of the few serious consequences of leaving this organisation would be the scarcity of available alternatives.
		COC8	One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice — another organisation may not match the overall benefits I have here
		TC1	I am prepared to do additional chores when this benefits my team.
		TC2	I feel at home among my colleagues at work
		TC3	I try to invest effort into a good atmosphere in my team
		TC4	In my work, I let myself be guided by the goals of my team
OCBI	Consideration (courtesy)	TC5	When there is social activity with my team, I usually help to organize it.
		TC6	This team lies close to my heart.
		OCBI3	I take steps to prevent problems with other workers.
OCBO	Civic virtue	OCBI4	I try to avoid creating problems for co-workers.
		OCBI5	I am mindful of how my behaviour affects other people's jobs.
		OCBO1	I keep up with developments in the company.
		OCBO2	I keep abreast of changes in the organisation.
		OCBO3	I read and keep up with org. announcements, memos, etc.

## **CHAPTER 8. ANALYSIS II**

### **8.1. Introduction**

Identifying the appropriate proxy items for all the latent constructs discussed in Chapter 7, this chapter presents the testing of a hypothesized model that was created by drawing on the literature review.

Chapter 8 consists of five sections. First, the constructs' correlation results are discussed, and divided into demographic and non-demographic factors (8.2), to fulfil the conditions for mediation testing, as suggested by Baron and Kenny (1986). After the correlations between the constructs have been examined, the plan for structural model testing is presented. Then, a direct model and two indirect models are examined, separately (8.3), to test for the presence of mediating effects. After the mediation effects of the two commitment forms have been confirmed, in the following section (8.4), the direct, indirect and total effects of these commitment forms are examined. Following the discovery of the partial mediation effects of affective OC and team commitment, the interaction effects of these two commitment forms are scrutinized (8.5). The chapter then concludes.

### **8.2. Descriptive Statistics**

In Chapter 7, all the scales of constructs were validated and improper proxy items were filtered out. For the remaining items, Table 8.1 presents descriptive statistics such as

means, standard deviations, composite reliabilities and correlations among observed variables. Most of the constructs' composite reliabilities were excellent, at 0.80 or more, except for continuance OC, at 0.74. Reliability at 0.74, however, is still good (Field, 2009). The correlations of the variables are discussed in two groups: demographic factors and non-demographic factors. This is to see whether the main constructs (non-demographic factors) significantly correlate with each other to meet the conditions for the mediation test, as well as looking at the correlations between demographic factors and main constructs.

#### 8.2.1. Demographic Factors

As noted in the literature review, demographic variables combined with empowerment, commitment and OCB did not produce relationships that were consistent with those described in previous findings. Gender (male or female) was related only to age and organisational and team tenure. Although the respondents were predominantly male employees (about 80% of the sample, which is characteristic of manufacturing companies), the lack of a significant relationship between gender and commitment was consistent with the findings of previous studies (Becker, 2009; Meyer et al., 2002).

Age was significantly related to continuance OC and team commitment, but not to affective OC. This result was different from that of Meyer et al. (2002, see Table 2.2 in Chapter 2), which showed that age was more associated with affective OC than continuance OC. However, it was in line with Becker's (2009) finding (see Table 2.3 in Chapter 2), which showed age to be more related to organisational commitment than team commitment. To be precise, this study suggests that age is more significantly

related to continuance OC than team commitment, which is understandable considering the biggest age group was 41-50 years and the average organisational and team tenures were 11 and 9 years, respectively. Age also had positive relationships with employees' competence, OCBI (courtesy) and OCBO (civic virtue). Given these results, we can say that older employees tend to perceive that they have more knowledge and skills related to work, that they are more considerate of co-workers, and that they even implement changes introduced by the company better than younger employees do.

Eighty eight per cent of respondents were full-time workers. This employment type was mostly associated with continuance OC, followed by job category and affective OC. However, it was not associated with team commitment or OCBO. As expected, competence and self-determination were significantly related to employment type. Since most of respondents were full-time workers, it can be said that full-time workers in this study tended to perceive that they were competent and able to show self-determination at work.

The correlation between organisational tenure and team tenure was very high, at 0.84. This was expected as respondents answered both questions similarly. These two kinds of tenure were not associated with team commitment; and this was consistent with the findings of Becker (2009). From this, we can see that, consistent with previous studies, tenure – in other words, employee turnover – is less related to team commitment.

Organisational tenure was more related to continuance and affective OC than was team tenure. Given that organisational and team tenures were more associated with continuance OC than with affective OC, this was consistent with the findings of Meyer et al. (2002). However, it was different with respect to tenure being negatively



Table 8.1. Means, Standard Deviations, Composite Reliabilities and Correlations between Study Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Sex	1.14	.35	-															
2. Age	39.28	8.88	-.15**	-														
3. Employment type	2.98	.24	-.04	.01	-													
4. Job category	1.43	.69	.01	-.34**	.12*	-												
5. Org. tenure	11.29	9.56	-.34**	.69**	.07	-.28**	-											
6. Team tenure	8.98	9.30	-.28**	.59**	.04	-.28**	.84**	-										
7. Team size	13.77	9.48	-.04	.29**	.01	-.29**	.24**	.25**	-									
8. Meaning	3.90	.80	.00	.07	.09	.17**	-.03	-.01	-.08	<b>.87</b>								
9. Competence	3.75	.75	.04	.14**	.10*	-.04	.08	.06	.02	.39**	<b>.87</b>							
10. Self-determination	3.25	.86	-.03	.10	.10*	.13**	-.04	-.07	-.09	.40**	.52**	<b>.81</b>						
11. Impact	3.17	.80	.01	.07	.03	.16**	-.09	-.09	-.08	.38**	.26**	.61**	<b>.84</b>					
12. Affective OC	3.54	.82	.04	-.05	.11*	.27**	-.12*	-.12*	-.03	.47**	.30**	.36**	.36**	<b>.80</b>				
13. Continuance OC	2.77	.82	-.02	.17**	.12*	-.12*	.23**	.18**	.03	.06	-.03	.01	.03	.03	<b>.74</b>			
14. Team commitment	3.74	.70	.01	.11*	.04	.17**	-.03	-.05	-.05	.55**	.34**	.42**	.46**	.54**	.06	<b>.93</b>		
15. OCBI	3.84	.69	.07	.16**	.10*	.02	.02	-.03	.03	.36**	.32**	.31**	.20**	.33**	.08	.54**	<b>.83</b>	
16. OCBO	3.76	.67	-.01	.20**	.06	.08	.08	.04	.03	.50**	.43**	.40**	.29**	.44**	.06	.63**	.52**	<b>.82</b>

Note. Sex: 1 = Male, 2 = Female; Job category: 1 = Production, 2 = Office & Administration, 3 = Sales, 4 = R&D, 5 = Others; Employment Type: 1 = Temporary, 2 = Contract, 3 = Full-time, 4 = Part-time. Scale reliabilities (Composite reliabilities) are on the diagonal in bold type. \*\* Correlation is significant at the 0.01 level (1-tailed) / \* Correlation is significant at the 0.05 level (1-tailed).

associated with affective OC. These two types of tenure were highly associated with age, but they were not related to OCB and any sub-factors of psychological empowerment. This was different from Seibert et al. (2011), whose results suggest that tenure is positively associated with psychological empowerment. Psychological empowerment in this study was mainly related to kinds of work ('Job category' in Table 8.1).

The variation in team size was quite wide at *sd* (standard deviation) = 9.48. I have assumed this was due to the samples used in this study, which included both office workers and production workers. The different jobs caused a variation in team size: the team size was significantly related only to demographic variables, such as job category, age, and team and organisational tenure.

## 8.2.2. Non-Demographic Factors

### 8.2.2.1. Psychological Empowerment

All the sub-factors of psychological empowerment – meaning, competence, self-determination and impact on team – had significant positive relationships with team commitment and affective OC. Specifically, all of the four sub-factors showed more significant relationships with team commitment than with affective OC, and none of them had significant relations with continuance OC. Therefore, Hypothesis 5a, proposing the significant positive relationship between psychological empowerment and team commitment, was supported. However, Hypothesis 5b, about the significant positive relationship between psychological empowerment and organisational commitment, was partially supported.

The fact that all the factors of psychological empowerment had stronger relationships with team commitment than with organisational commitment showed that team commitment was an important commitment focus and suggested that the management should seriously consider it alongside organisational commitment, in order to promote team and individual productivity. Of the four sub-factors of psychological empowerment, meaning had the strongest relationship with both commitment forms, followed by impact on team, self-determination and competence.

Further, all the psychological empowerment factors were positively associated with both OCBI and OCBO, although they were more associated with OCBO than with OCBI, which was consistent with the findings of Alge et al. (2006). Therefore, *Hypothesis 6a and Hypothesis 6b* were fully supported. Again, meaning had the strongest relationship with OCBI and OCBO, followed by competence, self-determination and impact on team.

Self-determination was strongly related to impact on team and competence. However, competence and impact on team were the least correlated among the four sub-factors. Given this, it could be inferred that despite employees feeling competent, their capability did not always lead to them exercising their power in their team. Among the four sub-factors, meaning was the most strongly associated with citizenship behaviour, both OCBO and OCBI.

#### 8.2.2.2. Commitment

The most unexpected correlation result came from continuance OC. Continuance OC was significantly related only to demographic factors. Of these, organisational tenure

was the most significantly related factor, and this supported Meyer et al. (2002)'s finding that organisational tenure was the most significant factor of continuance OC (see also Table 2.2 in Chapter 2). Continuance OC's associations with organisational and team tenure were the strongest among three forms of commitment in the table.

Affective OC had the strongest significant relationship with team commitment. This result suggested the relationship was much stronger than had been suggested by the research of Randall and Cote (1991) and Cohen (2000). This study's Pearson correlation was 0.54, while Randall and Cote's (1991) correlation was 0.08 and Cohen's (2000) was 0.37. When the scale of team commitment was appropriately employed, the correlation figure strongly improved from the previous two studies. In Chapter 7, the construct validity of team commitment was established, and was established that as distinct from that of organisational commitment. Although continuance OC seemed not to be related to team commitment, and the relationship between team commitment and normative OC was not tested here, the relationship between affective OC and team commitment was highly significant. Overall, team commitment had a partially significant relationship with organisational commitment: that is, only with affective OC among the three components of OC. Therefore, *Hypothesis 3b*, that team commitment and organisational commitment were significantly related each other, was partially supported.

Regardless of how appropriately team commitment may have been measured, we may assume that this result is related to the spread of the team structure in organisations. Cohen's (2000) study was conducted about a decade after Randall and Cote's (1991) study, and this study (2011) was conducted about a decade after Cohen's (2000) study. As the use of team structures spread, employees' commitment to teams may have risen.

This is why the level of commitment between two commitment forms may have increased from ten years ago or twenty years ago. This is strong evidence of the importance of team commitment in the current organisational structure.

Affective OC had a stronger relationship with OCBO than with OCBI. This corresponded to the target similarity perspective of Lavelle et al. (2005, 2007) and the findings of Becker (2009).

Team commitment provided different relational patterns from organisational commitment. The latter's relationship with affective OC was good, whereas team commitment was strongly and significantly related to OCBO and OCBI, than affective OC was, and explicitly more associated with OCBO than with OCBI. This result contrasted with the proxy theory and target similarity approach. Team commitment might be more related to OCBI because the target of commitment and citizenship behaviour, team members or co-workers, was proximal and concrete rather than distal and abstract. However, this result was inconsistent with previous findings (Becker, 2000; Neining et al., 2010). In addition, meaning, along with affective OC, was significantly associated with team commitment.

#### 8.2.2.3. Organisational Citizenship Behaviour (OCBI / OCBO)

Generally, OCBO presented stronger relationships with other observed variables than did OCBI. Whilst the strongest significant relationship of OCBI was with OCBO, the strongest relationship for OCBO was with team commitment. This could be explained by regarding civic virtue (OCBO) as the product of team commitment. Employees followed and kept up with the company's development and changes because these

would ultimately influence their teams' goals, productivity and performance. For any team members with strong and positive team commitment, this keeping-up could be taken for granted. Both OCBI and OCBO had similar patterns of correlations with psychological empowerment factors. The most significant relationships of both OCBI and OCBO were with meaning, followed by competence, self-determination and impact on team.

From this examination of the correlation matrix for the latent constructs, the conditions for the mediation of model testing were satisfied: there were statistically significant correlations between initial variables (psychological empowerment's four factors) and outcomes (OCBI/O); between initial variables (psychological empowerment's four factors) and mediators (team commitment/ affective OC); between mediators (team commitment/ affective OC) and outcomes (OCBI/O). Since all the latent constructs except continuance OC had statistically significant associations with one another, and their influential direction was supported by the previous literature review (see Chapter 3), the next stage of analysis, the multi-level mediation model testing, was proceeded with, and this is reported in the following section.

### 8.3. Multiple Mediation Model Testing

In order to observe how commitment mediated the relationships between psychological empowerment and OCBI/OCBO, three models were tested as: a direct model (Figure 8.1); an indirect model that controlled all the direct paths from initial variables to outcomes (Figure 8.2); and another indirect model that allowed all the direct paths from initial variables to outcomes (Figure 8.3). Although continuous OC was not

significantly related to any other constructs in the correlation matrix, all the models were tested with continuance OC included, to check and confirm its non-significance. Since the unified second-order structure of psychological empowerment and organisational commitment was not supported, the first-order independent four psychological empowerment factors and independent affective OC and continuance OC factor structures were tested.

#### 8.3.1. Direct Model

As mentioned above, a direct model excludes mediators, as seen in Figure 8.1. This is to check the mediation effects of commitment by comparing the results with those from indirect models.

The model fit of our direct model was good at  $\chi^2(df) = 824.13(405)$  with significance of RMSEA = .057, TLI = .901, CFI = .914 and SRMR = .075. As well as the model being significant, the other model fit indices indicated this model to be a good model. The path from impact on team was an exception; but the other three psychological empowerment factors were significantly and positively related to OCBI and OCBO. As expected from the correlation matrix, employees' acceptance of the meaningfulness of their work (meaning) strongly influenced OCBO ( $\gamma = .45$ ), followed by competence ( $\gamma = .24$ ) and self-determination ( $\gamma = .17$ ). As with OCBO, meaning was the most powerful positive factor in OCBI ( $\gamma = .24$ ) as well, followed by self-determination ( $\gamma = .20$ ) and competence ( $\gamma = .17$ ). The effects of meaning and competence were stronger on OCBO than on OCBI, whereas the effects of self-determination were stronger on OCBI than on OCBO.

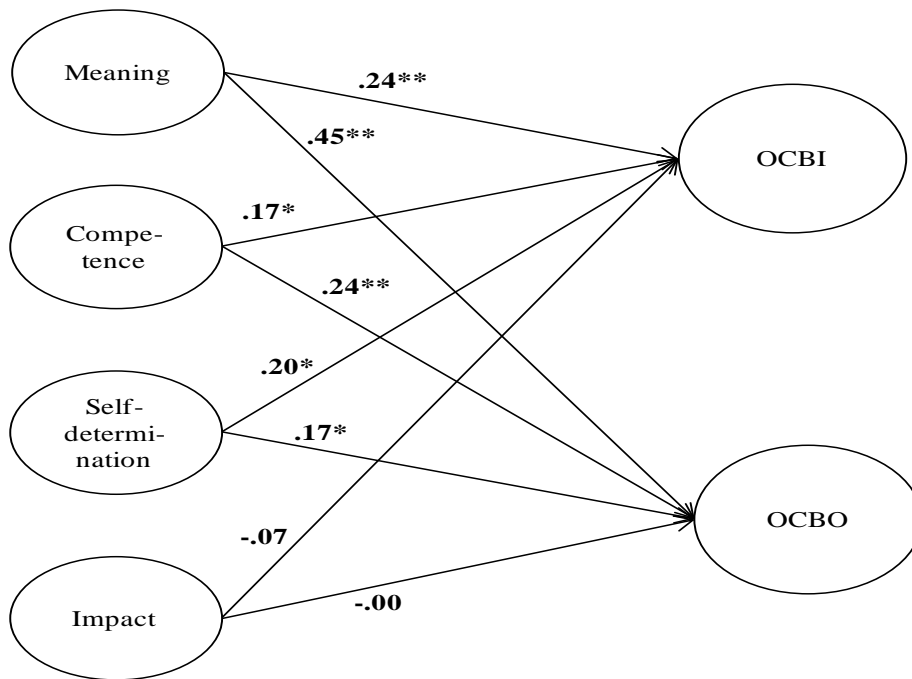


Figure 8.1. Direct Model

*Note.* Figures are from a completely standardized solution.

\*\* Significant at the 0.01 level (1-tailed), \* Significant at the 0.05 level (1-tailed).

On the previous correlation matrix, all the factors of psychological empowerment seemed to have significant positive relations with OCBI and OCBO. Unlike the other factors, however, impact on team did not show any positive or significant influences on the two forms of OCB. Impact on team was negatively associated with both OCBI and OCBO. Hence, *Hypothesis 6a* was partially supported as impact on team showed negative relationships and was even insignificant. *Hypothesis 6b* was also partially supported as self-determination was more associated with OCBI than with OCBO.

### 8.3.2. Indirect Models



As seen in Figures 8.2 and 8.3, the two indirect models illustrated the model with mediators, which were affective OC, continuance OC, and team commitment. The first indirect model, Indirect Model 1 (see Figure 8.2), was used to examine the full mediation effects of commitment by controlling the direct paths from empowerment to OCBs; whereas the second indirect model, Indirect Model 2 (see Figure 8.3), was used to look at partial mediation effects by allowing the direct paths as well as indirect (mediating) paths.

#### 8.3.2.1. Indirect Model 1: Full Mediation

Indirect Model 1 (Figure 8.1) presented a full mediation model with no direct paths from independent, initial variables to dependent, outcome variables. Instead, paths from independent variables to dependent variables were only permitted through three mediators. Thus we were able to see the effects of full mediation by allowing indirect influences only.

The model fit of Indirect Model 1 was significantly improved from that of the Direct Model, suggesting that there were mediation effects. The following was noted from the degree of freedom and significance: although the degree of freedom was increased from  $df = 405$  in the Direct Model to  $df = 410$  in Indirect Model 1, the model fit was, on the contrary, significantly improved. Chi-square fit was significantly improved ( $\Delta \chi^2 = 47.75$ , a significant change) and the other model fit indices were better than those of the Direct Model, as  $\chi^2(df) = 776.38(410)$ , RMSEA = .053, TLI = .912, CFI = .923 and SRMR = .068.

The factor-loading scores of all proxy items onto their theoretical latent constructs were good (for the factor-loading values and error variances, see the normal type figures in Figure 8.2). As expected from the correlation results (see Table 8.1), all the paths to and from continuance OC were non-significant.

When commitment mediated psychological empowerment and OCBI/O, the relational paths were changed from those of the Direct Model (for path coefficients, see bold type figures in Figure 8.2).

Still, meaning was a strong predictor of commitment, as expected from the correlation matrix. This signified that work meaningfulness significantly influences team commitment ( $\gamma = .44$ ) and affective OC ( $\gamma = .45$ ).

The effects of competence on OCBI and OCBO were only delivered via team commitment ( $\gamma = .11$ ), not via organisational commitment. The changes in the effects of competence on OCBI and OCBO will be examined later, in Section 8.3.2.2(2).

Self-determination was a good predictor of OCBs in the Direct Model, but it did not work at all when the mediators, the types of commitment, were added. None of the paths from self-determination to the three commitment forms were significant. Hence, we can say that there were no mediation effects of commitment between self-determination and OCBs.

In contrast to self-determination, impact on team showed significant paths to team commitment ( $\gamma = .23$ ) and affective OC ( $\gamma = .16$ ) and had significant effects on the OCBs. This demonstrated that there were mediating effects, since there were no significant paths from impact to the OCBs in the Direct Model.

Meanwhile, not all the paths from commitments to the OCBs were significant in Indirect Model 1.

The paths from team commitment to OCB were consistent with previous studies' (Becker, 2009; Cohen, 2006) findings. Team commitment was the strongest predictor of both OCBI ( $\beta = .48$ ) and OCBO ( $\beta = .59$ ), and the magnitude of its effects was greater than those of affective OC. Moreover, its predictive power on OCBO was stronger than on OCBI. Therefore, *Hypothesis 8a*, which proposed that team commitment had stronger effects on OCBO than on OCBI, was supported and *Hypothesis 8b*, which proposed that team commitment had more powerful significant effects on OCBI and OCBO than those of organisational commitment, was supported.

Affective OC showed a significant impact on OCBO ( $\beta = .21$ ) but, unexpectedly, it did not show any significant impact on OCBI. Therefore, *Hypothesis 7* was only partially supported, since organisational commitment did not have a significant effect on OCBO in this study.

However, the results were in line with the findings of Becker's (2009) meta-analysis study in terms of team commitment having superior effects to those of organisational commitment and the two commitments having stronger effects on OCBO than on OCBI (see Table 2.3 in Chapter 2 for the reference).

As mentioned earlier, continuance OC did not provide any significant routes to OCBI or OCBO. This result was in line with those of Meyer et al. (2002) and Meyer and Herscovitch (2001), suggesting affective OC had stronger links to discretionary behaviour than normative and continuance OC.

Overall, team commitment significantly mediated the relationships of meaning, competence and impact on team with OCBI and OCBO; affective OC mediated the relationships of meaning and impact with OCBO only; and continuance OC did not mediate any links between empowerment and OCBs. Since of the three components of OC only affective OC played a mediating role, and the significant path was only to OCBO in Indirect Model 1, *Hypothesis 9a*, proposing that a unified higher-order of organisational commitment had mediating roles between empowerment and OCBI, was not supported, and *Hypothesis 9b*, proposing that a unified higher-order of organisational commitment had mediating roles between empowerment and OCBO was only partially supported. However, *Hypothesis 10a and Hypothesis 10b*, which proposed that team commitment had mediating roles between empowerment and OCBI/OCBO, was supported. Although not all four sub-factors were mediated by team commitment, team commitment did mediate between three sub-factors of empowerment and OCBI as well as OCBO.

#### 8.3.2.2. Indirect Model 2: Partial Mediation

Unlike Indirect Model 1, Indirect Model 2 was a partial mediation model that allowed direct paths from independent variables to dependent variables, whilst holding the mediating links between them constant. This was to observe the direct and indirect effects of independent variables (psychological empowerment) on dependent outcome variables. The factor loading scores are not shown in Figure 8.3, as they were the same as those for Figure 8.2. The model fit of a partial mediation model (Indirect Model 2) was significantly improved from that of a full mediation model (Indirect Model 1), as  $\chi^2(df) = 733.25 (402)$ , RMSEA = .051, TLI = .917, CFI = .929 and SRMR = .063. The

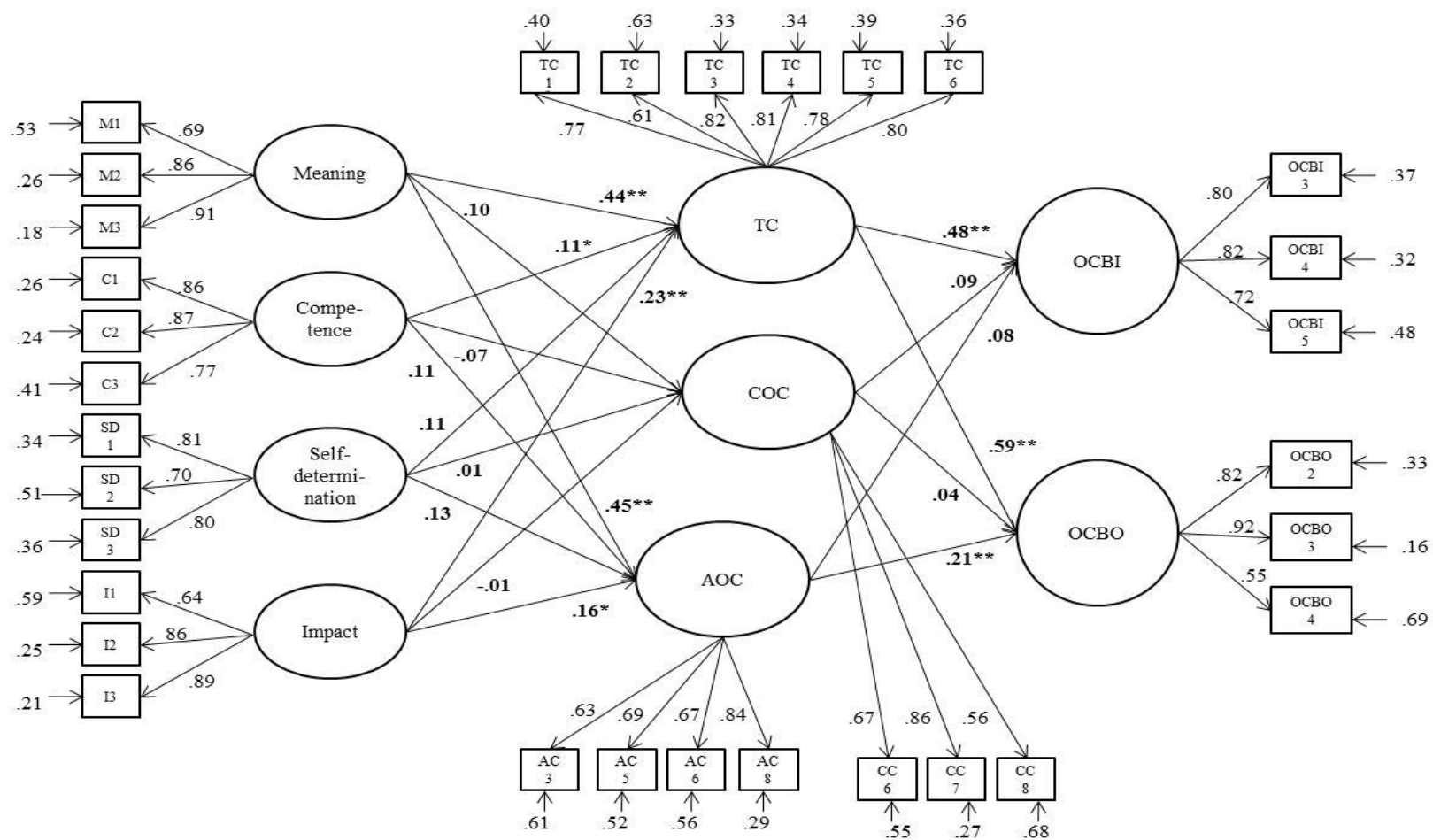


Figure 8.2. Indirect Model 1, in which the Direct Paths from Empowerment to OCB are Controlled

Note. All figures are from a completely standardized solution. Numbers in bold type are for path coefficients.

\*\* Path coefficients are significant at the 0.01 level (1-tailed), \* Path coefficients are significant at the 0.05 level (1-tailed).

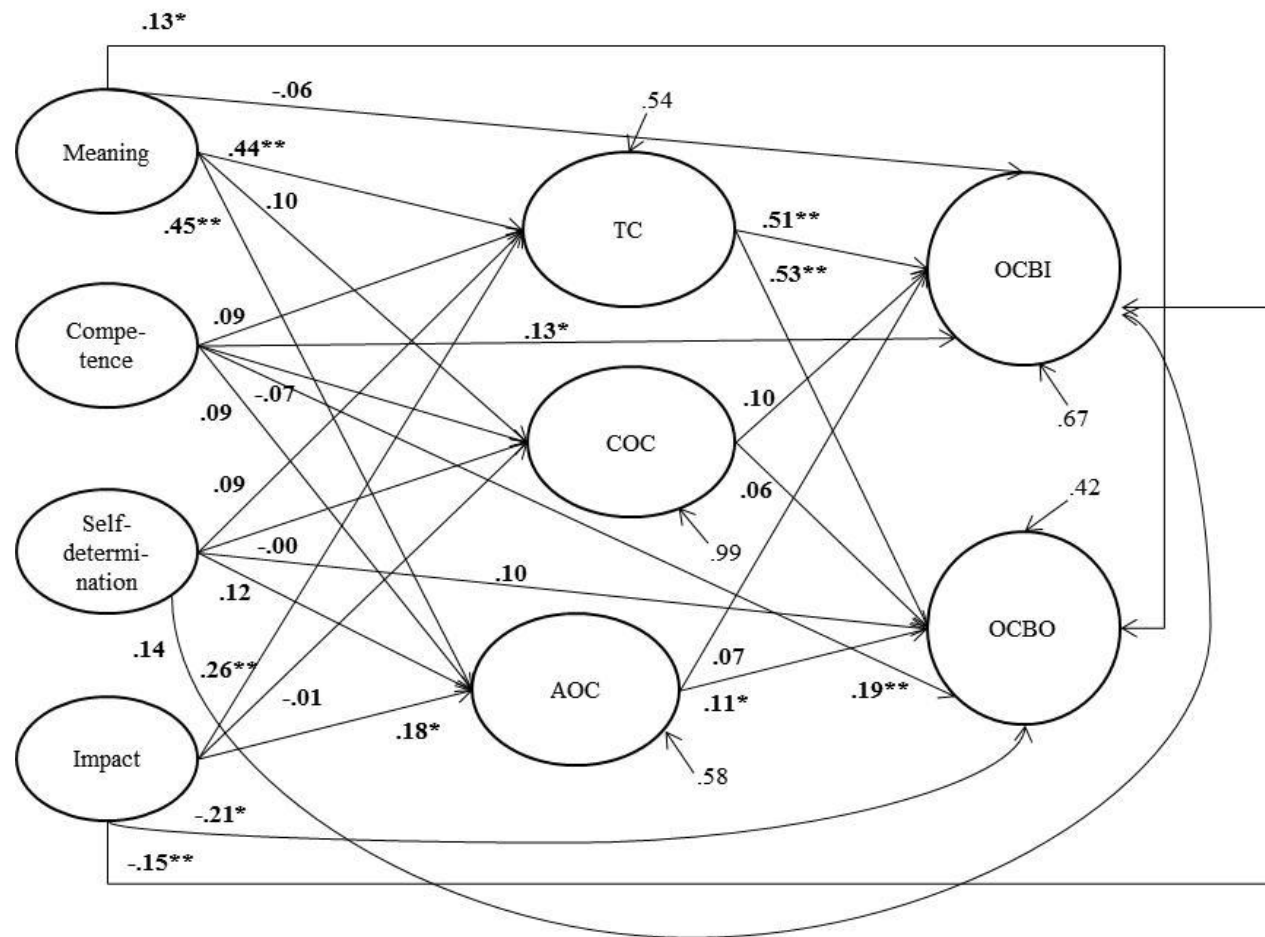


Figure 8.3. Indirect Model 2, in which the Direct Paths from Empowerment to OCB are not Controlled

*Note.* All figures are from a completely standardized solution. Numbers in bold type are for path coefficients.  
 \*\* Path coefficients are significant at the 0.01 level (1-tailed), \* Path coefficients are significant at the 0.05 level (1-tailed).

significant changes in Chi-square fit suggested that a partial mediation model (Indirect Model 2) was better than a full mediation model (Indirect Model 1) and a direct model (Direct Model).

#### (1) Indirect (mediated) Paths via Commitments

When the direct paths from empowerment to OCBs were not controlled (Indirect Model 2), the significant mediated paths were slightly changed from the previous model.

In Indirect Model 2 (partial mediation model), team commitment and affective OC significantly mediated only meaning and impact on team.

Among the sub-factors of psychological empowerment, the effects of meaning were still the strongest on both affective OC ( $\beta = .45$ ) and team commitment ( $\beta = .44$ ). The predictive power of impact on commitment and OCBs was surprisingly increased in a partial mediation model. Its effects on team commitment and affective OC in indirect Model 2 were increased to  $\beta = .26$  and  $\beta = .18$ , respectively, from  $\beta = .23$  and  $\beta = .16$  in Indirect Model 1. In addition to these increased effects on commitments, its direct effects on OCBI and OCBO became significant, although these were negative impacts (this will be discussed in the following section, Direct Paths).

However, the three commitment forms failed to mediate the paths from competence and self-determination to OCBs when direct paths were allowed.

When the direct paths were not controlled, the indirect effects of competence on OCBI and OCBO became direct effects. In other words, the significant path from competence to team commitment became non-significant. We can see on the Figure how the indirect effects on OCBs became direct effects. Self-determination did not create any

significant paths: there were no changes in significant paths between Indirect Model 1 and Indirect Model 2. In other words, where there were interventions of commitment, self-determination did not influence OCBI or OCBO.

Unlike the paths from empowerment to the commitments, there were no changes in significant paths from the commitments to OCBs. Continuance OC did not offer any significant paths; affective OC significantly influenced only OCBO; and team commitment still showed significant effects on both OCBI and OCBO.

Affective OC received significant positive effects from meaning ( $\gamma = .45$ ) and impact on team ( $\gamma = .18$ ), but these effects were only delivered to OCBO ( $\beta = .11$ ). Team commitment also got significant positive effects from meaning ( $\gamma = .44$ ) and impact on team ( $\gamma = .26$ ), and these effects on team commitment were powerfully delivered to both OCBI ( $\beta = .51$ ) and OCBO ( $\beta = .53$ ). When direct paths were allowed, the level of effects on OCBI from team commitment were slightly increased from  $\beta = .48$  to  $\beta = .51$ , whereas the effect on OCBO from team commitment was decreased from  $\beta = .59$  to  $\beta = .53$ .

## (2) Direct Paths

Just as there were changes in indirect (mediated) paths, the direct paths also presented a different pattern from those of the Direct Model. In the Direct Model, the paths from impact on team to OCBI and OCBO were non-significant. In contrast to this, in a partial mediation model (Indirect Model 2), the paths from self-determination to OCBI and OCBO became non-significant. In addition, the path from meaning to OCBI also



became non-significant. We can say that these changes reflected the partial mediating effects of the commitment forms.

The direct path from meaning to OCBO was significant ( $\gamma = .13$ ), reflecting the fact that team commitment and affective OC did not fully mediate. However, the path from meaning to OCBI was non-significant, showing team commitment's full mediation.

In the case of competence, its direct effects were weaker on both OCBI ( $\gamma = .13$ ) and OCBO ( $\gamma = .19$ ), compared to those of the Direct Model (OCBI  $\gamma = .17$ , OCBO  $\gamma = .24$ ), although the indirect effects on OCBI and OCBO disappeared. Given this, we can infer that the two commitment forms failed to mediate the relationships between competence and citizenship behaviours, and even their direct effects on OCBs declined.

The effects of commitment intervention between self-determination and OCBs were even worse: commitment failed to mediate the relationships between them. The direct effects of self-determination on OCBI/O were significant in the Direct Model. However, the significant effects through both direct and indirect paths disappeared when commitment intervened. When commitments were added, the role of self-determination in discretionary behaviour changed, becoming non-significant. There were no mediation effects of team commitment and affective OC between self-determination and OCBI/O.

In contrast to self-determination, impact on team produced its direct and indirect effects on OCBI and OCBO when team commitment and affective OC mediated the relationships between them. Its effects significantly increased when direct paths to OCBI ( $\gamma = -.15$ ) and OCBO ( $\gamma = -.21$ ) were allowed. Since both direct and indirect

paths from impact on team to OCBI and OCBO were significant, we can say that affective OC and team commitment partially mediated the relationships between them.

However, the direct effects of impact on OCBI and OCBO were changed from positive in the Direct Model to negative in a partial mediation model. We can infer that the more power employees perceived themselves to have in their team, the less they considered their co-workers (less OCBI) and the less they kept up with company development or changes (less OCBO). However, this would be balanced by the positive effects of commitment, according to this model.

Considering the results from full- and partial mediation models, only affective OC among the three components of OC had a positive impact on OCB. Furthermore, its significant effects were only on OCBO. However, team commitment showed significant and positive impacts on OCBI and OCBO. Given this, *Hypothesis 7*, proposing OC had significant positively related to both OCBO and OCBI and its effects on OCBO are stronger than on OCBI, was partially supported. As expected, the effects of team commitment on OCBO was stronger than on OCBI in both full and partial mediation models and their impact on OCBI and OCBO were much stronger than those of organisational commitment. Thus *Hypothesis 8a and 8b* were supported.

As with the full mediation model, among the components of OC only affective OC mediated the relationship between empowerment and OCB, and its mediation only affected OCBO. Hence, *Hypothesis 9a, OC's mediation to OCBI was not supported but Hypothesis 9b, OC's mediation to OCBO*, was supported, as shown in the full mediation model, when affective OC was regarded as OC. In the case of team commitment, its mediating roles were lessened as it did not mediate between competence and self-

determination and OCBs in a partial mediation model. However, it still strongly mediated the effects of meaning and impact on team on OCBI and OCBO. Therefore we can say that both *Hypothesis 10a*, team commitment's mediation to OCBI, and *Hypothesis 10b*, team commitment's mediation to OCBO, were supported.

### 8.3.3. Alternative Models

Considering that continuance OC did not produce any significant paths at all, an alternative indirect model was examined after dropping continuance OC in order to find a better model (see Indirect Model 3 w/o COC in Table 8.2). In addition to this, another alternative model without any non-significant paths was examined, whilst holding the other paths of Indirect Model 2 constant (see Parsimonious Model in Table 8.2).

Table 8.2. Structural Model Fit

Model	$\chi^2$ (df)	$\Delta \chi^2$ ( $\Delta$ df)	p-value	RMSEA	TLI	CFI	SRMR
Direct Model	824.13 (405)		.000	.057	.901	.914	.075
Indirect Model 1	776.38 (410)	47.75 (5)	.000	.053	.912	.923	.068
Indirect Model 2	733.25 (402)	43.13 (8)	.000	.051	.917	.929	.063
Indirect Model 3 <sup>a</sup> w/o COC	648.79 (324)	84.46 <sup>c</sup> (78)	.000	.056	.916	.928	.066
Parsimonious Model <sup>b</sup>	577.69 (259)	155.56 <sup>d</sup> (143)	.000	.062	.913	.925	.075

*Note.* Sample size = 323;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI= comparative fit index, SRMR = standardized root mean square residual.

- a. Model without continuance OC, with other paths of Indirect Model 2 held constant
- b. Model without any non-significant paths, with other paths of Indirect Model 2 held constant
- c. Changes in Chi-square fit compared with Indirect Model 2
- d. Changes in Chi-square fit compared with Indirect Model 2

As seen in Table 8.2, neither of the newly suggested models was significantly changed from Indirect Model 2 (a partial mediation model), which confirmed that all the non-significant paths were truly non-significant. Changes in Chi-square fit were non-significant: more than 100 changes in Chi-square fit ( $\Delta\chi^2$ ) for 78 changes of degree of freedom ( $df$ ) is considered as significant, at  $p = 0.05$  (but here  $\Delta\chi^2 = 84.46$  in Indirect Model 3); and exceeding 170 changes in Chi-square fit for 143 changes of degree of freedom ( $df$ ) is considered as significant at  $p = 0.05$  (but here  $\Delta\chi^2 = 155.69$  in the Parsimonious Model).

This table explicitly suggests that indirect (mediating) models are better than the Direct Model; and further, Indirect Model 2 is the best model of all, suggesting that the mediation of commitments is not fully operational, but rather partially functional.

After confirming that Indirect Model 2 presented the best model fit from the five attempted models, the standardized correlation matrix was examined, drawing on Indirect Model 2. This factor correlation matrix (see Table 8.3) demonstrated the levels of correlations among observed variables. Generally, this correlation matrix was consistent with the findings of Indirect Model 2 paths and of Table 8.1.

Table 8.3. Factor Correlation Matrix (Indirect Model 2)

	1	2	3	4	5	6	7	8	9
1. Meaning	-								
2. Competence	.38	-							
3. Self-determination	.35	.46	-						
4. Impact	.35	.23	.57	-					
5. AOC	.58	.36	.42	.42	-				
6. COC	.07	-.04	-.00	.01	.03	-			
7. TC	.60	.36	.44	.49	.44	.03	-		
8. OCBI	.32	.33	.31	.16	.28	.10	.52	-	
9. OCBO	.56	.48	.42	.30	.47	.07	.69	.42	-

*Note.* All figures are from a completely standardized solution and from the results of Indirect Model 2.

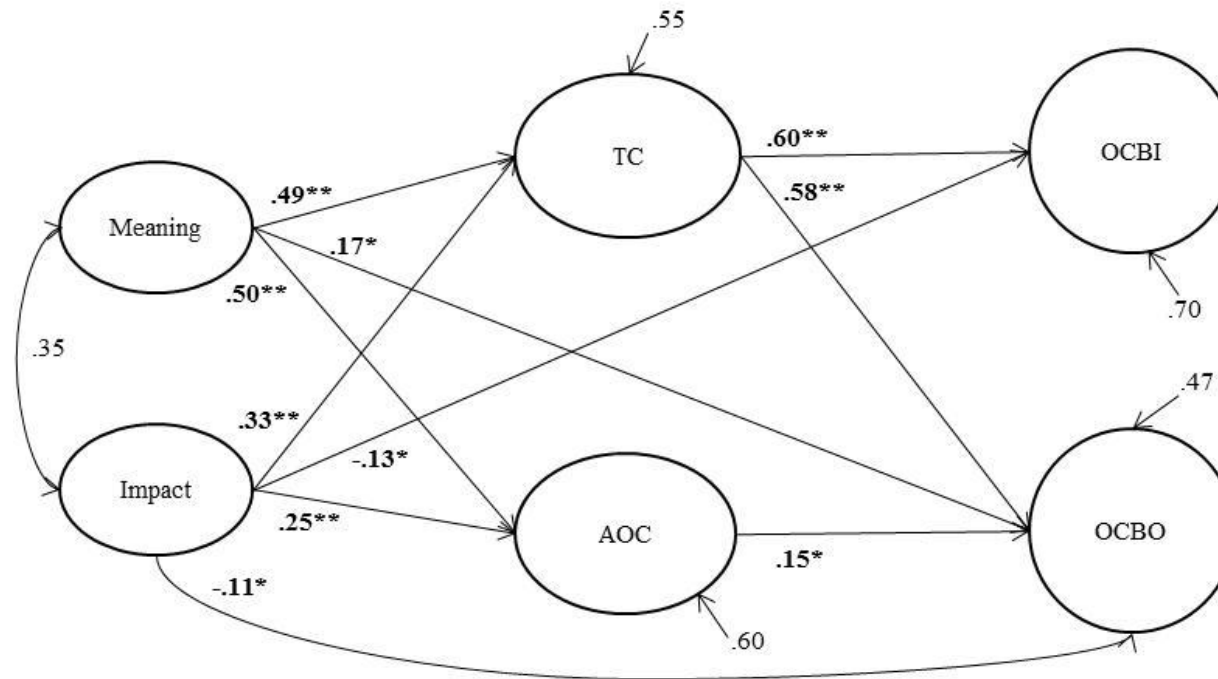
#### 8.4. Direct, Indirect and Total Effects

As the mediation models were better than the Direct Model, regardless of full or partial mediation, I assumed that there would be indirect effects via commitment. Given this assumption, the explanatory powers of team commitment and affective OC were explored only with significant paths, following Kline's (2011) suggestion that researchers use only significant paths to test direct, indirect and total effects. Therefore, the following changes were made:

- the paths from competence and self-determination to OCBI and OCBO were deleted, since team commitment and affective OC did not significantly mediate their relationships
- the path from affective OC to OCBI was omitted, as it was not significant.

Figure 8.4 shows a model modified from Indirect Model 2 in order to test the effect of these changes. The model fit was  $\chi^2(df) = 458.21(198)$ , RMSEA = .064, TLI = .918, CFI = .929 and SRMR = .080. There was statistically significant improvement in the Chi-square fit from that of Indirect Model 2.

Based on the model shown in Figure 8.4, direct, indirect and total effects were examined. Table 8.4 shows the effects of four different routes on OCBs. The mediation effects of commitment were relatively significant, and all the four routes showed mediating (indirect) effects. Team commitment fully mediated the relationship between meaning and OCBI (first route in Table 8.4) and the rest of the routes were partially mediated by team commitment and affective OC. Furthermore, the mediating effects were stronger on OCBO than on OCBI, which resulted in greater total effects on OCBO.



Model Fit:  $\chi^2(df) = 458.21(198)$ ,  $p = 0.00$ , RMSEA = .064.

Figure 8.4. Model via Commitment Only with Significant Paths

*Note.* All figures are from a completely standardized solution. Numbers in bold type are path coefficients.

\*\* Path coefficients are significant at the 0.01 level (1-tailed), \* Path coefficients are significant at the 0.05 level (1-tailed).

Table 8.4. Effects on OCB Mediated by Commitment

Paths*		Direct Effect	Indirect Effect	Total Effect
Meaning →OCB	Meaning → TC → OCBI	-	0.291	0.291
	Meaning → TC & AOC → OCBO	0.171	0.356	0.527
Impact →OCB	Impact → TC → OCBI	-0.132	0.195	0.063
	Impact → TC & AOC → OCBO	-0.106	0.225	0.119

Note.  $N= 323$ . \* All paths are significant. All figures are from a standardized solution.

The path leading from meaning to OCBI had no direct effect on OCBI (full mediation by team commitment). In other words, increasing the meaningfulness of work for employees by one standard deviation increased employees' OCBI by almost .30 standard deviations only via a mediating link. Compared to the Direct Model in Figure 8.1, the effect was 0.24 in the case of no mediation by team commitment. Also, the mediation of team commitment and affective OC maximized the effects of meaning on OCBO by adding an indirect effect, at 0.356, and thus increasing the total effect to 0.527. Otherwise it would have been 0.45 without the mediation of commitments (see Figure 8.1).

An unexpected finding in this study was the predictive power of impact on team on OCBs with the intervention of commitment. In a direct model, impact on team did not show any significant impact on OCBI or OCBO. However, this was changed when commitment mediated the relationships between them. As seen in Table 8.4, its direct effects on OCBI and OCBO were negative, at -0.132 and -0.106, respectively. However, these negative effects were transformed into positive effects by the mediation of team commitment and affective OC. The results suggested that employees who perceived that they had greater power in their team tended to be less considerate of their

co-workers. However, their team and affective OC corrected their negative behaviours into positive ones, or at least attenuated their negative behaviours.

This result suggested that there were mediation effects of team commitment and affective OC between psychological empowerment and employees' citizenship behaviour, since the total effects increased from those of the Direct Model: the total effect of meaning on OCBI was increased from 0.24 in the Direct Model to 0.29 in a mediation model; the total effect of meaning on OCBO was increased from 0.45 in the Direct Model to 0.53 in a mediation model; the total effect from impact on team to OCBI was negative and non-significant at -0.07 in the Direct Model; but it changed into being significant at 0.06 in a mediation model; and finally, the total effect of impact on team on OCBO was also negative and non-significant, at -0.00, but became significant at 0.12 in a mediation model.

As described above, this study identified that there were partial mediations by the commitments, as the mediators (commitments) allowed direct effects, except on the path from meaning to OCBI, which is a full mediation route for team commitment. Baron and Kenny (1986) state that internal, psychological variables tend to have measurement errors and the presence of measurement errors in the mediator tends to mean that the mediator's successful role is overlooked and overestimation of the direct effect of the independent variable on the dependent variable is allowed. Given Baron and Kenny's statement, the mediating effects of team commitment and affective OC may be larger than is suggested.



The examination of direct, indirect and total effects via commitment showed the important roles of team commitment in the workplace and re-confirmed the mediating effects of team commitment and affective OC on OCBI and OCBO.

#### 8.5. Interaction Effects

Taking note of the partial mediation effects of affective OC and team commitment on OCBO, I assumed that there was a possibility of interaction between the two commitment forms. Although affective OC's effect on OCBI was not statistically significant, there was a possibility that the interaction effects of affective OC and team commitment could be significant. Given this assumption, further tests were conducted to see whether there were any interaction effects of affective OC and team commitment. The expected formulas of interaction effects on OCBO and OCBI are these:

$$\begin{aligned} \text{OCBI} &= \beta_{0i} + \beta_{1i}\text{AOC} + \beta_{2i}\text{TC} + \beta_{3i}\text{AOCxTC} + e_i \\ \text{OCBO} &= \beta_{0o} + \beta_{1o}\text{AOC} + \beta_{2o}\text{TC} + \beta_{3o}\text{AOCxTC} + e_o \end{aligned}$$

Note that the two regression models have different outcomes for OCBI and OCBO, bringing in two different intercepts ( $\beta_{0i}$  and  $\beta_{0o}$ ); three predictors – affective OC (AOC), team commitment (TC), and the interaction term of two commitment forms (AOCxTC); and the errors, ( $e_i$  and  $e_o$ ). Each predictor has its own slope for AOC ( $\beta_{1i}$  and  $\beta_{1o}$ ), TC ( $\beta_{2i}$  and  $\beta_{2o}$ ) and AOCxTC ( $\beta_{3i}$  and  $\beta_{3o}$ ). To examine the interaction effect of affective OC and team commitment on OCBI and OCBO, four items of affective OC (AOC3,

AOC5, AOC6 and AOC8) and six items of team commitment (from TC1 to TC6) were transformed as average values.

On the basis of these averaged values, the interaction values of the two commitment forms were computed in SPSS. Table 8.5 presents the correlation matrix for them. Although affective OC and team commitment were moderately correlated with each other, at 0.53, the computed interaction value was highly correlated with affective OC and team commitment, at 0.90 and 0.83, respectively.

Table 8.5. Correlation Matrix of Averaged Values

Variables	1	2	3	4	5
1. AOC_avg	-				
2. TC_avg	.53**	-			
3. OCBI_avg	.33**	.46**	-		
4. OCBO_avg	.45**	.60**	.49**	-	
5. Interaction (AOC_avg X TC_avg)	.90**	.83**	.42**	.58**	-

Note. \*\* Correlation is significant at the 0.01 level (2-tailed).

The high correlation values of the interaction term can be explained by diagrams. As seen in Figure 8.5, the interaction part of AOC x TC consisted of pure AOC (purely affective OC), pure TC (purely team commitment), shared variance and pure AOC x TC interaction parts. Since these high correlations of interaction value caused multicollinearity problems, the pure interaction value of AOC x TC (pure AOC x TC in Figure 8.5) was computed.

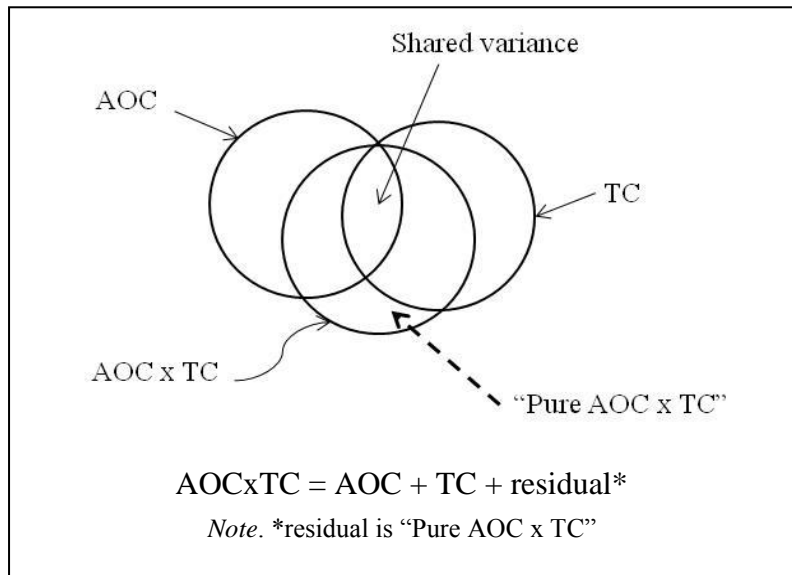


Figure 8.5. Composition of AOC x TC

In the linear regression analysis, the average values of affective OC and team commitment were set as independent variables, the interaction value was set as a dependent variable, and then the unstandardized residuals were saved as pure interaction values (see Figure 8.5). This is called ‘a residualized product term using the technique of residual centering’ (Kline, 2011: 331).

After the pure interaction values had been produced in SPSS, the model testing for interaction effect was conducted in LISREL. Since the path from affective OC to OCBI was non-significant, model testing was separately conducted for OCBI and OCBO. In order to compare the differences in the models with and without interaction, two different models were tested: the Constrained Model in which the interaction effect was set as zero and the Free Model in which an interaction effect was allowed (see Figure 8.6 and Figure 8.7).

#### 8.5.1. Interaction Effect on OCBI

The constrained interaction models showing the effects on OCBI (Constrained Model<sup>a</sup> in Figure 8.6) produced results consistent with those of the structural models (indirect, mediating models), although path coefficient values were slightly changed, since the AOC and TC values were average values rather than ones from factor loading results. The path from affective OC to OCBI was still non-significant, and the path from team commitment to OCBI was significant ( $\gamma = .45$ ). However, the Free Model<sup>b</sup> in Figure 8.6 showed an unexpected path. A path from AOC to OCBI was still non-significant; but a path from AOC x TC to OCBI was significant. Furthermore, it negatively influenced OCBI ( $\gamma = -.13$ ), while the other paths presented same results.

Table 8.6 presents two models' fits. The Chi-square fit of Free Model<sup>b</sup> was significantly improved at  $p = 0.05$  level from that of Constrained Model<sup>a</sup>. Although there was no significant direct effect on OCBI from affective OC, this suggested that there was an interaction effect from affective OC and team commitment on OCBI, and that its value was negative.

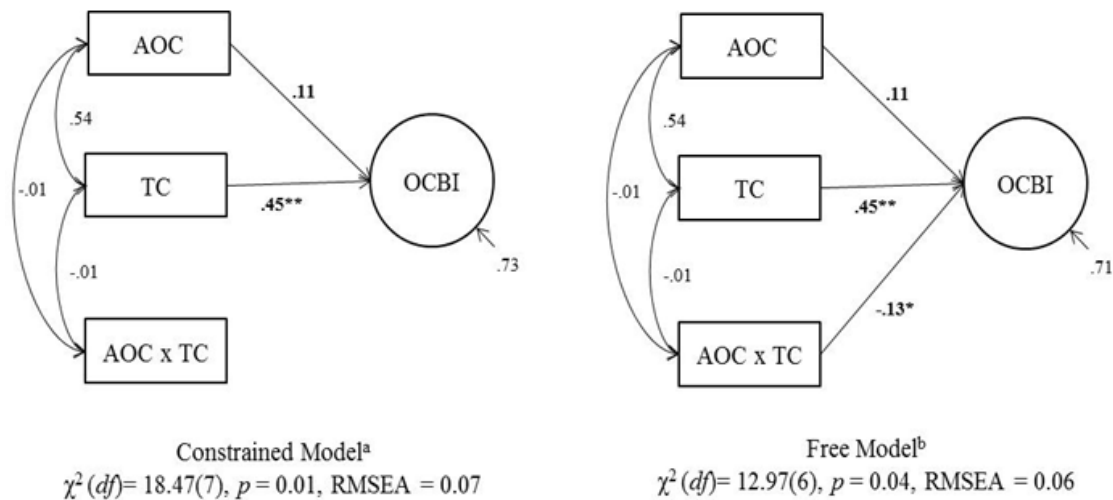


Figure 8.6. Interaction Effect on OCBI

*Note.* All figures are from a completely standardized solution. Numbers in bold type are path coefficients. \*\* Path coefficients are significant at the 0.01 level (1-tailed), \* Path coefficients are significant at the 0.05 level (1-tailed).

<sup>a</sup> Constrained model in which interaction effect is set as zero

<sup>b</sup> Free model in which interaction effect is allowed.

Table 8.6. Interaction Model: OCBI

Model	$\chi^2(df)$	$\Delta \chi^2(\Delta df)$	<i>p</i> -value	RMSEA	TLI	CFI	SRMR
Constrained Model <sup>a</sup>	18.47 (7)		.010	.072	.951	.977	.048
Free Model <sup>b</sup>	12.97 (6)	5.50 (1)	.044	.061	.966	.986	.025

*Note.* Sample size = 317;  $\chi^2$  = normal theory weighted least squares Chi-square, *df* = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual.

a. Interaction effect (pure AC x TC) is constrained as zero.

b. Interaction effect (pure AC x TC) is allowed.

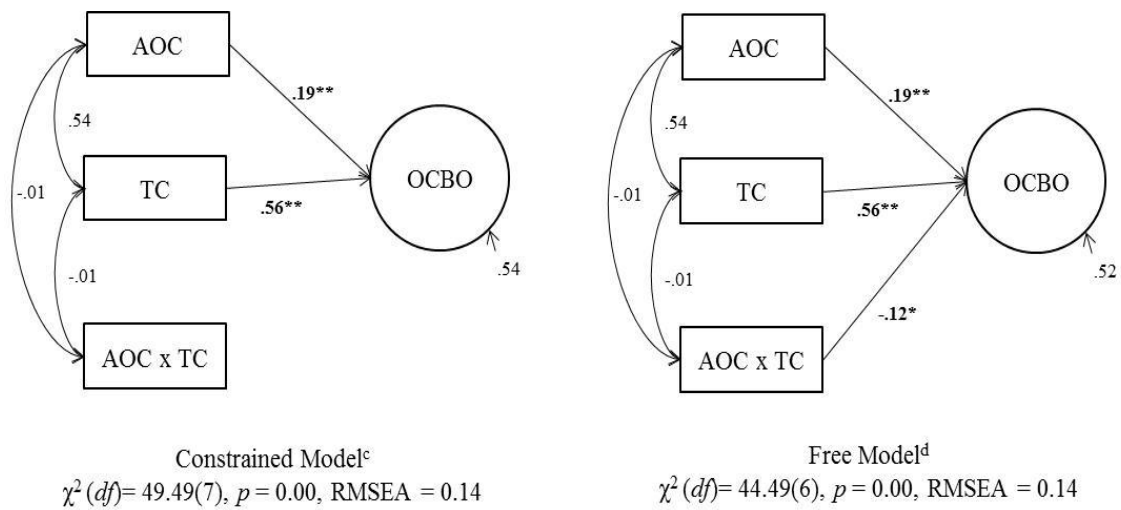


Figure 8.7. Interaction Effect on OCBO

*Note.* All figures are from a completely standardized solution. Numbers in bold type are path coefficients. \*\* Path coefficients are significant at the 0.01 level (1-tailed), \* Path coefficients are significant at the 0.05 level (1-tailed).

<sup>c</sup> Constrained model which interaction effect is set as zero.

<sup>d</sup> Free model which interaction effect is allowed.

Table 8.7. Interaction Model: OCBO

Model	$\chi^2(df)$	$\Delta \chi^2(\Delta df)$	$p$ -value	RMSEA	TLI	CFI	SRMR
Constrained Model <sup>c</sup>	49.49 (7)		.000	.139	.864	.936	.063
Free Model <sup>d</sup>	44.49 (6)	5.00 (1)	.000	.142	.860	.944	.060

*Note.* Sample size = 317;  $\chi^2$  = normal theory weighted least squares Chi-square,  $df$  = degree of freedom, RMSEA = root mean square error of approximation, GFI = goodness of fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, SRMR = standardized root mean square residual.

c. Interaction effect (pure AC x TC) is constrained as zero.

d. Interaction effect (pure AC x TC) is allowed.

### 8.5.2. Interaction Effect on OCBO

In terms of the size of the effect of commitment, the interaction models for OCBO were consistent with the results from the structural model testing (see Figure 8.7). The effect of team commitment on OCBO ( $\gamma = .56$ ) was much stronger than that of affective OC ( $\gamma = .19$ ), and its effect was greater on OCBO than on OCBI ( $\gamma = .45$ ). As both affective OC and team commitment significantly influenced OCBO, the error variances of OCBO ( $\varepsilon = .52$ -4) were smaller than those of OCBI ( $\varepsilon = .71$ -3).

Similarly to the results for OCBI, Free Model<sup>d</sup>, which showed the interaction effects of the two commitment foci, presented a better fit than Constrained Model<sup>c</sup> (see Table 8.7): there were significant changes in Chi-square fit at the  $p = 0.05$  level from Constrained Model<sup>c</sup> to Free Model<sup>d</sup>. The value of the interaction effect (AOC x TC) on OCBO ( $\gamma = -.12$ ) was similar to that on OCBI ( $\gamma = -.13$ ) and it was negative.

As shown in both Figure 8.6 and Figure 8.7, pure interaction (Pure AOC x TC) was negatively correlated with affective OC and team commitment at  $-0.01$ , although the interaction term, AOC x TC, was positively correlated with the two commitments (see Table 8.4). This could be interpreted as suggesting that there were large portions of shared variance between affective OC and team commitment (see the correlation matrix, Table 8.5), hence a small amount of pure interaction did not have much influence on their correlation values.

Given this negative interaction effect, we were able to infer that affective OC and team commitment did not produce complementary relationships but conflicting ones. Although the conflicting interacted values themselves were somewhat small, managers

should manage these two commitment forms carefully if they want to encourage better productivity and performance.

## 8.6. Conclusion

This chapter has examined the proposed hypotheses with the validated proxy items and tested those hypotheses that remained untested from Chapter 7. The main finding of this chapter was that team commitment and affective organisational commitment have independent mediating effects in the relationships between psychological empowerment (meaning and impact on team) and OCBI and OCBO. The hypothesized model used in this study satisfied Baron and Kenny's (1986) suggested conditions for claiming mediation effects, the testing of hypotheses 5a to 8b: that independent variables (psychological empowerment) must affect mediators (team commitment and organisational commitment) and mediators must also affect dependent variables (OCBI and OCBO):

This chapter has shown that this study made a good contribution to bridging the research gap by demonstrating the significant mediating effects of team commitment and affective OC. The findings also supported the influential role of cognition – attitude – behaviour. In addition to examining the hypothesized model, the study made another significant contribution by revealing the negative interaction effects of team commitment and affective organisational commitment on OCBs, which had not previously been researched, to the researcher's knowledge.

The next chapter, Chapter 9, will review the study and discuss in detail how the results of the proposed hypotheses can be interpreted and what has been learned from the



analyses. Chapter 9 will also suggest the limitations of this study and offer suggestions for future research.

## **CHAPTER 9. DISCUSSION AND CONCLUSION**

### **9.1. Introduction**

This chapter provides an overall discussion of the study's process and findings, as reported in the thesis. First, the major findings across Chapters 6 to 8 are discussed, along with their related theories, such as social exchange theory, social identity theory and self-categorization theory. Then, the potential contributions to knowledge that this study provides are discussed. These include theoretical, empirical and practical contributions. Then, the limitations of the study are considered, followed by suggestions for future research. The chapter closes with the overall conclusions to be drawn from the study.

### **9.2. Main Findings**

#### ***Scale Validity in a South Korean context***

The aim of this study was to explore the power of team commitment in the workplace and to provide an understanding of the effects played by multiple commitments. Prior to examining these, the study started by examining the validity of each construct, having identified that the scales used for examining team commitment in previous studies were inappropriate and that the applicability of the three-component model (TCM) of organisational commitment was debatable depending on the research context.

The construct that this study paid particular attention to was organisational commitment, as this is the core commitment form in the workplace and its scale is often used to measure team commitment. The results of the study were presented in Chapters 6 and 7. In Chapter 6 we saw how two separate data sets were used to examine scale validity in a South Korean context in relation to the two organisations in which the data sets were collected; and in Chapter 7 we looked at scale validity with a merged set of data from the two organisations. Regardless of whether the data sets were separated or merged, the results for the validity of Allen and Meyer's (1990) original TCM scale suggested the same overall finding: in a South Korean manufacturing context, the use of a normative organisational commitment scale was not supported; but a one-factor continuance organisational commitment scale was supported, which meant that a four-factor organisational commitment scale was not supported over a two-factor, CC:HiSac and CC:LoAlt, continuance organisational commitment scale. The findings in relation to affective organisational commitment were consistent with Morrow's (2011) suggestion that affective organisational commitment remains important. The validity of the original version of the affective organisational commitment scale was supported in a South Korean context, and only affective organisational commitment significantly explained respondents' perceptions and behaviour.

In Chapter 6 we examined the issue of the considerable overlap between normative commitment and affective commitment. We found that the revised version of the normative organisational commitment scale had a noticeably increased correlation with affective organisational commitment, compared to that of the original version of the scale. As the revised version of the affective commitment scale was identical with the original one except for the number of items, we can infer that the influence of the

normative scale might be related to overlap, as the normative commitment scale is considerably different depending on the version used.

In the revised TCM version, the scales of normative organisational commitment and continuance organisational commitment are considerably different from the original ones. As suggested by the findings of this study, care, therefore, should be taken when choosing which scale to use. The changed version of the normative organisational commitment scale, which better reflected employees' sense of reciprocal obligation with their organisation, was associated with multicollinearity in relation to the affective organisational commitment scale; and the revised version of the continuance organisational commitment scale decreased the level of relationships with affective organisational commitment and with normative organisational commitment (see Table 6.8 in Chapter 6). Although the study found that the original version of the normative organisational commitment scale caused fewer multicollinearity issues with affective organisational commitment, the original version of the normative organisational commitment scale was not supported in this context.

The evidence for the applicability of the continuance organisational commitment scale was mixed. The findings suggested that a two-factor model of commitment would be better than a one-factor one when researchers intended to examine the individual effects of continuance organisational commitment. However, a one-factor model of continuance organisational commitment would be recommended when researchers intended to look at continuance organisational commitment as part of a set of organisational commitment forms. Even when using the same scale for a construct in the same research context, the choice of which is the best model was likely to be different according to what specific subject the researchers focused on.

Validity testing of the team commitment scale was conducted with a scale that better related to on-the-job criteria and did not just reflect the attitudinal aspects that a scale of affective organisational commitment would have. Two stages of factor analysis, EFA and CFA, contributed to refining the team commitment scale. Supporting Bishop et al.'s (2005) findings, one item of the team commitment scale did not fit this scale, although its factor loading score at the stage of EFA was good enough. As Bishop et al. did, some of the findings could support the idea that team members might think of their team's success in the same way that they think about the success of the organisation. A key finding from the study, however, is that team commitment was a distinct and different construct from organisational commitment, even in the context of small and medium companies, where the psychological distance from the individual worker was much less than in large companies (this will be further discussed later).

Since Spreitzer (1995b) suggested that the four sub-factors of psychological empowerment could be combined into an overall construct of second-order construct, much research (Alge et al., 2006; Aryee & Chen, 2006; Chen & Kilmoski, 2003; Zhang & Bartol, 2010) has been conducted in that form, and this has had considerable empirical support. However, this study found that this second-order latent construct was not applicable in this context when convergent validity was examined. The factor structure for the scales for second-order OCBI and OCBO constructs were similarly not supported. Hence, this study employed a single-factor structure for the OCB construct and four individual factor structures for psychological empowerment.

Taking these unexpected results of the scale validity testing together, and considering the validity testing in two stages of factor analysis, discriminant validity and convergent validity, the study's findings suggested why researchers should be careful when

working with latent constructs which use proxy items. That is, why we, as researchers, should think of the possibility that proxy measures of latent constructs can represent their intended constructs differently. This may vary according to the social norms in different research contexts.

### ***Mediating Effects of Commitment***

Another main finding of the study was the mediating effects of commitment on the relationship between empowerment and OCB. Although team commitment and organisational commitment did not perfectly mediate the relationship, the study found that the two commitments enhanced the impact of psychological empowerment on OCBs through their mediation. Specifically, the mediation of team commitment and organisational commitment altered the negative effects of perceptions to more positive behaviour. This empirical finding suggests that social exchange on a daily basis in teams is important.

The thesis explicitly presented this mechanism via the table of direct effects and total effects in Chapter 8 (see Table 8.4). Interpersonal relationships within a team that were generated from a daily social exchange altered a negative series of exchanges into a positive series of exchanges. This can be understood in terms of relationships between perception on impact on team and their consideration for other members (OCBI) and civic virtue in terms of the organisation's policy (OCBO), both of which might be enhanced via interpersonal relationships, team commitment and organisational commitment.

The findings relating to the mediating effects of commitment can be explained with social identity theory and self-categorization theory. The more employees perceived they had influence on the team, the less they voluntarily exhibited discretionary behaviour as individuals. We can infer that this was changed by the intervention of social interaction created by self-categorized identification with the team and toward the organisation. Through their daily working life, employees might categorize themselves in terms of the organisation as a whole, in terms of the team to which they belonged, and as an individual; and then they would see things and act at various levels, according to their categorization (Haslam, 2001). Then, the contextualized categorization that employees relied on shaped how they interact with others. As a result, employees might behave in a distinctively discriminatory way, as members of a categorized group (Tajfel et al., 1971), and awareness of out-groups could reinforce awareness of their in-group and hence increased in-group cooperation and cohesion (Ashforth & Mael, 1989). Thus, the 'in-group favouritism' that occurred in social circumstances in turn created positive distinctiveness (Tajfel, 1974; Tajfel et al., 1971).

Considering these sorts of processes, we could say that the total effects of impact on team on OCBs, via two commitment forms, were bigger than the direct effects of impact on team on OCBs.

### ***Effects of Team Commitment***

This study explored the distinction between employees' commitment to their team and their commitment to their organisation in the context of small- and medium-sized enterprises (SMEs). These were interesting settings, given that the abstract and

psychological distances between team and organisation are much closer than those of large firms. It is important to repeat that team commitment here was measured by a more balanced scale that reflected not only attitudinal factors to do with attachment used in previous research, which had measured team commitment on a form of affective organisational commitment scale, but also on-the-job, work-related factors and factors relating to social interaction.

The study also found evidence of distinctly different effects between the two commitment forms in SMEs, and this contributed to an understanding of the important, separate effects of team commitment on employees' overall commitment to an organisation. As with the validity testing of team commitment, which showed that it was a distinct construct from organisational commitment, even in SMEs, and structural equation modelling, showing the effects of team commitment as a mediator and as a predictor, showed that it had a different role from organisational commitment. As shown in the correlation table (Table 8.1 in Chapter 8), team commitment was more strongly associated with other latent variables than organisational commitment, and the mediating power of team commitment was much stronger than that of organisational commitment (see Figures 8.2 to 8.4 in Chapter 8).

The different explanatory power of organisational commitment from that of team commitment supported the distinctiveness of team commitment. The study found that affective organisational commitment (affective OC) had a significantly positive influence on OCB toward the organisation (OCBO) but not on that toward individuals (OCBI); whereas team commitment significantly influenced both OCBO and OCBI. This result was consistent with those of previous studies (Becker, 2009; Cohen, 2006;



Sinclair et al., 2005), suggesting that affective OC had higher correlations with OCBO than with OCBI.

### ***Cultural Effects on Commitment***

Cohen (2006) assumes that the norms within each society affect the relationship between commitment and behaviour. He suggests that affective OC has more powerful positive effects on OCBO in cultures of higher power distance (PD) and those of high uncertainty avoidance (UA). Christie et al.'s (2003) comparative research across India, South Korea and the US on business managers' ethical and practical attitudes shows that South Korea's cultural score for power distance has fallen dramatically compared with the one provided by Hofstede, from PDI = 60 to PDI = 23, whilst the score for uncertainty avoidance stays as one of the highest of any country. Hofstede's index illustrated that South Korea had a high index of power distance, at 60, which was, for example, much higher than that of the UK (35). However, Korea's PDI score in Christie et al.'s study is similar to that of the US, which is 22.7.

Kwon and Kim's (2007) study also presents a comparatively low PDI, at 38. However, Christie et al. reveal that, whilst South Korea's business practice is very similar to India's, its PDI score is fairly similar to that of the US, although orders given by a superior are perceived to be less unethical than in the US. Considering this change in South Korea's cultural index score, it is desirable to re-examine Cohen's inference that affective commitment works more positively in cultures of high power distance and those with high uncertainty avoidance.

### ***Interaction Effects of Team Commitment and Organisational Commitment***

Reichers's (1986) study suggested future research on assessing the relationships among multiple commitments, and it queried whether there might be a relationship between conflict and commitment to the primary work group (such as a team), rather than between conflict and organisational commitment. The present study developed this idea in the sense that it discovered a conflicting relationship between team commitment and organisational commitment, although its effect was marginal in this context.

Reichers (1986) found that psychosocial conflict, which is perceived conflict between the individual and top management, explained a lot of the variance in organisational commitment and suggested that congruence between managerial and individual goals was important in preventing psychosocial conflict. Her findings raised the possibility of conflict between commitment forms when there was a lack of congruence between two of these. The present study also supported that idea by presenting the negative interaction effects between team commitment and organisational commitment. The goal discrepancy between teams and the organisation in this research context was marginal, as the negative level of interaction effect was quite trivial. However, this result suggests that the larger the discrepancies are between two groups' goals (for instance, between a team's goals and an organisation's goals), the more team members' psychosocial conflict grows. In such cases, a much bigger negative interaction between team commitment and organisational commitment might arise.

### ***Effects of the Sub-factors of Psychological Empowerment***

The empowerment effects on OCBs were inconsistent with those shown in Wat and Shaffer's (2005) study carried out with a sample from Hong Kong. Wat and Shaffer examined five facets of OCB: conscientiousness, sportsmanship, civic virtue, courtesy and altruism. In their study, in relation to the effects of psychological empowerment on civic virtue (OCBO in this study) and courtesy (OCBI in this study), the results are very different- only meaning among the four factors of psychological empowerment had a positive significant effect on courtesy (OCBI); and none of the four factors had a significant effect on either civic virtue (OCBO) or courtesy (OCBI).

Compared to Wat and Shaffer's study, this study demonstrated the different and more varied patterns of effects of meaning on OCBI. Even when there was no intervention by commitments, the effects of meaning on OCBI were positively related; and its effects were greater when commitment mediated this relationship. In this research context, the effects of meaning on OCBO (civic virtue) were stronger than on OCBI (courtesy); meaning directly and positively influenced OCBO; and meaning's effects were boosted through team commitment and organisational commitment. However, there were some similar findings to Wat and Shaffer's. Although it was not significant, the path from impact to OCBO (civic virtue) was negative in both studies.

The study, through using a direct model and indirect models, found more specifically that each psychological empowerment factor had different effects, and each acted as an individual predictor in the workplace. Teamworking is characterized by autonomy and delimited authority (Hackman, 2002), which are also features of manufacturing. Therefore, it was expected in this research context that empowerment would be important, in the sense that a management authority was to some extent loosely delivered to these teams; and team members' perceived competence was indeed

connected to this greater autonomy. As they became more independent from management, we might expect increased effort given in terms of independent problem-solving. Given this, self-determination, competence and impact on team were anticipated to be associated with psychological empowerment. However, the study found that when team commitment and organisational commitment mediated the relationship between psychological empowerment and OCBs, the relationships between competence, self-determination and the two commitments were not significantly associated; and there were negative relationships between impact on team and OCBs, regardless of the mediation of commitments.

This result can be understood in terms of the characteristically bureaucratic structure that has historically been embedded in the Korean manufacturing industry. The research context of this study was two transport-related manufacturing companies where, traditionally, bureaucratic characteristics have been embedded. The level of bureaucracy may have weakened the effects of empowerment and future research could compare alternative industries in Korea.

As automated systems had been introduced on production lines and craft work was not highly relied on in either company, self-determination might be expected to be a less significant predictor of workplace behaviour, although it was the strongest factor that loaded onto psychological empowerment. In line with this, competent employees might feel less empowered. We can infer that the measure relating to meaning, found as a significantly influential factor in team members' commitment (attitudes) and behaviour (OCBs), related more to the meaningfulness of their work but was not related to organisational structure. That is, questions about the meaning of work did not ask the respondents about the meaningfulness of their work as a team-member but about the

meaningfulness of the work in itself. Automation may have weakened the effects of this variable.

To summarize, the study found that affective organisational commitment according to the original version of TCM (Allen & Meyer, 1990) was the only properly applicable component in this research context, that is, in the case of manufacturing teams in South Korea. It was acknowledged that the dimensions of continuance organisational commitment should be considered according to the purpose of the research. Above all, the study found that team commitment explicitly stood up as a distinct construct from the construct of organisational commitment, even in small and medium-sized companies, and it discovered that the two commitment forms, team commitment and organisational commitment, had independent mediating roles between employees' perception and behaviour. The results of this study on how team commitment is a distinctive concept and plays different roles from organisational commitment are in line with the findings of Neining et al. (2010), where the research context was two medium-sized manufacturing companies' semi-autonomous teams in Germany. Although Neining et al.'s (2010) study measured team commitment and organisational commitment with the attitudinal commitment scale of OCQ devised by Porter and Smith (1970), the findings of this research also support their study with a more work-oriented team commitment measurement and with data from two medium sized Korean manufacturing companies' lean teams. These findings are even more meaningful in that they generalize the important status of team commitment in the workplace in an Asian context: that of South Korea. Compared to Germany, which can be represented as one of the Western cultures that are characterized by higher individualism and lower acceptance of unequal

power distribution, South Korea has higher collectivism and higher acceptance of unequal power distribution by society's less powerful members.

In addition, a target-focused two-factor framework did not support the target-similarity model suggested by Lavelle et al. (2007), as the effect of team commitment on OCBO was much stronger than that of organisational commitment. Further, the study found that there were negative interaction effects between team commitment and organisational commitment. As a whole, however, the study found very positive commitment effects. This might be because teamworking produced more positive work commitment (Wright & Edwards, 1998), and effective work teams were operated with shared commitment (Hackman, 2002).

### 9.3. Contributions

This study primarily contributes from a theoretical point of view by presenting an extensive review of commitment research; by showing how different forms of commitment have different roles in the workplace when it comes to influencing work behaviour; and by demonstrating how commitment research is still important in human resource management. The thesis underlines the need to distinguish between the conceptualizations of different forms of commitment for effective people management in the workplace; and it supports this need with empirical results in a South Korean context. Guest (1987) also argues that a unitary, one-size account of commitment is an overly simplistic strategy for human resource management, because there are possibilities for raising a complex set of issues by comparing multiple commitment forms. From this point of view, the study empirically substantiates the hypothesis that

different commitment foci have different effects in the theoretical model by demonstrating different mediating effects and negative interaction effects between commitments. Employees might have multiple commitment foci toward several sub-units within the frame of a unitary organisational situation. From the perspective of management, the strategies for commitment target-setting will be varied. The foci that will be desirable for effective strategic management could be either commitment to teams, commitment to the organization or both, depending on where managements set their goals, and they will depend on the situational contexts that each organisation faces.

This section presents the research contributions in three ways: theoretical, empirical and practical. When addressing the contributions of the research and the interpretation of the findings, three theories underlying the formation of a theoretical model are used: social exchange theory, social identity theory and self-categorization theory. Using these three theories, this study should contribute to an understanding of how social interaction in team environments is bound up with individual team members' social identities and their self-categorization.

#### 9.3.1. Theoretical Contributions

Commitment research has been regarded as a saturated research area. Nevertheless, this study established that we need to continue research on commitment by demonstrating the mediating role of team commitment and organisational commitment and their negative interaction effects. These more fine grained interaction effects are important because they concern relations between essential workplace attitudes.

### *Crystallising Commitment*

Above all, the study crystallised the status of team commitment in organisational behaviour research, establishing it as a distinct construct from organisational commitment and as an important commitment focus at work. The study employed a balanced, and arguably a less-biased measurement of team commitment in order to explore its effects. So, team commitment was not measured by a one-item scale, or by any form of attitudinal organisational commitment scale, such as Mowday et al.'s OCQ (1979) or Meyer et al.'s (1993) affective OC scale. Nor was it measured using a scale, considerably reflecting social interaction, such as Randall and Cote (1991). Instead, Ellemers et al.'s scale was adopted, and this with a greater emphasis on on-the-job factors was developed to measure team commitment.

As seen in the definition of team, teamworking is created through team members interdependently working toward common goals, whilst identifying themselves as distinct from other teams. Therefore, it is natural to expect that team members will interact with each other throughout their daily work. This suggests that concept of team commitment should be different from that of organisational commitment, which measures the affective (affective OC), cognitive (normative OC) and behavioural (continuance OC) aspects under the mainstream of attitudinal scales. In these terms, Ellemers et al.'s scale reflects employees' on-the-job work, social interaction, and attachment to teams. As with previous studies (Morrow, 2011; Riketta, 2002), this research found that only affective OC was statistically significantly associated with the other work-related factors examined. If the research had measured team commitment as a form of affective organisational commitment, replacing 'organisation' with 'team', it



would likely have different results and the finding might have been limited because of the role of affective OC shown in this study.

This is where the contribution of the study lies: it supported the distinctiveness of team commitment as one of the important commitment foci even in the context of small and medium-sized companies. It also identified its roles and effects on other constructs, and all of these interactions were supported because they were the result of measurement with an appropriate scale that considered on-the-job factors and not just attitudinal attachment.

### ***Research into Commitment Roles in the Workplace***

The second theoretical contribution of the study was identifying the mediating mechanism for multiple commitments and how it functioned in relation to those multiple commitments. A broad and in-depth review of the literature on commitment identified an understudied area in commitment research: the extent to which commitment acts as a mediator. As commitment is a relational and reciprocal construct, it was often examined as a predictor or an outcome of other workplace factors. However, using Structural Equation Modelling it was possible to look at mediating effects in more detail. Given this, the present research explored whether the two commitment forms, team commitment and organisational commitment, were significant mediators between team members' perceptions and behaviours. The results demonstrated that organisational commitment is a significant mediator between workplace factors, as had been shown by previous studies (Bishop et al., 2000; Hunt & Morgan, 1994); but it also found that team commitment simultaneously played a role as

an independent and additional mediator. As seen in the examination of the direct, indirect and total effects of the proposed mediating model (see Table 8.4 in Chapter 8), the indirect (mediating) effects of the two commitment forms changed the nature of the predictor's (impact on team) effects on OCBs from negative to positive. This suggests management has a role to play in supporting team commitment to improve the atmosphere in teams, and positively influence other outcomes for team members themselves. So, this was another contribution of the research: identifying the important role that commitment plays in impacting on work outcomes. It is also noteworthy that the study even identified the negative interaction effects in commitment forms. These were connected to the conflict between goal-setting in teams and at the organisation level. This is another significant contribution and area for future research to examine since the conflicting relationship between team commitment and organisational commitment has not previously been researched in occupational psychology.

### 9.3.2. Empirical Contributions

#### ***Increase in Generalizability of Commitment Research***

As Riketta (2002) argued, studies on commitment and performance are overwhelmingly based on Anglo-American countries and white-collar workers, especially sales people. In this respect, this research added to the evidence supporting the significant relationship between commitment and performance (OCBs) and from a research context that was different from those of the major sources: from South Korea, which is not an Anglo-American country, from an Asian culture but not from China, and from blue-collar workers on production lines, who were the majority of respondents (about 65 per

cent). The study's findings were consistent with those of previous studies that considered the important role of affective organisational commitment in a three-component model, and they contributed to generalize our understanding of the important of commitment at work.

The study contributed to an understanding of organisational commitment in a South Korean context, and the findings were supported by achieving the same results from two approaches to analysis, one using separate data sets collected from the two organisations, and another using the merged data set. The empirical findings of the study in the context of South Korea were all the more meaningful as Allen and Meyer's TCM was developed in a North American culture and mainly validated in Western cultures, and its applicability in a South Korean context had been debatable. As Meyer et al. (2012) stated, a normative commitment scale should be used with care, since this scale works differently according to the version used and the cultural context in which it is used. This is why the empirical finding of the study, that the original version of the normative commitment scale does not seem acceptable in a South Korean context, is notable. In line with Ko et al.'s (1997) suggestion, the applicability of the normative organisational commitment scale was found to be doubtful, and a three-factor model of organisational commitment was found to work better in a South Korean manufacturing context with the original version of the TCM scale. Given this, the thesis contributed by reporting results from a new research context, manufacturing industry of South Korea, and provided empirical evidence that supported the previous studies.

### ***Understanding the Different Effects of Individual Psychological Empowerment Sub-Factors in a South Korean Manufacturing Context***

The study made another empirical contribution by helping to explain the different effects of psychological empowerment's individual sub-factors with data from South Korean manufacturing teams. Spreitzer (1997) presented each sub-factor's individual effects on work satisfaction, work effectiveness and job strain with two data sets, one drawn from a manufacturing company's middle managers, and the other from the lower-level employees of an insurance company in the US. Wat and Shaffer (2005) looked at the effects of psychological empowerment's sub-factors on OCBs using marketing employees in investment banks in Hong Kong. Following on these findings, the present study contributed by providing empirical results from a new research context and helped understanding of a broader range of relationships between OCBs and empowerment.

In a direct model, OCBI was positively influenced by meaning, self-determination and competence (in this order); whereas OCBO was positively influenced by meaning, competence and self-determination. Neither OCB was significantly influenced by impact on team. However, those effects were changed when commitment was understood in terms of social exchange in working life. The changing effects of individual sub-factors during the social exchange processes can be explained with both social identity theory and self-categorization theory.

Haslam (2001) classified identity into personal identity (self as individual) and social identity (self as a member of a team or organisation). Of the four sub-factors of psychological empowerment, meaning was the strongest in a mediation model,

suggesting that the respondents' personal identity might have exerted a more powerful influence on them than their social identity. However, changes in self-categorization might occur that reflect the context for social exchange: very strong categorization in terms of team or organisation, built up over time and as a result of frequent social exchange might outweigh the effects of personal identity on some work-related outcomes.

Haslam (2001) explained these schematic shifts of the self as depersonalization. One way of looking at this is to say that the effects of self-determination lost their significance through the process of depersonalization: social identity exerted more influence than personal identity as the level of abstraction of the self categorization rose, from that of the self as individual to that of a team member and further to membership of the organisation. Therefore, decisions and actions of the group or the organisation might be regarded as more important than those taken by the team member as an individual. The important thing here is that we should understand this depersonalization process within the particular context, as every society (and organisation) offers a different context. That is perhaps why the findings of this study were different from those of Wat and Shaffer (2005), as Hong Kong investment banks and South Korean manufacturing provide different contexts; and that is why we have to continue to carry out research into commitment in various social contexts, in order to generalize or limit the generalizability of our findings.

### 9.3.3. Practical Contributions

#### ***A Pool of Commonly Applicable Commitment Items***

The results of the testing of Allen and Meyer's (1990) three-component organisational commitment model have implications for organisational practice. The validity testing of the original version of the TCM gave rise to the idea of a pool of commonly applicable commitment items for each component. Lee et al. (2002) called for research that would develop a universally applicable measure of organisational commitment, particularly for diverse work forces and globalized businesses. The present study provided a stepping-stone to this. The commonly extracted items will be useful tools to examine the commitment of employees in South Korea, as well as those of multinational companies which have overseas branches or have diverse work forces.

The commonly applicable items for affective organisational commitment and continuance organisational commitment are examples of such tools. The revised version of the affective organisational commitment scale, which dropped two items from the original version of the scale, is the one to be recommended. Dropping two items from the factor analysis gave identical findings to those of Meyer et al. (1993). In line with the results, which are given in Chapters 6 and 7, four items remained for the affective organisational commitment scale. For the measurement of continuance commitment, Meyer et al.'s (1996) scale is to be recommended. This is shortened and simplified from, but still similar to, the original version of the continuance commitment scale. The study found that the remaining four items of continuance commitment gave identical findings to those of Gill et al. (2011), even to the point of giving identical classified items for two dimensional continuance commitment: CC:LoAlt and CC:HiSac.

All this suggests that the findings of this study will be useful to researchers, HR managers and HR consultants, helping them to assess employees' commitment in the workplace, at least until a universally applicable measure is developed. Further, these

findings give practical support in terms of parsimony that the four-item versions of the affective and continuance commitment scales are shorter than the versions that have eight or six extracted items for each component. This shorter version of the item pool will make the data collection process more convenient, which should be highly appealing to managers, who want concise measures in a questionnaire.

### ***Congruent Goal Setting within Organisations***

The discovery of the negative interaction between team commitment and organisational commitment also has useful and practical implications for organisations' strategic management, in the sense that this result might help to explain the occurrence of conflict between teams and their organisation. In this research context, the level of conflict was trivial, and therefore both team commitment and organisational commitment could offset that negative impact. However, this suggests that there is a possibility that the two commitment forms may not be able to overcome the conflict if there are big discrepancies between the shared objectives of the team and those of the organisation. This result suggests to managements and team leaders how congruence in goal setting between teams and their organisation is strategically important and how it can eliminate one of the possible sources of conflict.

### ***Commitment Management***

Drawing on social exchange theory, the thesis has shown the strong impact of commitment on workplace behaviour. In particular, this has practical implications for

managers. Seibert et al. (2011) pointed out that employees in manufacturing industry had less positive psychological empowerment, as manufacturing industry traditionally has more hierarchical characteristics than other industries. In the review chapter in this thesis, we noted that psychological empowerment and commitment are associated with improved productivity and performance. Therefore, strategic management of commitment is necessary for managers. The findings of this research suggested that psychological empowerment could be enhanced resulting from team commitment and organisational commitment and that this might positively influence other desirable, voluntary behaviours. Team commitment was a good predictor of those behaviours. Although the manufacturing sector has embedded hierarchical characteristics, and hence its employees might perceive themselves as less empowered, managers can encourage voluntary citizenship behaviour by building up team commitment by acknowledging that this is something different from organisational commitment.

#### 9.4. Limitations of the Study

As with other research, this study had some limitations that should be acknowledged.

First, the generalizability of the findings is limited. The majority of those included in the research samples were team members working on production lines in two medium-sized manufacturing companies in South Korea. Although this was representative of the manufacturing sector, participants in this study were predominantly male.

We also have to think of the research context of South Korea, which is a country with a strong collective culture. For instance, South Korea scores 18 on the Hofstede Index of individualism, which is much lower than the UK's 89 or the US's 91. As its score



reflects, South Korea is a strongly collectivist society where people think of themselves as 'we' rather than 'I'. The use of language in Korea is one example of this. If someone says 'my' supervisor and 'my' team to describe his or her supervisor and the team to which he or she belongs to, other people may think that he or she is a very selfish person. In Korea, 'we' or 'our' is the normally used word instead of 'I' and 'my'. Hence, 'our' supervisor and 'our' team are the phrases that people commonly use. This strong in-group image 'enables people to engage in meaningful, integrated and collaborative organisational behaviour' (Haslam, 2001: 26). Therefore, the level of team commitment may have been hoisted in this group-culture society above that of other research contexts.

All the variables in the study were assessed via self-reporting questionnaires, since psychological constructs such as psychological empowerment, team commitment and organisational commitment, can scarcely be rated by others (Neininger et al., 2010), and self-rating of OCBI works better than rating by another (Ilies et al., 2009). However, this raises the issues of common method bias in the research. For this reason, several procedural remedies suggested by Podsakoff et al. (2003) were used, to lessen the effect of common method biases. Pilot testing led to modification of the questionnaire to provide more clarified concepts, for instance, the definition of a team. The guidelines for the questionnaire were refined so as not to lead the respondents to give socially desirable answers; and the promise to respondents that their anonymity as well as their confidentiality would be respected was emphasized.

## 9.5. Future Research

Given the limitations of this study identified above, there are some avenues for future research. Firstly, future research should aim to get different sources of data; and there should be research that offers a longitudinal study, to avoid common method biases.

Secondly, building on the findings reported here, future research could try to control for possible effects of national culture. Though this was one of the contributions of the thesis, future research could examine whether team commitment's influence was greater here given South Korea is a strongly collectivist society, and given that the research was into manufacturing. One way to do this is using Jayawardhena's (2004) account of the value-attitude-behaviour model. He found that values have a significantly positive influence on attitudes, and attitude mediates the relationship between value and behaviour. Therefore, cultural values, such as power distance and collectivism, could be explicitly examined to see how they affect the level of team commitment and organisational commitment, and how these two commitment forms mediate the relationship. The two commitment forms are intraorganisational commitment foci; so, it is recommended that there should be some comparative studies carried out in different cultural contexts to look at the impact of cultural values on attitudes and behaviour in the workplace.

Considering the research context of South Korea, future research could examine more diverse cultural effects on workplace attitude and behaviour, as cultural research in Korea has mainly inclined to collectivism and the avoidance of uncertainty, and has paid little attention to power distance as presented in Kwon and Oh's (2010) cross-cultural research undertaken in Korea from 1991 to 2009. Cohen (2006) argues that affective organisational commitment will explain OCBO better than OCBI in cultures with higher power distances. The results of the research carried out here could be

interpreted, according to Cohen's inference, as showing that Korean society generally accepts inequality in power distribution in its social relationships, according to a hierarchical order normally governed by age seniority, and in its manufacturing industry, which has a more bureaucratic and hierarchical organisational culture, one characterised by higher power distance.

Another piece of Korean research, Kwon and Kim's (2007) study, found that the PD index (PDI) for their selected sample, which consisted of aeroplane pilots and trainees, presented a much lower score, at  $PDI = 38$ , than Hofstede's sample, collected between 1967 and 1973, which presented a score of 60. Kwon and Kim inferred that the lower PD index was because their sample consisted of a professional occupational group that normally has a higher education background; because of the organisational culture the group belonged to; and because of value changes in Korean society, since the pilots, whose ages were under 40, were representatives of a much lower power distance culture. That is, they might have achieved different results with employees in another industry or with other occupational groups.

Another interesting area for future research would be to explore the significant factors of continuance organisational commitment in a South Korean context. This study supported the scale validity of continuance organisational commitment, although its dimensionality should be studied with care. Except for demographic variables, such as tenure, age and occupation, there were no variables that were significantly associated with continuance organisational commitment. Gill et al. (2011), using a South Korean sample, found that continuance organisational commitment was significantly correlated with deviant workplace behaviour (DWB); but they failed to find its explanatory power for DWB. While Ko et al. (1997) doubted the usefulness of the continuance

organisational commitment scale in a South Korean context, Lee et al. (2001) showed continuance organisational commitment was negatively related to turnover intention. Given this, exploring those workplace factors that continuance organisational commitment significantly predicts in different research contexts would contribute to generalizing the scale of continuance organisational commitment. Alongside exploring the factors that continuance organisational commitment significantly predicts, future research should make an effort to validate the applicability of bi-dimensional continuance organisational commitment in South Korea.

Another suggestion for future research would be the study of the differences between office workers and manufacturing shopfloor workers. As this study sought to examine the different roles of different forms of commitment in small and medium sized companies, rather than to look at the differences in occupational groups, the study focused on examining whether there were differences between the two companies (see Chapter 6). If future research were to find similarities or differences between office workers and shopfloor workers, understanding of the organisational context would be enriched and the idea should help in the planning of management strategy.

Another avenue that future research should explore is qualitative research. The area this study has explored has traditionally been researched in a quantitative way and the contribution has been to show how even in this saturated research area there are important aspects to carrying out commitment research. As the study found that latent constructs could be differently applied according to the research context, future research using a qualitative or a mixed-method approach could be of help to provide in-depth understanding of the research context and could therefore help to interpret the research findings.

Finally, productivity cannot be explained by one particular component. Rather, it is achieved by a complex interplay of forces (Wright & Edwards, 1998). Therefore, future research should aim to explore other commitment forms to see if they are able to explain workplace behaviour.

## 9.6. Conclusion

This study attempted to crystallise commitment by explaining more carefully the roles of team commitment and organisational commitment. As hypothesized, team commitment was found to play a strong and independent role in explaining outcome variables that are of central interest in occupational psychology. The explanatory framework for this was social exchange theory. The thesis offers strong support for the idea that exchange on daily-basis, and interdependent social interaction are important elements in understanding commitment effects. Also the context for these is important. Commitment by both management and employees is understood as an essential to success; and sustaining commitment is as critical as developing it (Heywood et al., 2010). In order to manage commitment effectively, this thesis suggests we need an integrative perspective that takes account of how individual employees create their self-image within their immediate team and within their larger organisational context in which they find themselves.

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# **APPENDICES**

## **APPENDIX 1. Survey Questionnaire**

Dear Respondent,

[Company Name] has agreed to participate in some independent, academic research that is part of my PhD study at the University of Birmingham. This survey is about employees' attitude and behaviour in the workplace.

Your company is contacting you on my behalf and I would ask you to take a few minutes to help in this worthwhile study. Your opinions are important and this research would not be possible without comments from experts such as you. Please find enclosed a survey, which asks you for your opinions. It should take about 10 minutes to complete and you do not have to supply your name or any contact details.

Your *participation is voluntary* and there is *no penalty* if you do not participate. I guarantee that you *cannot be identified* from your responses as the survey has been designed only to ask for general information. *Your response will be used for this research only* and will be kept in the archive for ten years. Please also let me know if you would like a summary of research findings.

If you have any questions or concerns about the survey, please contact me, Kyungok PARK at [REDACTED]. I would appreciate if you put the completed questionnaire into the enclosed stamped addressed envelope. Thank you for completing this survey in advance.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

### < GUIDELINES >

1. **There is no correct answer** in each question. Please do not spend too much time on individual questions as only general thoughts and frankness are wanted.
2. **Please circle the number closest to your thoughts and feelings.** We are not testing your ethical values.
3. Some questions may seem repeated, however **please answer every item.**
4. If you have any queries, please contact me with the email address given above. I will try my best to answer your questions.

## A. About Your Work

A1. **About Your WORK:** To what extent do you agree or disagree with the following?  
Please circle ONE number in EVERY row.

		Strongly Disagree	Dis- agree	Neither agree nor disagree	Agree	Strongly Agree
1	The work I do is very important to me.	1	2	3	4	5
2	My job activities are personally meaningful to me.	1	2	3	4	5
3	The work I do is meaningful to me.	1	2	3	4	5
4	I am confident about my ability to do my job.	1	2	3	4	5
5	I am self-assured about my capabilities to perform my work activities.	1	2	3	4	5
6	I have mastered the skills necessary for my job.	1	2	3	4	5
7	I have significant autonomy in determining how I do my job.	1	2	3	4	5
8	I can decide on my own how to go about doing my work.	1	2	3	4	5
9	I have considerable opportunity for independence and freedom in how I do my job.	1	2	3	4	5
10	I help others who have heavy workloads.	1	2	3	4	5
11	I give my time to help others with work problems willingly.	1	2	3	4	5
12	I take steps to prevent problems with other workers.	1	2	3	4	5
13	I try to avoid creating problems for co-workers.	1	2	3	4	5
14	I am mindful of how my behaviour affects other people's jobs.	1	2	3	4	5

		Strongly Disagree	Dis- agree	Neither agree nor disagree	Agree	Strongly Agree
15	I help others who have been absent.	1	2	3	4	5
16	I keep up with developments in the company.	1	2	3	4	5
17	I keep abreast of changes in the organisation.	1	2	3	4	5
18	I read and keep up with organisation announcements, memos, etc.	1	2	3	4	5
19	I do not take extra breaks.	1	2	3	4	5
20	I do not take unnecessary time off work.	1	2	3	4	5
21	My attendance at work is above the norm.	1	2	3	4	5

## B. About Your Views

**B1. About Your COMPANY:** To what extent do you agree or disagree with the following?  
Please circle ONE number in EVERY row.

		Strongly Disagree	Dis- agree	Neither agree nor disagree	Agree	Strongly Agree
1	I would be very happy to spend the rest of my career with this organisation.	1	2	3	4	5
2	I enjoy discussing my organisation with people outside it.	1	2	3	4	5
3	I really feel as if this organisation's problems are my own.	1	2	3	4	5
4	This organisation has a great deal of personal meaning for me.	1	2	3	4	5
5	I think that I could easily become as attached to another organisation as I am to this one.	1	2	3	4	5
6	I do not feel like 'part of the family' at my organisation.	1	2	3	4	5

		Strongly Disagree	Dis- agree	Neither agree nor disagree	Agree	Strongly Agree
7	I do not feel 'emotionally attached' to this organisation.	1	2	3	4	5
8	I do not feel a <i>strong</i> sense of belonging to <i>my</i> organisation.	1	2	3	4	5
9	I think that people these days move from company to company too often.	1	2	3	4	5
10	Things were better in the days when people stayed with one organisation for most of their careers.	1	2	3	4	5
11	I was taught to believe in the value of remaining loyal to one organisation.	1	2	3	4	5
12	One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain.	1	2	3	4	5
13	If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation.	1	2	3	4	5
14	I do not believe that a person must always be loyal to his or her organisation.	1	2	3	4	5
15	Jumping from organisation to organisation does not seem at all unethical to me.	1	2	3	4	5
16	I do not think that wanting to be a 'company man' or 'company woman' is sensible anymore.	1	2	3	4	5
17	I am not afraid of what might happen if I quit my job without having another one lined up.	1	2	3	4	5
18	It wouldn't be too costly for me to leave my organisation now.	1	2	3	4	5
19	It would be very hard for me to leave my organisation right now, even if I wanted to.	1	2	3	4	5
20	Too much in my life would be disrupted if I decided I wanted to leave my organisation now.	1	2	3	4	5
21	Right now, staying with my organisation is a matter of necessity as much as desire.	1	2	3	4	5
22	I feel that I have too few options to consider leaving this organisation.	1	2	3	4	5

		Strongly Disagree	Dis- agree	Neither agree nor disagree	Agree	Strongly Agree
23	One of the few serious consequences of leaving this organisation would be the scarcity of available alternatives.	1	2	3	4	5
24	One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice — another organisation may not match the overall benefits I have here.	1	2	3	4	5

**B2. About the TEAM You Belong To:**

Teams refer to  
“groups of individuals who work interdependently, have common goals, and are mutually accountable for task accomplishment.”

Please limit your team *to those whom you communicate directly while you work.*

Do you work in a team?      Yes ☐    No ☐

*If you answered **No**, please go to **B3**.*

1. How long have you worked **in your TEAM** (*not necessarily your company*)?  
(Please specify in months or years as appropriate)

\_\_\_\_\_ years and \_\_\_\_\_ months

2. How many members are there **in your team (including yourself)**?

\_\_\_\_\_

**Then, to what extent do you agree or disagree with the following?**

**Please circle ONE number in EVERY row.**

		<b>Strongly Disagree</b>	<b>Dis- agree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
25	I enjoy interacting with the members of this team.	1	2	3	4	5
26	All members need to contribute to achieve the team's goals.	1	2	3	4	5
27	I think of this team as part of who I am.	1	2	3	4	5
28	I am prepared to do additional chores, when this benefits my team.	1	2	3	4	5
29	I feel at home among my colleagues at work.	1	2	3	4	5
30	I try to invest effort into a good atmosphere in my team.	1	2	3	4	5
31	In my work, I let myself be guided by the goals of my team.	1	2	3	4	5
32	When there is social activity with my team, I usually help to organize it.	1	2	3	4	5
33	This team lies close to my heart.	1	2	3	4	5
34	I find it important that my team is successful.	1	2	3	4	5
35	My impact on what happens in my team is large.	1	2	3	4	5
36	I have a great deal of control over what happens in my team.	1	2	3	4	5
37	I have significant influence over what happens in my team.	1	2	3	4	5



## A. General Information

This section is for purely demographical statistics. The information will be used only for the statistical purpose of this research.

1	Sex	Male <input type="checkbox"/> Female <input type="checkbox"/>
2	Age	_____ years
3	Company Tenure	Please state <b>your working period</b> in <b>your COMPANY</b> . (not necessarily your team) _____ years _____ months
4	Employment Type	Temporary <input type="checkbox"/> Contract <input type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input type="checkbox"/> Other <input type="checkbox"/> (Please specify _____)
5	Job Type	Product <input type="checkbox"/> Office & Admin <input type="checkbox"/> Sales <input type="checkbox"/> R&D <input type="checkbox"/> Other <input type="checkbox"/> (Please specify _____)

*Please take a look back if you answered all the questions.  
Thank you for completing this survey!*

## APPENDIX 2. . Pilot Study (N= 31) Descriptive Statistics: Means, Standard Deviations, Reliabilities ( $\alpha$ ) and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Sex	1.45	.51	-																	
2. Age	44.06	7.95	-.48**	-																
3. Job Category	2.87	1.38	-.01	.42*	-															
4. Employment type	2.87	.50	-.03	.02	-.17	-														
5. Org. Tenure	12.48	8.05	-.56**	.64**	.15	.23	-													
6. Psy. Empowerment	3.86	.78	.13	.34*	.32*	-.19	-.09	<b>0.87</b>												
7. -Meaning	4.13	.64	.12	.36*	.44**	-.12	-.03	.85**	<b>0.59</b>											
8. -Competence	4.03	.70	-.09	.29	.15	-.26	.20	.57**	.35*	<b>0.74</b>										
9. -Self-determination	3.69	.94	.11	.35*	.17	-.18	-.09	.87**	.63**	.38*	<b>0.88</b>									
10. -Impact	3.61	.82	.14	.00	.29	-.28	-.25	.67**	.45**	.31*	.51**	<b>0.82</b>								
11. OC	3.31	.88	-.36*	.37*	.49**	-.37*	-.05	.26	.20	.11	.21	.30	<b>0.71</b>							
12. -AOC	3.48	.83	-.04	-.11	-.07	-.12	-.23	-.49**	-.42**	-.34*	-.43**	-.35*	.21	<b>0.69</b>						
13. -NOC	3.18	.99	-.33*	.23	.32*	-.36*	.06	.27	.07	.19	.23	.33*	.79**	-.04	<b>0.70</b>					
14. -COC	3.25	.80	.15	-.27	-.33*	.04	-.25	-.03	-.26	.10	.05	-.06	-.52**	.10	-.14	<b>0.78</b>				
15. Team Commitment	3.90	.68	.05	.27	.34*	-.27	.05	.66**	.54**	.49**	.47**	.66**	.31	-.55**	.40*	-.26	<b>0.88</b>			
16. OCBI	3.91	.73	-.034	.24	.09	-.13	.15	.46**	.30*	.46**	.36*	.29	.30	-.17	.30	-.12	.40*	<b>0.88</b>		
17. OCBO	3.79	.70	-.13	.42**	.31*	-.37*	.13	.32*	.33*	.31*	.30	.22	.24	-.28	.15	-.19	.41*	.48**	<b>0.68</b>	

Note. N= 31. Sex: 1=Male, 2=Female; Job Category: 1=Production, 2=Office & Administration, 3=Sales, 4=R&D, 5=Others; Employment Type: 1=Temporary, 2=Contract, 3=Full-time, 4=Part-time. Scale reliabilities, *Cronbach-alpha* ( $\alpha$ ), are on the diagonal in boldface. \*\* Correlation is significant at the 0.01 level (1-tailed) / \* Correlation is significant at the 0.05 level (1-tailed).

### APPENDIX 3. Sample 2: EFA with Oblique Rotation

Table 1. Sample 2: Factor Loading of Affective Organisational Commitment

Item no.	Questions	Factor 1	Factor 2	Factor 3
AOC8r	I do not feel a strong sense of belonging to my organisation	-.881	-.161	-.334
AOC5r	I do not feel like 'part of the family' at my organisation	-.725	.022	-.426
AOC6r	I do not feel 'emotionally attached' to this organisation	-.712	-.217	-.070
AOC2	I enjoy discussing my organisation with people outside it	.067	.677	.064
AOC7	This organisation has a great deal of personal meaning for me	.700	.246	.731
AOC3	I really feel as if this organisation's problems are my own	.581	.364	.711
AOC1	I would be very happy to spend the rest of my career with this organisation	.481	.398	.525
AOC4r	I think that I could easily become as attached to another organisation as I am to this one	.049	.011	.297

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. Cronbach Alpha  $\alpha = .754$ , KMO = .819

Table 2. Sample 2: Factor Loading of Normative Organisational Commitment

Item no.	Questions	Factor 1	Factor 2	Factor3
NOC2r	I do not believe that a person must always be loyal to his or her organisation	-.802	.189	-.302
NOC4	One of the major reasons I continue to work for this organisation is that I believe that loyalty is important and therefore feel a sense of moral obligation to remain	.666	.266	.482
NOC3r	Jumping from organisation to organisation does not seem at all unethical to me	-.460	-.115	-.139
NOC5	If I got another offer for a better job elsewhere I would not feel it was right to leave my organisation	-.005	.652	-.080
NOC6	I was taught to believe in the value of remaining loyal to one organisation	.560	.329	.658
NOC7	Things were better in the days when people stayed with one organisation for most of their careers	.093	-.110	.620
NOC8r	I do not think that wanting to be a 'company man' or 'company woman' is sensible anymore	-.433	.197	-.456
NOC1	I think that people these days move from company to company too often	.296	.017	.415

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. Cronbach Alpha,  $\alpha = .661$ , KMO = .715

Table 3. Sample 2: Factor Loading of Continuance Organisational Commitment

Item no.	Questions	Factor 1	Factor 2
COC4r	It wouldn't be too costly for me to leave my organisation now	-.757	-.194
COC1r	I am not afraid of what might happen if I quit my job without having another one lined up	-.593	-.203
COC2	It would be very hard for me to leave my organisation right now, even if I wanted to	.567	.414
COC5	Right now, staying with my organisation is a matter of necessity as much as desire	.552	.324
COC7	One of the few serious consequences of leaving this organisation would be the scarcity of available alternatives	.245	.783
COC3	Too much in my life would be disrupted if I decided I wanted to leave my organisation now	.554	.638
COC6	I feel that I have too few options to consider leaving this organisation	.248	.631
COC8	One of the major reasons I continue to work for this organisation is that leaving would require considerable personal sacrifice — another organisation may not match the overall benefits I have here	.225	.485

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. Cronbach Alpha,  $\alpha = .762$ , KMO = .738

Table 4. Sample 2: Factor Loading of Organisational Commitment with All 24 Items

Item no.	Factor 1	Factor 2	Factor3	Factor 4	Factor 5	Factor 6	Factor7
AOC8r	-.844	-.174	.312	-.412	.056	-.288	-.383
AOC5r	-.775	-.071	.325	-.237	-.027	-.381	-.116
AOC7	.743	.257	-.363	.453	-.043	.405	.363
AOC6r	-.735	-.020	-.085	-.025	.019	.001	-.348
AOC3	.658	.308	-.208	.503	-.009	.395	.384
NOC8r	-.641	-.058	.357	-.325	.120	-.439	-.137
COC4r	-.568	-.216	.230	-.300	.338	-.470	-.366
COC7	.037	.817	-.113	-.012	.018	.052	.088
COC6	.022	.638	.097	.163	-.207	.012	.200
COC3	.243	.630	-.191	.288	-.301	.212	.443
COC8	.045	.481	-.191	.112	.026	-.027	.123
COC2	.267	.416	-.374	.304	-.223	.228	.315
NOC5	-.072	-.040	.580	.026	-.008	-.109	.171
COC5	.463	.350	-.548	.259	-.035	.259	.197
NOC4	.466	.210	.076	.648	.103	.347	.269
NOC2r	-.539	-.087	.297	-.614	.050	-.199	-.302
NOC3r	-.078	-.108	-.024	-.585	.204	-.029	-.200
NOC6	.436	.259	.082	.574	.082	.552	.113
NOC1	.063	.116	-.180	.483	-.102	.395	-.098
COC1r	-.313	-.228	.295	-.246	.717	-.295	-.007
AOC4r	.156	.051	-.163	.016	.301	.188	-.014
NOC7	.161	.000	-.120	.146	.017	.657	-.005
AOC1	.496	.125	-.133	.389	-.057	.408	.701
AOC2	.082	.149	.155	.026	.020	-.108	.481

*Note.* Extraction Method: Principal Axis Factoring, Rotation Method: Oblimin with Kaiser Normalization. Figures are from Structure Matrix. Cronbach Alpha,  $\alpha = .852$ , KMO = .805

## APPENDIX 4. Result of Univariate Normality Test

Variable	Skewness		Kurtosis		Skewness and Kurtosis	
	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
ID	2.682	0.007	42.738	0.000	1833.762	0.000
MEANING1	-6.587	0.000	3.519	0.000	55.772	0.000
MEANING2	-5.296	0.000	2.816	0.005	35.979	0.000
MEANING3	-6.015	0.000	3.235	0.001	46.640	0.000
COMPET1	-2.213	0.027	-0.102	0.919	4.908	0.086
COMPET2	-0.334	0.738	-0.461	0.645	0.324	0.850
COMPET3	-1.652	0.099	0.088	0.930	2.737	0.254
SELFDT1	-2.505	0.012	0.735	0.462	6.818	0.033
SELFDT2	-2.808	0.005	-0.704	0.481	8.380	0.015
SELFDT3	-1.694	0.090	0.091	0.928	2.879	0.237
IMPACT1	-0.390	0.697	-0.386	0.700	0.301	0.860
IMPACT2	0.024	0.981	1.110	0.267	1.233	0.540
IMPACT3	1.021	0.307	1.078	0.281	2.204	0.332
AOC1	-2.326	0.020	-0.034	0.973	5.412	0.067
AOC2	2.165	0.030	-0.189	0.850	4.724	0.094
AOC3	-3.951	0.000	1.506	0.132	17.875	0.000
AOC4	1.936	0.053	-0.249	0.803	3.808	0.149
AOC5	-3.059	0.002	0.770	0.441	9.949	0.007
AOC6	-1.081	0.280	-1.580	0.114	3.663	0.160
AOC7	-2.822	0.005	0.304	0.761	8.055	0.018
AOC8	-1.486	0.137	-0.321	0.748	2.312	0.315
NOC1	-3.795	0.000	-0.164	0.870	14.428	0.001
NOC2	-3.416	0.001	-0.890	0.373	12.459	0.002
NOC3	4.049	0.000	0.597	0.551	16.753	0.000
NOC4	0.608	0.543	-1.315	0.189	2.098	0.350
NOC5	2.084	0.037	-2.853	0.004	12.482	0.002
NOC6	0.300	0.764	-3.880	0.000	15.141	0.001
NOC7	-2.222	0.026	-0.614	0.539	5.313	0.070
NOC8	-1.467	0.143	-0.866	0.386	2.901	0.234
COC1	-1.827	0.068	-1.108	0.268	4.564	0.102
COC2	-3.442	0.001	0.121	0.903	11.862	0.003
COC3	-1.425	0.154	-1.594	0.111	4.570	0.102
COC4	-1.726	0.084	-0.614	0.539	3.355	0.187
COC5	-4.655	0.000	1.623	0.105	24.304	0.000
COC6	1.104	0.269	-0.474	0.635	1.445	0.486
COC7	1.109	0.267	-1.339	0.181	3.022	0.221
COC8	-0.711	0.477	-1.833	0.067	3.864	0.145
TC1	-4.858	0.000	4.108	0.000	40.476	0.000
TC2	-1.154	0.248	-0.563	0.574	1.649	0.438
TC3	-1.485	0.138	0.783	0.434	2.818	0.244
TC4	-4.812	0.000	4.443	0.000	42.892	0.000
TC5	-3.120	0.002	2.000	0.045	13.736	0.001
TC6	-0.516	0.606	0.200	0.842	0.306	0.858
TC7	-4.009	0.000	3.387	0.001	27.544	0.000
OCBI1	-2.710	0.007	1.488	0.137	9.561	0.008
OCBI2	-2.376	0.018	-0.185	0.853	5.679	0.058
OCBI3	-4.220	0.000	2.738	0.006	25.310	0.000
OCBI4	-5.150	0.000	4.037	0.000	42.821	0.000
OCBI5	-4.728	0.000	3.156	0.002	32.314	0.000
OCBI6	-4.308	0.000	0.924	0.355	19.415	0.000

OCBO1	-5.706	0.000	3.988	0.000	48.463	0.000
OCBO2	-3.612	0.000	3.100	0.002	22.658	0.000
OCBO3	-5.477	0.000	3.545	0.000	42.561	0.000
OCBO1	-2.892	0.004	-0.344	0.731	8.483	0.014
OCBO2	-5.664	0.000	3.742	0.000	46.084	0.000
OCBO3	-8.023	0.000	3.826	0.000	79.000	0.000

## APPENDIX 5. Initial Exploratory Factor Analysis (All Items)

All Items Rotated Component Matrix<sup>a</sup>

	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mean1					.740									
Mean2					.788									
Mean3					.778									
Comp1						.864								
Comp2						.797								
Comp3						.799								
Selfd1								.805						
Selfd 2								.702						
Selfd 3								.737						
Impact1							.617							
Impact2							.811							
Impact3							.823							
AC1		.354												
AC2		.096										.755		
AC3		.557												
AC4		-.040												.826
AC5		-.692												
AC6		-.707												
AC7		.559												
AC8		-.739												
NC1			.368							.342				
NC2		-.595								-.324				
NC3										-.744				
NC4										.507				
NC5										.041		.466		
NC6										.442				
NC7										.100			.659	
NC8		-.574								-.033				
CC1				-.396										
CC2				.478										
CC3				.663										



CC4				-.391										
CC5				.260										.406
CC6				.751										
CC7				.777										
CC8				.691										
T1	.691													
T2	.606													
T3	.749													
T4	.757													
T5	.713													
T6	.682													
T7	.676													
OCBI1			.494											
OCBI2			.491											
OCBI3			.748											
OCBI4			.761											
OCBI5			.664											
OCBI6			.435											
OCBO1											.390			
OCBO2											.541			
OCBO3											.645			
OCBO4									.416		.405			
OCBO5									.803					
OCBO6									.705					

*Note.* Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. The result is from Rotated component matrix. Rotation converged in 10 iterations.