**UNIVERSITY OF SOUTHAMPTON**
**FACULTY OF BUSINESS AND LAW**
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# Values Congruence and Commitment: Throwing the Role of Psychological Climate into the Mix

by

**Samir Abdelkader Abdelmoteleb**

Thesis Supervisors

Prof. Malcolm Higgs

Dr. Michelle Luke

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## ABSTRACT

Studying the fit between employees and their organisations and the individual and organisational outcomes of this congruence has been an interesting topic for researchers over the past decades. However, the literature does not adequately address how this fit affects other organisational attitudes – in particular organisational commitment.

In this study, a theory on the mechanism by which employees' perception of person-organisation values fit impacts their affective organisational commitment and how this is impacted by their perceptions of the psychological climate is offered. Moreover, the study contributes to the literature through applying the Latent Congruence Model (LCM) developed by Cheung (2009a). Accordingly, all the hypotheses that pertain to values congruence, psychological climate and affective organisational commitment are simultaneously tested, controlling for the measurement errors. This SEM approach could be a useful analysis tool, especially as we know that, according to the simulation study of Cheung and Lau (2008), the bias in regression coefficients due to measurement error using path analysis may exceed 16% on average. Therefore, studying congruence under the frame of SEM in turn increases the accuracy and the significance of the congruence-related studies

The study was conducted in an Egyptian medium-sized textile organisation (N = 223). The results of the study supported the hypotheses that there would be positive relationships between affective organisational commitment and both perceived person-organisation values fit and psychological climate. Moreover, perceived person-organisation values fit demonstrated a positive impact on psychological climate. Importantly, psychological climate mediated the relationship between perceived person-organisation values fit and affective organisational commitment. The implications of these findings and directions for future research are discussed.

## DECLARATION OF AUTHORSHIP

I, **Samir Abdelkader Abdelmoteleb**, declare that this thesis and the work presented in it are my own and have been generated by me as the result of my own original research.

**Values Congruence and Commitment: Throwing the Role of Psychological Climate into the Mix**

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

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Signed:……

Date: ……

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# Chapter 1: INTRODUCTION

This chapter presents an overview of the thesis. It starts with discussing the study's key variables, person-organisation fit, psychological climate and organisational commitment. Following this brief discussion, the motivations that inspired the current study are offered. It also refers to the gap in the literature from which the research questions of this study were developed. Moreover, the structure of the thesis and a brief introduction of the content of the chapters it includes are discussed. The chapter concludes with highlighting the significance of this study.

## 1.1 Background of the research

As Schneider (2001) noted, of all issues of psychology that have fascinated both scholars and practitioners, none has been more pervasive than the fit between the person and the environment. For example, research on person-environment (PE) fit has extended for more than 100 years (Kristof-Brown et al., 2005). Furthermore, research on person-organisation (PO) fit has been approached from a variety of perspectives, such as values congruence, goal congruence, needs-structure fit, and personality climate fit (Verquer et al., 2003).

One notable approach to the exploration of PO fit has been the adoption of a values perspective. This is based on a view that human values are principles guiding human behaviour and attitudes (Rokeach, 1973). Thus, it follows that PO values fit can be defined as the similarity between patterns of organisational values and patterns of individual values (Chatman, 1991). People come to their organisations with their beliefs and values, and at the same time organisations have also values that define the organisation's culture. The extent to which the similarity of these values affects the well-being of persons and the performance of organisations has been investigated by organisational psychology researchers for a long time. When employees are similar to their organisations with regard to values, beliefs, goals, etc., they are said to be congruent or fit with their organisations.

Based on the theme that values are main guides for behaviours and attitudes (Rokeach, 1973), a values perspective could be applied to how employees perceive their working environment or psychological climate. Psychological climate can be broadly defined as the meanings employees

give to their jobs, co-workers, leaders, pay, performance expectations, opportunities for promotion, equity of treatment, and the like (James et al., 2008). Employees perceive their work environment to be positive or negative and these perceptions have been demonstrated to have an influence on a variety of organisational outcomes, such as organisational commitment (Parker et al., 2003).

Organisational commitment, in particular affective commitment, has also been demonstrated to be correlated with person-organisation fit (e.g. Kristof, 1996; Kristof-Brown et al., 2005). Organisational commitment can be defined generally as a psychological link between the employee and the organisation that makes it less likely that employees will voluntarily leave their organisations (Allen and Meyer, 1996). Organisational commitment is an important variable for any organisation, as it is associated to a number of work-related outcomes including job satisfaction and involvement with one's job, work motivation, and turnover (Johnson and Chang, 2008).

Crucially, both values and psychological climate perceptions have the ultimate destination of employees' well-being (Rokeach, 1973; James and James, 1989). Thus, the present research investigates the potential relationship between person-organisation values fit and the perception of psychological climate and the impact of this relationship on organisational commitment, specifically on affective organisational commitment.

### 1.2 Study motivation

Values express what is important to us in our lives (Calogero et al., 2009) and also own an important position in the scientific and public discourse at a number of levels (Meglino and Ravlin, 1998). Additionally, values are generally thought of as a key determinant of a person's behaviours and attitudes (Rokeach, 1973), and thus, research in values is expected to be most fruitful as the values-based relationships are expected to be more stable than those non values-related relationships.

Initially, I became interested in values research during my Masters degree in which I presented a paper about values in organisations. I followed this up with my Masters dissertation on the

relationship between person-organisation fit, professional level and organisational commitment. However, the current study differs from my Masters dissertation in that in this study I examined the mediating role of psychological climate in the relationship between PO values fit and organisational commitment, which is hoped to be an addition to the literature as research on PO fit has not dealt with this critical issue. Additionally, I sought to contribute to the method literature through employing the structural equation modelling (SEM) technique on this PO fit study. This could be an important methodological step as almost all person-environment studies, including PO, are based on conventional statistical techniques, such as multiple linear regression and correlation analyses. These analysis techniques do not consider measurement errors when estimating model parameters (Raykov and Marcoulides, 2006).

### 1.3 Research questions

Whilst traditional selection processes were centrally concerned with work oriented analyses and the determination of sets of knowledge, skills and abilities (KSAs), more recent research has sought to look beyond the direct KSAs needed for the job. In particular, organisations are focusing more on the fit between an individual's personality, beliefs and values and the organisation's espoused culture, norms and values than on KSAs during the selection process (Bowen et al., 1991). This compatibility between the employee and organisation is considered a key to retaining a workforce with the flexibility and organisational commitment necessary to meet challenging and competitive work environments (Kristof, 1996). Whilst the relationships between organisational commitment and both person-organisation values fit and psychological climate are well documented (e.g. O'reilly et al., 1991; Kiewitz et al., 2002; Chew and Chan, 2008), there have been no theoretical or empirical studies to date that have investigated the interrelationships among these variables. Therefore, the present research seeks to examine the relationships between PO fit, psychological climate and organisational commitment.

### 1.4 Outline of the thesis

The dissertation consists of six chapters. In Chapter 1, the introduction, some initial issues including the research background, study motivations, research questions, and the significance of the study are discussed. Chapter 2 discusses how the literature review pertains to the study's key variables. Specifically, the literature on personal values, organisational values, person-

organisation fit, psychological climate and organisational commitment are discussed. In this chapter, a number of critical topics pertaining to these variables have been discussed including their concepts, structures, their measurements, and the interrelationships among them. Chapter 3 presents the conceptual framework of the research, the hypotheses and the proposed research model. Chapter 4 describes the research methodology, including a presentation of the study philosophy, study approach and strategy, study measurements, and data collection. In Chapter 5, the data analysis and findings are presented. That is, the study data set is checked for its appropriateness for the various statistical analyses. Also, the findings of exploratory and confirmatory analyses are discussed. Moreover, the structural equation modelling issues in values congruence are presented. Finally, testing the study hypotheses and proposed model are explained. Finally, Chapter 6 discusses the study results. This includes the implications of the study findings, study contributions, limitations, and direction for future research.

### 1.5 Significance of the study

Initially, this study derives its importance from the nature of the concept of values. That is, given that the literature indicates that values are more stable than behaviours and attitudes (Rokeach, 1973), it is expected that the association of values and other variables could be more stable than these same variables and other non-values variables, such as the relationships between attitudes and behaviours. To date, there is no published research that has tried to explain how values congruence associates with other attitudinal variables; thus, one of the most significant contributions of this study is its investigation of the mechanism by which PO values fit exerts its impact on affective organisational commitment.

Methodologically, the present research utilises an advanced technique suggested by Cheung (2009a), structural equation modelling, to test the proposed model. Relatedly, this study investigates organisational commitment as the main dependent variable, because it is considered one of the most frequently studied in the organisational behaviour literature (Allen and Meyer, 1996). Organisational commitment has been frequently studied because of its critical association with organisational variables, such as job performance, job satisfaction, organisational citizenship and lower rate of absenteeism and intention to quit (Riketta, 2002).

**Summary**

In this chapter, an introduction to the current study was presented. It started with the background of the study, which indicated the extent to which person-organisation fit, in particular values congruence, could affect employees' attitudes including organisational commitment. In addition, it referred to the potential relationship bwteen person-organisation values fit and psychological climate and their relationships with organisational commitment. Moreover, the reasons that urged the researcher to pursue this research work were discussed. This chapter briefely showed the need of investigating the relationships between the study variables from a different perspective. In other words, it shed light on the need to include values congruence and psychological climate together in a single model that could help us understand how they predict organisational commitment. Additionally, the structure of the thesis and the topics it included were also briefely discussed. The chapter concludes with the importnace of this study.

The next chapter will discuss the literature review relating to the key variables examined with the purpose of gaining an in-depth understanding of the nature of these variables and developing a clear picture of the phenomenon under study. Therefore, the next chapter will go through the literature related to the variables of personal values, organisational values, person-organisation (PO) fit, psychological climate and organisational commitment.

# Chapter 2: LITERATURE REVIEW

## 2.1 Introduction

In this section, I will review the management, psychological and social sciences literature on the variables under investigation. Specifically, there is a need to have a deeper knowledge of the literature of PO fit and in particular PO values fit. This requires a discussion of the personal and organisational values literature before describing issues in the values congruence literature, such as measuring person-organisation values fit. Moreover, I will describe the psychological climate literature and discuss some critical issues, such as its construct and dimensions, the difference between psychological climate, organisational climate and organisational culture. Also, it is important to determine the main streams of research that pertain to the antecedents and consequences of psychological climate, and in particular, organisational commitment, the study's main dependant variable, and how to measure psychological climate. This section will conclude with discussion of the organisational commitment, and in particular, its concept, dimensions, antecedents and consequences.

## 2.2 Personal values

### 2.2.1 Definition and concept

Fundamentally, personal values have long been seen by social scientists to be critical determinants of attitudes and behaviour (Mccarty and Shrum, 2000). Therefore, it is important to define the concept of personal values. Rokeach, one of pioneers in the research of values, defined values as "enduring beliefs that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1973, p. 5). He also stated that values are used in two meanings: first, value as a criterion, by which people can evaluate their preferences and other behaviours, second, value as a description of the object. Moreover, he argued that studying value as a criterion, a guiding principle, is more parsimonious, because individuals hold fewer values than attitudes or behaviours (Rokeach, 1973). Also, Schwarts put it that "values (1) are concepts or beliefs, (2) pertain to desirable end states or behaviors, (3) transcend specific situations, (4) guide selection or evaluation of behavior and events, and (5) are ordered by relative importance" (Schwartz, 1992, p. 4). Different from values, attitudes are organisations of beliefs around a specific object

or situation, whereas the nature of values is more abstract (Mccarty and Shrum, 2000). Thus values differ from attitudes in their generality or abstractness; moreover, values have hierarchical ordering by importance (Schwartz, 1992).

Studying the distinguished features of values, Feather (1995) thinks values are abstract structures involving the beliefs that people have about desirable ways of behaving or about desirable end states. Values transcend specific objects and situations, and these beliefs have a normative quality about them. They have their source in basic human needs and in societal demands. Values are relatively stable but also change across the life span. They function as criteria or frameworks against which present experience can be tested. Moreover, values have relative importance for an individual, and as previously mentioned, an individual has far fewer values than specific beliefs and attitudes.Therefore, values are more abstract than attitudes, and they are hierarchically organised in terms of their importance for self. People defend their values and give various reactions when their values are fulfilled, challenged, or frustrated.

I have noticed that there is no consensus on a unique construct of human values. Furthermore, despite the popularity of values, there is a lack of consensus on the nature of values themselves. However, although there are many definitions of values, the various meanings are around the concept that values are core principles held by a person that are considerably stable and able to affect a person's perception, evaluation, attitudes and behaviours towards the ultimate goal of one's well being.

Individuals differ in their receptivity to socialisation activities that teach them values. Moreover, individuals may respond to socialisation because it may beneficial to them and increases their fit to organisations. Therefore, difference in values among individuals may be partially attributed to the susceptibility of individuals to socialisation and efforts of change values (Meglino and Ravlin, 1998).

Rokeach (1973) attributes the stability of values to the fact that they are learned by societies in an absolute all-or-none manner. That is, people are urged to continuously hold values, and that strict adherence to values makes it relatively stable over time. Moreover, Jones and Gerard

(1967) explained that people experience discomfort acquiring values, and because of this discomfort, they tend to hold these values because people usually develop attachment to things they have experience discomfort to acquire.

### 2.2.2 Values, motivation and needs

Many researchers think values are attached to motivations and essential human needs. Moreover, they have been seen as utilities, attitudes, interests, and nonexistent mental entities (Meglino and Ravlin, 1998). In particular, following the work of Maslow's (1970) theory of basic (safety, survival, and sustenance) and higher order needs (belongingness, esteem, and self-fulfilment), Inglehart (1971) developed his model claiming that the rise of economic development welfare led to less adherence to materialistic needs, and more concern about postmaterialistic needs. On the other hand, Feather (1995) believes that values have a motivational role by affecting a person's long and short term goals and the selection of actions that relate to these goals. As a different approach, Schwartz and colleagues (Schwartz and Bilsky, 1987; Schwartz, 1992; Schwartz and Bardi, 2001) developed a theory of universal values by drawing on the motivational goals people strive to achieve.

In their study of the interrelation between values, motivations, and personal goals, Jolibert and Baumgartner (1997) maintained that reviewing the definitions of these constructs indicates a type of circular causality among these three constructs. Moreover, values and motivations are defined to be strictly equivalent and personal goals, which are one of the building blocks of personality, also are used as synonyms of values. Table 2.1 shows the conceptual relations between these three constructs among key researchers.

However, needs and values have distinctive characteristics. Feather (1995) mentioned that values are related to norms having dimensions for goodness and badness, whereas the values-norm link does not necessarily exist between needs and the process of evaluation. Mcclelland (1985) added that values are seen closer to conscious awareness and more easily to be verbalised than needs (Cited in Feather, 1995).

Table 2.1 Interrelationships between values, goals, and motivations

| **Authors** | **Values and personal goals** | **Values and Motivations** | **Values and needs** |
|---|---|---|---|
| **Schwartz and Bilsky (1987)** | Values are sort of either terminal or instrumental goals. | Values could be seen as motivational concerns. | Values represent cognitive representations of the biological, interactional, and societal needs. |
| **Rokeach (1973)** | Values are desired terminal or instrumental end states. | The terminal and instrumental values are seen as motivations. | Values are cognitive representations and transformations of needs that express human needs. |
| **Murray (1951)** | Values lead to end state. | | Needs serve values. |
| **Maslow (1970)** | | Values are seen as motivations. | Fulfilling any need is a value. |

Source: Adapted from Jolibert and Baumgartner (1997)

### 2.2.3 Values facets

Classifying personal values into categories has allowed researchers to examine the relationships between different value types such as intrinsic and extrinsic values and other related variables, and human behaviours. One prominent perspective on values is Schwartz's value classification. Schwartz (1992) introduced a theory of human value systems and was able to determine 10 higher ordered values that are held across a wide range of cultures. These 10 motivational types of values were found to be comprehensive of the core values recognised as universal requirements of the human condition in cultures around the world. Moreover, the 54 single values that have been classified as consisting of 10 general values have shown nearly equivalent

meanings across cultures (Schwartz and Bardi, 2001). Table 2.2 gives a brief description of the 10 value types described by Schwartz (1992).

Table 2.2 Schwartz's motivational human values

| |
|---|
| **Power**: Social status and control or dominance over people and resources |
| **Achievement**: Success through demonstrating competence according to the standards of society |
| **Hedonism**: Pleasure, enjoyment and gratification for oneself |
| **Stimulation**: Excitement and challenge |
| **Self-direction**: Independent thought exploring life and action-choosing |
| **Universalism**: Understanding, appreciation, and showing tolerance and protection for the welfare of all people |
| **Benevolence**: The desire to achieve the welfare of people with whom one is in frequent personal contact |
| **Tradition**: Respect, commitment and acceptance of the customs, beliefs and ideas that belong to culture or religion |
| **Conformity**: Control of actions, inclinations, and impulses that are likely to upset or harm others and violate social expectations or norms |
| **Security**: Concern about safety, harmony and stability of oneself and society |

Source: Adapted from Davidov et al. (2008)

According to Schwartz (1992), the relationships among the single values can be summarised in terms of four higher order value types that form two basic, bipolar, conceptual dimensions. The first basic dimension places a higher order type combining stimulation and self-direction values in opposition to one combining security, conformity, and tradition values and this dimension was called *openness to change versus conservation*. The second dimension places a higher order type that combined power, achievement, and hedonism values in opposition to one that combined universalism and benevolence values and this dimension was called *self-enhancement versus self-transcendence*.

The theory of Schwartz (1992) has been widely accepted and validated cross-culturally (Schwartz, 1992; Schwartz et al., 2001). Furthermore, this theory has been validated using the technique of confirmatory factor analysis (CFA) (Schwartz and Boehnke, 2004). In addition, these higher-order types were used to describe the value structure more simply. Moreover, these

four types, rather than the 10 values, have been utilised to predict behaviour and attitudes (Schwartz and Boehnke, 2004).

A different approach dealing with the domain of personal values has been introduced by Elizur and Sagie (1999). These authors, using facet analysis, considered how the environment influences personal values. Facet analysis attempts to formally define the universe of observations, and to test hypotheses about the relationship between the definitional framework and the structure of the empirical observations. Elizur and Sagie categorised the items of values, based on an in depth review of value literature, into three main facets: value modality, focus and life area. Value modality has been divided into three categories, desired *material* consequences (pay), *affective* judgements (love, esteem) based on the feelings engendered from interpersonal relationships and *cognitive* judgements (interest, achievement, independence) based on opinions and beliefs. Focus refers to the extent to which a value is relevant to a specific behaviour or situation. Values that are relevant to a specific behaviour or situation are known as *focused*, whereas those that are not related to a specific behaviour or situation are known as *diffuse*. Life area makes the distinction between specific *work* area and *life* in general. Importantly, their empirical study outcomes, using small spaces analysis (SSA), showed that life and work occupied two distinctive regions and both can be classified further according to the modality and focus facets suggested. Moreover, health, happiness, and love were the most important life values for the used sample (Elizur and Sagie, 1999).

On the other hand, Rokeach (1973) classified values into two categories: instrumental and terminal values. Terminal values are end state beliefs a person strives to achieve, such as success. In contrast, instrumental values are the beliefs about particular modes of conduct, such as being ambitious, which urges a person to follow particular behaviours and in turn help one to achieve terminal values ultimately. Rokeach (1973) also claimed that there may be consequences of the relationships between values and other variables depending on the distinction between terminal and instrumental values. Supporting this proposition, previous research has revealed that terminal values were more related to organisational commitment than instrumental values (Putti et al., 1989).

### 2.2.4 Measuring personal values

There are two main ways to measure personal values, the ranking and rating methods. Among the special issues of personal values measurement, the ranking method is more common than the rating method (Mccarty and Shrum, 2000). The ranking method involves prioritising values to one another, whereas the rating method refers to evaluating every value independently.

Reviewing the ranking and rating methods, Tepeci (2001) sees that ratings have some advantages like capturing absolute, interpretable and meaningful, differences between scores, because values are rated independently from one another on the same scale. Moreover, parametric statistical analyses, such as correlation and regression analysis, can be performed on the data. On the other hand, some researchers (e.g. O'reilly et al., 1991) prefer the ranking method because they see that values are more accurately measured in choice situations, because individuals are not completely aware of their belief structure. In addition, because ipsative (ranking) techniques are based on comparing values to each other, all values cannot be given a high rating at the same time. As a result, ipsative instruments typically produce greater differentiation of scores and in return a more normal distribution in contrary to rating method whose normative distribution is typically skewed because many values are socially desirable. However, Edwards (1994a, 1994b) noticed that ranking procedure is linked to some methodological problems including the issue of violating the assumptions of standard statistical techniques and the failure of ranking to have information about the distance between component measures.

Apart from the methodological issues of ranking and rating, there are some measures that have been developed by researchers to assess personal values, and among these measures is Rokeach's (1973) Values Survey. This measure consists of 18 items for every kind of values (instrumental and terminal values). Rokeach's values taxonomy is perhaps considered the most popular conceptual structure in organisational research (Mcdonald and Gandz, 1991). The problem with this survey for organisational behaviour research is it has a great focus on life values more than work values. Importantly, Rokeach (1973) thought that values are central in predicting other behaviours and attitudes, in the sense that a value can be used to predict a number of value-relevant attitudes or behaviours. Rokeach suggested that people evaluate their values according to their own priorities. Therefore, he used the ranking procedure and was able to correlate a wide

range of behaviours and attitudes with both instrumental and terminal value, which has helped to demonstrate the predictive validity of the Rokeach value Survey (Maio et al., 2006).

Having been developed drawing on Schwartz's (1992) value theory which is seen as one of the most prominent value conceptualisations today (Lindeman and Verkasalo, 2005), Schwartz's Value Survey (SVS) is considered the most commonly used method in recent value research, and has been extensively validated worldwide (Calogero et al., 2009). However, once again it suffers from the same issues Rokeach's value survey experiences. That is, it is mainly related to life values rather than work values.

On the other hand, England (1967) also tried to assess managers' values by developing concepts derived from literature review related to personal value system for managers and the author organised 66 values into 5 categories: goals of business organisations (e.g., high productivity, organisational growth), personal goals of individuals (e.g., achievement, autonomy), groups of people (e.g., white collar employees, employees), ideas associated with people (e.g., obedience, trust), and ideas about general topics (e.g., caution, change) (England, 1967). According to this survey, respondents are required first to rate these values before ranking them in terms of three criteria: successfulness, pleasantness, and, rightness. Although this measure is frequently used in organisation studies, it has some problems, such as the overlap between values categories, difficulties completing the measure and the inclusion of items which cannot be considered values (e.g., attitudes towards customers) (Finegan and Theriault, 1997).

## 2.3 Organisational values

### 2.3.1 Definition

Organisational values are those values related to the means and ends that matter most to organisations and like personal values they determine what is intrinsically important for the organisation and play a guiding role in its functioning (Dobni et al., 2000). Organisational research has shown that the organisation's values have significant effects on all aspects of a person's job (Kraimer, 1997). Moreover, organisational value systems provide norms that help managers allocate organisational resources and indicate how organisational members should

behave (Cable and Edwards, 2004). Additionally, organisational values are considered an implicit agreement among employees about the form of appropriate behaviours in the workplace (O'reilly, 1989).

Although values, including organisational values, are relatively stable, they can be changed over time; for example, Chatman mentioned that a person may initially prefer working independently but can learn to appreciate team working, and in turn that may lead to increases in job satisfaction, intention to remain longer, and a longer stay with the organisation (Chatman, 1991). However, because of the lack of agreement on the nature of values (whether they are motivations, attitudes, personality types, needs, etc.), there is a need for more unanimity on how values are defined, conceptualised, and measured in organisational research (Meglino and Ravlin, 1998).

### 2.3.2 Origin of organisational values

Relying mainly on correlational results, researchers have investigated demographic, environmental and genetic variables as antecedents of organisational values (Sagie et al., 1996). Thus, Sagie et al. (1996) highlight the importance of interpreting these results with a bit of caution. Nevertheless and in support of demographic and environmental antecedents of organisational values, Cherrington et al. (1979) found that younger workers placed greater emphasis on the importance of money, and friends over work; older workers held more strongly to traditional taught work values which are considered important in the industrial society. Importantly, the authors suggested that work values are acquired in part through a process of socialisation similar to the development of other moral behaviour. More recently, Warr (2008) conducted a similar study and found somewhat consistent results that older employees showed higher ratings of the importance for work, but education was found insignificant in this respect. Moreover, significantly more men than women rated good pay, achievement, the opportunity to use initiative, a responsible job and good chances of promotion as highly important. On the other hand, more women than men rated pleasant colleagues, good working hours and the opportunity to meet people as highly important (see also Sagie et al., 1996).

Keller et al. (1992) research supports the notion that both environmental and genetic variables are antecedents of organisational values. Specifically, they found that in 23 monozygotic and 20 dizygotic reared-apart twin pairs about 40% in work values variance can be explained by genetic factors, whilst about 60% of the variance could be explained by environmental factors. The authors added that a person is not born with particular of work values; rather, it is expected that genetic factors are significantly associated with the learning of work values.

From a motivational perspective, some researchers (e.g., Allport et al., 1951) see work values as motivators. In addition, values are thought to be able to motivate goal-directed behaviour by inducing valence on behaviours. Also, work values and motivations have been identified to be related but distinctive. Motivation is a broader concept that includes elements such as conscious and unconscious needs and goals of work outcomes, whilst work values are more specific and are related to the importance assigned to work outcomes (Sagie et al., 1996).

Researchers have focused on two main classifications of the nature of work values. The first is intrinsic work values, which are oriented towards self-actualisation and self-expression, and extrinsic work values, which are focused on security and material acquisition (Vansteenkiste et al., 2007). This classification of work values is considered the most widely employed concept when measuring work values (Wu, 1996). Researchers also have tried to investigate whether there are differences in the associations between other variables and intrinsic and extrinsic work values. For example, it is argued that intrinsic values are expected to be more correlated with organisational commitment than extrinsic values (Putti et al., 1989).

### 2.3.3 Values and organisational culture

Researchers have accepted that culture can be thought of as a set of cognitions held by members of a social unit (O'reilly et al., 1991). Although there is no consensus over what this term exactly means (Tepeci, 2001) and there are debates over the appropriate methodology for studying this concept (O'reilly et al., 1991), organisational culture helps to define the thoughts, feelings, values and actions of people in everyday organisational life and in the process of decision making (Alvesson, 2002). It has been described as consisting of multiple layers, such as (1) visible

artefacts, (2) espoused beliefs, values, rules, and behavioural norms and (3) tacit, taken-for-granted, basic underlying assumptions (Schein, 2004).

Artifacts include the visible products of the group, including the architecture of its physical environment, language, technology, artistic creations, style (as embodied in clothing, manners of address, emotional displays), published lists of values, observable rituals and ceremonies, and the like. Espoused beliefs and values relate to someone's original beliefs and values, the sense of what ought to be. When a group is first created the first issue to consider is the individual's own assumptions about what is right or wrong, what will work or not work. Regarding basic underlying assumptions, this concept is about the degree of consensus on certain beliefs and values in a group. For example, when some solution to a problem works repeatedly, it is usually taken for granted by employees and if a particular assumption is strongly held in a group, those employees will find alternative behaviours based on any other premises inconceivable (Schein, 2004).

As mentioned by Schein (2004), organisational values are a key component of organisational culture, and thus, they are often used as a proxy for organisational culture (Dobni et al., 2000). Organisational culture usually starts with values and assumptions, and these values (consciously or unconsciously) work as the defining elements to which norms, symbols, rituals, and other cultural activities revolve. Moreover, this notion is consistent with the definition of values suggested by Rokeach (1973) that a value is an enduring belief of guiding nature (O'reilly et al., 1991). Values also play a role in supporting organisation's culture, and that can be achieved when organisations enhance their core values and make them shared by their employees. These core values are thought to perform certain crucial functions (Meglino et al., 1989). Given that one goal of studying organisational culture is to investigate the central values that are important to individuals' self-concept or identity as well as relevant to an organisation's central value system (O'reilly et al., 1991), then it is important to investigate organisational culture and identify its fundamental components.

### 2.3.4 Measuring organisational values

Researchers have achieved a fairly conspicuous progress in determining and constructing values in organisations, and as Mcdonald and Gandz (1991, p. 219) noted "at the organizational level, values have been conceptualized as the most practical and measurable element in the phenomenon of organizational culture". Numerous studies have identified various organisational values. Enz (1988), for example, conducted an empirical study in two organisations (the corporate headquarters of quick-service chain of restaurants and a robotics company) with the aim to assess whether the values possessed by an organisational department are consistent with the values of top management. The author developed her own values survey based on England's (1975) value measure and modified by interviews she conducted in the two organisations, one in the service industry and another in the technology industry. In assessing value congruence, the author used only the values that employees frequently express as important.

Other researchers have also attempted to identify organisational values. These empirical studies produced some common instruments, including O'reilly et al.'s (1991) 54-item Organisational Culture Profile (OCP). Moreover, this study revealed that eight factors were able to express the factor structure of the these individual items, including innovation and risk taking, attention to detail, orientation towards outcomes or results, aggressiveness and competitiveness, supportiveness, emphasis on growth and rewards, a collaborative and team orientation, and decisiveness. In addition, another measure of organisational values is Meglino et al.'s (1989) 24-item Comparative Emphasis Scale (CES). This measure suggested four factors for assessing work values: achievement, helping and concern for others, fairness and honesty.

Elizur et al. (1991) developed a device consisting of 24 statements to measure organisational values. This measure is largely based on need theories, such as McClelland (1961; e.g. achievement, affiliation, power and influence), Alderfer (1972; e.g., pay security-relatedness, recognition, growth), and Hackman and Oldham, 1980. Using the facet analysis, Elizur et al. (1991) identified two basic facets expressing the work values domain: modality of outcome and system performance contingency. According to modality of the outcome, the authors categorised pay, hours of work, security, benefits, and work conditions as instrumental; relations with supervisor, co-workers, recognition, esteem, and opportunity to interact with people as affective;

responsibility, advancement, achievement, influence, interest, feedback, meaningful work, use of abilities, independence, company, status, and contribution to society as cognitive. Moreover, according to the system performance contingency facet, pay, recognition, feedback advancement, and status were also categorised as rewards, and the other items as resources. The authors empirically tested their theoretical model using the technique of SSA (smallest space analysis), and this analysis supported their model. Actually, this work is somewhat related to Elizur and Sagie's (1999) operational definition of values, I discussed it before. That is, one of the three facets suggested for work values, modality, is similar to Elizur et al.'s (1991) facet of modality of outcome.

It is noteworthy that values instruments that are initially used in measuring personal values, such as the values taxonomy of Rokeach (1973) and Schwartz (1992) value inventory have been used in organisation studies. This may be due to the advantage of universality of these measures. Therefore, researchers used these measures to investigate the potential relationships between these common sets of values and other organisational variables. However, there were some doubts about using these personal values in organisational context. Therefore, organisational researchers have evaluated the validity of these personal values taxonomies in the organisation settings (Mcdonald and Gandz, 1991).

Although there is an overlap between personal and organisational values taxonomies, McDonald and Gandz (1991) have noted that the personal values taxonomies may not be appropriate for an organisation. The authors have maintained that the values surveys available have been used inaccurately to assess organisational values, as these instruments in fact were developed under the umbrella of social psychology and sociology literature. Nevertheless, having drawn extensively on previous well known values instruments and an in depth qualitative study, Mcdonald and Gandz contributed to the organisational values literature by devising a survey particularly dedicated to the organisational settings. These values are similar to the values identified by other values researchers (Allport et al., 1960; England, 1967; Rokeach, 1973). From an empirical perspective, this tool has been widely used to assess organisational values and values congruence between employee and organisational values (e.g. Finegan, 2000; Abbott et al., 2005). Moreover, McDonald and Gandz's shared value taxonomy was found to be

parsimonious and also demonstrated to be a reliable and valid instrument (Abbott et al., 2005; Howell et al., 2012)

### 2.3.5 Organisational values and organisational commitment

Generally, research on the relationship between work values and organisational commitment has not identified clear trends (Elizur and Koslowsky, 2001). For example, Finegan conducted a research investigating the relationships between values and organisational commitment, and the outcomes of this research showed that organisational values had stronger impact on employees' organisational commitment than personal and person-organisation values fit had (Finegan, 2000). Extending Finegan's (2000) research, Abbott et al. (2005) investigated the relationship between values and organisational commitment in two separate organisations. Although the results were similar to Finegan's (2000) findings, the two organisations' links between values clusters and the components of organisational commitments were inconsistent with each other. Importantaly and consistent with Finegan (2000), this study revealed that organisational values were the most consistent predictors of organisational commitment compared to personal values and person-organisation values fit. Moreover, it revealed that the values that predicted affective organisational commitment and normative organisational commitment were different from those predicted continuance organisational commitment. In addition, the variance in the affective organisational commitment was found to be predicted by the values comprising the humanity (courtesy, consideration, cooperating, fairness, forgiveness and moral integrity) and vision (development, initiative, creativity and openness) factors. However, adherence to convention (obedience, cautiousness and formality) and bottom-line (logic, economy, experimentation and diligence) factors were more important to continuance organisational commitment.

Other research has found that cognitive work values (e.g. achievement, responsibility, independence) are the only values that correlate with organisational commitment (Elizur and Koslowsky, 2001), which is consistent with Elizur's (1996) previous research. Yet, still Ho (2006) found that, amongst Taiwanese nurses, work values (terminal values: self-growth, self-relisation, and self-esteem; instrumental values: social interaction considerations, security and economic considerations) were associated with higher organisational commitment (values and effort commitment).

## 2.4 Person-organisation fit

First, it is important to indicate that although a lot of research has investigated the topic of person-environment fit, including PO fit, the literature review only includes articles that: (1) add to our knowledge of understanding this concept, (2) help develop the study's conceptual framework and consistent with the operationalisation of PO fit adopted in this study; therefore, some studies that dealt with this concept from a different perspective or that studied other variables were excluded. Examples of this are the study of Pan and Yeh (2012) and Wang et al. (2012). Although the first study examined values congruence, it looked at it in terms of its effect on work-family conflict and the second study linked values congruence to transformational leadership, (3) consistent with the current study's operationalisation of PO values fit as the similarity of a person's perception of individual and organisational values, some papers that dealt with PO values fit and commitment or dimensions of psychological climate were not the main focus of the current study as they studied PO fit from a differnt prespective. As an example, Howell et al. (2012) studied the relationship between values congruence and affective organisational commitment. However, they looked at PO values congruence as the congruence between an employee's perception of espoused values (values the organisation states as its guiding values) and enacted values (values and norms that are converted into employee behavior).

### 2.4.1 Definition

PO fit is a subgroup of person environment fit which encompasses other kinds of fits. Therefore, it is important to differentiate between PO fit and the other related concepts including person-group fit and person-job fit. Person-group fit is defined as the compatibility between an individual and his or her work group, and this fit was found to be linked to effective team composition. Person-job fit is the fit between the abilities of person and the demands of a job or the desires of a person and the job attributes (Edwards, 1991). Importantly, person-organisation fit has been differentiated from person-job fit and was reported to be a better predictor of intention to quit than perceived person-job fit is (Lauver and Kristof-Brown, 2001).

A variety of definitions for PO fit has been given, but the general theme encompasses the interaction between the person and the situation. For example, O'reilly et al. (1991) maintain that

PO fit refers to aspects of individuals, such as values and expectations, interact with aspects of situations (e.g., incentive systems and norms), affecting the individuals' attitudinal and behavioural responses. In contrast, Kristof (1996, pp. 4-5) describes it as "the compatibility between people and organisations that occurs when: (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both". Finally, from a value perspective, person-organisation fit can be defined as "the congruence between the norms and values of organisations and the values of persons" (Chatman, 1989, p. 339).

Although the concept of person-organisation fit may refer to many referents like PO goal congruence, and PO climate congruence, person-organisation values fit is considered the most important and frequently used referent (Kristof-Brown et al., 2005). Values congruence is a significant form of person-organisation fit because values are relatively stable beliefs that form a standard for guiding actions and developing attitudes (Erdogan et al., 2004). Meglino et al.(1989) maintained the level of values congruence does not change much over time because values are relatively stable individual characteristics. It is in turn expected that the relationships between person-organisation values fit and other organisational variables are more stable compared to the other non-value-based relationships.

Initially, fit matters to applicants, recruiters, and employees. It has effects on their attitudes, decisions, and behaviours in the work domain (Kristof-Brown et al., 2005). People would find it comfortable to work for an organisation where what they see most important to them are also important to other employees. Moreover, the employees who have similar values share common aspects of cognitive processing and a common way of interpreting events (Cable and Edwards, 2004).

### 2.4.2 Types of person-organisation fit

Most of the past literature and research on PE and PO fit have considered fit from both complementary and supplementary perspectives. Complementary fit occurs when a person's or an organisation's characteristics provide what the other wants. In other words, complementary fit happens when "the weaknesses or needs of the environment are offset by the strength of the individual, and vice-versa" (Muchinsky and Monohan, 1987, p. 271). Whilst complementary fit

has been the dominant trend in the person job fit literature, supplementary fit has been the focus of other types of fit (Kristof-Brown et al., 2005).

Supplementary fit exists when a person and an organisation possess similar characteristics (Cable and Edwards, 2004). The supplementary fit is the tradition that has been most used by researchers examining values congruence between employees and organisations (Cable and Edwards, 2004). PO fit researchers typically look at fit from a supplementary perspective, and this approach emphasises the importance of similarity of personal and organisational values, or individual personality and organisational culture (Liu-Qin et al., 2008). Furthermore, this approach is often used because achieving supplementary fit is one way to meet the fundamental need for consensual validation (Kristof-Brown et al., 2005). That is, people desire to maximise consistency among the elements of their belief system (Van Vianen, 2000).

Although they both draw from the same paradigm (person environment fit) and they predict the same variables, the complementary and supplementary traditions of the PE fit paradigm have developed independently, with little conceptual or empirical integration. Specifically, values congruence is looked at from a supplementary perspective, whilst psychological climate, the construct I will discuss it in the next section, is related more to the theories of psychological need fulfilment that show that people become dissatisfied when the supplies they receive from the environment fall short of what they desires. These theories also predict that people's satisfaction increases as supplies increase towards their desires (Cable and Edwards, 2004). Therefore, this study would make a link between both complementary PE fit through the psychological climate and the supplementary fit through the similarity between persons' values and organisational values.

### 2.4.3 Antecedents of person-organisation fit

Chatman (1989) argues that personnel selection and socialisation within the organisation are important antecedents of PO fit. That is, when organisations select employees who are responsive to organisational practices and shape them to stick to organisations' prevailing values, organisations achieve a stronger and stable attachment between the person and the organisation. Moreover, socialisation has been shown to affect newcomers' PO fit (Cable and Parsons, 2001).

Socialisation refers to the process by which an individual obtains the required attitudes, behaviour, and knowledge to participate as a member in the organisation. Socialisation is also considered important to organisations because it ensures the continuity of central values and norms, and provides new employees with a framework for responding to events in the work setting. Therefore, it helps newcomers' personal values become aligned with organisational values (Cable and Parsons, 2001).

### 2.4.4 Consequences of person-organisation fit

Analysing the nature of some types of PE fit and their expected relationships with other organisational variables, Kristof-Brown et al. (2005) maintain that job satisfaction is expected to be most strongly associated with person-job (PJ) fit, organisational commitment should be most strongly correlated with PO fit, satisfaction with co-workers should be more correlated with person-group (PG) fit and satisfaction with supervisor is expected to be more strongly correlated with person-supervisor (PS) fit. Empirically, Kristof-Brown et al. (2005) demonstrated that the correlation between PO fit and organisational commitment had the strongest relation ($r$ = .51), compared to job satisfaction and intent to quit ($r$s = .44 and −.35, respectively). However, in contrast to their prediction that needs-supplies fit effects would be stronger than supplementary fit, the correlation with organisational commitment for supplementary fit was higher ($r$ = .53) than needs-supplies fit ($r$ = .39). With the exception that demands-abilities fit had a substantially weaker effect on work attitudes, these results are consistent with Cable and Edwards' (2004) finding that the psychological need fulfillment and values congruence play unique and relatively equal roles in affecting work attitudes.

It has been noticed that, among the dimensions of PO fit, values congruence is more strongly related to work attitudes variables. For example, in a meta analysis study by Verquer et al. (2003), the estimated population correlations between values congruence and job satisfaction, organisational commitment, and turnover intentions were stronger than the population correlations between these variables and other measures of congruence, including goals, and personality congruence (see also Meglino et al., 1989; Chew and Chan, 2008). Other research has shown that employee seekers' perceptions of fit with their expected organisations are

predicted by the congruence of their values and recruiting organisations' values (Judge and Bretz, 1992; Cable and Judge, 1996).

Perceived PO values fit explained more variance in restaurant employees' job satisfaction, intent to remain and willingness to recommend the organisation than organisational values and individual values (Tepeci, 2001). Also, according to Vandenberghe (1999), PO values fit has been found to predict nurses' intention to staying with their organisations. Employees' perception of values congurence negatively correlated with interpersonal deviance. Moreover, values congurence mediated the relationship between the socialised charismatic leadership and interpersonal deviance, whilst this mediation role of values congruence was not supported for organisational deviance (Brown and Trevino, 2006).

Kristof-Brown et al. (2005, p. 291) distinguished between three types of PE fit: "(a) perceived fit, when an individual makes a direct assessment of the compatibility between P and E; (b) subjective fit, when fit is assessed indirectly through the comparison of P and E variables reported by the same person; and (c) objective fit, when fit is calculated indirectly through the comparison of P and E variables as reported by different sources". Kristof-Brown et al. (2005) suggest that both perceived and subjective fits have stronger relationships with attitude variables than objective fit. They further suggest that this may be the case because perceived and subjective fits are more prone to consistency biases as they are assessed by the same source, whereas objective fit is less prone to this effect. However, they also argue that at the same time the objective fit has the possibility of influencing persons' perception of environment dimensions because of the potential strong effect of organisational culture on how persons react to work situations. Moreover, subjective fit, though indirectly assess the fit, does not fully negate consistency biases (Kristof-Brown et al., 2005).

Motivated by the urge of examining the behavioural outcomes that have not been meta-analytically examined before, Hoffman and Woehr (2006) conducted a meta-analysis study to examine the relationships between PO fit and job performance, organisational citizenship behaviours, and turnover. Taking into account that the majority of the studies (N = 121) identified for the meta-analysis had defined PO fit using value congurence, the authors found

that PO fit is an important correlate of behavioural outcomes. Objective PO fit correlated to turnover, task performance, and OCB ($r$ = .27, .28 and .26, respectively), whilst perceived PO fit ($r$ =.35, .25 and .21, respectively) and subjective PO fit ($r$ =.07, .20 and .19, respectively) were also correlated with these variables. Importantly, the method of measuring PO fit has been found to be an important moderator of the strength of these relationships, such that perceived and objective PO fit measures were more strongly related to behavioural outcomes than was subjective PO fit (Hoffman and Woehr, 2006).

### 2.4.5 Measuring person-organisation values fit

In this respect, the literature review of PO fit mainly demonstrated four techniques of assessing indirect PO fit: (1) difference score method, (2) profile correlation method, (3) direct method and (4) polynomial method. The difference score method depends on finding the difference between perceived and preferred ratings of measured values, and PO fit can be obtained through summing the rating differences between two component measures. However, this technique suffers from the fact that negative and positive scores contradict each other and usually lead to mistaken results (Tepeci, 2001). Another way utilising the difference score method is to sum the absolute value of the differences, neglecting the direction of the difference between the preferred and perceived value ratings to avoid the previously mentioned summing problem (Edwards and Parry, 1993; Edwards, 1994a). The final way to apply the difference score method is to sum the squared of the differences between scores. This conceptualisation of the difference score method avoids the problem of opposite direction of differences. However, when studying the extent to which the component measures are related to the outcome, the product of component measures is given twice the weight of the squared terms, as demonstrated in the following equation (Edwards, 1994a, 1994b).

$Z = b_0 + b_1X^2 - 2b_1XY + b_1Y^2 + e$, where $X$ and $Y$ are commensurate component measures and Z is the dependent variable, $e$ represents a random disturbance term, $b_0$ is the intercept, and $b_1$ is the coefficient on X and Y.

This supposition is invalid unless the variance explained by this product equals the sum of the squared terms variances, which cannot be assumed a priori (Edwards, 1994b). Therefore,

Edwards and Parry (1993) mentioned that difference score methods in general are widely known to suffer from numerous substantive and methodological problems.

The profile correlation method, also known as the Q method, means that researchers use the correlation statistics to find the relation between an individual's profile of preferred and perceived values using either sum of absolute differences (|D|), sum of squared differences ($D^2$), or square root of sum of absolute differences (D). O'reilly et al. (1991) devised an instrumental tool, called the Organisational Culture Profile (OCP), which assesses PO values fit using the profile correlation method.

The OCP contains 54 value statements that capture individual and organisational values, and person-culture fit is calculated by correlating the profiles of organisational values and individual preferred values. Nevertheless, the profile correlation method also suffers from a few methodological problems. As the Q scores collapses across components and dimensions that are conceptually distinct, the interpretation of Q scores are ambiguous. Moreover, because Q only represents similarity in profile shape, but not the distance between profiles, it is possible that profiles with large discrepancies but similar shapes may lead to high values of Q, whereas profiles with small discrepancies and small difference in shape may produce small or even negative values of Q (Edwards, 1994b).

The direct measure of congruence is designed to elicit a relative comparison between *two components* (such as perceived and preferred honesty) within a single item. This method apparently has the advantage of avoiding the calculation process and its problems, although the calculation process is conducted implicitly or explicitly by the respondent and hence it experiences the same problems of the difference score method. More seriously, this method, through incorporating the two measure components, confounds the relative contribution of the two components, and also unwarrantedly assumes the symmetric effects of components on outcomes (Edwards, 1994a, 1994b).

The polynomial regression method, which is attributed to Edwards and colleagues

(Edwards and Harrison, 1993; Edwards and Parry, 1993; Edwards, 1994a, 1994b; Edwards, 1995) is based on assessing the individual contribution of the person and organisation, and takes into account the nonlinearity contributions of these two variables, such as the interaction of person and organisation (P*O), the curve linear contribution of person ($P^2$) and the same for organisation ($O^2$). Edwards (1994a, 1994b) claims that this method avoids the problems inherent to both difference and correlation methods, and has the unique features of assessing the solely contribution of every variable without neglecting the nonlinearity relations between preferred and perceived values ratings.

However, one problem with using polynomial regression equations to measure PO fit is the difficulty of interpreting the resulting coefficients (Edwards and Parry, 1993). Nevertheless, the polynomial regression method may have conceptual problems, rather than methodological ones, and a discussion of this issue will be deferred until the methodology chapter.

**Summary**

Values are fundamental to attitudes and behaviours. There have been continuous research attempts to classify values, whether personal or organisational, and measure them to facilitate studying values in depth. Organisational values are core components of organisational culture and the core values every organisation has distinguish it from other organisations. Research has shown that organisational values are correlated to organisational commitment. PO values fit is a concept that represents the extent to which employees' values are congruent with organisation's values and the impact of this similarity on various organisational variables. Several empirical studies have tried to operationalise measures that are effectively able to assess person-organisation values congruence.

On the other hand, some studies have demonstrated that that PO values fit has positive effects on employees' organisational commitment, especially affective or attitudinal commitment. Importantly, research efforts have extended to differentiate between the various clusters of values and their distinguished impact on organisational variables, such as organisational commitment (e.g. Finegan, 2000).

## 2.5 Psychological climate

### 2.5.1 Definition

It is widely accepted among behaviour researchers that behaviour is a function of the interaction between the person and the environment. This position has been applied to employees' perception of work environment. If organisational climate had a main effect on all employees, this would ignore the possibility that particular differences among employees could affect employees' perceptions of work environment (Downey et al., 1975). Davidson (2000) defines psychological climate as the individual attitude towards the organisation and this attitude can change when circumstances change. It is often referred to as a kind of complementary fit that investigates how the fit between employees' desires and the supplies in the work environment affects their attitudes (e.g., whether an organisation offers the amount of independency that an employee wants) (Cable and Edwards, 2004). In support of this view, Tracey et al. (1995) believe that psychological climate is dependent on organisational members paying attention to significant organisational characteristics, such as policies, reward systems, and managerial behaviours, so that they can give meaning to those characteristics based on their personal values, beliefs and needs. Thus, climate represents the shared pattern of meanings among individuals about the fundamental characteristics of an organisational context. Drawing on this position, the perception of psychological climate can also be seen as a concept of complementary fit by which employees express their perception of the organisational environment around them regarding how much it provides them depending on employees' standards of desires.

### 2.5.2 Construct, dimensions and measuring of psychological climate

The literature review of psychological climate *construct* has used terms that routinely confuses levels of theory, analysis, and measurement (Parker et al., 2003). For example, there has been some uncertainty about the boundaries of this construct. Moreover, there was confusion about the difference between psychological climate and job satisfaction. However, subsequent research has supported the distinction between these two constructs, showing that psychological climate is about employees' descriptions of their work environment whilst job satisfaction is related to their evaluations of those perceptions. In addition, the term of the psychological climate construct

sometimes was used interchangeably with other different concepts such as organisational climate and organisational culture (Parker et al., 2003).

Extensively having drawn on literature review, Jones and James (1979) developed their well known measure of psychological climate, consisting of four categories (job and role characteristics, characteristics of leadership, workgroup characteristics and subsystem and organisational characteristics) of 145 items that represent 35 a priori composites, many of which have been shown by research to be internally consistent, psychologically meaningful measures of the work environment. Each composite consists of two to seven items (Jones and James, 1979). Table 2.3 indicates some selected items used in this measure along with their meanings.

Table 2.3 Jones and James's (1979) psychological climate dimensions

| | **Job and role characteristics** |
|---|---|
| Role ambiguity | The extent to which a task is unclear in terms of demands or criteria, or the conflict between this task and other tasks. |
| Role conflict | The pressures for conflicting or mutually exclusive behaviors. |
| Job autonomy | The ability of a person to determine the nature of the tasks or problems faced and to arrive at a particular action. |
| Job variety | The extent to which the job calls for the engagement in a wide range of behaviors or to use a variety of equipment. |
| Job challenge | The extent to which a job gives people a chance to use their skills and abilities. |
| Job pressure | The degree to which there is not enough time, manpower, training, or resources to complete a particular task |
| Efficiency of job design | The extent to which job behaviors and job design lead to the goals of an organisation. |
| | **Characteristics of leadership** |
| Support | The extent to which the supervisor is aware of the needs of subordinates. |
| Goal emphasis | The emphasis on high standards of performance. |
| Work facilitation | The extent to which supervisor help achieve goal attainment through scheduling, coordinating, planning, and providing resources. |
| Interaction facilitation | The extent to which supervisors encourage the development of close relationships within the group. |

Table 2.3 Jones and James's (1979) psychological climate dimensions (continued)

| | **Workgroup characteristics** |
|---|---|
| Workgroup cooperation | Helping the cooperative effort among individuals to carry out difficult tasks. |
| Reputation for effectiveness | The extent to which the group is able to produce work of higher quality. |
| Workgroup esprit de corps | The extent to which members feel satisfied in their groups. |
| Workgroup friendliness and warmth | The extent to which there are open communication, trust and friendly relations among members of a workgroup. |
| | **Subsystem and Organisational Characteristics** |
| Openness of expression | The degree to which individuals feel the atmosphere is conducive to the expression of individual opinions, ideas, and suggestions. |
| Interdepartmental cooperation | The extent to which the organisation facilitates friendly, cooperative interactions between departments. |
| Conflict of organisational goals and objectives | The degree to which goals and policies of one group are in conflict with other groups. |
| Ambiguity of organisational structure | The extent to which organisational channels of authority are unclearly undefined. |
| Consistent applications of organisational policies | The extent to which organisational policies and procedures are consistently applied. |
| Organisational esprit de corps | The degree to which employees believe their organisations have an important role and also the extent to which these organisations offer unique opportunities for growth and reward. |
| Professional esprit de corps | The degree to which employees think their professions have good image to outsiders. |
| Opportunities for growth and advancement | The degree to which employees feel that the organisation provides an opportunity for their desired personal skills, goals, and rewards. |

Source: Adapted from Jones and James (1979)

Parker et al. (2003) argue that the five situational referents (job characteristics , role characteristics, leadership characteristics, work group and social environment characteristics, and organisational and subsystem attributes) introduced by James and colleagues (Jones and James, 1979; James and Sells, 1981) provide a comprehensive coding system that would help organise the psychological climate literature. James and James (1989) indicated that there is a hierarchical cognitive model with a single, general factor underlying measures of meaning of work environment (the overall work environment is believed by the employee to be

personally beneficial versus personally detrimental to the organisational well-being of him or her). Moreover, this general factor order has been emprically supported by other studies (Brown and Leigh, 1996).

In contrast, drawing on Kahn's (1990) qualitative research, Brown and Leigh (1996) developed a six dimension-psychological climate measure that assesses the extent to which employees perceive their work environment as beneficial or harmful in terms of meaningfulness and safety of the environment. As this instrument is the one that was selected for the present study, a description of the measure will be elaborated up on in the methodology chapter.

### 2.5.3 Organisational climate

There are a number of definitions of organisational climate but they frequently were inconsistent with each other and caused problems relating to measurement and theory building (Glick, 1985). Nevertheless, a widely accepted definition of organisational climate is that of James et al. (2008). According to James et al. (2008), organisational climate can be defined as the overall meaning derived from the aggregation of employees' perceptions of a work environment. In other words, it is the average way employees in an organisation ascribe meaning to an organisation. Thus, the present research considers climate to be the property of individuals regardless of the agreement or disagreement of individuals. If there is such agreement among individuals' perceptions, there is a possibility to aggregate these shared perceptions to reach organisational climate of this work unit (Glisson and James, 2002).

Initially, the concept of climate can be traced to the studies of Lewin of experimentally created social climates and qualitative observation of natural organisational settings (Denison, 1996). Organisational climate is also viewed as a logical extension of the the concept of psychological climate (James et al., 2008). Researchers concerned with individual perceptions focus on psychological climate, whereas organisational climate is investigated when organisational attributes are of interest (Glick, 1985). Therefore, it is logical the individual is the unit of analysis of psychological climate and not the department, or the organisation. Although many studies have been conducted to investigate the cross-level inference problems and units of theory and analysis, the unit of theory problem has not been resolved in climate research (Glick, 1985).

Chan (1998) posited that the relationship between organisational climate and psychological climate depends on how the construct of organisational climate is conceptualised. When the individual perceptual agreement within an organisation is central, then an additive composition model would be inappropriate. That is, within-group variance among lower level units (individual perceptions) in this case becomes relevant in composing the lower level construct (psychological climate) to the higher level construct (organisational climate). Then, a direct consensus composition model, which is considered the most popular form of composition among multilevel researchers, is appropriate. Psychological and organisational climate are conceptually related to one another (Schulte et al., 2006); however, they are distinctive constructs, though they handle the same content (perception of work environment).

The common practice of aggregating measures of psychological climate strengthened the argument for the organisation as a unit of theory (Glick, 1985). This model of measuring organisational climate uses the consensus within groups at the lower-level (e.g. among individuals in a work team) as a necessary condition for opertionalising the higher-level construct as an aggregate of the individual-level measures (Glisson and James, 2002). In other words, unless there is a considerable consensus on the perceptions of employees' work environment, we cannot reach organisational climate. On the other hand, when there is such consensus, that would justify agggergating employees' perceptions to determine the climate for this unit or division or the whole organisation (James et al., 2008).

Difficulties have arisen in trying to conceptualise the construct of climate. For example, Davidson (2000) noted that dimensions of climate are not always clearly distinguishable from other variables that may relate to categories such as organisational structure, system values and norms. Moreover, using perceptual measurement may mean that organisational climate also includes some situational characteristics as well as individual perceptual differences and attitudes. Hoever, James and Jones (1974) argued that that there are rationale and empirical evidence that support using the perceptual measures as these measures are variables related to different levels of explanation.

### 2.5.4 Organisational culture and organisational climate

Organisational culture can be defined as "the framework that is engendered by the organisational systems and beliefs. It is relatively slow to form but has a high degree of permanency" (Davidson, 2000, p. 13). Organisational culture refers to the normative beliefs and common behavioural expectations that prescribe the way work is approached and are the basis for socialising employees (Glisson and James, 2002). Thus, the focus is on what individuals believe are the expectations and norms for the people in the work unit rather than on what they think are expected of them personally (Glisson and James, 2002). Without this within group consensus, researchers cannot compose culture from employees' responses because such lack of agreement suggests that common expectations and norms have not been identified (Glisson and James, 2002).

Researchers consider culture to be deeper in nature than climate because culture includes values and assumptions (Glisson and James, 2002). Some researchers think that the visible part of culture is more important for transmitting this culture than that invisible part (values and assumptions) because employees are fully aware of behavioural expectations, although they may not be conscious of the values and assumptions that lie at the core of those expectations. However, these assumptions and values give meaning to the dimensions of culture they compose and explain their influence on the work environment (Glisson and James, 2002). As organisational culture is related to the firmly implanted beliefs and values of organisational members, it occupies a deeper level at people's psychology than does climate (Schneider et al., 1996). Unlike the suggested general factor in psychological climate, the various empirical studies showed that organisational culture is a multidimensional construct (Glisson and James, 2002).

Schneider et al. (1996) maintain that both organisational culture and organisational climate are interconnected, and any sustainable organisational change is most assured by changing what people in an organisation experience as the climate and what employees believe the organisation values as the culture. The main difference between research in organisational climate and organisational culture can be shown in Table 2.4.

Table 2.4 Difference between literature of organisational culture and organisational climate

| Differences | Culture Literature | Climate Literature |
|---|---|---|
| Epistemology | Contextualised | Comparative |
| Point of View | Native point of view | Researcher's viewpoint |
| Methodology | Qualitative | Quantitative |
| Level of Analysis | Underlying values and assumptions | Surface-level manifestations |
| Orientation | Historical evolution | A historical snapshot |
| Theoretical Foundations | Social construction and critical theory | Lewinian field theory |
| Discipline | Sociology and anthropology | Psychology |

Source: Adapted from Denison (1996)

According to Denison (1996), culture refers to the deep structure of organisations, which could be represented by the values, beliefs, and assumptions. Also, the meaning of culture could be set up through socialisation to a variety of identity groups that interact in the workplace. Moreover, the symbolism is important in this respect as it gives culture both the stability and a fragile nature rooted in the dependence of the system on individual cognition and action. On the other hand, although organisation's value system plays a key role in organisational climate, it tends to present these social environments in relatively static terms, and climate describes these environments in terms of a fixed set of dimensions. Therefore, organisational climate is often seen as relatively temporary.

Most of the research on organisational culture has primarily focused on the notion that the construct is multidimensional (James et al., 2008). That is, although, relative to the climate literature, there have been a few empirical studies that investigated the dimensionality of organisational culture, these research efforts supported the notion that a single higher-order factor could not express the variability in the organisational culture variables. For example, as James et al. (2008) indicated some researchers employed principal components analysis to

investigate the dimensionality of the Organisational Culture Inventory (OCI) and this study identified multiple dimensions.

### 2.5.5 Consequences of psychological climate

In a meta-analysis study of psychological climate and work outcomes, job and role perceptions have weaker effects on employee attitudes (job satisfaction, job involvement and organisational commitment) than leader, work group and organisational perceptions (Parker et al., 2003). The robustness of these relations may differ from other meta-analysis' results. For example, Parker et al.'s (2003) results regrading role-related psychological climate dimensions had a sample-weighted average, whilst Jackson and Schuler (1985) found that the average correlation between role ambiguity and role conflict with job satisfaction, commitment, and job involvement was modest ($r$ = .41). These differences may have emerged because different correlation coefficients were calculated and different instruments were utilised across the two meta-analyses. Moreover, James and Tetrick (1986) have investigated the causal relationships between psychological climate aspects and job satisfaction and found support for a postcognitive nonrecursive model in which job satisfaction occurs after job perceptions in the causal order and job perceptions and job satisfaction are reciprocally related (James and Tetrick, 1986).

### 2.5.6 Psychological climate and organisational commitment

Organisational commitment can be broadly defined as an attitude that closely binds employees and organisations such that employees have a positive vision of the organisation and of the possibility that the relationship will continue for a long time (Martin, 2008). Several studies have examined the relationship between psychological climate and organisational commitment. For example, Welsch and Lavan (1981) have shown that role conflict and role ambiguity have significant negative correlations with organisational commitment and group work, power, whereas opportunities for promotion have significant positive correlations with organisational commitment. In addition, Chew and Chan (2008) found that remuneration, recognition, and an opportunity to undertake challenging employment assignments were correlated with attitudinal organisational commitment, whilst both training and career development did not significantly correlate with organisational commitment.

Finally, Allen and Meyer (1996) supported the hypotheses that work environment dimensions represent antecedents of organisational commitment. In particular, affective commitment was shown to share variance with variables that are consensually seen as ‘‘desirable’’ (e.g., supportive and dependable supervisors, challenging work, fair treatment). Importantly, the same study confirmed that employees’ work experience, compared to affective commitment, more modestly correlated with normative commitment and these employees’ work experience also typically did not correlate significantly with continuance commitment. Therefore, continuance commitment cannot reasonably be seen as a negative reaction to poor work experiences (Allen and Meyer, 1996). Work experiences are expected to develop organisational commitment constructs differently. Affective commitment (emotional attachment to the organisation) is expected to correlate with work experiences that make the employee feels ‘‘psychologically comfortable’’ and enhance his or her sense of competence. Continuance commitment (the attachment to the organisation based on the perceived costs resulting from leaving the job) is likely to develop on the basis of employees’ recognition of the investments employees made in the organisation. Finally, normative commitment (attachment to the organisation based on feelings of obligations), though less affected by work experiences compared to employees’ earlier experiences, is thought to be developed through the process that make employees feel their organisations provide them with more than they can easily reciprocate (Allen and Meyer, 1996). Taken together, this highlights the potential relationships between affective organisational commitment and employees’ psychological climate perceptions in comparison with the other two constructs of organisational commitment, continuance commitment and normative commitment.

HRM practices have important influences on an organisation’s employee commitment. In this respect, the high-commitment approach to HRM tries to create the conditions necessary to help establish voluntary employee involvement and identification with the organisation rather than forcing employees to comply with organisational goals by restricting employee discretion through narrowly-defined jobs, work simplification, strict supervision, many regulations of processes (Gellatly et al., 2009).

**Summary**

Psychological climate is a concept which represents an employee's perception of work environment. Researchers have investigated the various dimensions that compose work environment perception, and these attempts have been developed to explore the general dimensions that are able to capture the whole work environment. Organisational climate is a related concept which means aggregating employees' perception of work environment, taking into account the minimum amount of consensus required for legal aggregation, to reach the prominent perceptions of a particular organisation. Although organisational climate and organisation culture are distinguished constructs, it seems that both constructs are related; as psychological climate can be seen from the perspective that it is a reflection of organisational values. Psychological climate dimensions are correlated to a number of organisational variables, including organisational commitment. Studies have indicated that the more positively employees see work environment dimensions, the more committed the employees.

## 2.6 Organisational commitment

### 2.6.1 Concept

Organisational commitment has become a central concept in the study of work attitudes and behaviour (Allen and Meyer, 1996). It has a wide focus, such as commitment to value (e.g. protestant work ethics), career, job (e.g. job involvement) and the organisation. Organisational commitment is attitude with many well-founded conceptualisations. For example, the construct of organisational commitment can take different sets of mind, most of them include the emotional dimension in their models, which has been labelled various names, such as affective commitment, value commitment, moral commitment, and normative (identification and internalisation) commitment (Meyer and Herscovitch, 2001).

Morrow (1983) thinks that organisational commitment, like some other organisational concepts, has experienced concept redundancy because of researchers' fascination with the construct. He argued that he found more than 25 measures of organisational commitment with a huge degree of overlap between them. For example, there are many concepts related to work commitment, such as organisational commitment, career salience, job involvement, work as a central life interest,

the protestant work ethic. Moreover, these concepts clearly do not have equivalent intended meanings, and this has been supported in factor analytical studies. The factor analysis of Morrow and Mcelroy (1986) illustrated that Mirels and Garrett's (1976) protestant work ethic and Mowday et al.'s (1979) organisational commitment were relatively independent. Moreover, the study of Brooke et al. (1988) has indicated the discriminant validity among measures of organisational commitment, job satisfaction, and job involvement (Brooke et al., 1988).

Initially, there are two main views of commitments that have dominated the literature on organisational commitment: behavioural or continuance commitment and attitudinal or affective commitment (Mcgee and Ford, 1987). According to Becker, people are expected to remain in their current organisations if they depend on the continuation of the organisation to save the investments they made in the organisation. These investments mean everything valuable to an employee, such as age, tenure. That means that employees may remain in their organisations just because they cannot tolerate losing the investments they made if they leave their current organisations and this concept is known as side-bet theory (Becker, 1960). This side-bet theory is called also calculative or continuance commitment (Meyer and Allen, 1984). Calculative commitment or continuance commitment is that kind of commitment that is related to cost according to the employee's point of view or perception. Continuance commitment has been developed since the work of Becker (1960), who advanced this posit of side-bets theory. Continuance commitment also can be attributed to Kanter (1968) who used it to describe a member's dedication to the survival or continuance of an organisation caused by requiring members to make investments and sacrifices such that it would become difficult for him or her to leave or detach (Brown, 1996). Continuance commitment has been regarded as an affectively neutral construct (Allen and Meyer, 1996). Moreover, some researchers call this concept behavioural commitment.

One of the well-known studies of organisational commitment is that of Steers (1977), in which he defined organisational commitment as the extent to which employees identify with and involve in organisations (Steers, 1977). Also, among these studies is the one of Porter et al. (1974), who think that organisational commitment can be identified by at least three factors: (a) the belief in and acceptance of their organisations' goals and values; (b) their desires to exert

considerable effort for the sake of their organisations; (c) their intentions to keep their organisational membership. This definition is related particularly to the attitudinal type of organisational commitment (Mathieu and Zajac, 1990). Allen and Meyer (1990) posit that the most prevalent approach to organisational commitment in the literature is one in which organisational commitment is seen from the perspective that it is an affective or emotional attachment to the organisation such that the strongly committed individual enjoys membership in the organisation as he/she identifies with and involves in the organisation. This point of view of organisational commitment has also been adopted by other scholars; however, they labelled it different names. For example, Kanter (1968) labelled this type of commitment cohesion commitment and Buchanan (1974) defined affective commitment as affective attachment to the organisation's goals and values, to one's role in relation to the goals and values, and to the organisation's sake, apart from the organisation's instrumental worth (Meyer et al., 1990).

Because affective commitment is attitudinal in nature, it is expected to be more correlated to the organisational commitment measures of prevailing attitudinal characteristics. That notion has been empirically supported through the strong correlation between affective organisational commitment and Mowday's (1979) organisational commitment questionnaire (OCQ; Allen and Meyer, 1996).

Some researchers see that, although attitudinal and continuance commitment are different concepts, they cannot be seen as entirely separated. That is, an employee may initially relate to his or her organisation because of calculative aspects but over time he or she develops commitment to this organisation because he or she has become emotionally attached to it. However, these two concepts are distinctive enough to let researchers compare between their relative relationships with other variables of interest (Mathieu and Zajac, 1990). Empirically, this distinction has been supported. For example, Ferris and Aranya (1983) studied the factorial structure of attitudinal and calculated scales of organisational commitment and found their factor pattern conformed to the a priori placement of items to scales. Moreover, the predictive validities of attitudinal commitment appeared to be higher than those for calculative commitment (Mathieu and Zajac, 1990).

### 2.6.2 Organisational commitment construct

Meyer and Allen (1984) investigated the validity of their 8-item measure of organisational commitment, which was based on Becker's (1960) side-bets theory. As a result, they raised the question of the multidimensional nature of organisational commitment. Allen and Meyer differentiated between three kinds of commitment, affective, continuance and normative commitment. According to Allen and Meyer (1990), affective commitment could be defined as an employee's link to his/her organisation because of the emotional attachment to, identification with, and involvement in, this organisation. The continuance component refers to an employee's desire to stay in the organisation based on the expected costs that the employee has to incur if he/she leaves the organisation. Finally, the normative component refers to the employee's desire to keep his/her membership in the organisation due to feelings of obligation to remain with the organisation.

Consistent with the work of Allen and Meyer (1990), the empirical outcomes of the study of Dunham et al. (1994) supported the three-dimension construct of organisational commitment, and affective, continuance and normative latent variables were distinguishable, though related to some extent (for affective and continuance commitment, $r = .20$; for affective and normative commitment, $r = .47$; and for normative and continuance commitment, $r = .22$). Moreover, this study also gave some evidence that continuance commitment is better represented by two sub-dimensions, personal sacrifice and lack of alternatives. Also these two sub-dimensions, though independent, were correlated ($r = .74$) (Dunham et al., 1994). Furthermore, the confirmatory factor analysis conducted by Meyer et al. (1990) showed that the oblique two-factor model of continuance commitment of low alternatives of jobs available and personal sacrifices better fitted the data set than the orthogonal two-factor model, which means that these two dimensions are correlated and not independent. However, Allen and Meyer (1996), through their review of the factor analytic studies of organisational commitment, propose that whether continuance commitment can be represented by only one general factor or two dimensions still needs more clarification. Also, some other researchers take the same proposition that the results of the empirical studies related to the dimensionality of continuance commitment are mixed (Meyer and Herscovitch, 2001). Nevertheless, Hackett et al. (1994) empirically supported the three-component model of organisational commitment of Meyer and Allen (1991) over the model of

one general component of organisational commitment, and the four component model of organisational commitment, one that consists of affective commitment and normative commitment and which separates continuance commitment into two subscales of employees' perceptions of personal sacrifice and lack of job alternatives. Jaussi (2007) also found support for the three factor model.

Jaussi (2007) has posited that, although there is consensus about the fundamental basis of attitudinal commitment, attachment and identification, there is no agreement on how to operationalise it. This is the reason why Jaussi believes that there are various measures of attitudinal commitment in which some concepts of attitudinal commitment, (e.g. willingness to exert effort and identification with the organisation) are combined in Meyer and Allen's (1991) scale and Mowday, Steers, and Porter's (1979) scale. Moreover, neither O'Reilly and Chatman (1986) nor Meyer et al. (1990) captured the concept of positive affect for the organisation, which is well documented in the definitions of attitudinal commitment. This may lead to problematic issues related to whether there are other dimensions underlie the current constructs in the event that there are no justifications for the previously mentioned procedures (Jaussi, 2007).

Although there is wide acceptance of Allen and Meyer's (1990) approach to organisational commitment, the theory has also been critiqued (Gellatly et al., 2009). For example, Solinger et al (2008) criticised the three component organisational commitment theory of Allen and Meyer (1990), and proposed to abandon using this model because of the fundamental misconception of this theory. They argued that the model can only predict turnover intentions, rather than a wide range of organisational behaviours. They relied on the attitude-behaviour model by Eagly and Chaiken (1993) in concluding that none of these dimensions of organisational commitment reflect actual behaviour. In particular, they argue that affective commitment reflects an emotional attachment to the organisation as a target, not to the behavioural act of leaving or remaining with the organisation, continuance commitment reflects the perceived cost related to the behaviour of leaving the organisation and normative commitment reflects the moral-based evaluation of the behaviour of leaving or remaining with the organisation. Therefore, Solinger et al. have concluded that the three dimension model of organisational commitment is inconsistent in focus. That is, affective commitment represents an attitude towards the organisation, whilst both

continuance commitment and normative commitment are attitudes towards *leaving* the organisation derived from imagined consequences. Additionally, they claim that the current literature of organisational commitment experiences a misconception of organisational commitment, and recommend developing a model of organisational commitment that composites the fundamental three aspects of an attitude, including organisational commitment, which are affection, cognition, and action (Solinger et al., 2008).

In a meta-analytical study, Meyer et al. (2002) also found that there is an overlap between the scales of affective and normative commitment and that appears in the high correlation between them ($r$ = .63); however, this overlap increases when the 6-item scale used instead of the 8-item scale ($r$ =.77 and .54, respectively). The meta-analytic work of Meyer et al. (2002) indicated that although there is a high correlation between affective and normative commitment and that there are similarities between their antecedents, correlates, and consequences, the magnitude of the correlations is often quite different. They concluded that affective commitment and normative commitment are not the same. They also recommended work is needed to understand what normative commitment is, the way it develops, and whether it contributes uniquely to the prediction of behaviour. Moreover, this study supported the two scales of perceived sacrifice and lack of alternatives, and it found that the scale of perceived sacrifice had a stronger negative correlation with withdrawal cognition and turnover intention than did the lack of alternatives. Therefore, the authors see that the scale of perceived of high sacrifice can better represent operational definition of Becker's (1960) side bet than does the scale of perception of lack of job alternatives. More important, this study recommended refining the continuance commitment measure for future research, and referred to the possibility of including more items to reflect perceived sacrifice (Meyer et al., 2002).

Other research also supports the notion that organisational commitment consists of three separate factors. For example, Finegan (2000) found that the value-continuance commitment relationships suggest a very different pattern from normative and affective commitment. Whilst continuance commitment was only correlated with adherence to convention and bottom-line values, affective and normative commitment similarly correlated with the vision and humanity values. However, Abbott et al. (2005) have found that continuance commitment does not seem to

be related to values in any consistent way, and that continuance commitment seemed to be operating very differently from affective and normative commitment; hence, the authors showed doubt about the validity of continuance commitment within the construct of organisational commitment. Accordingly, the validity of the Meyer and Allen's model still needs to be investigated because of the mixed results reported in the literature.

Seeking to validate the current scales of organisational commitment, Klein et al. (2012) recently have criticised these scales claiming that because of the ambiguity surrounding the meaning, structure, and measurement of commitment, these current scales are contaminated and deficient measures. Specifically, they maintained that the appropriate meaning of commitment should not overlap with both the continuance and normative mindsets. That is, bonds representing a lack of alternatives, perceived costs or even moral obligations reflect different bond types that do not relate to the volitional choice to be dedicated to a target which best represents the concept of commitment. On the other hand, they also criticised the affective construct of commitment thinking that this concept was largely defined in terms of identification, which they saw as a distinctive bond that is different from commitment. However, although Klein et al. (2012) recommended developing a new scale that would avoid the current conceptual issues of commitment, they expected that the new suggested scale would be more correlated to the affective commitment scale, compared to the continuance and normative ones.

From this review it could be concluded that there are some issues related to the content and construct validity of the concept of commitment, including affectivel commitment. However, it seems that the affective organisational commitment is still considered the most appropriate representative of the concept of commitment.

### 2.6.3 Antecedents of organisational commitment

Steers (1977) thinks that when determinants of organisational commitment are examined, it is clear that the major antecedents come from work environment. Steers in particular sees that organisational commitment may be predicted by three general groups of variables: (1) personal characteristics, which are these variables that describe the individual (age, education, opportunity for achievement, role tension, central life interest), (2) job characteristics, which may have a

more pronounced effect on other affective responses, such as job satisfaction than on organisational commitment, including job challenge, opportunities for social interactions, feedback by job and (3) work experience which includes group attitudes towards the organisation, organisational dependability and trust, perceptions of personal investment and personal importance to an organisation, and rewards or the realisation of expectations. More important, Steers was able to support his hypothesis, but he was not able to cross validate these hypotheses for opportunities for optional interaction, age, met expectations, and feedback (Steers, 1977; see also Kidron, 1978; Morris and Sherman, 1981). Furthermore, Steers (1977) also proposed that organisational commitment is low when organisations fail to provide employees with challenging and meaningful tasks. This idea is consistent Mayer and Schoorman's (1998) findings, and congruent with Simon's (1958) motivational framework, that the antecedents of continuance commitment were retirement benefits, organisational tenure, and, education, whilst the antecedents of value commitment were job involvement, role ambiguity, felt participation, perceived prestige.

Mathieu and Zajac (1990) in their meta-analysis of organisational commitment delineated organisational commitment focus strictly as one's commitment to organisation, and therefore they handled the Protestant work ethic as an antecedent to organisational commitment and the other foci (career; job, e.g. job involvement and job orientation; and union) have been considered as correlates of organisational commitment. They also have investigated the potential antecedents of organisational commitment, and categorised these antecedents into the following groups: personal characteristics, job characteristics, group-leader relations, organisational characteristics and role states. In terms of personal characteristics, age, correlated with attitudinal commitment more than with calculative commitment and the researchers attribute that to various reasons, including the possibility that over time employees may get better positions and become more satisfied with their jobs. The relationship between gender and organisational commitment yielded inconsistent results. Education had a small negative correlation with organisation commitment, although the relationship was stronger for attitudinal commitment than for calculative commitment. This inverse relationship may be because as education level increases, employees expect the organisation to offer them more because they have more job options. Similarly, marital status showed a small positive relationship with organisational

commitment. Interestingly, position tenure was more correlated to attitudinal commitment than calculated commitment, whereas organisational tenure was more related to calculative commitment. Moreover, perceived competence showed a strong relationship with organisational commitment. Also, ability and salary correlated with organisational commitment. Protestant work ethic correlated moderately with organisational commitment and job involvement was correlated with organisational commitment. With regard to job characteristics, organisational commitment showed a medium positive correlation with skill variety, a small correlation with autonomy and a medium correlation with job challenge. In addition, the average of the job characteristic components (skill variety, task autonomy, challenge, and job scope) highly correlated with commitment. In regard to group-leader relations, group cohesiveness, task interdependence, leader initiating structure and consideration, leader communication, and participatory leadership, showed significant correlations with organisational commitment. Regarding organisational characteristics, this study revealed that both larger organisations and organisational centralisation showed low correlation with organisational commitment. Finally, this study supported the correlation between role stress and organisation commitment through significant relationships between organisational commitment and role conflict, role ambiguity, and role overload.

In contrast, the meta-analyses of Mathieu and Zajac have found that the situational characteristics antecedents of organisational commitment (e.g. job characteristics, leader relations) account for more variance than do personal characteristics (e.g. demographic variables). Moreover, they recommend conducting further research to investigate the potential role of personal differences in moderating the influence of situational antecedents on organisational commitment (Mathieu and Zajac, 1990).

Several studies have examined the antecedents of affective, continuance and normative commitment. Most of this research has found support for antecedents of affective commitment. For example, Meyer et al. (2002) found that affective commitment had the strongest and most favourable correlations with organisation-relevant and employee-relevant outcomes. Similarly, Hackett et al. (1994) have found that, compared to continuance commitment and normative commitment, affective commitment had the strongest correlations with job in general satisfaction

(JIG) ($r$ = .51), motivational scale (MJDQ) ($r$ = .52), the questionnaire of attitudinal organisational commitment (OCQ) ($r$ = .72), age ($r$ = .17), and organisational tenure ($r$ = .17). Also, Addae et al. (2008) found a significant negative relationship between conflict and role ambiguity and affective commitment, whilst the relationship between these variables and continuance commitment were not significant. In addition, Allen and Meyer (1996) found that employees' work experience (psychological climate) variables were generally related to organisational commitment and were most strongly with affective commitment.

Allen and Meyer (1996) believe that the reason why very few antecedents of normative commitment have been identified is because these antecedents, such as early familial and cultural socialisation experiences, are not ones that are typically examined in organisational research. Although there are many empirical studies that investigated the antecedents of organisational commitment, there are no studies that have taken the route of determining the mechanism by which organisational commitment can be predicted. Researchers usually study correlations between commitment and various antecedents without considering the possible reasons why these variables influence commitment (Meyer and Herscovitch, 2001). This shortage of research also applies to the relationship between person-organisation fit and organisational commitment where researchers fail to explain the mechanism by which values congruence may exert its effect on organisational commitment.

Nevertheless, values are expected to be strongly considered in this respect because perception of work experience is a function of the values one holds. Meyer and Herscovitch think that for any personal or situational variable to contribute to the development of affective commitment it should let the individual: (a) be intrinsically motivated and involve in a course of action, (b) recognise the value-relevance of pursing a course of action, and/or (c) derive his/her identity from working towards an objective (Meyer and Herscovitch, 2001). The mind-set characterizing affective commitment is desire. Employees who hold strong affective (values, morals) commitment are expected to pursue a course of action related to a particular target. However, the mechanisms by which this desire is created vary across the different conceptualisations but they include involvement, shared values, and identification (Meyer and Herscovitch, 2001).

### 2.6.4 Consequences of organisational commitment

Organisational commitment has been linked to motivation. For example, Meyer et al. (2004) have found that employees with high level of affective commitment are motivated to remain because of intrinsic motivation, more autonomous external regulation, and stronger promotion focus in the pursuit of goals. Others have found that employees with higher continuance commitment are motivated to remain to minimise the risk of personal losses and they are pushed by the perception that no enough alternatives are available (Luchak and Gellatly, 2007). Similarly, Mathieu and Zajac (1990) found a correlation between organisational commitment and internal motivation ($r$ = . 67), and the authors propose that internal motivation, which pertains to feeling of accomplishment, self-fulfilment, etc., is expected to correlate to attitudinal commitment, whilst external motivational, which is related to rewards, is more likely to correlate to calculative commitment.

Other research has identified turnover intentions as an important consequence of organisational commitment. Steers (1977) found that organisational commitment predicted increased willingness to say with the organisation and decreased the desire to leave organisation. Similarly, Porter et al. (1974) found a negative relationship between organisational commitment and turnover. A similar finding was reported by Mathieu and Zajac (1990). In particular, they found that organisational commitment was found to be correlated with withdrawal behaviours as it positively correlated with attendance, and negatively with lateness and turnover. Also, Somers (1995) found that affective commitment was found to be the most consistent predictor of job withdrawal intentions, turnover and absenteeism. Other research, Addae et al. (2008), has found support for the notion that continuance commitment is the least likely to predict turnover intentions ($r$ = −.27) compared to affective and normative commitment ($r$s = −.39 and −.43, respectively; see also Meyer et al., 2002). Other research has found a link between organisational commitment and organisation citizenship behaviours. For example, Cullinan et al. (2008) found that employees with higher levels of organisational commitment are less likely to get involved in ethically questionable behaviours, whether these behaviours are organisational-harm or organisational-gain issues. Additionally, Meyer et al. (2002) found that affective commitment and normative commitment correlated positively with organisational citizenship behaviour

(OCB) ($r$ = .32 and .24, respectively), whereas the correlation with continuance commitment was near zero ($r$ = −.01).

Organisational commitment has been linked to stress and work-family conflict. For example, Meyer et al. (2002) have found affective commitment to correlate negatively with both self-reported stress, and work-family conflict ($r$ = −.21 and −.20, respectively), continuance commitment to correlate positively with both self-reported stress, and work–family conflict ($r$ = .14 and .24, respectively) and normative commitment to correlated negatively with work-family conflict, though very weakly ($r$ = −.04). Mathieu and Zajac (1990) also found support for a significant negative relationship between stress and organisational commitment ($r$ = −.33). Importantly, research has posited that both organisational commitment and job satisfaction are reciprocally related but that the influence of satisfaction on commitment was stronger (Mathieu, 1991). Mathieu and Zajac (1990) found that job involvement was correlated more highly with attitudinal commitment than with calculated commitment ($r$s = .42, 27, respectively), occupational commitment was correlated with organisational commitment ($r$ = .42) and organisational commitment was correlated with job satisfaction ($r$ = .53) (Mathieu and Zajac, 1990).

Likewise, Meyer et al. (2002) found that affective commitment had stronger relationships with overall job satisfaction, job involvement, and occupational commitment than both continuance and normative commitment. Meyer et al. (2002) argued that overall job satisfaction measures often include items pertaining to satisfaction with the organisation itself (Meyer, 1997) and that could justify why there is a high correlation between them.

The literature is less consistent in identifying performance as a consequence of organisational commitment. For example, Steers (1977) did not find a significant relationship between organisational commitment and performance. Similarly, organisational performance had one of the weakest relationships with organisational commitment in the meta-analysis study of Mathieu and Zajac (1990). Using others' ratings of performance and output measures as performance criteria, the authors found that the strength of the relationships between organisational commitment and performance was modest ($r$s =.14 and .06, respectively). However, the meta-

analysis study of Meyer et al. (2002) showed that affective and normative commitment correlated positively ($r$ = .16, .06, respectively) with job performance, whilst continuance commitment correlated negatively with job performance ($r$ = −.07). These findings are consistent with the meta analytical study outcomes of Riketta (2002), who found a corrected correlation between attitudinal (affective) organisational commitment and job performance to be modest and positive ($r$ = .20).

Consistent with the general outcome of the literature, Luchak and Gellatly (2007) showed that affective commitment is a better predictor of job performance, turnover cognitions, absenteeism than continuance commitment. Moreover, drawing on the theory of self-determination and regulatory focus theory, Luchak and Gellatly (2007) posited that continuance commitment has nonlinear relations with work outcomes, because when employees' continuance commitment increases from low to moderate, their experience of the external contingencies and the risk of being absent or performing poorly also increases, and in turn, there is a need for defensive, prevention focus to maintain security and personal stability. However, beyond this level of continuance commitment, the effects of continuance commitment on work outcomes are expected to be modest or negligible because the need for defensive procedures become less salient after reaching the minimum required work standards. More important, the authors empirically supported the nonlinear relations between continuance commitment and turnover cognitions, absenteeism, and job performance, and see that continuance commitment will have its most pronounced effects when it is at its low to moderate levels (Luchak and Gellatly, 2007).

**Summary**

There are a lot of efforts that have been made to define the appropriate constructs of organisational commitment and to determine its antecedents and consequences. Work values and psychological climate perceptions have been documented to be considerable predictors of attitudinal commitment. The literature review indicates that Allen and Meyer's (1990) three-component organisational commitment theory has been widely accepted in the field.

Moreover, the literature review has showed that values are both theoretically and empirically linked to organisational commitment, especially attitudinal commitment. When evaluating the

constructs of organisational commitment, there is an implied common concept among researchers that attitudinal organisational commitment is critical. That is, it cannot be overcome when investigating the concept of organisational commitment. This may be due to the potential theoretical and empirical implications the attitudinal construct has in relation with various organisational variables compared to the other constructs of organisational commitment.

**Conclusion of literature review**

From the review of the literature it can be concluded that values have a potential role in predicting organisational commitment. Moreover, previous research has contributed in analysing the distinguished contribution of the various clusters of values in explaining variance in employees' organisational commitment. Specifically, person-organisation values fit has been found to be correlated to organisational commitment in the sense that the similarity between person and organisation's values lead to higher levels of organisational commitment. On the other hand, psychological climate has been well documented to be related to organisational commitment, that is, the more employees feel positive towards their environment, the more they are committed to their organisations. One research gap that has been identified is the conceptual link between PO fit and organisational commitment. In particular, PO values fit and organisational commitment may be linked through the relationship with psychological climate. In the following section, I will develop the conceptual framework that contains the hypotheses and the research model drawing on the existing literature review.

# Chapter 3: HYPOTHESES AND CONCEPTUAL FRAMEWORK

## 3.1 Introduction

In the light of the research questions, I, drawing on related literature review, will develop this study's hypotheses to derive the suggested research model. This proposed model will be assessed by simultaneously testing its hypotheses and gauging its fit to the data using the technique of structural equation modelling.

## 3.2 Developing hypotheses

### Person-organisation values fit and organisational commitment

The meta-analysis study of Verquer et al. (2003) showed that work attitudes are among the most frequently examined criteria in person-organisation fit studies. This may be because (a) the ease of measuring attitudes compared to behaviours, (b) the strong influence of interactional foundations on theories of work attitudes model, and (c) the greater occurrence of significant results in studies investigating PO fit and work attitudes over other types of dependent variables.

Reviewing the research into PO fit, we can see that value-based congruence between person and organisation is the most prominent dimension among other types like goal congruence, personality climate fit, needs supply fit. Moreover, values congruence has had the majority of empirical studies among other types of person-organisation fit (Verquer et al., 2003).

Mcdonald and Gandz (1991) argued that establishing a work environment characterised by strongly shared values is one approach to achieving deeper individual-organisational integration and greater employee commitment. Moreover, Cable and Edwards (2004) think that attitudes are expected to be most positive when values congruence is maximised.

Research to date has indicated that there is a well-established relationship between PO values fit and organisational commitment (Meglino et al., 1989; O'reilly et al., 1991; Kristof, 1996). Moreover, the meta-analysis of Kristof-Brown et al. (2005) demonstrated that the strongest relationship between person-organisation fit and other variables is organisational commitment, compared to job satisfaction and intent to quit. However, the study of Finegan (2000) indicated

that employees' perception of organisational values is more important to them than is the congruence of personal and organisational values. Her study showed that there was a positive relationship between employees' perception of PO vision values fit and affective organisational commitment. Specifically, Finegan (2000) found that affective commitment was associated with increases in P-O fit for the values of humanity and vision. However, continuance commitment was associated with increases in P-O fit for the values of adherence to convention and bottom-line factors. Moreover, she found that the interaction of personal values and perceived organisational vision values was a predictor of affective commitment.

The results of the meta-analysis of Kristof-Brown et al. (2005) demonstrated that such multidimensional measures (measures having multiple content dimensions such as personality, needs, goals) were better predictors of job satisfaction and intent to quit than values-only measures. However, for organisational commitment, PO values fit demonstrated stronger relationships with these variables than did multidimensional measures.

Mentioning that values play such an important role in the definition of commitment, Finegan (2000) maintained that a person whose personal values match an organisation's operating values would be more committed to the organisation than a person whose personal values differ from the organisation's. Moreover, subjective PO values fit, the values congruence between the person and organisation as they are perceived by the employee (Kristof-Brown et al. 2005), was positively correlated with organisational commitment (attitudinal) and negatively with intention to stay with the organisation (Chew and Chan, 2008). Based on the above argument, I developed the following hypothesis:

**Hypothesis 1:**

*Employees' perception of person-organisation values fit is positively correlated with affective organisational commitment.*

**Psychological climate and organisational commitment**

The research of Mayer and Schoorman has insisted that there is a difference in the antecedents of the components of organisational commitment. Organisational tenure, retirement benefits,

education, and age were more highly correlated with continuance commitment, whilst felt participation, perceived prestige, job involvement, and role ambiguity were more highly correlated with value commitment (Mayer and Schoorman, 1998). More important, in comparison with continuance commitment and normative commitment, the strong relationship between affective commitment and MJDQ—Motivational scale (e.g. job challenge, job scope, and opportunity for self expression), reinforces the notion of Allen and Meyer (1990) that affective commitment is most affected by the nature of one's work experiences (Hackett et al., 1994).

Organisational psychologists use many variables to assess perceptions of work environments and that includes perceptual indicators of job attributes (e.g. job challenge, job autonomy), characteristics of leadership (e.g., leader consideration and support), workgroup characteristics and interfaces between individuals and organisations (e.g. role ambiguity) (James and James, 1989). In addition, It is expected that employees' perception of psychological climate may play an important role in predicting organisational commitment because, as Mowday (1982) indicated, situational variables have demonstrated to be the most effective variables in predicting organisational commitment.

Research has indicated that psychological climate works as a predictor for organisational commitment (O'reilly et al., 1991; Martin et al., 2005) and job satisfaction and job involvement (Parker et al., 2003). Also, perceived organisational support has been found to be positively related to affective organisational commitment (Cropanzano et al., 1997; Allen et al., 2003; Kuvaas, 2008). Additionally, research has indicated that psychological climate is an effective predictor of organisational commitment (Martin et al., 2005). In addition, Allen and Meyer (1996) generally supported the hypotheses that work environment dimensions represent antecedents of organisational commitment. In particular, challenging work and fair treatment (aspects of psychological climate) have been identified as antecedents of affective commitment. Moreover, work experience was related to both affective and normative commitment, although the latter relation was more modest, but unrelated to continuance commitment. Kiewitz et al. (2002) found that all the dimensions of psychological climate (supportive management, role clarity, self-expression, contribution, recognition, and challenge) were positively associated with

affective organisational commitment. Taken together, these findings indicate that the potential relationship between affective organisational commitment and psychological climate is particularly promising, compared to these of continuance commitment and normative commitment. From the previous discussion, I developed the following hypothesis:

**Hypothesis 2:**

*Employees' perception of quality of psychological climate is positively correlated with affective organisational commitment*

**Person-organisation values fit and psychological climate**

Elizur and Koslowsky (2001) posited that when employees perceive that their personal values are congruent with the common values in their organisations they are likely to experience more positive meaning in relation to their work environment. Meglino and Ravlin (1998, p. 356) endorsed this view suggesting that "when persons share similar value systems (i.e., interpersonal values congruence), they tend to perceive external stimuli in similar ways". Therefore, employees who hold values that are similar to those of other employees are likely to have similar perceptions and interpretations of what is happening around them, and as a result, positively perceive the quality of their work environment. The rationale behind this is as follows. Incongruence in either direction is likely to result in frustration, difficulty in working effectively with others, lack of role clarity, and so forth and there is no reason to expect a priori that work attitudes will differ depending on whether the individual's value orientation is greater than or less than that of the organisational values (Ostroff et al., 2005). On the other hand, James et al. (2008) state that a central component of individual perceptions of psychological climate is a valuation of the work environment according to a value- or need-based judgment processes. This leads to the potential effect of values congruence on psychological climate. Specifically, individuals respond emotionally to environmental attributes as a function of the significance that such attributes are perceived to have for personal well-being. In turn, that suggests that meanings acquire significance because they are 'emotionally relevant' to determinations of one's personal sense of organisational well-being.

James and James (1989) viewed psychological climate perceptions as partial functions of personal value systems. Furthermore, values serve as standards for assessing the well-being in the organisation (Rokeach, 1973). Given the supplementary nature of PO values fit that is achieved when an individual's personal characteristics are congruent with the characteristics of the organisation and its members (Resick et al., 2007), I argue that employees who are more values-congruent with their organisation are more likely to be positive in their perception of work environment. Thus, the congruence of one's personal values with organisational values is expected then to be reflected in one's perception of the quality of work environment and, in turn, on the quality of his/her work attitudes. From the above, I developed the following hypothesis:

**Hypothesis 3**:

*There is a positive relationship between employees' perception of person-organisation values fit and their perception of the quality of psychological climate.*

**The potential mediating role of psychological climate**

From a conceptual perspective, Ren (2010) posits that attitudinal outcomes such as satisfaction, discretionary work behaviour and commitment are among the key consequences of values congruence as values congruence is closely related to the key factors that facilitate intrinsic motivation. In addition, research has shown that intrinsic motivation plays an important role in shaping employees' attitudinal commitment to their organisations (Meyer et al., 2004). However, self-determination theory implies that intrinsic motivation can be undermined when employees feel they lack control, autonomy or freedom in performing their work activities (Deci and Ryan, 1985). This may mean that values congruence could facilitate employees' attitudinal commitment on the condition that intrinsic motivation is not hindered through negative perception of their work environment. This potential indirect effect of psychological climate is particularly relevant given that employees' positive or negative perception of work environment could be beneficial or detrimental to one's sense of organisational well-being (James et al., 2008).This in turn refers to the mediational role of psychological climate in the linkage between values congruence and affective organisational commitment.

Moreover, values congruence is a type of supplementary fit that occurs when there is a similarity between the attributes of the person and organisation. On the other hand, psychological climate could represent the supply-need concept of PE fit, which happens when a person or organisation provides what the other lacks in terms of needs (Muchinsky and Monohan, 1987; Kristof-Brown et al., 2005). Accordingly, the proposed mediational role of psychological climate could be looked at from the perspective that it represents an integration of the approaches of supplementary and complementary fit. In other words, whilst values congruence is expected to positively impact affective organisational commitment through the conceptual framework of supplementary fit, this linkage is rationally supported by the bridge of psychological climate which expresses the extent to which work experiences fulfil the person's needs. As such, when work experiences constitute supplies that create needs-supplies fit, affective commitment should occur (Edwards and Cable, 2009).

Additionally, valuation of environmental attributes is a fundamental component of psychological climate. Valuation can be defined as judgment of the extent to which a particular value can be expressed by an environmental attribute. For example, how much a given pay rise may represent equity (James et al., 2008). Moreover, James et al. (2008) think that this valuation is a partial function of one's personal values, as they operate as latent indicators of the significant environmental attributes. In other words, these personal values produce the schemas used to cognitively evaluate work environment attributes in terms of their significance to the individual's organisational well-being. Similarly, values congruence could enhance this role given that values congruence facilitates an employee's organisational well-being. That is, individual values represent a guide for an employee's decisions and actions. On the other hand, organisational values shape the organisational norms and also specify how employees should behave (Edwards and Cable, 2009). Therefore, when an employee perceives that his/her values are aligned with the organisation's (i.e. values congruence) that would result in the balance between individual and organisational values, and as a result, employee's well-being increases. This could be further supported given that values congruence enhances employees' perception that their preferences and goals are aligned with those of the organisation, and this alignment in turn fosters their beliefs that they will not be harmed by the organisation (Enz, 1988). On the other hand, affective organisational commitment is particularly attached to these work experiences that make an

employee feels psychologically comfortable in the organisation (Allen and Meyer, 1996).Therefore, we could infer that the link between values congruence and affective organisational commitment is intervened by the evaluation process of work environment and that the extent to which values congruence could positively affect affective organisational commitment is partially determined by how positively an employee perceive his/her environment as a proxy for his/her overall well-being.

Moreover, Kristof-Brown et al. (2005) noticed that fit has been studied independently and suggested the need to study this concept within the context of other meaningful predictors of work outcomes. In addition, Cable and Edwards (2004) posited that values congruence may indirectly affect attitudes towards one's organisation. Research has shown that employees who perceive they are more congruent with their organisations' values are expected to show more flexibility across jobs and mesh better with their organisation (Herbst and Houmanfar, 2009), which in turn means that values congruence could positively affects employees' perception of work environment. On the other hand, when personal and organisational values are incongruent, an employee's behaviour will violate either of these values; however, there is no compelling reason positing that work attitudes will differ depending on whether the individual's values orientation is greater than or less than that of the organisation (Naus et al., 2007). Importantly, values incongruence in either direction is expected to lead to negative consequences including frustration, difficulty in working effectively with others, lack of role clarity (Ostroff et al., 2005). In addition, research has indicated that both values congruence and psychological climate are good predictors of affective organisational commitment (e.g. Boxx et al., 1991; Allen and Meyer, 1996; Kristof, 1996; Kristof-Brown et al., 2005; Martin et al., 2005). Describing organisational commitment, Virtanen (2000, p. 339) contended that 'definitions and usage of the term emphasising values, norms, affects, attachments, identifications and so on imply that it shares some of its referents with those of organizational climate and organizational culture'. Taken together, these relationships imply a typical case of mediation, where a proposed causal agent X and some presumed effect Y invoke at least one intervening variable M to account for the cause-effect relation between X and Y such that a change in X causes changes in M, which in turn cause changes in Y (Hayes and Preacher, 2010). That is, whilst values congruence (predictor) is conceptually linked to affective organisational commitment (outcome), at least part of this

relationship is a function of the extent to which values congruence (predictor) impacts psychological climate (mediator) and its reflection on affective organisational commitment.

From a methodological perspective, Frazier et al. (2004) stated that moderators are often introduced when the relationship between a predictor variable and an outcome variable is weak or inconsistent across studies. On the other hand, mediators are used when this relationship is strong and researchers want to understand the mechanism behind this relationship. In addition, a mediation relationship is employed when a suggested mediator variable is correlated with the independent variables, whereas the moderation relationship is used when the suggested moderator is uncorrelated with these variables (Wu and Zumbo, 2008). Accordingly, and given the argument developed above, the proposed relationships between employees' perception of PO values fit, perception of psychological climate and affective organisational commitment lend themselves to the mediation approach. Taken together, I proposed the following hypothesis:

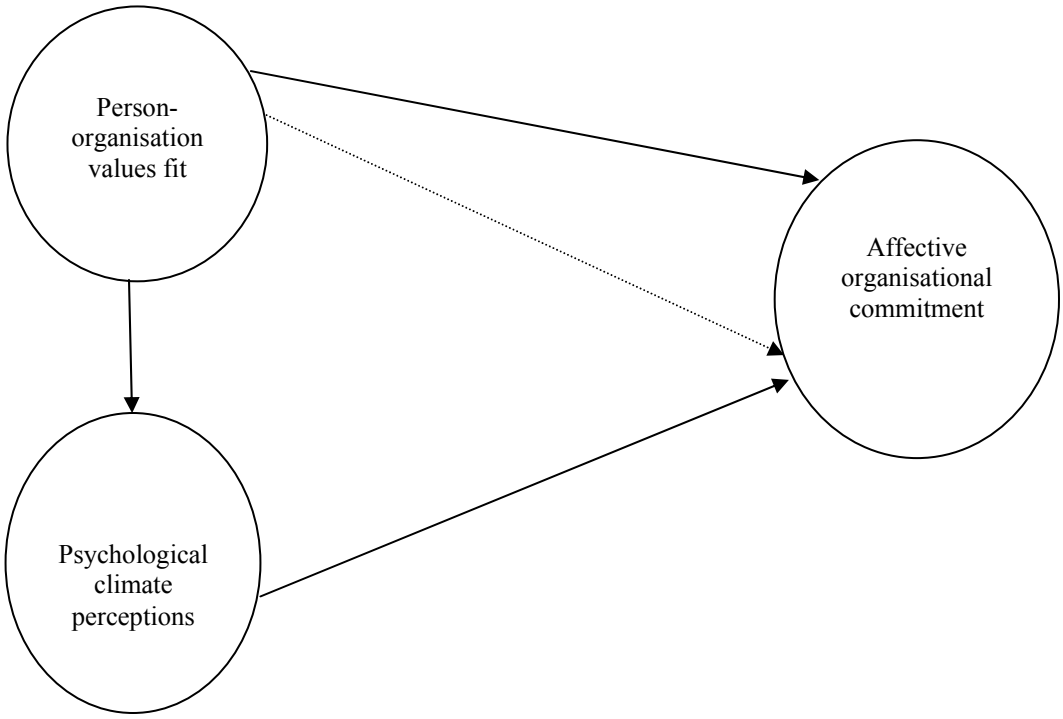
**Hypothesis 4**:
*Employees' perception of the quality of psychological climate positively mediates the relationship between their perception of person-organisation values fit and affective organisational commitment.*

### 3.3 Research model

The hypotheses mentioned above represent a research model I will test. Drawing on the previous discussion, I expect a recursive causal relationship between PO values fit and psychological climate where PO values fit leads to psychological climate.

More important, psychological climate is expected to have a mediation role (at least partially) in the relationship between PO values fit and affective organisational commitment. Figure3.1 represents a generic view of the proposed research model.

Figure 3.1 The proposed research model of the relationships between person-organisation values fit, psychological climate and affective organisational commitment




Note: The solid arrows refer to the direct relation between variables, and the dotted arrow refers to the indirect effect of PO values fit on affective organisational commitment through its effect on psychological climate.

**Summary**

In this section, the conceptual and theoretical framework for this study was offered. Reviewing the literature on the study's key variables led to develop a group of hypotheses that represent a proposed model in which PO values fit is positively related to both psychological climate and affective organisational commitment. Moreover, psychological climate is positively related to PO values fit and mediates the relationship between PO values fit and affective organisational commitment. This hypothesised mediational relationship is important as it would help us understand the process by which values congruence could be attached to affective organisational commitment, which is not clear in the extant literature. The next chapter is about the research methodology utilised in this study.

# Chapter 4: RESEARCH METHODOLOGY

## 4.1 Introduction

This section presents the research philosophy on which the present study was based in terms of the research paradigm and epistemology. Moreover, it will go through the quantitative and qualitative approaches and the reasons why the quantitative approach was adopted in this study. This section includes a discussion of the elements of the empirical study including the measures used in this study, the population and sampling procedures, the study design and the instrument used to collect data.

## 4.2 The philosophy of study

There are three epistemological (i.e. frames of reference for the study of knowledge) approaches that represent the main epistemological streams in organisational science. These are the positivism, interpretativism and constructivism paradigms (Girod-Séville and Perret, 2001). From status of knowledge perspective, the positivism approach is based on the ontological hypothesis that the knowledge object has its own essence and also on the independence of subject (the observer) and object (reality). On the other hand, both interpretativism and constructivism are based on the phenomenological hypothesis that the essence of the object is multiple and cannot be attained (moderate constructivism) or does not exist at all (radical constructivism) and accordingly there is dependence of the subject and object. In terms of how knowledge can be generated, positivism follows the discovery approach; that is, the research question is formulated about the reasons for a particular phenomenon. In contrast, the research question of the interpretativism paradigm is formulated in terms of studying the factors that motivate actors of a particular phenomenon. Finally, the research question of the constructivism approach is centred on the process of constructing reality. This construction of reality is based on the notion that reality is formulated by the act of knowing rather than being given by an objective perception of the world. In terms of validity, positivism mainly relies on confirmation, refutability and logical consistency whilst interpretativism depends on credibility, transferability, dependability, and confirmability. With regard to constructivism, it is based on teachability (i.e. reproducibility, intelligibility, and constructability) (Girod-Séville and Perret, 2001).

From this, it is obvious that there are some factors should be considered before deciding which epistemological approach to pursue, including the researcher's held assumptions about the nature of knowledge, nature of reality, ways of obtaining knowledge, and the validity of the extracted knowledge. Moreover, both the interpretativism and constructivism paradigms have some common assumptions and they are considerably different from the positivism paradigm. Although I tend to prefer the positions of positivism over the other two paradigms, I think that the principles of this paradigm are too difficult to pursue in any social research context. Therefore, this paradigm would not fit into my vision of reality for this current research. Accordingly, I opted for the post-positivism paradigm.

According to post-positivism, there is external objective reality, but this reality is dealt with sensitively because of its complexity. Moreover, this philosophy also takes the biases driven from the scientist studying the social phenomenon into account. Therefore one cannot be sure that the scientific methods used allow one to perceive objective reality. Alternatively, post-positivists think that the goal of science is to achieve *intersubjective agreement* among scientists about the nature of reality. To summarise, positivism sees that there is a reality found apart from an individual's perception and it can be understood through one's observation and it follows general laws, whereas post-positivism sees that there is empirical reality but our understanding of this reality is limited by its complexity and the researcher's bias and other limits (Schutt, 2006). However, although post-positivism can be considered an improved version of the positivism epistemology, post-positivism still experiences the inherent criticisms of the quantitative approach. For example, some scholars argue that a social phenomenon is usually so complicated that the quantitative paradigm cannot explain it adequately, because it needs in-depth qualitative analysis (Blackmore and Lauder, 2005). Also the non-positivists argue that the quantitative paradigm's theme of objectivity cannot be guaranteed (Johnson and Duberley, 2000).

In sum, the post-positivism paradigm would be the most appropriate philosophy to adopt for the current research questions. It is the most appropriate because research has shown that values are enduring beliefs which can be represented in facets (Schwartz and Bilsky, 1990) and that psychological climate and organisational commitment can also be organised in particular dimensions (e.g. Jones and James, 1979, Allen and Meyer, 1990). These facets and dimensions

may encourage the idea that there is a possibility that researchers can pursue reality that is somewhat separated from its actors.

Research bias cannot be completely avoided. One source of this bias is the researcher's own values which are traced even in the logic by which the researcher chooses the topic and also in the way the researcher handles the research (Saunders et al., 2007). However, I expect there would be not much effect of this potential bias on the research due to the weak contact between the researcher and the participants. Furthermore, I am more committed to the objectivity concept of reality and think that the challenge the researcher has to take is to the extent to which employees perceive and understand this reality. The study instrument I used is an indication of this point of view. That is, some studies of human value facets and psychological climate dimensions have been found to be universal by showing high levels of replications across different cultural settings in many different countries (e.g. Schwartz and Bilsky, 1990; Schwartz, 1992; Schwartz et al., 2001).

### 4.3 Quantitative versus qualitative method

Quantitative approach by definition lends itself to the statistical applications and numerical measures, whilst the qualitative one tends to the description and exploratory enquiry. Quantitative approaches to studying culture are concerned with identifying its predictive power, categorising organisations into cultural or measuring the distinct elements or dimensions of culture as objective as possible. Whilst qualitative approaches seek to characterise culture's rich, emergent, constructed and multi-dimensional nature using ethnographic approaches (Millward, 2001). Although the qualitative approach has the advantage of studying the manifests of organisational culture like stories and artefacts, the quantitative approach gives a researcher the opportunity to replicate assessments across different organisations and units and also help them compare data across studies. Moreover, the quantitative approach is less prone to what is called social desirability bias that is more found in interviews and other qualitative methods (Tepeci, 2001). Also, the qualitative approach has the advantage of its high internal validity as it is, compared to the quantitative approach, able to study rival explanations of the phenomenon under study. Moreover, its external validity could also improve through including various contexts in

the analysis (Baumard and Ibert, 2001). However, the qualitative approach suffers from limitations of generalisability (Bachiochi and Weiner, 2004).

In addition, the qualitative approach suffers from the desire of power distribution between researcher and participant to foster the theme of meaning construction, and this violates the commitment of quality research to make a contribution to the research. This could happen through denying the researcher's right to intellectual and academic freedom and oversimplifying the theoretical construct (Karnieli-Miller et al., 2009). As a result, there could be some sensitivity to the issues of meanings, especially when it comes to developing complicated relations, like the present study. Thus, this necessitates research professionalism to handle such matters. Therefore, in the light of the nature of the current research questions, the quantitative approach is more fit.

Nevertheless, adopting a quantitative approach for the present research does not mean the quantitative paradigm is better than the qualitative approach. Some researchers argue that quantitative research is not any more scientific than qualitative research (King et al., 1994) and that the qualitative research paradigms are becoming increasingly fashionable in the social sciences as a valid alternative to positivism and in part as an ideological criticism of positivistic science (Millward, 2001). The most important rationale behind this choice is that the researcher has a well-developed theory, in the sense that the literature review related to the current research questions is rigours and stable, allowing the researcher to develop the hypotheses and put them to the test.

### 4.4 Research approach

Given the research questions and the paradigm espoused, I utilised the hypothetico-deductive testing method, which is the usual approach to derive knowledge in the quantitative paradigm (Millward, 2001). The hypothetico-deductive testing method aims at formulating more general hypotheses, and then comparing these hypotheses against a particular reality in order to assess the validity of these hypotheses (Charreire and Durieux, 2001). Specifically, Charreire and Durieux (2001) identified four steps for the hypothetico-deductive testing method to be implemented:

1. We should determine from the literature which concepts will enable us to respond to our research question.
2. We observe the extent to which these hypotheses, models or theories do not perfectly account for or cannot represent our reality.
3. We try to develop new hypotheses, models or theories.
4. We follow the appropriate testing phase which will enable us to refute, or not, the hypotheses, models or the new theories.

### 4.5 Research strategy

I used the survey to investigate the research questions because it is considered one of the most suitable research strategies to test hypotheses due to its structured format (Tharenou et al., 2007). The survey or questionnaire is a tool for collecting primary data that adapts well to quantitative research. Moreover, it allows us to work with large samples and help us establish statistical relationships or numerical comparisons (Ibert et al., 2001).

### 4.6 Time horizon

Longitudinal analyses are usually contrasted with cross-sectional studies. Longitudinal analyses pertain to the data collected that is related to at least two distinct points in time, whilst the data of cross-sectional studies is collected in relation to a distinct moment (Forgues and Vandangeon-Derumez, 2001).

Research has shown that longitudinal research has demonstrated more accredited results when investigating the issues of causality (Wu and Zumbo, 2008). However, because of the limitations of time and resources dedicated to this study, the cross-sectional approach was adopted.

### 4.7 Population and sample

The application of this research is industrial organisations in Egypt. Fundamentally, a reasonable amount of homogeneity among the various industrial organisations in the population is expected. For access considerations, the present study was conducted in a single industrial

organisation in the city of Port Said, Egypt. However, this would impose some issues regarding the external validity of the study results, as this proposed homogeneity could not be assessed. Nevertheless, this potential problem is not critical given that in many studies, external validity is a secondary issue, as researchers are more concerned with establishing the internal validity of results before thinking of generalising the study results (Royer and Zarlowski, 2001).

To increase the internal validity of this study, I surveyed the whole organisation. Relatedly, samples that are more homogenous will make it easier to highlight relationships and build theories. Moreover, the results of the research that is characterised by strong internal validity may be able to be generalised to a larger or a different population. However, for this target, it is necessary to replicate these studies in different circumstances such as various regions and organisations (Royer and Zarlowski, 2001).

## 4.8 Study measures

### 4.8.1 Person organisation-values fit

Ostroff et al. (2005) mentioned that one of the limitations of the studies of values congruence fit is that researchers followed a catalogue approach to values, rather than starting from a well-developed theoretical structure. In addition, it is argued that it is critical for researchers, who investigate values congruence between employees and organisations, to operationalise values at individual and organisational level of analysis in a similar taxonomy. Moreover, that taxonomy will make it easier for researchers to test the hypothesised link between values congruence and other behavioural variables (Mcdonald and Gandz, 1991).

One of the instruments that have been used in values research is the values taxonomy of Mcdonald and Gandz (1991). This taxonomy includes 24 values that have significant impact in any organisation, such as moral integrity, co-operation and initiative. According to Mcdonald and Gandz (1991), 22 out of their 24 values are similar to the values used in the earlier works of Allport et al. (1960), England (1967) and Rokeach (1973), and thus providing strong support for their proposed value taxonomy.

McDonald and Gandz's shared value taxonomy also has some obvious advantages. First, it has been developed totally in the business context, compared to the other prominent values taxonomies which were not developed particularly in the commercial contexts (e.g. Rokeach, 1973, Schwartz, 1992). Second, its primary target was to find these values that are specific enough to represent the unique nature of individuals (idiopathic) and at the same time universal enough to represent the aggregations of individuals (nomothetic) to develop a value taxonomy that is appropriate to assess individual-organisation values congruence. Third, it translated some value concepts, such as loving and clean, into the idiom of business (Mcdonald and Gandz, 1991). Also, according to McDonald's doctoral thesis (1993; cited in Finegan, 2000), the rank-order of this instrument gained a test–retest reliability of .76, and the inter-rater reliability for employees was .77.

On a sample of 121 employees at a subsidiary plant of large petrochemical company, Finegan (2000) conducted principal component factor analysis using the 24-value-item taxonomy of Mcdonald and Gandz (1991) and the results yielded 4 factors. Courtesy, consideration, cooperating, fairness, forgiveness, and moral integrity loaded on one factor labelled humanity (the coefficient alpha were .85 and .89 for person values and organisation values, respectively); obedience, cautiousness, and formality loaded on a factor labelled adherence to convention (coefficient alpha was .63 for person values and .68 for organisation values); logic, economy, experimentation, and diligence loaded on a factor labelled bottom-line issues (coefficient alpha was .71 for person values and .70 for organisation values); finally development, initiative, creativity, and openness loaded on a factor labelled vision (coefficient alpha was .59 for person values and .81 for organisation values).

Having extended the study of Finegan (2000), Abbott et al. (2005) conducted confirmatory factor analysis on two Australian organisations, a government communications agency (N = 146) and a social welfare organisation (N = 135). The 17 value items of Mcdonald and Gandz (1991) and this model failed to fit the data due to multicollinearity problem. In particular, the bottom line factor highly correlated with the convention factor ($r$ = .91) suggesting that it would be parsimonious to combine them into a single factor. The researchers had to revert to the original values taxonomy of Mcdonald and Gandz (1991) and conducted principal components analysis

which yielded three factors. The values consideration, cooperation, courtesy, and forgiveness loaded on a factor labelled the humanity factor. The second factor was labelled the vision factor and was associated with adaptability, creativity, initiative, and development. The third factor labelled the conservatism factor was associated with cautiousness, economy, formality, obedience, and orderliness. Taken together, the previous findings reaffirm the need for conducting the procedure of explanatory factor analysis with the variability of culture and business settings and the additional proposed items as I will explain in detail in the subsequent paragraphs.

Finegan discussed the validity of her study instrument, which is based on McDonald and Gandz's values taxonomy (Mcdonald and Gandz, 1991, 1992), by comparing it with other similar measures like Schwartz's scale and indicated that because Schwartz's scale aimed to find universal values it does not include the bottom-line values related to work settings in particular; moreover, Gandz's scale misses some values such as achievement, found in Schwartz's scale, which may be applied to work domain (Finegan, 2000). Therefore, Finegan recommended considering such missed values as that could provide a more inclusive taxonomy of higher-order work values (Finegan, 2000).

Based on this recommendation, an item related to the domain of achievement as specified by Schwartz and colleagues (Schwartz, 1992; Schwartz and Bardi, 2001; Schwartz and Boehnke, 2004), was added to both employees' preferred values, and employees' perceived values taxonomies. Ultimately, this values instrument consisted of 25 questions for each values domain.

### 4.8.2 Psychological climate

Initially, I prefer to take the holistic vision, instead of dealing with particular dimensions, when studying psychological climate, because that would give the study a deeper sight into the process of individuals' perception of work environment; besides, researchers see the holistic vision more fruitful in terms of expected results: studying single dimensions or a set of independent dimensions of climate deprives us from comprehending the broader context of work environment and this is considered a limitation because it may be useful to examine various dimensions of climate together through studying these aspects as a system (Schulte et al., 2006).

As mentioned before, there are a number of measures that are used to assess individuals' perception of their psychological climate (work environment), and one of the most well documented measures is the psychological climate measure of Jones and James (1979). This tool consists of 145 items based on 35 a priori scales found in the literature on work environment perceptions (e.g. support, awareness of employees' needs and problems, job challenge, role conflict). Originally, this 145-item questionnaire was administrated to a sample of 4315 US Navy personnel and the principal components analysis yielded 6 factors which were labelled (a) conflict and ambiguity, (b) job challenge, importance and variety, (c) leader facilitation and support, (d) workgroup cooperation, friendliness and warmth, (e) professional and organisation esprit and (f) job standards (Jones and James, 1979).

This measure has been used extensively across a wide range of various work settings and it proved to be most reliable and valid; moreover, from a psychometrical perspective it provides the most adequate approach to study work environment perceptions (Ryder and Southey, 1990). However, one of the disadvantages of this measure is its length as it contains 145 items. James and James (1989) derived four first order factors which showed factorial invariance across diverse work environments, including (a) role stress and lack of harmony, (b) job challenge and autonomy, (c) leadership facilitation and support, and (d) workgroup cooperation, friendliness, and warmth. Having used the then 1979 version of the measure, the authors tested the model that a general higher latent factor of psychological climate explains the variances of these correlated four first order factors. The results of the confirmatory factor analysis supported this model across 4 different samples. However, this measure is still relatively long taking into account it compasses 17 manifest psychological climate variables and each of these variables represents a composite of 3-11 items.

Alternatively, the present research utilised the measure of Brown and Leigh (1996). This measure was based on Kahn's (1990) ethnographic research that explored the extent to which employees perceive the organisation to be a psychologically safe and meaningful work environment. Furthermore, the authors proposed that the psychological climate factors affect employees' tendencies to engage in their work or distance themselves psychologically from it. This measure consists of 6 first order factors, including (a) supportive management (Supportive

management allows employees to try and fail without fear of reprisals. It also gives employees control over their jobs and the methods to achieve their goals), (b) role clarity (Clear expectations and consistent, predictable work norms could create a psychologically safe environment and lead to more job involvement), (c) self-expression (When employees feel psychologically safe in their work roles, they are expected to infuse their personalities, creativity into their work roles. Employees who experience self-expression will be more involved in their job), (d) perceived meaningfulness of contribution (Employees' perception that their work significantly affects organisational processes and outcomes is likely to enhance their identification with their work roles), (e) Recognition (Employees who feel that their contributions are recognised are most likely to identify with their jobs and be more involved), and (f) challenge (Challenging work let employees devote greater amounts of their physical, cognitive, and emotional resources to their work and is likely to result in greater perceived meaningfulness of the work experience) (Brown and Leigh, 1996).

Brown and Leigh (1996) found that a two higher order-factor model for their measure of psychological climate construct was significant. That is, the first order factors representing supportive management, clarity, and self-expression loaded on the second-order factor of psychological safety, and the first order factors of contribution, recognition, and challenge loaded on meaningfulness. However, the model in which there was a general factor of psychological climate encompassing these two first order factors was also significant, and this model also marginally better fitted the data. Given that the correlation between the second order psychological safety and meaningfulness factors was very high in both samples used in this study ($r$s > .88), the authors indicated that the general psychological climate factor was the best way to represent the data parsimoniously with a reasonable accuracy (Brown and Leigh, 1996).

Furthermore, this factor structure has been replicated by others (Kiewitz et al., 2002) and that the scale has a high internal consistency (αs >.81; Kiewitz et al., 2002; Kolodinsky et al., 2004; Byrne et al., 2005), even in non-western samples (Biswas and Varma, 2007). It is noteworthy that Brown and Leigh (1996) preferred not to add the psychological climate dimension of work group due to the nature of the participants in their studies. That is, they relied on the fact that their sample of sales persons worked independently and did not work with co-workers on a day-

to-day basis, which does not apply to the present study. Therefore, Brown and Leigh's (1996) measure and items derived from the dimension of work group in Kahn's (1990) measure were utilised in the present study. These items pertain to group and intergroup dynamics (see Kahn, 1990, pp. 709-711).

Accordingly, four items were developed to assess employees' perception of the psychological climate dimension of work group (e.g. My relationship with my work group members is friendly and productive). Given that the original instrument consists of 21 items, the whole psychological climate instrument, after adding these four items, consisted of 25 items.

### 4.8.3 Organisational commitment

The literature on organisational commitment has produced a number of instruments that have showed reasonable validities and reliabilities. Among these instruments is the tool of Porter et al.'s organisational commitment questionnaire OCQ (Porter et al., 1974; Mowday et al., 1979), which is considered one of the most widely used measure for assessing attitudinal organisational commitment (Mathieu and Zajac, 1990; Meyer et al., 2002). This measure has two versions, the first one consists of 15 items and the other is 9 items (which drops the 'desire to remain' items). According to the meta analysis of Mathieu and Zajac (1990), the internal consistency reliability of the both versions of the scale was high (15-item version were good: $\alpha s > .85$).

More recently, the instrument of Meyer, Allen and colleagues (Meyer and Allen, 1984; Allen and Meyer, 1990; Meyer et al., 1990; Meyer and Allen, 1991) has been extensively used in the studies of organisational commitment, and that may be because of its emphasis on the multidimensionality of organisational commitment construct (affective, continuance, and normative). Moreover, there are two versions of this tool. The first, the original, consists of 8 items and is highly reliable ($\alpha = .87$) (Allen and Meyer, 1990), whilst the second 6-item version is also reliable ($\alpha = .82$) (Meyer et al., 1993).

The meta analysis of Meyer et al. (2002) showed that the average reliability of affective organisational commitment, in 144 studies was good ($\alpha = .82$). Importantly, in 9 studies, the OCQ (Porter et al., 1974; Mowday et al., 1979) and affective commitment scale (Meyer and

Allen, 1984, 1991; Allen and Meyer, 1990; Meyer et al., 1990) were highly correlated, *r*s (4540) = .88.

As we can see from the results of the two meta analysis, which could give a more accurate estimate of the quality of measures, the internal consistency reliability results are relatively in favour for the instrument of Porter et al. (1974). Nevertheless, the choice between these two instruments would mainly depend on the related issues of methodology. The OCQ of Porter et al. (1974), whether the original 15-item version, the 9-item version, or even the proposed version of Benkhoff (1997), contains items dealing with value-based attitudinal organisational commitment (e.g. 'I find that my values and the organisation's values are very similar'). More important, the operational definition of attitudinal organisational commitment explicitly designated values as one of the factors determining employee's attitudinal organisational commitment: this type of commitment can be represented by three factors, "(a) a strong belief in and acceptance of the organisation's goals and values (b) a willingness to exert considerable effort on behalf of the organisation and (c) a definite desire to maintain organisational membership" (Porter et al., 1974, p. 604).

Empirically, some researchers conducted factor analyses on this measure and found that it is a multidimensional construct. For example, Angle and Perry (1981) found that measures consisted of two factors, which they labelled value commitment (α = .89) and commitment to stay (α = .72). Nine out of 14 items loaded on the value commitment factor, whilst the other five items loaded on the factor of commitment to stay. Also, Cohen and Gattiker (1992) found, in two samples from USA and Canada, two factors representing 13 out of the 15 items of the OCQ. Seven of these items loaded on a factor labelled value-moral commitment (Canada, α = .89; USA, α = .93), and the remaining 6 items loaded on a factor labelled continuance commitment (Canada, α =.79; USA, α = .86). Consequently, the presence of such a value-based factor in the OCQ may lead to common method bias problems (see Podsakoff et al., 2003) with the measurement of person-organisation values fit. Therefore, the affective organisational commitment scale of Meyer et al. (1993) was deemed most appropriate for this study.

Furthermore, the 8-item instrument of Allen and Meyer (1990) was utilised for two reasons. Firstly, as indicated earlier, its internal consistency coefficient is relatively better than the 6-item version of (Meyer et al., 1993); secondly, the meta analysis study of Meyer et al. (2002) indicated that the correlation between the 8-item scale and normative organisational commitment was smaller, though substantial, than the 6-items scale, *r*s (9,470) > = .53), which may support the content validity of this measure.

### 4.8.4 Control variables

A number of control measures (background information) have been added to the questionnaire, and these measures have been widely used in similar studies due to the relevance of these control variables to affective organisational commitment. Specifically, the length of organisational tenure, age, and level of education positively correlated (albeit weakly) with affective organisational commitment (Meyer et al., 2002). Also there is some mixed evidence that marital status is related to organisational commitment. In particular, Mathieu and Zajac (1990) found marital status to be significantly correlated with organisational commitment, whereas Meyer et al. (2002) found a weak relationship between marital status and affective commitment. Meyer et al. (2002) also found gender differences in affective organisational commitment, such that women tend to be more affectively committed to their organisation. Therefore, tenure, age, education level, marital status and gender were included as control variables in the present study.

## 4.9 Study instrument

As mentioned earlier, the values taxonomy of Mcdonald and Gandz (1991) was utilised. All of the value items were accompanied by the definitions of Mcdonald and Gandz (1992) to make it clear what is meant by these values. In the same line, an item expressing the value of achievement as identified by Schwartz (1992) and its accompanied definition (Schwartz and Boehnke, 2004) was also utilised. It is worth noting that participants rated the values taxonomy twice (once based on their own values and once based on their perception of organisational values). This was done in order to calculate the difference of these values perceptions as a proxy for values congruence.

A modified version of Brown and Leigh's (1996) psychological climate scale with the addition of four items from Kahn's (1990) scale representing the workgroup dimension was utilised. Futhermore, Allen and Meyer (1990) affective commitment scale was utilised.

All measures were rated on a 7-point scale, ranging from 1 'strongly disagree' to 7 'strongly agree' for both affective organisational commitment and psychological climate scales and from 1 'not important at all' to 7 'very important' for the values taxonomy. The order by which the questionnaire items were presented was counterbalanced.

### 4.10 The survey and the questionnaire pre-test

Because the study was conducted in Egypt, where the language is Arabic, the survey was first translated from English into Arabic by the author before it was forwarded to a linguistics specialist who translated the Arabic survey back to English and compared this back-translated version with the original survey for similarity of form and meaning (Brislin, 1970; Sinaiko and Brislin, 1973; Sperber et al., 1994). As a result of the feedback from the linguistic specialist, a few wording amendments (i.e. using synonyms for some words) were made to the Arabic survey. I checked the final survey and found that these did not alter the structure and meaning of the survey items. The survey was then piloted on 40 Egyptian employees working in a various business areas. The purpose of the pilot study was to assess the clarity of the items and the length of time to complete the measures. In this pilot study, participants were asked to complete all of the measures and provide their feedback in regard to the clarity and readability of the items. They were also instructed to suggest additional items that were not directly assessed. Of the 31 responses received, there was no issue in regard to the items themselves. However, some respondents thought that there was some ambiguity in how to respond to the items using the response scale given. In response to this, examples of the way respondents should answer the questions were given (see Appendix 3).

### 4.11 Data collection

This study was conducted in a medium-sized industrial organisation within the textile industry in Egypt. The organisation is based in the industrial area (fish basin) in the city of Port Said. This organisation has 650 employees, and it produces a wide range of textile products (woven fabrics). The survey was distributed to all 650 employees and a covering letter accompanied the survey, explaining the purpose of this study and emphasising that all employees' responses would be confidential and anonymous. These questionnaires were distributed and collected using the organisation's internal mail. It took approximately six weeks to collect the data and 399 responses were received (61% response rate).

**Summary**

In this section a number of research methodology-related issues were discussed. The chapter explained the bases on which the quantitative approach and the post-positivism paradigm were adopted. Being the standard research approach for a quantitative paradigm, the hypothetico-deductive testing method was selected. In addition, some other methodological issues were discussed. That is, due to time and resource limitations, the cross-sectional design using the survey was used to collect the study's data. Moreover, because of data access limitation, the study was conducted in a single organisation, surveying all its employees. Finally, there was a discussion about how the study's measures were selected, how the study instrument was developed and how the data was collected. The next chapter will describe the study's data analyses and findings.

# Chapter 5: DATA ANALYSES AND FINDINGS

## 5.1 Introduction

This section will present all the procedures followed to analyse the collected data. Specifically, it will show the actions taken to check the integrity of the present data including gauging the nature of the missing data in this data set. In addition, this chapter will discuss the procedures taken to check the statistical assumptions for the different statistical analyses used in this study, including the issue of sample size. Next, it will examine the properties (e.g. factor structure, reliabilities) of the various scales before examining the proposed structural model in which psychological climate mediates the relationship between person-organisation values fit and affective organisational commitment.

## 5.2 Cleaning the data set

This section describes the procedures taken to make sure that the data set was entered correctly and/or that there were not any unusual cases in the data. Therefore, this section includes the procedures dealing with the issues of initial screening and missing data.

### 5.2.1 The initial screening

After entering in the data into IBM/SPSS (version 18), the data was checked to see if there were any instances of data misentry or missing data. In addition, nine cases were omitted based on the rationale that these respondents spent only from one to four months at the organisation before completing the survey. These cases were deleted because past literature (Chatman, 1991) supports the notion that socialisation experiences contribute significantly to create and change person-organisation fit during an employee's first year at an organisation. It also seems reasonable to suspect that similar processes may apply to the constructs of psychological climate and affective organisational commitment.

### 5.2.2 Missing data

There is no general consensus on how much the percentage of missing data could be considered problematic (Schlomer et al., 2010). There are some suggestions in regard to when this

percentage of missing data can be a source of potential bias in statistical analysis (Schlomer et al., 2010), such as 5% (Schafer, 1999), more than 10 % and others even suggest 20% (Schlomer et al., 2010). However, other researchers think that it is the pattern of missing data that is the most crucial, rather than the percentage of missing data (Tabachnick and Fidell, 2007).

There are three types of missing data: (1) missing completely at random (MCAR), (2) missing at random (MAR) and (3) not missing at random (NMAR). In MCAR, there is no pattern in the missing data and the missing data is not related to any other variables in the data set. This means that the cases with missing data would be considered a random subset of the entire sample. In MAR, the probability of having a missing data is related to other variables in the data set, but is not related to the variable of interest. In NMAR, there is likelihood that the missing data are related to the score of the same variable had the participant responded. But because we don't have the score of the missing data, NMAR is considered conceptual (Schlomer et al., 2010).

When missing data is not considerably large (i.e. less than 5 %) and it is considered MCAR, the different techniques of dealing with this case are almost all the same. However, although there is the temptation to assume that the missing data is MCAR, it is important to test this hypothesis (Tabachnick and Fidell, 2007).

Little (1988) proposed a formal test of MCAR which can be used to confirm whether the missing data is considered MCAR. However, Hair et al. (2010) think that it would not be an issue if the amount of the missing data is low enough so that the remaining data is able to properly detect the statistical results even if these missing data operates in a nonrandom manner. Although this approach may be justifiable, the practical concern of how to identify a low amount of missing data is still problematic given the absence of the consensus of this percentage in the literature. Therefore, some researchers have tried to solve this dilemma by offering some rules of thumb, such as the rules by Hair et al. (2010) in which they propose that the potential problems of missing data can be ignored if the amount of this missing data is less than 10 per cent under the condition that these missing data have a random pattern. Moreover, the remaining cases should be large enough for the selected statistical analysis if replacement values will not be used to substitute for these missing values.

Also, deleting cases or variables may be the most efficient solution when a large number of missing data is concentrated in a few cases or variables, especially when the deletion considerably reduces the extent of the missing data. Moreover, this option is often utilised when there is nonrandom pattern of missing data in the data (Hair et al., 2010). It is worth mentioning that a few respondents did not give answers to all demographic and background questions (i.e. age, marital status, education). However, it may be appropriate to look at the pattern of the missing data before deciding which approach to adopt. Thus, the Little's MCAR test was conducted. This test examines whether the pattern of missing data is consistent with MCAR. A significant result suggests that the missing data deviates from the MCAR pattern. As the Little's MCAR test was nonsignificant, $\chi^2(1885) = 1946.55$, $p = .16$, there are various options available for dealing with the missing data.

#### 5.2.2.1 Missing data in background variables

The quantity of the missing data among background variables is limited and the pattern of the missing data in the whole missing data can be considered MCAR. Therefore, cases with missing values were kept in the data set, as these variables do not represent main concerns in the design of the current study.

#### 5.2.2.2 Missing data in responses of values

The missing data found in this portion of variables were not odd except one case. This particular case (observation number 13) consistently had missing values. Therefore, this observation was deleted from the analysis (Hair et al., 2010).

#### 5.2.2.3 Missing data in psychological climate

Eleven participants did not answer most of the questions in the psychological climate questionnaire. Therefore, these participants were deleted from the analysis. Once again, 11 cases related to the construct of psychological climate that were severely missing were found, and subsequently removed.

#### 5.2.2.4 Missing data in organisational commitment

According to Hair et al. (2010), cases with missing data for dependent variables typically are deleted to avoid any artificial strength of relationships with independent variables. Therefore, all the cases that had significant missing values on the organisational commitment variables were deleted from the analysis. This action resulted in excluding participants who did not answer any of the eight questions of organisational commitment. These actions of deleting the participants who had a significant proportion of missing values resulted in 355 cases for further analysis.

There are different options to remedy missing data besides deletion options, including, among others, listwise, pairwise, and multiple regression estimation. However, literature suggested that those techniques that rely on the model-building mechanisms are more efficient in terms of accuracy of variance, standard deviation, and means; moreover, they are less biased in their estimations (Tabachnick and Fidell, 2007). One of these techniques is expectation-maximisation method (EM).

EM is one of the likelihood-based approaches which assume that missing data falls into the category of MAR (Horton and Kleinman, 2007, Schafer and Graham, 2002). A limitation of this technique is the absence of using the standard errors in such estimation, unless there is a special program doing this task, such as SEM software programs. Also, this technique is more suitable in the situations where there is not a great amount of missing data, as the current data set, and where there is no inferential statistics such as exploratory factor analysis (Tabachnick and Fidell, 2007). Accordingly, the EM approach was utilised to estimate the missing data in the data set based on the rationale that the missing data falls into the MCAR category and as previously mentioned, EM is better than other conventional approaches such as multiple regression estimation.

### 5.3 Preparing for the data analyses

Before conducting the different statistical analyses it was necessary to code the study variables for ease of using data. Examples of these coding symbols are presented in Table 5.1.

Table 5.1 Examples of coding study variables

| **Statement/Item** | **Code** |
|---|---|
| Gender | Gen |
| Marital status | MartStat |
| Adaptability | Ad |
| Organisational achievement | AchvO |
| Support of manager2: My manager is supportive of my ideas and ways of getting things done. | Sup2 |
| Self-express4: It is okay to express my true feelings in this job. | SfExp4 |
| Organisational commitment1: I would be very happy to spend the rest of my career with this organisation. | Com1 |

Relatedly, for the data to be suitable for parametric analyses, the nonscaling variables (i.e. gender, marital status, educational degree) were dummy coded. There were no extreme splits between the main categories in nonscaling variables. However, it may be necessary to combine those categories with very low ratios or very uneven split (i.e. greater than 10 to 1) to other related categories when conducting inferential statistical analysis, as the scores on those low ratios would have more influential impact on correlation coefficients with other variables (Tabachnick and Fidell, 2007). That is, the ratios of 'divorced or separated employees' and 'other educational degree' to other relative categories were so low that they were combined to their relative categories. Accordingly, the final categories for the nonscaling variables were as follows. For gender, the numerical code (1) was assigned to males the numerical code (0) was assigned to females. For marital status, married participants were assigned the value of (1), whereas single participants, including those divorced, separated and widowed were assigned the value of (0). In terms of education levels, those with a middle degree (less than bachelor degree level) and bachelor degree or postgraduate degree were assigned the following respective codes (the number of new coded variables is one less than the number of groups we're recoding; Field, 2009): middle degree (0 = secondary school diploma; 1 = middle degree), bachelor degree (0 = secondary school diploma; 1 = bachelor degree).

### 5.4 Exploratory factor analyses

Having checked the initial characteristics of the data set, the next step was to conduct the exploratory factor analysis (EFA) on the data set with the purpose of determining the structure of the main concepts. Initially, Gorsuch (1997) sees that EFA may be helpful when it lead researchers to focus hypotheses for confirmatory analysis. On the other hand, justifying using EFA even with the apparent possibility of using CFA, Henson and Roberts (2006) stated that EFA can be useful even when there is a priori theory. Thus, unlike EFA, CFA is not concerned with discovering a factor structure, but rather confirming the details of an assumed factor structure (Raykov and Marcoulides, 2006). Given that exploratory factor analysis is recommended to be conducted before confirmatory factor analysis when we do not have a substantive theoretical model (Schumacker and Lomax, 2004) and given that I was not able to extend the hypotheses of study to assign particular values facets and psychological climate dimensions a priori, I conducted an exploratory factor analysis first on these constructs before conducting the main analyses and testing the proposed model. Moreover, given that research has proposed that affective organisational commitment seems to be unidimensional and that from a psychometric perspective its construct is relatively stable (e.g. Dunham et al., 1994; Hackett et al., 1994; Jaussi, 2007), I found CFA to be more appropriate for validating this construct. Specifically, EFA was conducted on psychological climate, individual values, and organisational values, whereas a confirmatory factor analysis (CFA) was conducted on affective organisational commitment.

#### 5.4.1 Exploratory factor analysis versus principal component analysis

Researchers have widely used exploratory factor analysis as a tool to develop scales and subscales (Gorsuch, 1997). Exploratory factor analysis is considered the most utilised and studied latent variable method in the social and behavioural sciences (Pruzek, 2005).

Differentiating between principal component analysis (PCA) and exploratory factor analysis (EFA), Fabrigar et al. (1999) contended that PCA mainly aims to achieve data reduction. That is, its goal is to find a number of factors that are able to represent the original data and make it easier to express, whilst the main purpose of EFA is to identify latent constructs. In other words, EFA aims to arrive at a parsimonious representation of the associations among measured

variables. This distinction is important especially when we know that data reduction does not attempt to model the structure of correlations among the original variables.

However, some researchers rely on the notion that the results of both PCA and EFA are very similar, so they justify using them interchangeably. However, this point of view is not accepted by other researchers who think that these numerical coincidences are not guaranteed, and therefore, this claim cannot be generalised (Cudeck, 2000). More important, some researchers do not consider PCA as a kind of exploratory factor analysis at all. For example, Cudeck (2000) sees that not only PCA is often incorrectly used as a kind of factor analysis but also many published articles erroneously present PCA results as a type of factor analysis and contends that PCA is mainly a technique for summarising the information contained in several variables into a small number of weighted composites.

In the light of the previous brief discussion, exploratory factor analysis (EFA), not principal components analysis (PCA), was considered to be the most appropriate technique to be used to operationally develop the study scales.

### 5.4.2 Statistical assumptions for exploratory factor analysis

Orr et al. (1991) sees that the examination of the data set to determine whether all points are appropriate for inclusion in the study at hand is an essential aspect of data analysis. Tabachnick and Fidell (2007) think that because EFA is delicately sensitive to the sizes of correlations between the individual items, it is critical that honest correlations be employed. Therefore, outlying cases, problems created by missing data, and degradation of correlations due to poorly distributed variables could significantly affect the EFA results. As missing data has already been dealt with, this section will focus on the issues of normality and outliers, as they may affect the accuracy of the EFA results estimates. It is noteworthy that these assumption tests, besides other tests, are important for the accuracy of the majority of parametric tests, and as Field (2009) contended, using a parametric test when the data does not meet the parametric assumptions leads to inaccurate results. Therefore, the parametric assumptions using the whole data set were checked.

#### 5.4.2.1 Normality

Normality is the most fundamental assumption in multivariate analysis (Hair et al., 2010). Although the assumption of normality is not required for some statistical analysis, especially those ones that do not belong to inferential statistics, such as most types of exploratory factor analysis, the solution is usually better when variables are normally distributed (Tabachnick and Fidell, 2007). Moreover, the assumption of *multivariate* normality is crucial for most statistical analysis, especially for inferential statistics. This assumption means that the observed variables and all linear combinations of variables are normally distributed. However, even if this assumption is not necessarily required for an analysis, such as exploratory factor analysis, the results of these tests degrade with the violation of these assumptions, including multivariate normality, and the safest procedure then is to transform those scores that obviously deviate from normality (Tabachnick and Fidell, 2007). Nevertheless, the tests of multivariate normality that are available are not readily tested and overly sensitive (Tabachnick and Fidell, 2007). That is, the statistical tests intended to detect violation of multivariate normality (e.g. Mardia's (1985) test) are limited in their applications, as any slight departure from normality in large samples may lead to statistically significantly results (Kline, 2011). However, the assumption of multivariate normality can be partially checked by examining the normality of individual variables (Tabachnick and Fidell, 2007). Also, it is thought that many of the cases of multivariate normality violations could be detected through the inspection of univariate distributions (Kline, 2011).

Skewness and kurtosis are techniques that are widely used to check for normality among variables. Skewness refers to the extent to which a mean of a variable is not in the centre of the distribution, while kurtosis has to do with the extent to which the distribution of the variable is either flat or peaked. Ideally, researchers hope that skewness and kurtosis values are zero, that is the distribution of variables are symmetric, and when that happens, variables are said to be normally distributed (Tabachnick and Fidell, 2007; Field, 2009).

There are statistical tests by which one could judge the extent to which variables match the symmetry of distributions. However, some researchers think when one has a small or moderate sample, using alpha levels of .01 or .001 is conventional but conservative. When one has a large

sample (i.e N ≥ 200), it would be more appropriate that one should look at the shape of the distributions of variables instead of using the previous tests, because large samples always have low standard errors for kurtosis and skewness, which increases the chance of rejecting the null hypothesis even if there are minor deviations from normality (Tabachnick and Fidell, 2007; Field, 2009). Therefore, according to Field (2009), if the researcher has a large sample, it is more important to inspect the shape of the distribution and look at the values of both skewness and kurtosis but not the significance values. Moreover, Hair et al. (2010) think that large samples reduce the impact of the detrimental effects of nonnormality. Additionally, they think that the larger the sample size, the less concerned the researcher could be with nonnormal variables. Similarly, in a large sample, the impact of departure from zero skewness and kurtosis diminishes. That is, underestimates of variance associated with positive kurtosis disappear with samples of 100 or more cases. Also, with negative kurtosis, underestimation of variance disappears with samples of 200 or more (Tabachnick and Fidell, 2007).

#### 5.4.2.1.1 Normality of individual values variables

By examining the significance of skewness and kurtosis and the shapes of distributions of these variables, it is clear that some of these variables deviated from normality. The skewness indexes ranged from the absolute value of .1 to 2.9 with more negative skewness values. For kurtosis, the values ranged from the absolute value of .4 to 13.4 (achievement had a severely positive kurtosis).

#### 5.4.2.1.2 Normality of organisational values variables

Similar values of skewness and kurtosis were given to individual values and their corresponding organisational values. The skewness indexes ranged from the absolute value of .06 to 2.6. Once again more negative skewness values were found. Regarding the kurtosis indexes, they ranged from .08 to.8.7, with more positive kurtosis values, showing apparent deviation from normality in terms of kurtosis for some organisational values.

#### 5.4.2.1.3 Normality of psychological climate variables

The indexes values for both skewness and kurtosis showed better values compared to the individual and organisational values. These absolute values ranged from .1 to 1.6 for skewness

and from .2 to 3.2. However, their normal distribution shapes showed some deviation from normality.

#### 5.4.2.1.4 Normality of organisational commitment variables

None of the variables of organisational values suffered from skewness problems as the absolute indexes of skewness ranged from .1 to .8. However, some slight kurtosis problems were found as the absolute indexes of kurtosis ranged from .2 to 1.5. Importantly, their normal distribution shapes were almost normal.

#### 5.4.2.1.5 Normality of background variables

Finally the extent to which the study background variables meet the assumption of normality was checked. The results suggested that with the exception of "bachelor degree and other degrees" the skewness indexes values were reasonable (the absolute indexes of skewness ranged from .07 to 3.1. Concerning the kurtosis values, once again it seemed there was an issue related to the variable "bachelor degree and other degrees", and the absolute indexes of kurtosis ranged from .2 to 7.9. Moreover, the normal distribution shapes of these variables, with the exception of the previously mentioned variable, were almost normal.

### 5.4.2.2 Outliers in the data set

Outlying data points are those values in the data set that are well separated from the majority of the data (Orr et al., 1991) or they are observations that are distinct from most of the data points in a sample (Bollen et al., 1990). These outlying data may influence the fit of statistical models and lead to bias in parameter estimations (Filzmoser, 2005). To handle the issue of potential outliers in the data set, the data was screened for both univariate and multivariate outliers.

#### 5.4.2.2.1 Univariate outliers

A univariate outlier is a value in the data set that is very different from the rest of the other values that are related to a particular variable. The Z-scores method was utilised to identify the potential univariate outliers in the data set. This method standardises the data by transforming the original scores to be expressed as a distribution with a mean of 0 and a standard deviation of 1. Accordingly, these Z-scores can be utilised to count how many data points exceed certain

important limits. For example, given the normal distribution of the data set, it is expected that 1% of the data set will have absolute values greater than 2.58, and none should be greater than 3.29 (Field, 2009). This section will discuss the nature of univariate outliers in the different variable groups.

#### 5.4.2.2.1.1 Univariate outliers in background variables

Although there were 28 Z-scores in "the bachelor degree and other degrees" exceeded the limit of 3.29 ($p < .01$) to specify the value as a univariate outlier, Johnson and Wichern (2007) think that these standardised values should be looked at in light of the sample size and number of variables, and they suggested that a value of *3.5* might be appropriate for a moderate sample size. Accordingly, no cases in the background variables could be identified as potential univariate outlier, given that the Z-scores of the previously suspected values did not exceed 3.42.

#### 5.4.2.2.1.2 Univariate outliers in individual values variables

Given the conservative criteria used to determine the potential univariate outliers, five cases in the variable "cautiousness" had Z-scores that exceeded the value of −4.30; eight cases in the variable "cooperation" exceeded the Z-score value of −3.72; five cases in the variable "courtesy" exceeded the Z-score value of −4.36; two cases in the variable "development" exceeded the Z-score value of −.3.69; five cases in the variable "diligence" had Z-score values that ranged from −.3.51 and −4.48; six cases in the variable "fairness" exceeded the Z-score value of −4.17; five cases in the "forgiveness" variable had Z-scores values that ranged from −3.59 and −4.48; three cases in the "moral integrity" variable the Z-score value of −3.93; two cases in the "obedience" variable exceeded the Z-score value of −4.18; two cases in the "orderliness" variable exceeded the Z-score value of −4.25; three cases in the 'social equity" exceeded the Z-score value of −4.77; and five cases in the "achievement" variable had Z-scores that ranged from −4.81 and −5.89.

#### 5.4.2.2.1.3 Univariate outliers in organisational values variables

Only one case in the "broadmindedness" variable exceeded the Z-score value of −3.54; two cases in the "cautiousness" exceeded the Z-score value of −4.08; two cases in the "cooperation" variable exceeded the Z-score value of −4.32; three cases in the "courtesy" variable exceeded the

Z-score value of −3.92; two cases in the "development" exceeded the Z-score value of −4.14; six cases in the "fairness" variable exceeded the Z-score value of −4.12; five cases in the " forgiveness" exceeded the Z-score value of −3.62; five cases in the "formality" variable exceeded the Z-score value of −3.63; seven cases in the "moral integrity" had Z-scores that ranged from −3.88 and −4.81; one case in the "obedience" variable exceeded the Z-score value of −4.15; six cases in the "openness" variable had Z-scores that ranged from −4.39 and −5.36; six cases in the "orderliness" variable exceeded the Z-score value of −3.68; five cases in the " social equity" variable exceeded the Z-score value of −3.93; and three cases in the "achievement" variable exceeded the Z-score value of −4.56.

#### 5.4.2.2.1.4 Univariate outliers in psychological climate variables

Few of the psychological climate variables were identified as outliers through the Z-score method. Two cases related to one of the statements "challenge" exceeded the Z-score value of -3.73; four cases pertain to the statement of "group dynamics" exceeded the Z-score value of −4; nine cases related to the statement of "role clarity" exceeded the Z-score value of −351.

#### 5.4.2.2.1.5 Univariate outliers in organisational commitment variables

No univariate issue was found in all the statements of affective organisational commitment as no Z-score of these variables exceeded the absolute value of 3.5 or even 3.29.

#### 5.4.2.2.1.6 Decision about the potential univariate outliers

Although the main purpose of inferential statistics is to estimate parameters that represent the majority of the population under study and outliers may represent a threat to inferential statistics, Bachiochi and Weiner (2004) argue that these potential outliers do not represent important threats to the use of means and standard deviation in practice. Also, Hair et al. (2010) state that outliers should be retained unless one has reasons to believe that they are aberrant and not representative of the observations in the population. They continue to say that the deletion of these potential outliers may improve the multivariate normality of the data set but usually at the expense of generalisability of statistical results. Therefore, none of the outliers were removed from the data set. Moreover, given the shapes of the normal distributions of the study variables and the index values of deviations from normality, there was no practical necessity for

conducting data transformation procedures that are usually done to improve the normality distribution characteristics of data sets.

#### 5.4.2.2.2 Multivariate outliers

Multivariate outliers are not necessarily extremely high or low values along single coordinates. Rather, their univariate projection on particular directions makes them distinguishable from the majority of the data (Filzmoser, 2005). To identify the potential multivariate outliers, Mahalanobis test ($D^2$) was conducted. This test is a statistical measure that allows for significance testing and is based on the idea of evaluating the position of each observation compared with the centre of all observations for a particular set of variables. The Mahalanobis statistic divided by the number of variables involved ($D^2/df$) is approximately distributed as a central chi-square ($\chi^2$) statistic with degrees of freedom equal to the number of variables (Hair et al., 2010; Kline, 2011). According to the Mahalanbois technique, a potential multivariate case could be determined using a conservative alpha level of significance, such as .001 or .005 (Tabachnick and Fidell, 2007).

As Table 5.2 indicates, seven cases (identified in red font) were obviously away from all other cases and these deviations are statistically significant as they exceeded the critical value of 133.5 based on the conventional significance alpha of .001. Based on the notion that outliers may have great impact on the exploratory factor solutions as these extreme cases may degrade the solution (Tabachnick and Fidell, 2007), the deletion of these seven cases could be appropriate given the $D^2$'s values of these seven cases indicated that they were distinguishably separated from the rest of the data set cases.

However, given that some researchers see that deleting multivariate outliers is accused of causing the studied model to be as a Procrustean model trimmed to fit allegedly "typical" cases, but ignores the differences in responses that characterise real empirical data (Gao et al., 2008), a series of data-transformation analyses, using log, square root, reciprocal, reverse score transformation methods were conducted. However, when conducting the Mahalanobis on the transformed-data versions, the same potential seven cases were identified as outliers even if after the significance level of identifying the potential outliers was relaxed to .005.

Table 5.2 Part of the Mahalanobis test results

| Case number | Mahalanobis distance |
|---|---|
| 302 | 171.43 |
| 181 | 162.52 |
| 57 | 161.65 |
| 89 | 161.46 |
| 289 | 159.87 |
| 48 | 159.77 |
| 346 | 156.45 |
| 54 | 132.47 |
| 75 | 131.99 |
| 235 | 130.37 |
| 171 | 130.20 |
| 253 | 130.16 |
| 15 | 129.91 |
| 127 | 129.28 |
| 109 | 127.94 |
| 256 | 127.43 |
| …… | ..... |
| …… | ..... |

Note. Df = 87, $p$ = .001, critical value = 133.512

In this regard, Tabachnick and Fidell (2007) state that transformation may not able to deal with real multivariate cases as the problem is with the combinations of scores of these cases on different scores and they are usually deleted. Therefore, these cases were removed from the data set. The deletion of these seven cases left 348 cases for further analysis. Taken together, it was sufficiently evident that the variables in the data set at hand have roughly normally distributions (Field, 2009), which gives the justification of conducting EFA and relying on its results.

#### 5.4.2.3 Sample size for the exploratory study

Initially, the sample for exploratory study should consist of individuals similar to the those with whom the proposed measurements will be ultimately used and the results of the EFA are enhanced when the sample has a verity of people. Moreover, ideally the EFA sample contains those individuals who score high and those score low on the proposed scales so that the sample well represents the study population (Gorsuch, 1997).

Although more than a century has passed since Charles Spearman's development of exploratory factor analysis technique (Pruzek, 2005), there has been a controversial debate in the literature over many important issues including the appropriate sample size for EFA studies. Many scholars put rules of thumb concerning the minimum sample size required for exploratory factor analysis and many of these rules referred to the notion that at least a sample size of 100 is required. Others suggested there should be at least from 5 to 10 participants per variable up to 300 (Field, 2009). Fabrigar et al. (1999) argue that this simple size of 100 is really accurate only if two conditions are fulfilled: every expected common factor is overdetermined or represented by at least three to five measured variables and the communalities for measured variables are high (i.e. $\alpha > .70$). Moreover, this communality, also called component saturation (the magnitude of component loadings), was found to be related to the stability of component patterns of samples, and the sample size was more important when component saturations were low (.40).

However, the importance of sample size was less important when these component saturations were high (.60 and .80), and once a certain minimum sample size was achieved, further improvements were small (Guadagnoli and Velicer, 1988). If these conditions are not totally achieved, a sample size of at least 200 subjects is then required; moreover, when these conditions are poorly met, a sample size as large as 400 or 800 might not be sufficient. These conditions (i.e. sample size has less effect when there are overdetermination of factors and high communalities of variables) have been empirically examined and found to be generally related to more accurate recovery of population loadings and improvement of the factor analysis solution (Maccallum et al., 1999; Hogarty et al., 2005).

However, unfortunately these characteristics of the observed variables are post hoc assessments. That is, they cannot be determined before collecting data. This implies that a priori decisions about sample size can be difficult, and the best rule of thumb to follow, then, is to collect the largest possible sample size for factor analysis studies (Henson and Roberts, 2006). Given the sample size collected and the number of variables for the various constructs, 125 cases were randomly utilised for the exploratory factor analysis given that there were a maximum number of 25 variables (for individual values, organisational value, and psychological climate), with 5 cases for each variable.

Regarding the descriptive statistics, this subsample consisted of 64 men, 60 women and one who did not indicate his/her gender, aged between 19 and 45 (M = 29.8, SD = 6.5). Seventy six respondents (61%) were married and 48 (38%) were single or divorced (These categories were combined due to the very small ratio of divorced people) and one respondent did not indicate his/her marital status. Seventy seven respondents (62%) had a secondary school diploma degree, 37 (30%) had a middle degree, 10 (8%) had a bachelor's or postgraduate degree and one respondent did not indicate his/her educational degree.

### 5.4.3 The results of exploratory factor analyses

With the aim to identify the various latent variables that could be used to test the study hypotheses and model, this section is dedicated to presenting the EFA results for employees' perceptions of individual values, organisational values and psychological climate.

#### 5.4.3.1 Individual values factors

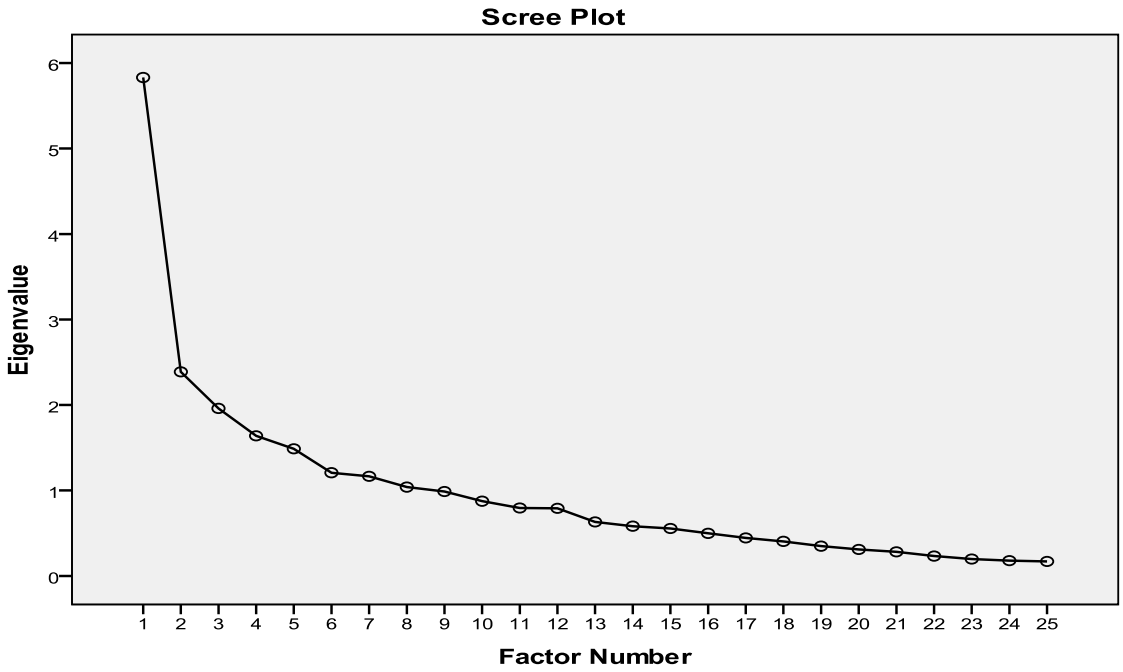
Researchers think that the first thing we should do before engaging into factor analysis statistics is to look at the matrix of interrelations among variables. We expect that there should be reasonable significant sizes of correlations among variables that convey factorability (Field, 2009).

The matrix of correlation of individual values was satisfactory, as the correlation matrix did not show low correlations (below .30), neither did it have very high correlations (i.e. correlations above .80) (Field, 2009). Also, the determinant of this correlation matrix was 4.12, which

showed that multicollinearity did not represent an issue in this data set. Moreover, the Barteletts test gave a good indication of factorability in this data set ($\chi^2$ [300] = 1159.6, $p < .0001$).

The scree test, which suggested between three and four factors (see Figure 5.1), contradicted with the Kaiser's rule suggestion that eight factors could be extracted.

Figure 5.1 The scree test for the construct of individual values




It is noteworthy here, the technique of parallel analysis (PA), which is less widely used and more complex compared to the previously mentioned two techniques, is considered to be the most accurate tool of determining the number of factors to keep in exploratory factor analysis (Turner, 1998; Hayton et al., 2004; Goldberg and Velicer, 2006; Dinno, 2009). The rationale behind PA is that one randomly generates parallel components from data sets that are the same sample size and with the same number of variables before extracting the average eignvalues of these data sets and also the 95th percentiles of these eignvalues. Before deciding the number factor to retain, the real eignvalues of the data set are compared to those generated by the random data. Therefore, only those eignvalues that were larger than those random data eignvalues are retained (Dinno, 2009).

The parallel analysis solution supported a four-factor solution. The fifth eignvalue of the data exceeded that of the mean of the random data but it did not exceed the 95th percentile one (see Figure 5.2 and Table 5.3). This indicates that four factors may be more appropriate to be used.

Figure 5.2 The parallel analysis plot for individual values

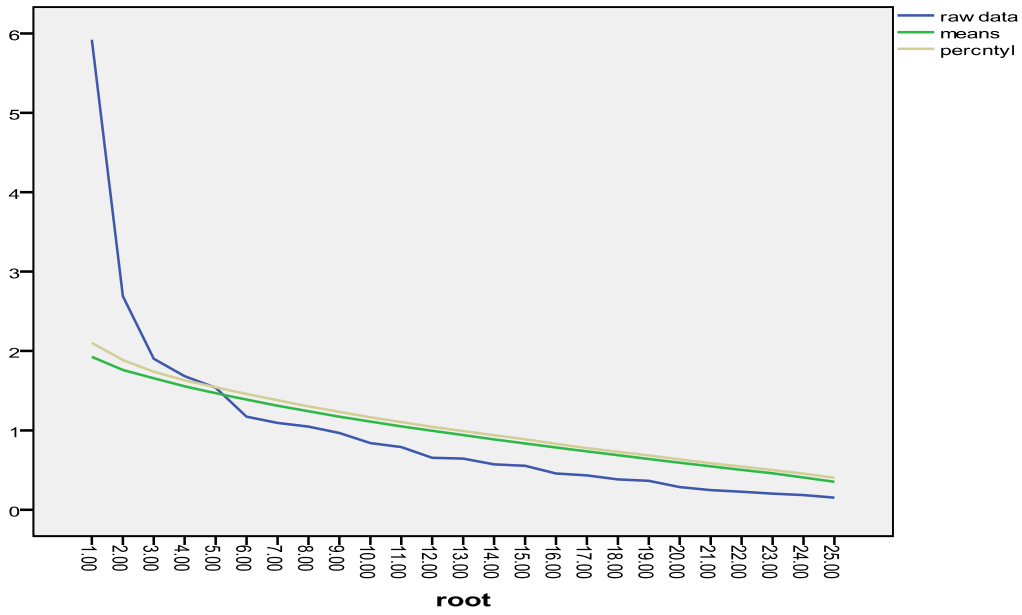



Table 5.3 Parallel analysis for individual values

| Root | Raw Data | Means | Percentile |
|---|---|---|---|
| 1 | 5.92 | 1.93 | 2.10 |
| 2 | 2.69 | 1.76 | 1.89 |
| 3 | 1.90 | 1.66 | 1.74 |
| 4 | 1.68 | 1.55 | 1.63 |
| 5 | 1.54 | 1.47 | 1.54 |
| 6 | 1.17 | 1.39 | 1.46 |
| 7 | 1.09 | 1.31 | 1.38 |
| 8 | 1.05 | 1.24 | 1.31 |

Table 5.3 Parallel analysis for individual values (continued)

| Root | Raw Data | Means | Percentile |
|---|---|---|---|
| 9 | .97 | 1.17 | 1.23 |
| 10 | .84 | 1.11 | 1.16 |
| 11 | .79 | 1.05 | 1.10 |
| 12 | .65 | 1 | 1.05 |
| 13 | .64 | .94 | .99 |
| 14 | .57 | 89 | .94 |
| 15 | .55 | .84 | .89 |
| 16 | .46 | .78 | .83 |
| 17 | .43 | .74 | .78 |
| 18 | .38 | .69 | .73 |
| 19 | .36 | .64 | .68 |
| 20 | .29 | .59 | .63 |
| 21 | .25 | .55 | .59 |
| 22 | .23 | .50 | .54 |
| 23 | .20 | .46 | .50 |
| 24 | .18 | .41 | .45 |
| 25 | .15 | .35 | .40 |

Note. Specifications for this Run:
N (cases) = 125, N (variables) = 25, N (data sets) = 125, Percentage = 95

Using the extraction method of principal axis factoring (PAF) with varimax rotation and the cut-off criteria of .4 (Stevens, 2009), this four-factor solution accounted for 40% of the variance in the data. Table 5.4 below expresses these observed variables that loaded onto the four factors and the suggested names of these individual values factors.

Table 5.4 The four-factor solution for employees' perception of individual values

| **Work Ethic Values** | **Bottom-line Values** | **Compliance Values** | **Fairness Values** |
|---|---|---|---|
| Cooperation **(.55)** | Aggressiveness **(.69)** | Experimentation **(.67)** | Achievement **(.57)** |
| Courtesy **(.72)** | Adaptability **(.45)** | Economy **(.71)** | Social Equity **(.66)** |
| Openness **(.61)** | Autonomy **(.59)** | | |
| Obedience **(.43)** | | | |
| Moral Integrity **(.71)** | | | |

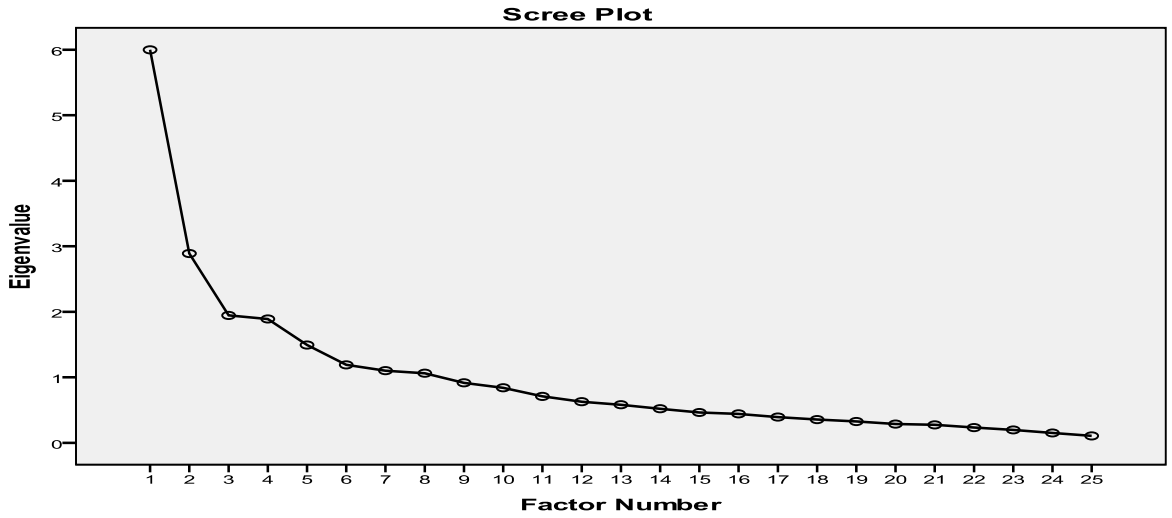
Note. N = 125; (factor loadings in parentheses)
Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

#### 5.4.3.2 Organisational values factors

The correlations among the organisational values items were suitable as their sizes were considerable enough to indicate factorability among these variables. In addition, none of the correlations were very small (below .30) or very high (above .80) that could cause any concern. Moreover, the determinant value of this matrix was 7.5, which implied that there were no multicollinearity problems. Additionally, the Barteletts test was rejected ($\chi^2$ [300] = 1343.3, $p <$ .0001). Also, the anti-image correlation matrix did not indicate serious concern.

Once again, there was a dispute among the results of both Kaiser's rule (suggesting seven factors) and the scree test (suggesting three or five factors as there were two breaks in the scree figure, see Figure 5.3). Thus, PA analysis was utilised to resolve this disagreement.

Figure 5.3 The scree test for the construct of organisational values




The PA analysis demonstrated four factors (see Table 5.5). Although the fifth eignvalue of the data exceeded that of the mean of the random data, it did not exceed the 95th percentile one (the more conservative criteria, see also Figure 5.4). This indicates that four factors may be more appropriate to be used. This criterion was followed, as the literature showed that the 95th percentile criterion may reduce PA's slight tendency to retain untrue factors and therefore it is preferred to the means criterion (Hayton et al., 2004).

Table 5.5 Parallel analysis for organisational values

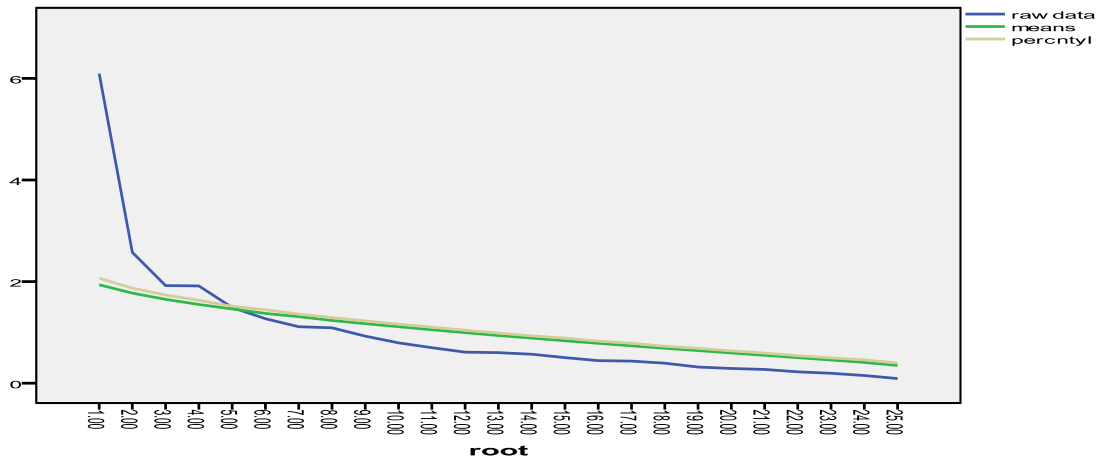
| **Root** | **Raw Data** | **Means** | **Percentile** |
|---|---|---|---|
| 1 | 6.10 | 1.94 | 2.07 |
| 2 | 2.58 | 1.77 | 1.87 |
| 3 | 1.92 | 1.65 | 1.74 |
| 4 | 1.92 | 1.55 | 1.63 |
| 5 | 1.49 | 1.46 | 1.51 |
| 6 | 1.27 | 1.37 | 1.44 |
| 7 | 1.11 | 1.31 | 1.36 |
| 8 | 1.09 | 1.24 | 1.29 |
| 9 | .93 | 1.17 | 1.23 |
| 10 | .79 | 1.11 | 1.16 |

Table 5.5 Parallel analysis for organisational values (continued)

| Root | Raw Data | Means | Percentile |
|---|---|---|---|
| 11 | .70 | 1.05 | 1.10 |
| 12 | .61 | 1 | 1.05 |
| 13 | .60 | .94 | .99 |
| 14 | .57 | .89 | .93 |
| 15 | .50 | .84 | .89 |
| 16 | .44 | .78 | .83 |
| 17 | .43 | .74 | .79 |
| 18 | .39 | .69 | .73 |
| 19 | .32 | .64 | .69 |
| 20 | .29 | .59 | .64 |
| 21 | .27 | .55 | .59 |
| 22 | .22 | .50 | .54 |
| 23 | .20 | .46 | .50 |
| 24 | .15 | .41 | .46 |
| 25 | .09 | .35 | .40 |

Note. Specifications for this Run:
N (cases) = 125, N (variables) = 25, N (data sets) = 125, Percentage = 95

Figure 5.4 The parallel analysis plot for organisational values



The PAF method with varimax rotation and the cut-off criteria of .4 were followed, resulting in a four-factor solution that accounted for 44% of the variance in the data. Table 5.6 indicates the observed variables that loaded onto these four factors and the suggested names of these organisational values factors. Importantly, this solution is similar to some extent to the four-factor solution found by Finegan (2000).

Table 5.6 The four-factor solution for employees' perception of organisational values

| **Work Ethic Values** | **Bottom-line Values** | **Compliance Values** | **Growth Values** |
|---|---|---|---|
| Cooperation **(.68)** | Aggressiveness **(.79)** | Experimentation **(.88)** | Development **(.68)** |
| Courtesy **(.61)** | Adaptability **(.61)** | Economy **(.68)** | Diligence **(.52)** |
| Caution **(.67)** | Logic **(.46)** | Fairness **(.64)** | Achievement **(.55)** |
| Openness **(.63)** | Autonomy **(.45)** | Formality **(.58)** | Creativity **(.44)** |
| Social Equity **(.47)** | | | |
| Obedience **(.50)** | | | |
| Moral Integrity **(.49)** | | | |
| Forgiveness **(.41)** | | | |

Note. N = 125 ; (factor loadings in parentheses)
Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

As Tables 5.4 and 5.6 indicate there are similar factors especially for the first three factors, but with less stable factors as these values contain fewer variables. It should be noted that the last two individual values factors have two variables only loading on them and that represents a real hazard to their stability (Kline, 2011).

#### 5.4.3.3 Which factors to adopt as the base of the study?

The decision about the factors to choose as the base for the study is important as identical factors between employees' perception of both individual and organisational values were not found. Given that the fundamental research inquiry for this study is to assess the values congruence of

employees, one cannot pursue this inquiry unless one obtained commensurate measurement scales so that one can have meaningful comparisons of these values when using the difference method (Edwards, 1994b; Kristof, 1996; Cheung, 2009a). Therefore, both the individual and organisational values data were re-factored after enforcing both the individual and organisational values to load on the same number of factors, with the same value-items. Only the one-factor solution was able to achieve this target. Using the cutoff criteria of .4, this solution yielded 14 values that loaded on one factor for both perceived individual values (accounting for 22.9% of the variance) and perceived organisational values (accounting for 23.1% of the variance). The factor loadings of the preferred and perceived values were similar to a reasonable extent (see the highlighted items) and these values were *aggressiveness, broad-mindedness, cautiousness, cooperation, courtesy, development, diligence, initiative, logic, moral integrity, obedience, openness, orderliness, and social equity* (see Table 5.7).

Table 5.7 Factor loadings of preferred individual and perceived organisational values

| **Value item** | **Preferred individual values** | **Perceived organisational values** |
|---|---|---|
| Aggressiveness | .61 | .59 |
| Broad-Mindness | .68 | .65 |
| Cautiousness | .77 | .64 |
| Cooperation | .61 | .62 |
| Courtesy | .61 | .61 |
| Development | .70 | .67 |
| Diligence | .59 | .56 |
| Initiative | .50 | .40 |
| Logic | .49 | .51 |
| Moral Integrity | .69 | .62 |
| Obedience | .45 | .42 |
| Openness | .61 | .59 |
| Orderliness | .55 | .41 |
| Social equality | .43 | .43 |

Note. N = 125

#### 5.4.3.4 Factor analysis of psychological climate

The psychological climate matrix indicated that there were considerable relationships among psychological climate items. However, these were not too high (i.e. > .8) to indicate problems of multicollineraity (Field, 2009). Moreover, the determinant value of this matrix was 1.16, which is very far away from .00001, indicating that no multicolinarity is present among variables (Field, 2009). Moreover, the Barteletts test was conducted, and the results confirmed that there are interrelationships between the variables ($\chi^2$ [300] = 1569.2, $p < .0001$). Also, the Kaiser measure of sampling adequacy, which ranges between 0 and 1, yielded an acceptable value of .79 (Kaiser, 1974; Tabachnick and Fidell, 2007).

Next, the measure of sampling adequacy (MSA) was examined through looking at the anti-image correlation matrix, which is considered to be the most informative matrix in preliminary factor analysis process (Field, 2009). For a good factor analysis, the diagonal of this matrix (which expresses the KMO for individual items) should exceed .5; however, the data set showed only three values that are less than .5. It is suggested then that if one has items that are less than the bare minimum of .5, one may consider removing these items or testing the difference in results of keeping and removing these items. The majority of the values of the diagonal of this matrix exceeded the suggested cut-off of .5. Moreover, one should expect to find low values in the off-diagonal of the anti-image matrix, which represent the partial correlations between variables, and these low values were obviously found in the data (Field, 2009).

The suggested number of factors for this sample is six factors according to the Kaiser's recommendation of keeping these eigenvalues over 1, or the rule of the latent root. However, this common method suffers from some problems including overestimating the suggested number of factors to retain (Field, 2009). However, the scree test (see Figure 5.5) shows a clear break at the fourth factor. Moreover, we could draw a straight line that encompasses the eigenvalues from the fourth factor to the 25$^{th}$ factor, meaning that only three factors should be kept.

Figure 5.5 The scree test for the construct of psychological climate


Because the main purpose of exploratory factor analysis is to retain the fewest factors with explaining the most variance of the observed variables, this decision is critical as it will affect the results of the exploratory factor analysis solution directly (Henson and Roberts, 2006).

The PA showed that the data set can be expressed better using three factors (see Table 5.8). The fourth eignvalue of in the data did not exceed that of the mean of the random data and that of the 95th percentile one (the more conservative criteria). Moreover, the raw data line was higher than those of random data and the 95th percentile till the fourth eignvalue (see Figure 5.6). This indicates that three factors may be more appropriate to be used as all the other factors after this third factor may be attributed to sampling error (Hayton et al., 2004).

Table 5.8 Parallel analysis for psychological climate

| **Root** | **Raw Data** | **Means** | **Percentile** |
|---|---|---|---|
| 1 | 7.53 | 1.94 | 2.07 |
| 2 | 2.53 | 1.77 | 1.87 |
| 3 | 1.87 | 1.65 | 1.74 |
| 4 | 1.49 | 1.55 | 1.63 |
| 5 | 1.32 | 1.46 | 1.51 |

Table 5.8 Parallel analysis for psychological climate (continued)

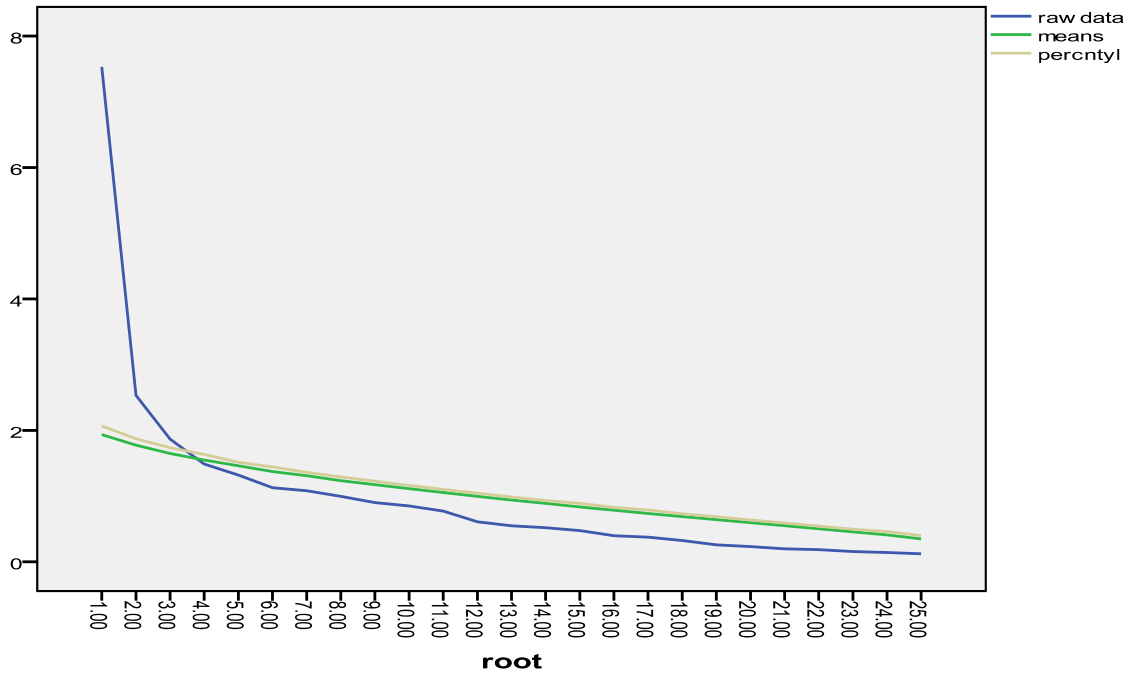
| Root | Raw Data | Means | Percentile |
|---|---|---|---|
| 6 | 1.13 | 1.37 | 1.44 |
| 7 | 1.08 | 1.31 | 1.36 |
| 8 | 1 | 1.24 | 1.29 |
| 9 | .90 | 1.17 | 1.23 |
| 10 | .85 | 1.11 | 1.16 |
| 11 | .77 | 1.05 | 1.10 |
| 12 | .61 | 1 | 1.05 |
| 13 | .55 | .94 | .99 |
| 14 | .52 | .89 | .93 |
| 15 | .47 | .84 | .89 |
| 16 | .40 | .78 | .83 |
| 17 | .37 | .74 | .79 |
| 18 | .32 | .69 | .73 |
| 19 | .26 | .64 | .69 |
| 20 | .23 | .59 | .64 |
| 21 | .20 | .55 | .59 |
| 22 | .19 | .50 | .54 |
| 23 | .16 | .46 | .50 |
| 24 | .14 | .41 | .46 |
| 25 | .12 | .35 | .40 |

Specifications for this Run:
N (cases) = 125, N (variables) = 25, N (data sets) = 125, Percentage = 95

Because the construct of psychological climate is based on latent factors, not data reduction, the common factor analysis extraction method, principal axis factoring (PAF) was utilised. It was mentioned earlier that the construct of psychological climate contains correlated factors that usually could be expressed by a higher second-order factor. Accordingly, the oblique option is the most appropriate in this case. Therefore oblique rotation, with direct promax option was

utilised. Also, factor loadings of less than .50 were suppressed (Kline, 2011) with the purpose to achieve clearer structure for psychological climate data, where one expects to find some items with cross-loadings due to using the promax rotaion technique.

Figure 5.6 The parallel analysis plot for psychological climate




The EFA results using promax rotaion technique resulted in three correlated factors (accounting for 43% of the variance in the data). The first factor contained 11 items, including four items with cross-factor loadings, that implied support from management (e.g. My boss is flexible about how I accomplish my job objectives) and the role perceived in the organisation (e.g. I feel very useful in my job); therefore, this latent factor was labelled "management support & role perceived". The second factor involved five items, including an item with cross-factor loading, that implied the cohesion and flexibility at work (e.g. My work group members express their feelings and ideas freely); therefore, this latent factor was labelled "cohesion & flexibility at work". The third factor involved four items, including an item with cross-factor loading, that express the quality of communication and confidence at work (e.g. It is okay to express my true feelings in this job); therefore, this latent factor was labelled "confidence at work" (see Table 5.9).

Table 5.9 The factor loadings of the EFA for the psychological climate construct

| **Structure Matrix** | | | |
|---|---|---|---|
| **Item/statement** | **Factors** | | |
| | **Management support & role perceived** | **Cohesion & flexibility at work** | **Confidence at work** |
| My boss is flexible about how I accomplish my job objectives (Sup1) | .56 | | |
| Management makes it perfectly clear how my job is to be done (RolCl1) | .72 | .73 | |
| I feel very useful in my job. (Cont1) | .59 | | .51 |
| My job is very challenging. (Chlng1) | .54 | | |
| My manager is supportive of my ideas and ways of getting things done. (Sup2) | .75 | | |
| The amount of work responsibility and effort expected in my job is clearly defined. (RolCl2) | .67 | | |
| Doing my job well really makes a difference. (Con2) | .69 | | |
| My superiors generally appreciate the way I do my job. (Rec2) | .76 | | |
| I feel free to be completely myself at work. (SelfXp2) | | .81 | |

Table 5.9 The factor loadings of the EFA for the psychological climate construct (continued)

| **Structure Matrix** | | | |
|---|---|---|---|
| **Item/statement** | **Factors** | | |
| | **Management support & role perceived** | **Cohesion & flexibility at work** | **Confidence at work** |
| My boss gives me the authority to do my job as I see fit. (Sup3) | | | .69 |
| I feel like a key member of the organisation. (Con3) | .79 | .41 | |
| The organisation recognises the significance of the contributions I make. (Rec3) | .78 | .43 | |
| The feelings I express at work are my true feelings. (SelfXp3) | | .62 | |
| My work group members express their feelings and ideas freely. (GrpDy3) | .44 | .79 | |
| The norms of performance in my department are well understood and communicated.( RolCl3) | .42 | .84 | |
| It is okay to express my true feelings in this job. (SelfX4) | | | .55 |
| There is clarity of communication between my work group members. (GrpDy4) | | | .77 |
| I can trust my boss to back me up on decisions I make in the field. (Sup5) | .52 | | |

N = 125
Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

## 5.5 Confirmatory factor analyses and structural equation modelling

This section will aim to validate the EFA results with the confirmatory factor analyses (CFA). It will finish with testing of the proposed model with the technique of structural equation modelling (SEM). Firstly, the criteria selected to assess the various models (model fit indexes) will be discussed. Secondly, the topic of parcelling which was utilised to increase the reliability of model parameter estimates will be explained. Thirdly, the statistical assumptions on which both CFA and SEM analyses are based will be examined. Moreover, the issue of the appropriate sample size for SEM studies will be discussed. Fourthly, the results of testing the various proposed models will be reported and explained. All the analyses were conducted using Mplus 6.1 (Muthén and Muthén, 2010).

### 5.5.1 Model fit indexes

To assess the extent to which a particular proposed model fits the data, researchers employ a group of criteria called model fit indexes. The model chi-square test is used in measuring how much accuracy the proposed model is different from the characteristics of the data set in terms of covariance. In other words, the $\chi^2$ goodness-of-fit statistic evaluates the how much the discrepancy between the sample and fitted covariance matrices is, and it is calculated as the product of the sample size minus one and the minimum fitting function (Hu and Bentler, 1999). Chi-square test ($\chi^2$) is well known to be sensitive to sample size; however, this test could be used effectively in comparing alternative models and this test is known as chi-square difference test ($\chi^2$ Diff).

Because of the sensitivity of the Chi-square test ($\chi^2$) and its impact on the quality of decision taken regarding the acceptance or rejection of the suggested research models, various other indexes have been invented including Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), Akaike Information Criterion (AIC), Normed Fit Index (NFI), Goodness-of-Fit Index (GFI) and the Adjusted Goodness-of-Fit Index. Actually, there is no consensus on which ones of these model fit indexes to be used for best results as each of them has its own merits and disadvantages. However, in this study, besides the $\chi^2$ test, RMSEA, CFI, and SRMR for assessing the fit of the

hypothesised models will be utilised because these model fit indexes are among the most widely used and accepted model fit indexes in the literature (Hair et al., 2010).

**RMSEA** is considered one of the most, if not the most, widely used assessments of fit in the applications of SEM (Kelley and Lai, 2011). This test reflects the degree of misfit in the proposed model (Chen et al., 2008). The RMSEA follows a noncentral chi-square distribution and allows for discrepancies between model-implied and sample covariances up to the level of the expected value of $\chi^2$ or df. When the value of RMSEA is ≤ .05, then the model is close fit; RMSEA close to .08 and less than .10 is considered mediocre; and finally when RMSEA is > .10 that represents poor fit (Kelley and Lai, 2011).

**CFI**, or Bentler CFI, is an incremental fit index that assesses the relative improvement in the fit of a particular model over that of a baseline model which is usually the independence model (Kline, 2011). Hu and Bentler (1999) recommended a CFI cut-off of .90.

**SRMR** is a measure of the mean absolute correlation residual or the overall difference between the data set observed correlations and the model's predicted correlations (Kline, 2011). Some scholars recommended an SRMR value less than .08 for a good fit model. However, some other researchers recommended an SRMR value less than .10 for a model to be acceptable (Byrne, 2010; Kline 2011).

### 5.5.2 Sample size for the SEM study

In the literature there are two main approaches for determining sample size in SEM. The first is the N:Q ratio; that is, cases (N) to the number of model parameters estimated (Q) and there are some suggestions for this ratio, including 20:1 (ideal), 10:1 (required), and 5:1 (marginal; Kline, 2011). However, Bollen (1989) and Chan et al. (2007) suggested that if the sample size is at least 200, there should be at least three to five participants for each estimated parameter. Relatedly, there are some scholars who advise journal editors not to accept SEM papers for publications until they have been conducted on at least 200 cases unless the study population is restricted in size (Barrett, 2007). Excluding the 125 cases of the EFA study, the CFA/SEM analyses were conducted using 223 cases. Although a sample size of 223 meets the 200-case minimum rule, it

is also appropriate to pursue and investigate the extent to which this sample size complies with the second criterion of N:Q ratio. Initially, at the individual item level, this criterion could be readily met for the construct of affective organisational commitment (as will be explained in the subsequent sections). However, as I will explain in the subsequent section, there would be some issues meeting this criterion when applying CFA's and SEM techniques on the constructs of values congruence and psychological climate (where the N:Q ratios were < 3) and this in turn leads to discussion of the technique of parcelling.

### 5.5.3 The parcelling technique

Before conducting CFA's, the parcelling technique was utilised for both values congruence and psychological climate to increase the validity of them in terms of both the ratio of participant to parameter and the multivariate assumptions. Moreover, one advantage of using parcelling is that using items as compared to parcels will lead to a larger covariance matrix, which in turn makes it less likely that the model will fit well even if the model closely matches the process being studied (Williams and O'boyle, 2008).

Parceling or combining a group of related items to form indicators is a common practice in the literature, and it aims to achieve various objects including improving the observed variables to a factor ratio and also deals with violation in multivariate normality assumptions (Coffman and Maccallum, 2005). However, care should be taken when parcelling these items that are proposed to measure more than one factor (Williams and O'Boyle, 2008). Considering this caveat, parcels were composed to include the items that loaded onto only one factor, a procedure known as homogenous parcels (Coffman and MacCallum, 2005), whereas the cross-loading items were left intact without parcelling as combining similar items that come from the same facet would increase the internal consistency of the parcel (Williams and O'Boyle, 2008).

As the current sample size was able to meet the criterion of N:Q ratio at the individual level (i.e. throughout all the factor analyses related to the construct of affective organisational commitment, this ratio exceeded the ratio of 8:1), the parcelling technique was limited to values congruence and psychological climate when conducting CFA's. Using the parcelling technique for individual and organisational values and based on the similarity of factor loadings of the

items of values across individual and organisational values (see Table 5.7), "initiative", "moral integrity", "cautiousness", and "orderliness" were kept intact and all the remaining items were treated as one parcel.

Based on Comrey and Lee (1992), a factor loading of .32 (10% variance) is considered poor, .45 (20% variance) is fair, and .55 (30% variance) is good, .63 (40% variance) very good, and .71 (50% variance) is considered excellent. Also, in many cases an item loads on more than one factor and the secondary loading sometimes negatively affects the results of the CFA when validating the EFA results (Kline, 2011). Therefore, all the items that loaded relatively high on more than one factor (i.e. .40) were kept intact when composing parcels (see Table 5.9).

Accordingly, for psychological climate, two parcels for the first and third factors were composed, besides all cross-loading items. That is, the factor of "management support & role perceived" was composed by one parcel containing 7 items (clear items) and other four individual items. Although only two of these individual items are clearly items with cross-loadings, the other two items (Con3 and Rec3, see Table 5.9) showed some overlapping with other factor in the EFA study, therefore I preferred to leave these two items intact. Following the same logic, the factor of "cohesion & flexibility at work" consisted of five items. Similarly, the factor of "confidence at work" consisted of one individual item and a parcel encompassing three items (Sup3, SelfX4, and GrpDy4).

### 5.5.4 The SEM statistical assumptions

As with all statistical techniques, SEM, including CFA, relies on some assumptions for its results to be valid and reliable. SEM has a number of estimators that use its own equations to estimate model parameters. Therefore, it is important to make sure that the present data complies with these assumptions or that the selected estimator is robust to violations, if any, of these standard assumptions. Attending to these assumptions is very important, as neglecting such violations could produce biased results whether in model fit or parameter estimates, and ultimately lead to incorrect decisions (Finney and Distefano, 2006).

Accordingly, before conducting the main analyses, the data were screened for the potential problems related to the violations of these assumptions which are related to collinearity, outliers, missing data, multivariate normality, linearity and homoscedasticity, score reliability, score validity (Kline, 2011). As the issue of missing data has already been dealt with, the next section will focus on the other assumptions.

#### 5.5.4.1 Collinearity

Collinearity can occur when two measures which are supposed to assess two different variables actually measure the same thing. This can be obvious when the correlation between these variables is very strong (e.g. .95) (Kline, 2011). To assess this possibility, a series of multiple linear regression analyses in which each time a different variable as the criterion and the rest as predictors were calculated to estimate the tolerance, which is a measure of collinearity (Kline, 2011). As long as the value of tolerance is not less than .10, it may be a good indication that there is no serious collinearity in the data set. None of these analyses reported a result approaching the value of .10 (Field, 2009) and in turn that indicated there was no collinearity issue in the data set.

#### 5.5.4.2 Outliers

##### 5.5.4.2.1 Univariate outliers

Potential univariate outliers in the data set were assessed by inspecting the frequency distributions of the Z-scores of all variables. Although some of the resulting Z-score values exceeded 3, given the shapes of the distributions of these variables and using the more conservative rule of 3.5 of Johnson and Wichern (2007), it was concluded that no univariate outliers in the data set represented an issue.

##### 5.5.4.2.2 Multivariate outliers

The Mahalanobis test was conducted to determine the potential cases with multivariate outliers. As Table 5.10 shows, only two cases (highlighted in red font) may be considered multivariate outliers, as they exceeded the cut-off value of 62.25.

Table 5.10 Part of the Mahalanobis test results for the second sample

| Case number | Mahalanobis distance |
|---|---|
| 190.00 | 64.59962 |
| 98.00 | 62.40198 |
| 142.00 | 61.32441 |
| 60.00 | 58.08321 |
| 97.00 | 57.03428 |
| 73.00 | 56.63522 |
| 147.00 | 56.22381 |
| 137.00 | 54.60044 |
| 88.00 | 52.75150 |
| 18.00 | 52.55831 |
| 136.00 | 51.59880 |
| 42.00 | 51.59334 |
| 120.00 | 51.43484 |
| .... | ..... |
| ..... | ..... |

Df = 34, $p$ = .001, critical value = 62.25.

However, given that this test is arbitrary (Tabachnick and Fidell, 2007; Field, 2009) and that these two cases are not extremely isolated from the centroid of the remaining cases, compared to the deleted cases of the first Mahalanobis test (see Table 5.2), these two cases were retained.

#### 5.5.4.3 Normality

##### 5.5.4.3.1 Univariate normality

Following the recommendations of Tabachnick and Fidell (2007) and Field (2009), the shapes of the frequency distributions of the study variables can help assess potential problems with univariate normality. The indexes values of skewness and kurtosis generally indicate that no serious normality issues are found in this data set. However, it is also clear that some of these

variables suffer from deviations from normality. Table 5.11 shows the values of these normality indexes along with information about the missing data in each variable. Moreover, consistent with the univariate normality indexes, the frequency distributions of the 34 variables also further support the previous conclusions (see Appendix 1). That is, those variables that had somewhat greater values in terms of skewness and kurtosis had frequency distribution shapes that were asymmetric (e.g. the shapes of bachelor and other degrees, and orderliness).

Importantly, although there is no consensus on the acceptable degree of non-normality in the literature, various studies that examined the impact of non-normality on maximum likelihood (ML) results indicated that problems may arise when skewness and kurtosis approach values of 2 and 7, respectively (Finney and Distefano, 2006). Based on these recommendations, it seems that the data set does not suffer from serious univariate normality problems that may considerably affect the results derived from it.

Table 5.11 The univariate normality indexes of skewness and kurtosis for the study variables

| **Variable** | **N** | | **Skewness Index** | | **Kurtosis Index** | |
|---|---|---|---|---|---|---|
| | **Valid** | **Missing** | **Skewness** | **Std Error** | **Kurtosis** | **Std Error** |
| Gender | 222 | 1 | -.073 | .163 | -2.013 | .325 |
| Age | 223 | 0 | 391 | .163 | -.221 | .324 |
| MartStat | 220 | 3 | -.470 | .164 | -1.796 | .327 |
| MidDegree | 220 | 3 | .927 | .164 | -1.151 | .327 |
| Bach_Others | 220 | 3 | 3.188 | .164 | 8.238 | .327 |
| Tenure | 223 | 0 | -.322 | .163 | -1.232 | .324 |
| Cautious | 223 | 0 | -1.605 | .163 | 4.152 | .324 |
| Intv | 223 | 0 | -1.077 | .163 | 1.826 | .324 |
| Mointg | 223 | 0 | -1.352 | .163 | 1.965 | .324 |
| Ord | 223 | 0 | -1.909 | .163 | 4.878 | .324 |
| indVal1 | 223 | 0 | -.982 | .163 | 1.128 | .324 |
| CautiousO | 223 | 0 | -1.087 | .163 | 1.288 | .324 |
| IntvO | 223 | 0 | -.703 | .163 | .408 | .324 |
| MointgO | 223 | 0 | -1.986 | .163 | 5.410 | .324 |

Table 5.11 The univariate normality indexes of skewness and kurtosis for the study variables (continued)

| Variable | N | | Skewness Index | | Kurtosis Index | |
|---|---|---|---|---|---|---|
| | Valid | Missing | Skewness | Std Error | Kurtosis | Std Error |
| OrdO | 223 | 0 | -2.635 | .163 | 8.248 | .324 |
| orgVal1 | 223 | 0 | -1.167 | .163 | 2.513 | .324 |
| RolCl1 | 223 | 0 | -.678 | .163 | .611 | .324 |
| psyclim1 | 223 | 0 | -.577 | .163 | -.952 | .324 |
| psyclim3 | 223 | 0 | -.901 | .163 | .094 | .324 |
| SelfXp2 | 223 | 0 | -.719 | .163 | .416 | .324 |
| SelfXp3 | 223 | 0 | -1.027 | .163 | .281 | .324 |
| Cont1 | 223 | 0 | -.877 | .163 | .535 | .324 |
| Con3 | 223 | 0 | -.211 | .163 | -.552 | .324 |
| Recl3 | 223 | 0 | -.269 | .163 | -.495 | .324 |
| GrpDy3 | 223 | 0 | -.452 | .163 | .280 | .324 |
| RolCl3 | 223 | 0 | -.636 | .163 | .917 | .324 |
| Com1 | 223 | 0 | -.673 | .163 | .388 | .324 |
| Com2 | 223 | 0 | -.841 | .163 | .463 | .324 |
| Com3 | 223 | 0 | -.784 | .163 | .548 | .324 |
| Com4 | 223 | 0 | .251 | .163 | -1.011 | .324 |
| Com5 | 223 | 0 | .250 | .163 | -1.005 | .324 |
| Com6 | 223 | 0 | .169 | .163 | -1.097 | .324 |
| Com7 | 223 | 0 | -.862 | .163 | .425 | .324 |
| Com8 | 223 | 0 | .412 | .163 | -1.371 | .324 |

#### 5.5.4.3.2 Multivariate normality and the robust maximum likelihood estimator

The majority of data collected in behavioural research don't comply with normal distribution whether univariate or multivariate; such violations of the distributional and also of the structural assumptions are common in practice and may lead to seriously misleading results (Curran et al.,

1996). Therefore, the proper handling of such violations when testing hypotheses or assessing various proposed models is critical for the advancement and credibility of our research endeavour.

One of the contributions that SEM scholars have provided is the technique of the Sattora-Bentler (S-B) method (MLM in Mplus), which is a robust maximum likelihood estimator that accounts for the deviations from normality. Satorra–Bentler statistic adjusts downward the value of $\chi^2$ from standard ML estimation by an amount that reflects the degree of kurtosis. Moreover, the simulation studies to assess this method performance supported it (Kline, 2011; Byrne, 2012). In addition, studies showed that the standard errors estimated by the (S-B) method exhibited greater precision than ML-based standard errors when using non-normally distributed ordered categorical data (Distefano, 2002). Given that the data set are not optimal in terms of univariate normality and in turn of multivariate normality, the Sattora-Bentler (S-B) method was utilised with the purpose to obtain unbiased parameters when assessing the study model.

#### 5.5.4.4 Linearity and homoscedasticity

Linearity is another assumption of multivariate statistical techniques. Moreover, homoscedasticity (i.e. uniform distributions) among residuals is another aspect of multivariate normality to be considered (Kline, 2011). Tabachnick and Fidell (2007) suggest that it is not practical to examine all pairs of variables especially when one has a large number of variables. Instead, they think it is appropriate to check the scores on skewness statistics to examine these variables that are probably not linear and also one should consider these variables that may demonstrate real curvilinear relationships.

On the other hand, non-normality in some variables, more random error at some levels of some variables than at others or outliers may cause heteroscedasticity (i.e. nonuniform distributions) among residuals (Kline, 2011). If a data set met the multivariate normality assumption, each variable would be itself normally distributed and the relationships between pairs of variables would be linear and homoscedastic (Tabachnick and Fidell, 2007).

Based on the univariate normality results, these variables that were more likely to demonstrate nonlinear relations and/or heteroscedasticity were examined. First, a large number of the shapes of the frequency distributions of the residuals resulting from various bivariate relationships among the study variables were examined. These shapes were considerably systematic in terms of normality. In addition, the residual plots to test both the linearity and homoscedasticity assumptions were employed (Tabachnick and Fidell, 2007). In these plots, standardised residuals are plotted against predicted values, and linearity occurs when residuals are randomly distributed around the zero and there is no pattern to these residuals. Appendix 2 displays a group of these examined relationships. The relationships among variables that could violate linearity and homoscedasticity assumptions due to their univariate normality indexes (e.g. the relationship between organisational orderliness and self expression) were emphasised. However, there was no evidence there were non-linear relationships among the investigated variables.

With regard to homoscedasticity, also these residual plots indicated that, although some bivariate relationships demonstrated some violations of homogeniety of variance (e.g. the relationship between cautiousness and self-expression), these cases were very limited. Importantly, these few cases of variance homogeniety deviations were not extreme. Also, although the homoscedasticity assumption is important, its violation is not fatal to an analysis of ungrouped data. However, considering the heteroscedasticity in the data set is a good practise as this heteroscedasticity increases the model predictability (Tabachnick and Fidell, 2007).

#### 5.5.4.5 Score validity

Score validity or construct validity means the soundness of the inferences based on the scores of study measures, or in other words, whether the measures used in a particular study are proper for assessing the hypothetical constructs under study. Although there is no single test is used to assess this concept, there are some facets that are usually used to gauge the construct validity including content validity, convergent and discriminant validity, and criterion-related validity.

Beginning with content validity, this concept investigates whether the selected test items could represent the domains they are supposed to measure and accordingly expert opinion, not the statistical analysis, is critical to support this aspect of validity (Kline, 2011). Given that the

measures used in the study have been frequently used in the literature, as discussed before, and these measures have received enough acceptances, this is expected to support the content validity of the study measures.

Concerning convergent and discriminant validity, if a measure properly assesses what it is supposed to measure, scores on that measure should be more related to scores on other similar constructs (i.e. convergent validity) and at the same time the scores on that measure would be less related to scores on dissimilar constructs (i.e. discriminant validity) (Tharenou et al., 2007). In this respect, confirmatory factor analysis is one approach to assess these types of validity (Tharenou et al., 2007; Kline, 2011). Accordingly, the results of confirmatory factor analyses I will discuss it in the next section could help assess convergent and discriminant validities in the current data set.

Criterion-related validity could be expressed as the relationship between scores on a particular tool and another external criterion, which this tool is intended to predict and the correlation between them could be used to assess this type of validity (Millward, 2001). Accordingly, the interrelationships among the study variables could support the criterion-related validities if these correlations were in the expected directions and their magnitudes were large enough. It is noteworthy that the concept of score reliability is relative here as choosing reliable measures is required to achieve the score validity, though it does not guarantee it (Kline, 2011). The score reliabilities of the study variables are reported in Table 5.14.

### 5.5.5 Confirmatory factor analyses and measurement models

In this section the EFA results conducted on the first subsample will be validated by conducting confirmatory factor analyses using the second subsample; moreover, the factor structure of the affective organisational commitment will also be examined. Assessing the fit quality of these individual constructs is important, as it helps detect any defects in these models and suggest fixing them before assisting the global measurement model (i.e. the general measurement model which includes all the study constructs) and the various competitive structural models.

#### 5.5.5.1 Confirmatory factor analysis of affective organisational commitment

Given that research has proposed that affective organisational commitment seems to be unidimensional and that from a psychometric perspective it is relatively stable (e.g. et Dunham al., 1994; Hackett et al., 1994; Jaussi, 2007), confirmatory factor analysis was utilised to test the proposed one-factor model for organisational commitment. However, this suggested model showed very poor fit to the data ($\chi^2_{MLM}$ [20] = 230.6, $p < .0001$; RMSEA = 0.22; CFI = 0.74; SRMR = .16). Moreover, three out of the four reversed items of this scale had non-significant factor loadings (i.e. items 4, 5, and 6). Therefore, an EFA on the initial sample (N = 125) was conducted to investigate the structure of the affective organisational commitment in this data. Two distinctive factors were extracted, and interestingly, all the negative statements loaded on one factor. The fit of this two-factor model showed relatively better fit to the data than the one-factor model ($\chi^2_{MLM}$ [19] = 48.93, $p < .0001$; RMSEA = 0. 084; CFI = 0.96; SRMR = .059).

According to the literature, reverse-worded statements pose problems in some cultures and especially in non-western business settings (Steenkamp and Burgess, 2002) and this could be for two reasons. First, a state of incompatibility between positive and negative questions arises as respondents do not properly comprehend the negatively phrased questions, which happens most often in respondents with low level of education and young respondents. Second, a state of inconsistency may arise due to the fact that respondents respond differently to positive and negative questions in the sense that they perceive these statements as representing two different constructs (Wong et al., 2003). In response to these two possible explanations, the average inter-item correlations for both positive and reverse-worded questions were calculated. If the first explanation applies to this data, it is expected that one would find an obvious difference between these two inter-item correlations. Alternatively, if the second theory is correct, one should observe a similarity between these two inter-item correlations. The inter-item correlations for the positive and reverse-worded statements were .72 and .43, respectively, which indicates that there was incompatibility between positive and reverse-worded statements in this sample. To further investigate this explanation, a multitrait-multimethod analysis was conducted in which, besides the affective organisational commitment factor, two method factors were developed, for positive and reverse-worded items, and the factor loadings of the positive and reverse-worded items were set to be equal on its respected method factors, such that the positive items (items 1, 2, 3, 7) had

equal loadings on the positive method factor and the reverse-worded items (items 4, 5, 6, 8) had equal loadings on the reverse-worded method factor, and these two method factors were allowed to correlate (Wong et al., 2003). The results of this analysis supported the concern that negative statements are incompatible with the positive statements ($\chi^2_{MLM}$ [16] = 29.7, $p < .001$; RMSEA = 0.062; CFI = 0.98; SRMR = .038), and all the reverse-worded statements, except item 8 (b = −.70, $p < .001$), had non-significant loadings on the affective organisational commitment factor. Additionally, because item 8 was significant, the model in which the affective organisational commitment contained the positive items besides item 8 was compared with the model in which only the positive items are included, in terms of internal consistency. The α's for these two constructs were .78 (after reversing the score of item 8) and .91, respectively. Importantly, the item-total statistics results showed that only deleting item 8 would improve the constancy reliability of this construct and this improvement would lead to a reliability coefficient of .91 (the model of only positive items). Based on these results, the four reverse-worded statements were dropped and a CFA was retested on the four positive items. This analysis supported this one-factor model as it yielded a considerably better fit compared to all the other competitive models ($\chi^2_{MLM}$ [2] =.93, $p = .63$; RMSEA = 0; CFI = 1; SRMR = .01). Moreover, all factor loadings (items 1, 2, 3, and 7) were highly significant (β's = .77, .88, .89, and .87, respectively, $p < .001$).

It is noteworthy that the all N:Q ratios of the previous CFA's were satisfying as this ratio ranged from 8.58 to 9.29. Accordingly, one could trust these parameter estimates as being good representative of the affective organisational commitment model.

#### 5.5.5.2 Using SEM in values congruence

This section will provide the justifications for utilising the difference method as a proxy of values congruence and the theme on which SEM could be used in the study and how SEM mathematically could be used in values congruence. In addition, the three proposed conditions related to applying this technique will be explained.

#### 5.5.5.2.1 Appropriateness of using the difference method and overview of the SEM in congruence research

The literature review on PO fit has mainly demonstrated four techniques of assessing PO fit: (1) difference score method, (2) profile correlation method, (3) direct method, and (4) polynomial method. Among these alternatives, the difference and the polynomial methods have been dominant in the literature (Kristof, 1996). Therefore, the discussion will be limited to these two techniques.

Tisak and Smith (1994) defined the difference method as the scores of the difference between distinct but conceptually related constructs. The difference score method depends on finding the difference between perceived and preferred ratings of measured values. PO fit can be obtained through summing the rating differences between two component measures.

The polynomial regression method is based on assessing the additive contribution of both the person and organisation. It also takes into account the nonlinear contributions of these two variables, that is, the interaction of person and organisation (P*O); the curvilinear contribution of person ($P^2$), and the same for organisation ($O^2$). Edwards and Parry (1993) claimed that this method avoids the problems inherent to both difference and correlation methods, has the unique feature of assessing the unique contribution of every variable, and does not neglect the nonlinear relationships between preferred and perceived values ratings.

In this study, the difference method was preferred over the polynomial method for the following reasons. First, from a conceptual perspective, the theory on which the hypotheses of the study were developed is the similarity between employees' perception of both their own values and organisational values and the impact of this similarity on psychological climate and affective organisational commitment; therefore, the difference method, as a proxy of this similarity, would be more appropriate to assess this research inquiry. Second, although the introduction of the polynomial method helped researchers gain much knowledge regarding the interaction between two commensurate measures and test more complicated research questions, from a methodological perspective, there are some issues arising as to whether this method deals with the concept of congruence or the interaction between commensurate constructs (Tisak and Smith, 1994).

One of the main important features of SEM is its ability to account for the measurement errors when simultaneously testing a particular study's hypotheses. However, due to the complexity of the topics involving similarity, fit or congruence between constructs, the congruence research for a long time has missed taking advantage of this advanced technique.

Cheung (2009a) recently has introduced the latent congruence model (LCM) that aimed at using SEM in investigating the issues of similarity and fit between constructs and the antecedents and consequences of this congruence. LCM is able to take the measurement error into account which in turn increases the accuracy and the significance of the congruence-related studies. Cheung (2009b) mentioned that LCM is mainly different from polynomial regression in that the LCM considers congruence and its components as distinctive constructs, and therefore it can deal with different research questions. Commenting on the difference between the approaches of polynomial regression and LCM, Cheung (2009b) contended that congruence analysis and component analysis answer different research questions and that the determination of the appropriate approaches to use should be based on the theory and research hypotheses related to the research question.

Indexes based on the algebraic difference discard information about the absolute level of the person and job measures (Tinsley 2000). For example, given the individual values as the reference, the size of incongruence (algebraic difference) between an employee's scores of individual and organisational values 7 and 5 = –2, which is the same for another employee's scores of 3 and 1. However, the mean of these two employee's value scores are 6 and 2, respectively. One of the advantages of the LCM is that it controls for this mean (level) of values when assessing congruence.

To explain the mechanism of LCM, suppose one has two latent variables Level (L) and Congruence (C) and only two manifested variables, individual values (IV) and organisational values (OV). Therefore, one could calculate the level (L) and congruence (C) as follows (derived from Cheung 2009a):

$L = (IV + OV)/2$ (Equation 5.1)

$C = OV - IV$ (Equation 5.2)

From Equation 5.1,

$IV + OV = 2L$, then

$IV = 2L - OV$ (Equation 5.3)

Given Equation 5.2,

$OV = C + IV$ (Equation 5.4)

Substituting Equation 5.4 in Equation 5.3;

$IV = 2L - C - IV$, from this (Equation 5.5)

$2 (IV) = 2L - C$, (Equation 5.6)

Dividing Equation 5.6 by 2, we obtain;

$IV = L - C/2$ (Equation 5.7)

Following the same procedures for OV, we obtain the following equation:

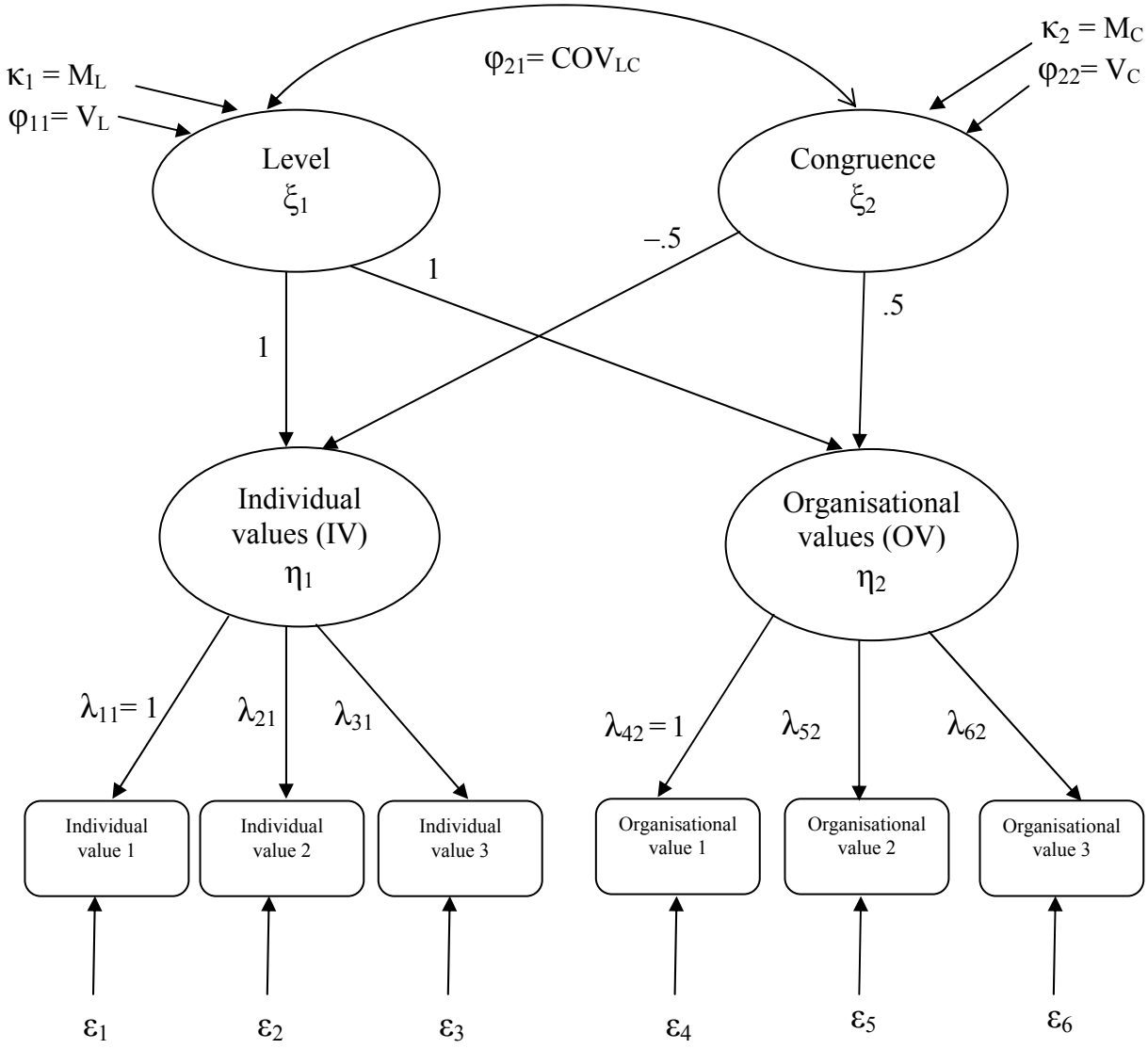
$OV = L + C/2$ (Equation 5.8)

From Equations 5.7 and 5.8, the level (L) factor has fixed factor loadings of 1 on IV and OV, whilst congruence (C) factor has fixed factor loadings of – 0.5 on IV and 0.5 on OV, and this rationale could be applied to any item-level congruence model where the two observed variables are replaced by two latent variables ($\eta_1$ and $\eta_2$) with multiple indicators. This is a second-order factor analysis model where the second-order factors $\xi_1$ and $\xi_2$ represent the level and congruence of the two first-order latent variables, $\eta_1$ and $\eta_2$.

Importantly, the measurement errors can be estimated and partialled out when estimating parameters for $\eta_1$, $\eta_2$, $\xi_1$, and $\xi_2$. The mean and variance of the factor level represent the grand mean ($M_L$) and variance of the mean rating of IV and OV ($V_L$). Similarly, the mean and variance of the factor congruence represent the average difference between IV and OV ($M_C$) and the variance of the difference ($V_C$). The two factors, level and congruence, are allowed to covary ($COV_{LC}$; see Figure 5.7). However, as congruence occurs when the difference between employee's perceptions of organisational values is at its minimum, the difference between these perceptions will be called *incongruence* for ease of interpretation.

Figure 5.7 A latent congruence model using the difference method

(adapted from Cheung, 2009a)




#### 5.5.5.2.2 Confirmatory factor analysis of values congruence

Establishing a model encompassing both individual and organisational values to assess congruence is more complicated, as there are some issues that should be examined before this suggested model is ready to be used in SEM analysis. Specifically, three conditions for measurement equivalence need to be checked to avoid misleading results (Cheung, 2009a), configural equivalence, metric equivalence, and scalar equivalence. Configural equivalence

requires that one compares constructs that have the same items, and one can test this configural equivalence by assessing how this configural equivalence model fits the data. If one fails to achieve this condition, the comparison would be inappropriate because one would compare two constructs with different conceptualisation. Metric equivalence is the extent to which the two constructs in comparison are manifested in similar ways. In other words, it requires that similar items under each construct have equal factor loadings. This condition can be tested by comparing two models in which the unconstrained model is the original model and the model with equal factor loadings for similar items is the reduced or nested model. If there is no statistical significance between these two models, then one has achieved this condition. However, it is not always the case that one finds equal factor loading across all the items; therefore, one can look for partial metric equivalence. That is, one should identify these items that have equal factor loadings across the two constructs in comparison. Scalar equivalence deals with the extent to which the intercepts of the similar manifested variables under the two constructs are equal. Similar to the procedure recommended in metric equivalence, one could compare the model with equal intercepts with the one with unconstrained intercepts, and if one fails to achieve the full scalar equivalence, then one could seek to establish partial scalar equivalence.

Cheung (2009a) noticed the absence of examining these important requirements in congruence research, which may lead to misleading results and stated that examining measurement equivalence is rarely (if ever) discussed when applying the difference method. In response to these recommendations, these three conditions were checked before testing the global and structural models. Specifically, the configural model showed acceptable fit to the data ($\chi^2_{MLM}$ [31] = 62.3, $p < .001$; RMSEA =.067; CFI = .94; SRMR = .053). However, three covariances of measurement error terms between individual and organisational values (i.e. initiative, caution and moral integrity) were estimated in this model. This action could be justifiable given that the value items for individual and organisational constructs in the survey are identical and respondents were asked to rate them twice, which in turn may lead to some overlapping between measurement errors of these items. Moreover, all factor loadings were significant (see Table 5.12).

Table 5.12 Factor loadings for the configural model for the values congruence

| **Item** | **Individual values factor loadings** | **Organisational values factor loadings** |
|---|---|---|
| Moral Integrity | .75 | .87 |
| Cautiousness | 1.18 | 1.04 |
| Values parcel† | 1.05 | .83 |
| Orderliness | .482 | .77 |

Note. N = 223. The coefficients presented are the unstandardised regression coefficients (Bs). †both individual & organisational parcels contained 10 items. The item *Initiative* for the individual and organisational factors was not included, as these items were fixed to unity for identification purposes. All the factor loadings are significant at $p < .001$.

In regard to metric equivalence, given that the first two factor loadings for both individual and organisational constructs (i.e. initiative) were fixed to 1 for identification purposes, the hypothesis that all the other factor loadings (4 factor loadings across individual and organisational values) were equal was tested. The comparison between the configural model and this constrained model ($\chi^2_{MLM}$ [35] = 70.4, $p < .001$; RMSEA = .067; CFI = .94; SRMR = .070), yielded a non-significant chi-square value ($\chi^2_{MLM}$ [4] Diff = 8.08, $p$ =.089), which suggests that one can assume factor loadings across both the individual and organisational values are equal.

In regard to scalar equivalence, given that the first two intercepts for the individual and organisational constructs (i.e. initiative) were fixed to 1 to calculate the mean of the difference between the constructs of individual and organisational values (incongruence), the hypothesis that the other four intercepts of individual and organisational values were equal was tested. However, no intercept equivalence could be achieved, as all the series of chi-square difference comparisons between the model with all the intercepts free and the models with constrained intercepts yielded significant results. These results indicated that the interpretation of any structural hypotheses between this values congruence model and other variables should be considered in light of a model with full metric equivalence and non-equivalent intercepts (see Table 5.13 for the factor loadings for the final values congruence model).

Table 5.13 Factor loadings for the values congruence considering the full metric equivalence

| **Item** | **Individual values Factor/ Organisational values factor** |
|---|---|
| Moral Integrity | .83 |
| Cautiousness | 1.12 |
| Values parcel† | .92 |
| Orderliness | .68 |

Note. N = 223. The coefficients presented are the unstandardized regression coefficients (Bs). †both individual & organisational parcels contained 10 items. The item *Initiative* for the individual and organisational factors was not included, as the factors were fixed to unity for identification purposes. All the factor loadings are significant at $p < .001$.

Regarding the N:Q ratios of the previous values congruence models, the intercepts manifested variables also had to be estimated because of using the means analysis. However, these ratios also were acceptable as they ranged from 6.6 to 8.6, which implied that these parameters could be considered good representatives of these models.

#### 5.5.5.3 Confirmatory factor analyses for psychological climate

For psychological climate, the three-correlated factor solution was assessed and the model fit indexes for this model were acceptable ($\chi^2_{MLM}$ [30] = 60.02, $p < .01$; RMSEA = .067; CFI = .98; SRMR = .040) and the correlations coefficients between these three variables were .63, .45, and .64; $p < .001$, respectively.

Given that there are relatively high correlations between these factors and that the literature considerably support the existence of a second-order factor that is responsible for the covariance among the first-order factors of psychological climate (e.g. Jones and James, 1979; James and James, 1989; Brown and Leigh, 1996; Kiewitz et al., 2002; Kolodinsky et al., 2004), this theory was tested.

The second-order psychological climate model showed a good fit to the data ($\chi^2_{MLM}$ [31] = 63.07, $p < .01$; RMSEA = .068; CFI = .98; SRMR = .041), and the chi-square comparison

between this second-order psychological climate model and the three-correlated factor model was non-significant ($\chi^2_{MLM}$ [1] Diff = 2.99, $p$ =.083). That means there is a higher second-order factor that represents the data of psychological climate more parsimoniously than the three-correlated first-order factors.

Additionally, due to the cross loadings of some items across the three factors of psychological climate, a series of nested models were tested to examine the plausibility of other alternative models. First, the one-single factor model that could be responsible for the covariance among the manifested variables of psychological climate was tested. This model showed a very poor fit to the data ($\chi^2_{MLM}$ [35] = 364.1, $p < .0001$; RMSEA = .21; CFI = .77; SRMR = .096). Moreover, the existence of "two-factor models" considering the combinations of the three factors of psychological climate was tested. That is, the model in which the first factor (F1) exists with the factor represented by the combination of the second and third factor (F2, F3 combined in only one factor) was tested. Similarly, the other two models of F2 with (F1, F3 combined in only one factor) and F3 with (F1, F2 combined in only one factor) were tested. These models were labelled A, B and C, respectively.

Model A, compared to the single-factor model, showed better fit to the data ($\chi^2_{MLM}$ [32] = 90.2, $p < .0001$; RMSEA = .11; CFI = .94; SRMR = .056). The chi-square difference between this model and the proposed higher second-order model was highly significant ($\chi^2_{MLM}$ [1] Diff = 52, $p < .0001$). Model B demonstrated poor fit to the data ($\chi^2_{MLM}$ [33] = 175.6, $p < .0001$; RMSEA = .14; CFI = .90; SRMR = .086) and also the chi-square difference between this model and the proposed higher second-order model was highly significant ($\chi^2_{MLM}$ [2] Diff = 148.2, $p < .0001$). Finally, Model C also showed poor fit to the data ($\chi^2_{MLM}$ [34] = 318.1, $p < .0001$; RMSEA = .19; CFI = .80; SRMR = .091) and once again the chi-square difference between this model and the higher second-order model was highly significant ($\chi^2_{MLM}$ [3] Diff = 206.16, $p < .0001$).[1]

1. The number of degrees of freedom varies in these models depending on the number of cross-factor loadings in each model and the necessity of model identification as in Model C where the second factor has only two manifested variables.

Taken together, the proposed higher second-order factor of psychological climate demonstrated to be the best model to explain the variance of the psychological climate data compared to all other alternative models. Also, the N:Q ratios of the all the tested psychological climate models showed satisfying results. These ratios ranged from 6.56 to 7.43, implying that the estimated parameters of these modes could be trusted.

### 5.5.6 Descriptive statistics

This subsample (223 subjects) was composed of 115 men, 107 women and one who did not indicate his/her gender, aged between18 and 50. One hundred and thirty five respondents (61%) were married and 85 (38%) were single or divorced and three respondent did not indicate their marital status. One hundred and thirty nine respondents (62%) had a secondary school diploma degree, 64 (29%) had a middle degree, 17 (8%) had a bachelor's degree and three respondents did not indicate their educational degrees.

The coefficient alphas, means, standard deviations and intercorrelations of the study variables are presented in Table 5.14. As indicated in this table, the mean of employees' age in this sample is 29.5 years and the tenure mean is approximately 4 years. The variables related to educational degree and marital status did not correlate with any of the main variables whilst gender, age and tenure did. In addition, the mean of the affective organisational commitment is higher than the scale midpoint. Moreover, the mean of the individual values is .2 larger than that of organisational values on the Likert scale and both of them are relatively high. Also, the grand average of psychological climate is higher than the midpoint of the scale.

Regarding score reliability, the affective organisational commitment demonstrated high internal consistency reliability (.91). Moreover, psychological climate as a general measure of employees' perceptions of the quality of work environment showed a good score reliability (.85). On the other hand, whilst the score reliability of the organisational values was acceptable, the reliability coefficient of the individual values (.63) was less than the value of .70 recommended by some researchers (Kline, 2011).

Table 5.14 Means, standard deviations, reliabilities and intercorrelations of the study variables

| Measures | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.Gender | 1 | | | | | | | | | |
| 2. Age | .23** | 1 | | | | | | | | |
| 3. Mstatus | .007 | .13 | 1 | | | | | | | |
| 4. Middeg | -.05 | -.12 | -.04 | 1 | | | | | | |
| 5. Bachdeg | -.02 | -.12 | -.01 | -.19** | 1 | | | | | |
| 6. Tenure | .22** | .42** | .04 | -.08 | .04 | 1 | | | | |
| 7. Ind Values | .21 | .21** | -.03 | -.01 | -.002 | .14* | (.63) | | | |
| 8. Org Values | .16 | .05 | -.05 | -.04 | -.04 | .04 | .66** | (.72) | | |
| 9. Pclimate | .33** | .31** | .04 | -.09 | .03 | .28** | .48** | .30** | (.85) | |
| 10. AOC | .33** | .47** | .07 | -.05 | -.07 | .37** | .49** | .23** | .70** | (.91) |
| M | .55 | 29.5 | .61 | . 29 | .08 | 3.9 | 6.1 | 5.9 | 4.8 | 5.2 |
| SD | .50 | 6.1 | .49 | .46 | .27 | 1.7 | .56 | .70 | .99 | 1.2 |

Note. N = (217 – 223) due to some missing answers in the control variables. Scale reliability coefficients are in parentheses. Gender (0 = female; 1 = male); Mstatus = marital status (0 = single; 1 = married); Middeg = middle degree (0 = secondary diploma; 1 = middle degree); bachdeg = bachelor degree (0 = secondary diploma; 1 = bachelor degree); Ind Values = individual values; Org Values = organisational values; Pclimate = psychological climate; AOC = Affective Organisational Commitment. *$p < .05$ **$p < .01$.

### 5.5.7 Testing the model hypotheses

One of the most important advantages of SEM is its ability to simultaneously assess all the model's hypotheses which in turn increase the validity of its results. However, beforehand, it is important that the global measurement model that includes all the measurements of the study variable is acceptable in terms of its fit to the data. Therefore, this part consists of two sections: the global measurement model and structural model.

#### 5.5.7.1 Improving the N:Q ratios for the structural models

Latent *mean* structure analysis is 'parameter consuming" in terms of the number of estimated parameter. In other words, once one requests to estimate a factor mean or the intercept of an observed variable, Mplus automatically estimates the intercepts for all the observed variables,

even for those variables that are not of interest (i.e. affective organisational commitment and psychological climate items). Accordingly, it is clear that the measurement and structural models would not achieve the recommended N:Q ratios to obtain the required trusted parameter estimates.

Therefore, before assessing the global measurement and structural models, two common procedures that have been used in the SEM literature to cope with small sample sizes and the low N:Q ratios were followed. These two techniques are the reliability correction and item average (Hofmann and Morgeson, 1999; Coffman and Maccallum, 2005; Zhang and Bartol, 2010). Because the consistency reliability of organisational commitment was high ($\alpha = .91$), the reliability correction was applied to it. That is, the average score of the organisational commitment items was calculated and its measurement error term was fixed by multiplying its variance by one minus its reliability (Zhang and Bartol, 2010). For psychological climate, the items of the three first order factors were averaged into single indicators; however, the variances of their measurement error terms were calculated as usual (Zhang and Bartol, 2010).

#### 5.5.7.2 Measurement model

The fit of the global measurement model in which all latent measures, including control variables, were allowed to correlate was assessed. For control variables, I expressed them as latent variables by fixing the factor loadings of the manifested variables on their respected factors at one and fixing the measurement error terms by zero. Only those control variables that had significant coefficients with the dependent latent variables were retained to conserve statistical power and this screening resulted in dropping the variables *education* and *marital status*. The results of this measurement model were acceptable ($\chi^2_{MLM}$ [103] = 214.7, $p < .0001$; RMSEA = .070; CFI = .91; SRMR = .082) which gives a good indication that I continue to the structural model.

In addition, given that the number of free parameters in this model were 67, the N:Q ratio of this global measurement model was 3.32 which is considered acceptable in terms of the recommended ratio of at least 3 of Bollen (1989). Also, it is noteworthy that the global

measurement model is the model with the greatest number of free parameters (Anderson and Gerbing, 1988). Therefore, all the next structural models will have better N:Q ratios.

#### 5.5.7.3 The structural model

Figure 5.9 indicates the proposed model in which both affective organisational commitment and psychological climate were regressed on the mean of individual and organisational values (level) and incongruence of these two constructs. Additionally, affective organisational commitment and psychological climate were regressed on the three control variables (age, gender, tenure). Moreover, these control variables were not allowed to correlate with the level and incongruence constructs.

The residual variances (error terms) of the model variables were first assessed to make sure that there were no serious issues in this proposed model. Table 5.15 shows both the standardised residuals, which are the ratios of covariance residuals over their standard errors (Kline, 2011), and $R^2$ values for the observed and latent dependent variables in the model. An $R^2$ represents the proportion of variance in each variable accounted for by its relevant factor (Byrne, 2012). These $R^2$ values could be important for assessing the psychometric quality of constructs as standardised errors are affected by the measurement units in both the observed and latent variables and the magnitude of the parameter estimates, and therefore, no definitive criteria has been established to determine what small or large standard error is (Byrne, 2012).

As Table 5.15 indicates, all the parameter coefficients are highly significant. Moreover, the proportions of variance in observed items explained by the affective organisational commitment (.89) and psychological climate (.71, .60. and .62, respectively) are acceptable. However, compared to the previous constructs, the constructs of individual values and organisational values demonstrated less proportions of variance in their relevant indicators as they ranged from .16 to .68 for individual values, and from .21 to .76 for organisational values.

Regarding the latent dependent variables, R-square values showed satisfactory results. About 69% of the variance in the affective organisational commitment could be accounted for by the

values congruence, level and psychological climate. In addition, 51% of the variance in psychological climate could be attributed to values congruence and level.

Table 5.15 Residual variances and R-square values for the study variables

| **Parameter** | **Estimate** | **Standard Error (S.E)** | **Est./S.E.** | **Two-Tailed *P*-Value** |
|---|---|---|---|---|
| **Residual Variances** | | | | |
| GEN | 0.000 | 999.000 | 999.000 | 999.000 |
| AGE | 0.000 | 999.000 | 999.000 | 999.000 |
| TENURE | 0.000 | 999.000 | 999.000 | 999.000 |
| COMM | 0.107 | 0.012 | 8.915 | 0.000 |
| PSYCHO1 | 0.290 | 0.039 | 7.410 | 0.000 |
| PSYCHO2 | 0.400 | 0.060 | 6.678 | 0.000 |
| PSYCHO3 | 0.385 | 0.059 | 6.570 | 0.000 |
| CAUT | 0.651 | 0.053 | 12.351 | 0.000 |
| INDVAL | 0.320 | 0.049 | 6.467 | 0.000 |
| INTV | 0.755 | 0.050 | 15.237 | 0.000 |
| MINTG | 0.745 | 0.059 | 12.725 | 0.000 |
| ORDER | 0.845 | 0.044 | 19.217 | 0.000 |
| CAUTO | 0.498 | 0.061 | 8.174 | 0.000 |
| ORGVAL | 0.237 | 0.052 | 4.529 | 0.000 |
| INTVO | 0.761 | 0.042 | 18.196 | 0.000 |
| MINTGO | 0.741 | 0.062 | 11.953 | 0.000 |
| ORDERO | 0.794 | 0.040 | 19.908 | 0.000 |
| ORGCOM | 0.311 | 0.057 | 5.505 | 0.000 |
| PC | 0.488 | 0.093 | 5.276 | 0.000 |
| IV | 0.000 | 999.000 | 999.000 | 999.000 |
| OV | 0.000 | 999.000 | 999.000 | 999.000 |
| **R-SQUARE** | | | | |
| **Observed Variables** | | | | |
| GEN | 1.000 | 999.000 | 999.000 | 999.000 |
| AGE | 1.000 | 999.000 | 999.000 | 999.000 |

Table 5.15 Residual variances and R-square values for the study variables (continued)

| **Parameter** | **Estimate** | **Standard Error (S.E)** | **Est./S.E.** | **Two-Tailed *P*-Value** |
|---|---|---|---|---|
| **Residual Variances** | | | | |
| TENURE | 1.000 | 999.000 | 999.000 | 999.000 |
| COMM | 0.893 | 0.012 | 74.196 | 0.000 |
| PSYCHO1 | 0.710 | 0.039 | 18.110 | 0.000 |
| PSYCHO2 | 0.600 | 0.060 | 10.007 | 0.000 |
| PSYCHO3 | 0.615 | 0.059 | 10.510 | 0.000 |
| CAUT | 0.349 | 0.053 | 6.608 | 0.000 |
| INDVAL | 0.680 | 0.049 | 13.743 | 0.000 |
| INTV | 0.245 | 0.050 | 4.947 | 0.000 |
| MINTG | 0.255 | 0.059 | 4.357 | 0.000 |
| ORDER | 0.155 | 0.044 | 3.524 | 0.000 |
| CAUTO | 0.502 | 0.061 | 8.239 | 0.000 |
| ORGVAL | 0.763 | 0.052 | 14.567 | 0.000 |
| INTVO | 0.239 | 0.042 | 5.726 | 0.000 |
| MINTGO | 0.259 | 0.062 | 4.181 | 0.000 |
| ORDERO | 0.206 | 0.040 | 5.157 | 0.000 |
| **Latent Variables** | | | | |
| ORGCOM | 0.689 | 0.057 | 12.179 | 0.000 |
| PC | 0.512 | 0.093 | 5.530 | 0.000 |
| IV | 1.000 | 999.000 | 999.000 | 999.000 |
| OV | 1.000 | 999.000 | 999.000 | 999.000 |

Note. N = 222. The coefficients presented are the standardized regression coefficients. When *Estimate* has a fixed value, then the standard error = 0 and both the Est. /S.E. and *P*-values are flagged by the value of 999.000. COMM is the single indicator of affective organisational commitment (ORGCOM); PSYCHO1, PSYCHO2, and PSYCHO3 are the indicators of psychological climate (PC); CAUT, INDVAL, INTV, MINTG, ORDER, CAUTO, ORGVAL, INTVO, MINTGO, and ORDERO are the indicators of the first-order factors of individual values (IV) and organisational values (OV).

The results of the structural model suggested that the proposed model could be accepted, as it provided a reasonably adequate fit to the data ($\chi^2_{MLM}$ [111] = 241.3, $p < .0001$; RMSEA = .073;

CFI = .90; SRMR = .097). Moreover, as Table 5.16 indicates, almost all parameters were highly significant and in the expected directions, and as expected, the covariances of all the three error terms (i.e. initiative, cautiousness, and moral integrity) were highly significant.

Moreover, the results showed that the mean of the incongruence between individual values and organisational values was – 0.49, $p < .0001$. This means that employees' perception of their individual values, on average, is greater than their perception of organisational values by. 49 of a Likert unit. Also, the grand mean of individual and organisational values is 5.28, $p < .0001$.

Table 5.16 The estimated values for the parameters for the proposed model

| **Parameter** | **Estimate** | **Standard Error (S.E)** | **Est./S.E.** | **Two-Tailed *P*-Value** |
|---|---|---|---|---|
| **ORGCOM** BY | | | | |
| COMM | 1.000 | 0.000 | 999.000 | 999.000 |
| **PC** BY | | | | |
| PSYCHO1 | 0.596 | 0.062 | 9.560 | 0.000 |
| PSYCHO2 | 0.577 | 0.067 | 8.651 | 0.000 |
| PSYCHO3 | 0.660 | 0.073 | 9.022 | 0.000 |
| **IV** BY | | | | |
| INTV | 1.000 | 0.000 | 999.000 | 999.000 |
| MINTG | 0.792 | 0.121 | 6.541 | 0.000 |
| CAUT | 1.046 | 0.115 | 9.066 | 0.000 |
| INDVAL | 0.875 | 0.095 | 9.218 | 0.000 |
| ORDER | 0.616 | 0.124 | 4.980 | 0.000 |
| **OV** BY | | | | |
| INTVO | 1 | 0.000 | 999.000 | 999.000 |
| MINTGO | 0.792 | 0.121 | 6.541 | 0.000 |
| CAUTO | 1.046 | 0.115 | 9.066 | 0.000 |
| ORGVAL | 0.875 | 0.095 | 9.218 | 0.000 |
| ORDERO | 0.616 | 0.124 | 4.980 | 0.000 |

Table 5.16 The estimated values for the parameters for the proposed model (continued)

| Parameter | Estimate | Standard Error (S.E) | Est./S.E. | Two-Tailed *P*-Value |
|---|---|---|---|---|
| **LGEN** BY | | | | |
| GEN | 1.000 | 0.000 | 999.000 | 999.000 |
| **LAGE** BY | | | | |
| AGE | 1.000 | 0.000 | 999.000 | 999.000 |
| **LTENURE** BY | | | | |
| TENURE | 1.000 | 0.000 | 999.000 | 999.000 |
| **LEVEL** BY | | | | |
| IV | 1.000 | 0.000 | 999.000 | 999.000 |
| OV | 1.000 | 0.000 | 999.000 | 999.000 |
| **FIT** BY | | | | |
| IV | -0.500 | 0.000 | 999.000 | 999.000 |
| OV | 0.500 | 0.000 | 999.000 | 999.000 |
| **PC** ON | | | | |
| LGEN | 0.523 | 0.167 | 3.126 | 0.002 |
| LAGE | 0.033 | 0.013 | 2.636 | 0.008 |
| LTENURE | 0.108 | 0.055 | 1.970 | 0.049 |
| LEVEL | 1.522 | 0.246 | 6.198 | 0.000 |
| FIT | -1.993 | 0.617 | -3.229 | 0.001 |
| **ORGCOM** ON | | | | |
| LAGE | 0.041 | 0.009 | 4.632 | 0.000 |
| LTENURE | 0.079 | 0.039 | 2.037 | 0.042 |
| PC | 0.376 | 0.087 | 4.321 | 0.000 |
| LEVEL | 0.495 | 0.200 | 2.474 | 0.013 |
| FIT | -0.752 | 0.363 | -2.069 | 0.039 |
| **FIT** WITH | | | | |
| LGEN | 0.000 | 0.000 | 999.000 | 999.000 |
| LAGE | 0.000 | 0.000 | 999.000 | 999.000 |
| LTENURE | 0.000 | 0.000 | 999.000 | 999.000 |
| LEVEL | 0.065 | 0.026 | 2.492 | 0.013 |

Table 5.16 The estimated values for the parameters for the proposed model (continued)

| Parameter | Estimate | Standard Error (S.E) | Est./S.E. | Two-Tailed *P*-Value |
|---|---|---|---|---|
| **LEVEL** WITH | | | | |
| LGEN | 0.000 | 0.000 | 999.000 | 999.000 |
| LAGE | 0.000 | 0.000 | 999.000 | 999.000 |
| LTENURE | 0.000 | 0.000 | 999.000 | 999.000 |
| **LAGE** WITH | | | | |
| LGEN | 0.000 | 0.000 | 999.000 | 999.000 |
| **LTENURE** | | | | |
| WITH | | | | |
| LGEN | 0.101 | 0.047 | 2.150 | 0.032 |
| LAGE | 4.142 | 0.629 | 6.588 | 0.000 |
| **INTVO** WITH | | | | |
| INTV | 0.455 | 0.077 | 5.913 | 0.000 |
| **CAUTO** WITH | | | | |
| CAUT | 0.218 | 0.044 | 4.953 | 0.000 |
| **MINTGO** WITH | | | | |
| MINTG | 0.194 | 0.052 | 3.767 | 0.000 |
| Means | | | | |
| **LEVEL** | 5.282 | 0.072 | 73.117 | 0.000 |
| **FIT** | -0.491 | 0.081 | -6.042 | 0.000 |
| Variances | | | | |
| **LEVEL** | 0.336 | 0.075 | 4.459 | 0.000 |
| **FIT** | 0.121 | 0.034 | 3.547 | 0.000 |
| **LGEN** | 0.250 | 0.010 | 25.542 | 0.000 |
| **LAGE** | 37.142 | 3.349 | 11.089 | 0.000 |
| **LTENURE** | 2.909 | 0.170 | 17.139 | 0.000 |

Note. N = 222. The coefficients presented are the unstandardized regression coefficients. *BY* indicates factor loading, *ON* regression coefficient, *WITH* covariance. When *Estimate* has a fixed value (i.e. 1, .5, −.5) or it is hypothesised that there is no relationship (0), then the standard error = 0 and both the Est. /S.E. and *P*-values are flagged by the value of 999.000. COMM is the single indicator of affective organisational commitment (ORGCOM); PSYCHO1, PSYCHO2, and PSYCHO3 are the indicators of psychological climate (PC); CAUT, INDVAL, INTV, MINTG, ORDER, CAUTO, ORGVAL, INTVO, MINTGO, and ORDERO are the indicators of the first-order factors of individual values (IV) and organisational values (OV). LEVEL and FIT are the second-order factors of IV and OV.

The following sections discuss the structural relationships among study variables. In particular, they will discuss how the results pertain to the hypotheses. However, the role of control variables in this model will be discussed first.

#### 5.5.7.3.1 Control variables

Regarding the control variables and their relationships with psychological climate, all the control variables were positively correlated with psychological climate. That is, age demonstrated a positive significant relationship with psychological climate ($\beta = .23$, $p < .001$). That means that older employees perceive more positively the quality of their work environment than younger employees. Gender (female = 0, male = 1) had a positive impact on psychological climate ($\beta = .14$, $p < .001$). That is, males perceive more positively the quality of work environment in this organisation than females. Moreover, the length of employee service (tenure) was positively related with psychological climate ($\beta = .13$, $p < .04$). This implies that the more experience an employee gains in the organisation, the more positive his/her perception of the quality of the work environment.

At the same time and regarding affective organisational commitment, only age and tenure showed positive impact on affective organisational commitment as the relationship between gender and affective organisational commitment was non-significant ($\beta = .07$, $p = .14$). Age was positively correlated with affective organisational commitment ($\beta = .23$, $p < .001$). This means that older employees reported more positive affective organisational commitment than younger employees. Moreover, tenure was positively correlated with affective organisational commitment ($\beta = .13$, $p < .03$). This indicates that employees with more experience in this organisation reported more positive affective organisational commitment than less experienced employees.

#### 5.5.7.3.2 Hypothesis 1

As indicated in Figure 5.9, Hypothesis 1, employees' perception of person-organisation values fit is positively correlated with affective organisational commitment, was supported ($\beta = –.24$, $p < .03$). As the values incongruence impact on affective organisational commitment was negative, this means that the more similar these values, the more affective organisational commitment employees report. This shows that the more congruent an employee's perceptions of his/her

individual and organisational values, the more positively he/she would report affective organisational commitment.

Additionally, the values level demonstrated a positive relationship with affective organisational commitment ($\beta = .27$, $p < .005$). This means the higher the average of the perceptions of individual and organisational values, the more positive an employee report affective organisational commitment.

#### 5.5.7.3.3 Hypothesis 2

Hypothesis 2, employees' perception of the quality of psychological climate is positively correlated with affective organisational commitment, was supported ($\beta = .50$, $p < .001$). This means that employees with a higher level of psychological climate perception more positively perceive affective organisational commitment than employees with a lower level of psychological climate perception.

#### 5.5.7.3.4 Hypothesis 3

Hypothesis 3, there is a positive relationship between employees' perception of person-organisation values fit and their perception of the quality of psychological climate, was accepted, as the values incongruence impact on psychological climate was negative ($\beta = –.48$, $p < .001$). In other words, given the individual values as the reference, the more employees' perception of organisation values being deviated from their individual ones, the more negative they reported the quality of their perception of psychological climate. This means that the more congruent an employee's perceptions of individual and organisational value, the more he/she positively perceive his/her work environment. Moreover, the grand mean of individual and organisational values (level) showed positive impact on psychological climate ($\beta = .62$, $p < .001$). That is, the higher the mean of individual and organisational values, the more positive their perception of their work environment.

#### 5.5.7.3.5 Testing Hypothesis 4

This hypothesis is related to the potential mediational role of psychological climate in the relationship between person-organisation values fit and affective organisational commitment. As

the topic of mediation represents an important issue in organisational behaviour and social science literature, it is appropriate to present a brief introduction to the mediation in the literature before testing this hypothesis.

#### 5.5.7.3.5.1 Introduction to mediation

Mediation occurs when a particular predictor indirectly exerts its impact on a dependent variable through one or more intervening variables (Preacher and Hayes, 2008). The methodology of Judd and Kenny (1981) and Baron and Kenny (1986), also known as the causal steps strategy, is the most widely used and cited in testing the hypothesised mediating role of a variable (Shrout and Bolger, 2002; Mackinnon et al., 2007; Preacher and Hayes, 2008; Hayes, 2009).

This methodology of mediation testing requires taking the following four steps (Mackinnon et al., 2007): (1) the relationship between the independent and dependent variables should be significant, (2) the relationship between the independent and mediating variables should be significant, (3) the relationship between the mediating and dependent variables should be significant and (4) the coefficient relating the independent variable to the dependent variable (in condition 1) must be larger (in absolute value) than the coefficient relating the independent variable to the dependent variable (in condition3), when both the independent and mediating variables predict the dependent variable.

It is critical here to differentiate between two possible cases in condition 4. First, the coefficient relating the independent variable to the dependent variable (in condition3) is not significant ($\hat{c}$ = zero) and that means there is a full mediation relationship (see Figure 5.8). Second, if the coefficient relating the independent variable to the dependent variable (in condition3) is significant but less than the coefficient in condition 1 (c), there is a partial mediation relationship. This can be summarised in terms of coefficients as follows: a, b and c should be significant and $\hat{c}$ should be smaller than c by nontrivial amount (Preacher and Hayes, 2008).

To summarise the steps of this methodology (see Figure 5.8), the significance of the difference between the coefficient of the relationship between the independent and dependent variables (in condition 1) and the coefficient of the relationship between the independent and dependent

variables ( in condition 3) need to be tested. This difference can be expressed another way through demonstrating the following three regression equations (Mackinnon et al., 2007):

$$Y = i_1 + cX + e_1, \quad \text{(Equation 5.9)}$$

$$Y = i_2 + \hat{c}X + bM + e_2, \quad \text{(Equation 5.10)}$$

$$M = i_3 + aX + e_3, \quad \text{(Equation 5.11)}$$

Where I's are intercepts; X, Y, and M are the independent, dependent and mediator variables, respectively. C is the coefficient relating the independent variable and the dependent variable, $\hat{c}$ is the coefficient relating the independent variable to the dependent variable adjusted for the mediator, b is the coefficient relating the mediator to the dependent variable adjusted for the independent variable, a is the coefficient relating the independent variable to the mediator, and $e_1$, $e_2$, and $e_3$ are residuals (Mackinnon et al., 2007).

According to this method, the difference between c and $\hat{c}$ in equations 1 and 2, respectively, is divided by the standard error of this difference and the resulting value is checked against the normal distribution for significance. Alternatively, the point estimate of the indirect effect (mediation) is a*b. Under the methods of maximum likelihood and ordinary least squares methods, a and b are asymptotically independent and normally distributed. Moreover, the standard error (SE) of a*b can be calculated as follows:

$SE_{a*b} = (a^2 s_b^2 + b^2 s_a^2)^{1/2}$, where $s_a^2$ and $s_b^2$ represent the squared standard error of *a* and *b*, respectively.

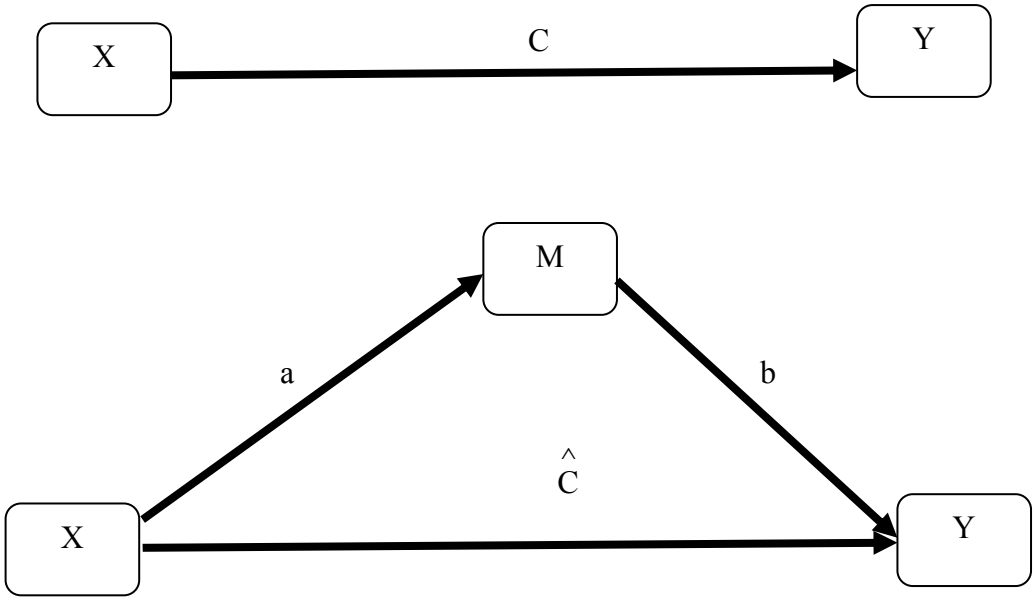
This formula is also known as Sobel's (1982) formula, which is considered the most commonly used formula for calculating the standard error of a*b (mediating effect) (Mackinnon, 2008). This standard error estimate is used to test whether the indirect effect or mediation is significantly different from zero through standard normal distribution. In other words, the ratio of a*b to its standard error is calculated as a statistic for testing the null hypothesis that the indirect effect is zero, with the *p*-value derived from the standard normal distribution (Hayes, 2009).

However, many researchers recommend using *an alternative* methodology to test the mediating role of a variable due to some limitations to the previous methodology. That is, research has

showed that this method suffers from low statistical power (Mackinnon et al., 2002; Preacher et al., 2007).

Figure 5.8 The proposed steps for testing a mediational model

(adapted from K. Preacher and Hayes, 2008)




Note. The first part shows the direct effect of X, the independent variable on Y, the dependent variable. The second part shows the role of the mediator M through decomposing the effect of X on Y to a direct effect (C) and an indirect effect (a*b).

Also, Hayes (2009) stated that the causal steps method has been heavily criticised for some reasons: (1) simulation studies showed that this methods, compared the competing other methods, demonstrated the lowest power to detect the indirect effect of the independent (X) variable on the dependent variable (Y) through the supposed mediator (M). (2) it is based on inference from some logic following the recommended steps by this method. That is, it does not quantify every procedure to reach its conclusion. In other words, if the coefficients a and b is significant, then according to this method the indirect effect is significant without statistically supporting this claim. Based on this argument, Hayes (2009) described the causal steps method as ‘not optimal’.

Hayes (2009) also criticised the common practice of using the Sobel test as a supplement to the causal steps as he thinks that it should be used instead of these steps. Accordingly, he thinks that there is little evidence for this procedure. He indicated that the causal steps test provides no information beyond the Sobel test and therefore, the Sobel test should not rely on the significance of the coefficients of *a* and *b* for it to be conducted. In other words, one should not precondition applying the Sobel test on significant paths linking X to M or M to Y. However, the Sobel test suffers from a fundamental flaw as it assumes that the sampling of the indirect effect has a normal distribution while this indirect effect (a*b) tends to be asymmetric (Hayes, 2009).

Supporting this point of view, MacKinnon (2008) thinks that using the formulas based on the unstandardised standard errors to test the significance of the product of standardised "a*b" regression coefficients can lead to misleading results. Therefore, one should use tests that do not assume normality of the sampling distribution and the technique of bootstrapping is one of these tests (Hayes, 2009).

Bootstrapping is a nonparametric resampling procedure that does not impose the assumption of normality of the sampling distribution. It is a computationally intensive method that is conducted by randomly drawing samples from the data set and estimating the indirect effect in each resampled data set. Repeating this process thousands of times constitutes an empirical approximation of the sampling distribution of a*b that could be used to construct confidence intervals for the indirect effect (Preacher and Hayes, 2008).

Given that the bootstrap approach is considered the most appropriate solution to the issue of low statistical power and that the bootstrap technique has proved superiority over the other statistical techniques (Nevitt and Hancock, 2001; Preacher et al., 2007; Cheung and Lau, 2008), the bootstrap technique was employed to test the mediational hypothesis.

#### 5.5.7.3.5.2 Hypothesis 4

Hypothesis 4, employees' perception of the quality of psychological climate positively mediates the relationship between their perception of PO values fit and affective organisational commitment was examined through testing the product of the unstandardised coefficients of the

path from values incongruence to psychological climate and the path from psychological climate to affective organisational commitment.

According to the bootstrap results, this coefficient (a1b, see Figure 5.9) was significant (95% CI = –1.84 to –.28, bootstrap resamples = 5000). Because the confidence interval did not include zero, the results are indicative that psychological climate mediated the relationship between values *incongruence* and affective organisational commitment. That in turn means that psychological climate positively mediated the relationship between *values congruence* and affective organisational commitment. Additionally, psychological climate also demonstrated a mediational role in the relationship between the level of individual and organisational values and affective organisational commitment as this coefficient (a2b) was significant, (95% CI =.21 to 1.06, bootstrap resamples = 5000). Because the confidence interval did not include zero, these results are indicative that psychological climate positively mediated the relationship between the level of individual and organisational values (the level of values congruence) and affective organisational commitment.

#### 5.5.7.4 Assessing other alternative models to the proposed model

To further validate the proposed model, other models were tested. That is, as suggested by the literature (e.g. Anderson and Gerbing, 1988; Kline, 2011), it is good practice to examine alternative models when there is theory to support them as competing models to the researcher's proposed model and hypotheses.

According to the literature, PO values fit is influenced by the organisational values existing at the time of membership and by changes in individual values following membership and tenure (Chatman, 1991). On the other hand, psychological climate can be viewed through the frames of cognitive social learning theory and interactional psychology (James et al., 1978), and this may draw attention to the possible role of the perception of work environment in facilitating person-organisation values fit.

Based on this, the model in which psychological climate is an independent variable that exerts its influence on values congruence and congruence level, as well as congruence and level serving as

mediators of the relationship between psychological climate and affective organisational commitment was tested. This model demonstrated a reasonably good fit to the data ($\chi^2_{MLM}$ [104] = 235.9, $p < .0001$; RMSEA = .076; CFI = .89; SRMR = .092). However, the potential mediation role of values congruence could not be established, as the structural coefficient of the impact of psychological climate on values incongruence was no-significant ($\beta = –.09$, $p > .052$); therefore, this model was not further evaluated.

Moreover, based on the hypotheses, the model without the indirect effect of values congruence on affective organisational commitment through psychological climate was tested. Furthermore, in this model, affective organisational commitment was regressed on the control variables and values congruence and psychological climate were allowed to correlate. This model showed mediocre fit to the data ($\chi^2_{MLM}$ [112] = 256.3, $p < .0001$; RMSEA = .076; CFI = .88; SRMR = .11). Importantly, the chi-square difference between the proposed model and this model yielded significant results ($\chi^2_{MLM}$ [1] Diff = 23.7, $p < .0001$), which indicates that the proposed model better represents this study data set.

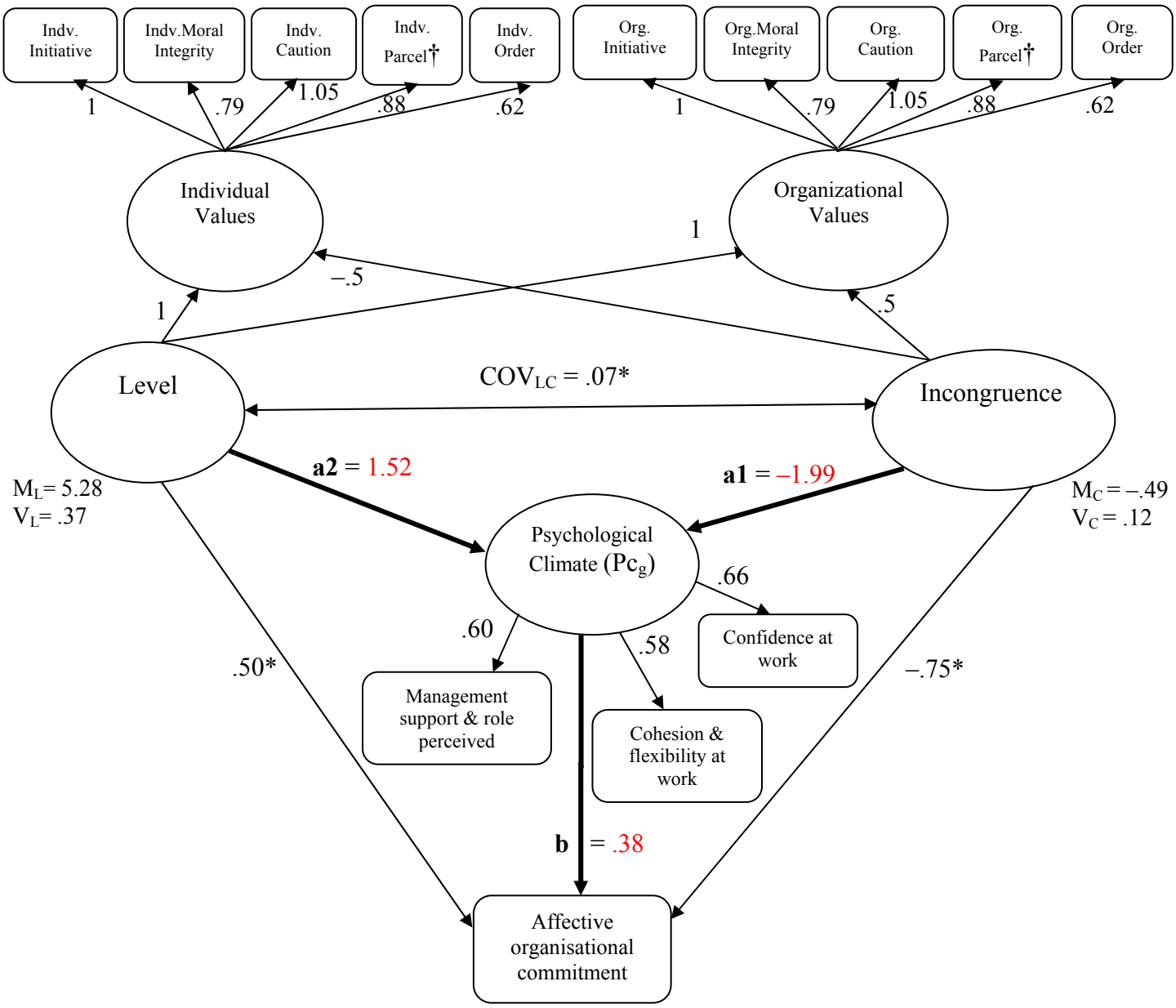
Given that the proposed model represents partial mediation because there was a significant relationship between PO values fit and affective organisational commitment, the model in which the direct paths from values incongruence and congruence level to affective organisational commitment were dropped was examined. The model fit indexes for the complete mediation of psychological climate were marginally acceptable ($\chi^2_{MLM}$ [113] = 247.7, $p < .0001$; RMSEA = .073; CFI = .89; SRMR = .097). However, the chi-square difference of the two models was significant ($\chi^2_{MLM}$ [2] Diff = 6.21, $p < .05$). Therefore, one can conclude that psychological climate partially mediates the relationship between values congruence and affective organisational commitment in this organisation. Table 5.17 provides a summary of the model fit indexes for the structural models tested in this study.

Table 5.17 Comparison of a number of structural models of the interrelationships between values congruence, psychological climate and affective organisational commitment

| Model | DF | $\chi^2$ | RMSEA | CFI | SRMR |
|---|---|---|---|---|---|
| Independence Model | 136 | 1385.7 | NA | NA | NA |
| Measurement Model | 103 | 214.7 | .070 | .91 | .082 |
| Proposed Model | 111 | 241.3 | .073 | .90 | .097 |
| Alternative Model 1: Values congruence as a mediator | 104 | 235.9 | .076 | .89 | .092 |
| Alternative Model 2: Organisational commitment regressed on psychological climate and values congruence (no mediation) | 112 | 256.3 | .076 | .88 | .11 |
| Alternative Model 3: Complete mediation | 113 | 247.7 | .073 | .89 | .097 |

Note. All the structural models are significant at $p < .001$

Figure 5.9 Structural relationships between values congruence and affective organisational commitment with the psychological climate as a mediator




Note. N = 222 (one response was deleted as a result of using the listwise method).The coefficients presented are the unstandardized regression coefficients (Bs). Indv. = Individual, Org. = Organisational; Level refers to the grand mean of individual and organisational values.† Both individual & organisational parcels contained 10 items. The measurement error terms and control variables are displayed for ease of presentation. All paths in the structural model analysis are significant at $p < .001$. * $p < .05$. The mediation coefficients for incongruence (a1b) and level (a2b) were significant (95% CI = –1.84 to –.28 and 95% CI =.21 to 1.06, respectively; number of bootstrap resamples = 5000).

**Summary**

In this chapter several topics were handled. First, the issues of cleaning the data set and preparing for the data analyses were offered. The statistical assumptions on which EFA is based and results of it were also described. In addition, the statistical assumptions and results of CFA were detailed and analysed. Finally, the results of testing the study's hypotheses using SEM were offered. The findings obtained supported the developed hypotheses and the SEM results supported the proposed structural model. The next chapter will present the conclusions and discussion of the study's findings.

# Chapter 6: CONCLUSIONS AND DISCUSSION

## 6.1 Introduction

Although person-organisation values fit or values congruence has been one of the topics that attracted scholars' attention for a long time, some issues related to this concept need clarification, including the mechanism by which values congruence is associated to other variables. This thesis aimed to contribute to this particular issue. Specifically, it tried to build a theory in which a model that represents the potential relationships among person-organisation values fit, psychological climate and affective organisational commitment was proposed. According to this model, it was hypothesised that PO values fit would be positively associated with both psychological climate and affective organisational commitment. Moreover, psychological climate was hypothesised to be a predictor of affective organisational commitment. Importantly, it was hypothesised that psychological climate would mediate the relationship between person-organisation values fit and affective organisational commitment.

This chapter will present the main findings of the study. In addition, it will discuss the contribution this study made to the theory, method and practice. Moreover, the limitations of this study and recommendations for future research will be discussed.

## 6.2 Study findings

### 6.2.1 Person-organisation values fit and affective organisational commitment

The appeal of the PE fit topic has led to its widespread application in modelling vocational outcomes including occupational health, productivity, work commitment, and retention (Tinsley, 2000). There is a general consensus that values congruence has positive outcomes for both individuals and organisations. One of these positive outcomes is affective organisational commitment (Howell et al., 2012).

Employees see organisational values as attributes that are common in the workplace and guide their decisions and behaviour. Consequently, when employees believe in these values it is expected that their affective organisational commitment increase (Howell et al., 2012). On the

other hand, some researchers posited that employees with strong personal values might have a more positive outlook than those with weak values, and that those employees with more positive values are predicted to have a better relationship with their organisation (Meyer et al., 2010).

A similar logic has been used to justify the potential linkage between values congruence and organisational commitment. Those employees who evaluate their values as highly congruent with those of the organisation demonstrate higher organisational commitment than those employees reporting low values congruence (Kristof, 1996). In the current study, the extent to which the similarity of employees' individual values and their perception of organisational values may affect their level of affective organisational commitment was empirically investigated in a non-Western context.

Consistent with previous study results (e.g. Kristof, 1996; Kristof-Brown et al., 2005; Ostroff et al., 2005), this study supported the positive relationship between values congruence, expressed by the algebraic difference method, and affective organisational commitment. Employees who had similar perceptions of their own values and organisational values reported higher levels of affective organisational commitment more than those who had dissimilar perceptions. Moreover, as the methodological technique of Cheung (2009a) makes a distinction between the level of individual and organisational values and their differences, it helps us test both of these concepts separately (i.e. the level of values and congruence of values). Accordingly, the relationship between the level of values and affective organisational commitment was tested and this relationship was supported. This implies that the more the average of employees 'perception of their own and organisational values, the better they report affective organisational commitment.

From a prediction perspective, one could expect, given other variables remaining constant, that employees in this study organisation will have higher level of affective organisational commitment if they have relatively similar perceptions of their own values and the operating organisational values. However, given the high positive correlation between values congruence and organisational commitment, this study did not concur with previous studies (e.g. Kalliath et al., 1999; Finegan, 2000) that demonstrated weak relationships between values congruence and organisational commitment. Nevertheless, these differences should be interpreted with some

caution, as values congruence in these previous studies were assessed by the polynomial method, and not by the difference method as it is the case in this study. This difference in operationalising values congruence is important, as the literature showed that the methodology of measuring PO fit operates as a moderator in the relationship between PO fit and other attitudes (Hoffman and Woehr, 2006).

### 6.2.2 Psychological climate and affective organisational commitment

Organisational commitment is one of the organisational variables that have a prominent position in the literature. This is maybe due to its well documented associations with various important variables for any organisation including intention to quit, absenteeism, job satisfaction, organisational citizenship behaviour and job performance (Somers, 2009; Kell and Motowidlo, 2012). Accordingly, researchers have been trying to identify the potential antecedents of this variable. Literature showed that employees' perception of work environment or psychological climate is one of these antecedents. Psychological climate is defined as a general construct comprising an individual's psychologically meaningful representations of proximal organisational structures, processes, and events (Parker et al., 2003).

Concerning the assessment of psychological climate, one advantage of this study is its adopting of a holistic perspective of the construct of psychological climate. In other words, the majority of prior studies dealt with psychological climate as a number of individual dimensions. For example, to assess the role of psychological climate in facilitating the adjustment of employees during organisational change, Martin et al. (2005) selected only three dimensions that were thought to be salient in relation to the changes by employees of the organisation studied. However, the current study employed a wider range of observed variables representing the construct of psychological climate to more accurately explain employees' perceptions of their work environment. That is, according to the EFA and CFA results, three dimensions were able best to express the covariance among a larger number of manifested variables of employees' perception of their work environment. Based on the nature of these manifested items loading on each of these factors, these latent factors were labelled "management support & role perceived", cohesion & flexibility at work", and "confidence at work". Moreover, consistent with prior research work that supported the existence of a higher second-order factor that could encompass

the first-order factors of psychological climate (e.g. James and James, 1989; Brown and Leigh, 1996; Kiewitz et al., 2002; Biswas and Varma, 2007) and could be used to determine the extent to which employees see their work environment as beneficial or personally detrimental to their organisational well-being (James and James, 1989), this study supported this second-order factor which consisted of the previously-mentioned three factors.

Regarding the relationship between psychological climate and affective organisational commitment, employees in this organisation who reported higher levels of perception of work environment also demonstrated higher levels of affective organisational commitment. This finding matches with the theories that state that employees' positive perception of their work environment is positively correlated with attitudinal organisational commitment (Parker et al., 2003; James et al., 2008). Moreover, this study also offered further evidence in a non-Western context that the construct of psychological climate is a good predictor of affective organisational commitment. Therefore, this finding is in line with previous literature (e.g. Allen and Meyer, 1996; Kiewitz et al., 2002; Martin et al., 2005).

### 6.2.3 Person-organisation values fit and psychological climate

This hypothesis investigated the potential impact of values congruence on employees' perception of work environment and actually this significant relationship was not studied in the literature. Having used the algebraic difference method as a proxy for values congruence, a positive relationship between values congruence and employees' perception of work environment (psychological climate) was found. That is, employees who showed similar patterns of perceptions of their own values and organisational values, reported higher levels of psychological climate. This finding could be interpreted as follows. When employees feel that the values they hold are similar to that of the organisation, they have positive attitudes towards their work environment and in turn they report higher scores on the dimensions assessing their perception of their work environment. Moreover, these perceptions were represented in this study by a general higher-order factor of psychological climate encompassing the average scores of three first-order factors (i.e. "management support & role perceived", cohesion & flexibility at work", and "confidence at work"). Therefore, in this organisation, values congruence could be considered a good predictor of psychological climate.

### 6.2.4 The mediating role of psychological climate in the relationship between person-organisation values fit and affective organisational commitment

Although numerous studies have examined relationships between values congruence and other organisational outcomes, few studies have attempted to explain the reasons behind these relationships (Edwards and Cable, 2009). Therefore this hypothesis represented a fundamental linkage to the proposed model relationships, as it aimed to explain the mechanism by which person-organisation values fit is associated with affective organisational commitment through psychological climate. The results obtained strongly supported this hypothesis. That is, the factor of psychological climate statistically mediated the relationship between person-organisation values fit and affective organisational commitment. Therefore, in this organisation, although there was positive relationship between person-organisation values fit and affective organisational commitment, a fundamental part of this relationship is only explained through the indirect relationship through psychological climate.

In this respect, there were few studies that tried to understand the mechanism by which PO values fit associates with affective organisational commitment including the study of Gutierrez et al. (2012), which was conducted on nursing faculty in USA. In this study, both normative commitment and developmental experiences mediated the relationship between PO values fit and affective organisational commitment. However, there are some limitations to the results of this study. Firstly, the authors, when they tested these meditational hypotheses, followed the conventional procedures which contradict with the more recent published work that doubted the reliability of the causal steps-based results. Moreover, it was not clear whether the authors supported their meditational claims by using the Sobel test or the bootstrapping technique**.** Secondly, the authors did not test other alternative or competing models. Specifically, they did not test whether there were complete or partial mediation relationships among these variables. Thirdly, the authors measured PO values fit using the direct method. There is general consensus among PO fit scholars that the direct method is plagued by great level of bias compared to all other types of fit (Kristof, 1996; Kristof-Brown et al., 2005; Van Vuuren et al., 2007). Therefore, the current study is hoped to give more insight into the process by which values congruence impacts affective organisational commitment through an employee's perception of work environment. Moreover, this study indicated that such mediating relationship is partial. That is,

there is also a direct relationship between values congruence and affective organisational commitment apart from the indirect relationship through psychological climate.

On the other hand, commitment represents the employees' belief in and acceptance of their organisations' goals and values (D'amato and Zijlstra, 2008). This close conceptual linkage may in turn justify the direct relationship found in the current study between values congruence and affective organisational commitment. That is, although there was an indirect relationship between values congruence and affective organisational commitment through psychological climate, this relationship could not be supported as complete mediation, which occurs when the association or the link between the predictor (values congruence) and criterion (affective organisational commitment) would be non-significant if the effect of the mediator (psychological climate) was accounted for.

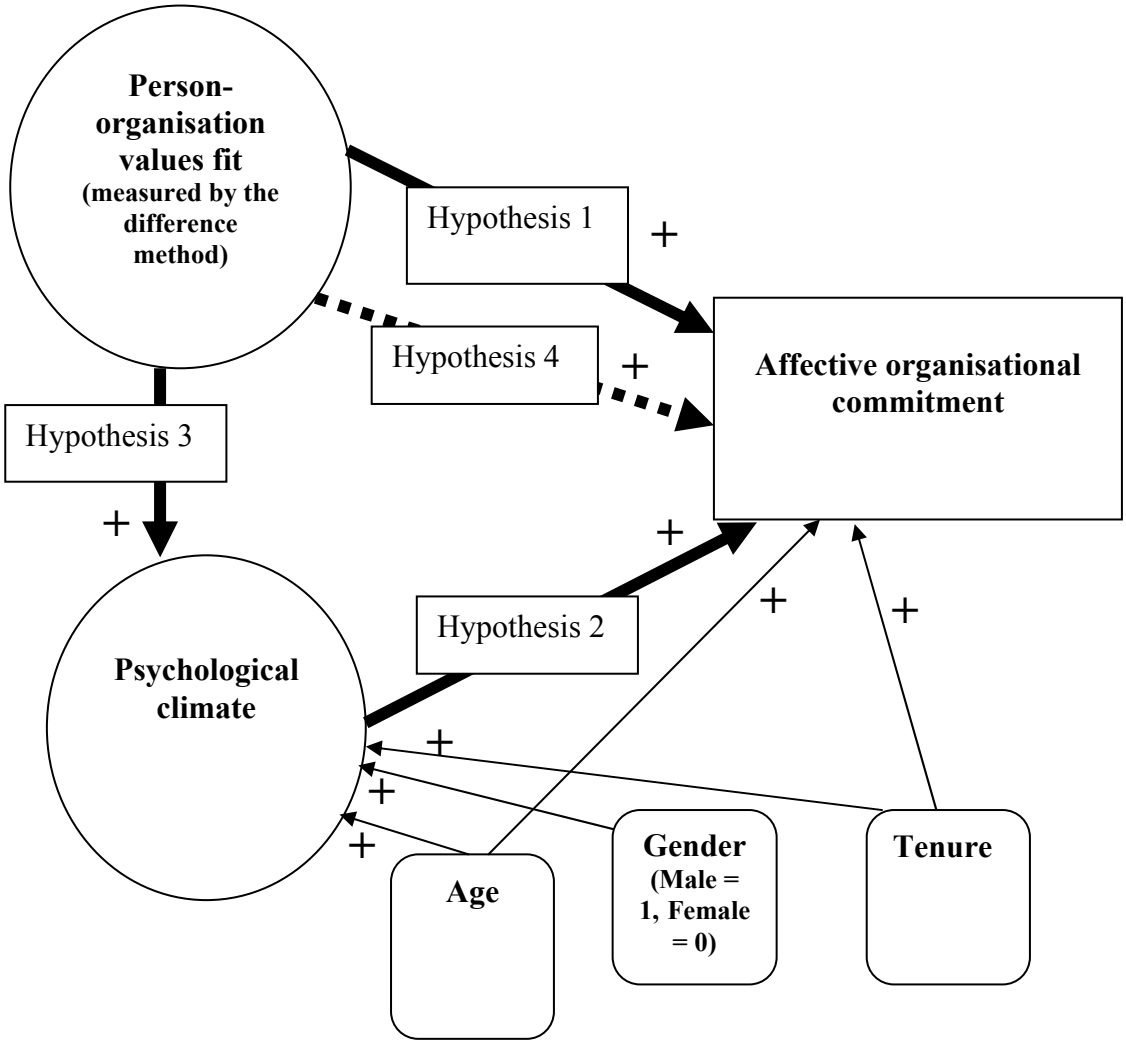
### 6.2.5 Assessing the proposed model

One of the strengths of this study is that it simultaneously tested all its hypotheses benefiting from the advanced statistical technique of SEM. The proposed model showed support for all the hypotheses even when utilising the most stringent method of bootstrapping to test the hypothesis of mediation. That is, there were positive relationships between affective organisational commitment and both values congruence, defined as the algebraic difference between employees' preferred values and their perception of organisational values, and psychological climate or employees' perception of their work environment. As mentioned above, the psychological climate was assessed as a general factor involving the average scores of three first-order factors measuring employees' perception of their work environment in this organisation. Importantly, controlling for the grand average of the scores of both preferred and perceived values (values level), psychological climate mediated the relationship between values congruence and affective organisational commitment using bootstrapping resamples of 5000. Moreover, this proposed model demonstrated accepted fit to the data in terms of the fit indexes.

Additionally, alternative models which were supported by theory were tested. Specifically, firstly as the proposed model represented a partial mediation model where there was a significant relationship between person-organisation values fit and affective organisational commitment, the

complete mediation model in which person-organisation values fit exerts its effect on affective organisational commitment only through psychological climate (i.e. no significant direct relationship between person-organisation values fit and affective organisational commitment) was tested. This complete mediation model did not fit the data as the proposed model did. Secondly, the model in which person-organisation values fit mediated the relationship between psychological climate and affective organisational commitment was tested. However, this hypothesised mediational relationship could not be established. Thirdly, the model in which both person-organisation values fit and psychological climate are independent variables directly exerting their impacts on affective organisational commitment (i.e. there would be no mediational relationships) was tested. This model did not fit the data well as the proposed model did. Accordingly, it was concluded that the proposed model is considered the best fit to the data compared to all other alternative models. Figure 6.1 represents the main findings of the study as expressed by the study hypotheses along with the significant relationships of control variables.

Figure 6.1 The overall relationships supported by the proposed model




Note. The solid lines represent the direct relationships among variables whilst the dotted line expresses the indirect relationship between values congruence and affective organisational commitment through psychological climate.

## 6.3 Study contributions

This study has a number of contributions and this section will explain the contributions this study made from three perspectives. That is, theory, method, and practice contributions.

### 6.3.1 Contribution to theory

One of the main contributions of this study is its attempt to investigate the mechanism by which person-organisation values fit associates with other dependent variables. Although past studies have supported positive relationships between values congruence and a number of individual and organisational variables, how these relationships develop is still unclear (Edwards and Cable, 2009; Howell et al., 2012). Specifically, the well documented association between values congruence and organisational commitment (Kristof, 1996) was not studied in terms of why this relationship occurs.

The model in which employees' values congruence impacts affective organisational commitment through psychological climate was examined. Although there have been some indications that would suggest such potential relationships, no theoretical or empirical research has explicitly examined this rationale. Edwards and Cable (2009) indicated that, although numerous studies have examined the relationships between values congruence and other outcomes, few of these studies have tried to explain why these relationships occur. Moreover, Edwards and Cable (2009) argued that although these few studies recommended investigating the mechanisms that would explain the process relating values congruence to other organisational variables, these suggestions are speculative as the mechanism of mediation has not been investigated in this respect. Moreover, although there are some indications in the literature that could support such claims, no attempts have been made to assemble, distil and integrate them into a coherent conceptual model.

The current study built on the literature to develop a model in which psychological climate could help justify the relationship between values congruence and affective organisational commitment. Particularly, Cable and Edwards (2004) posited that employees are mainly concerned with the degree to which organisational rewards could meet their desires. Moreover, organisational values affect the supplies offered to employees, and employees' perceived

importance of these supplies has an impact on their desires. Hence, psychological need fulfillment represents a proximal cause of employee attitudes such that attitudes are influenced directly by how much organisational supplies fulfill employee needs. On the other hand, values congruence could be seen as distal cause, such that values congruence affects employee attitudes only by virtue of its effects on psychological need fulfillment. Accordingly, psychological need fulfillment mediates the relationship between values congruence and attitudes (Cable and Edwards, 2004; Edwards and Cable, 2009). As a result, conceptually, this line of argument could support the theory positing that psychological climate mediates the relationship between PO values fit and affective organisational commitment. Moreover, this study used an integration perspective of both the supplementary fit paradigm and complementary fit paradigm to support the hypothetical mediational role of psychological climate.

Accordingly, another significant contribution of this study is the integration of the concepts of supplementary fit and complementary fit paradigms. As values congruence is defined as the similarity between an employee's preferred values and his/her perception of organisational values, it represents the first paradigm. On the other hand, complementary fit occurs when any of the person's or organisation's characteristics gives what the other needs (Kristof, 1996). This type of fit is usually represented in the literature by psychological fulfilment (Edwards and Cable, 2009). Accordingly, the psychological climate is an example of this complementary fit in which employees perceive the extent to which their organisations are able to provide them with the psychological supplies they see as necessary to maintain their organisational well being. Although these two paradigms have long-standing traditions in the literature (Muchinsky and Monohan, 1987; Cable and Edwards, 2004), little research work has been done to integrate these two paradigms with the purpose to increase our knowledge of the concept of fit. In this study, it appeared that the supplementary fit represented by values congruence has a positive impact on employees' perception of the needed supplies from their work environment (psychological climate). This psychological integration leads in turn to an increase in employees' affective organisational commitment. Given the supported mediational role of psychological climate, complementary (supply-need) fit partially explained why the similarity of characteristics (values) between an employee and organisation could lead to affective organisational commitment. In other words, the relationship between values congruence and affective organisational

commitment is partially conditional on maintaining a sufficient level of complementary fit of psychological climate.

Furthermore, the supported mediational role of psychological climate in the relationship between values congruence and affective organisational commitment is particularly important given that the technique of mediation is considered the standard for testing theories regarding process (Rucker et al., 2011). Moreover, meditational relationships are causal models even when we cannot reach a causal conclusion due to using a cross-sectional design in testing the proposed model. Namely, the underlying theories of such meditational models suggest directional inferences which are intrinsically causal (Rose et al., 2004; Wu and Zumbo, 2008). Moreover, the understanding of such mediating effects is vital to both the development of sound theory and the improvement of practice in HRM and related fields as such mediating models increase our knowledge about the mechanisms explaining the relations between independent variables and dependent variables (Rosopa and Stone-Romero, 2008). Accordingly, the present model is a step forward towards more understanding of the nature of the interrelationships between values congruence, psychological climate and affective organisational commitment.

Additionally, the model in which affective organisational commitment could be predicted by psychological climate and values congruence was tested. Although various previous studies examined these relationships, this study replicated these studies in a non-Western environment. Accordingly, this study further supported the plausibility of these relationships. Taken together, this study represents an attempt to fill in a significant gap in the literature which is hoped to increase knowledge about this topic and in turn to contribute significantly to the clarification of the debates in this important area of organisational behaviour research.

Equally important, in terms of conducting the study, the current study has the merit of having been conducted in non-Western environment. The literature obviously indicates that the majority of PO fit studies have been applied to US- or European-based organisations. Accordingly, this study hopefully gives more insight into this important topic in non-Western countries. It is noteworthy that the results from this study are consistent with the general trend of research that PO values fit has a positive relationship with affective organisational commitment. Moreover,

psychological climate has positive relationship with affective organisational commitment. However, once again caution should be exerted when comparing the previous results with the extant literature given the difference in measuring the construct of PO values fit and the methodology of assessing the various models.

On the other hand, there are few empirical studies that examined PO fit and its relationship with other organisational variables in the Arab business context. One of these attempts is the study of Behery (2009) who conducted his study in a number of United Arab Emirates-based organisations. According to this study, a positive relationship was found between PO fit and affective organisational commitment. Moreover, psychological contract, which is defined as an employee's belief regarding the work terms and conditions that imply a reciprocal exchange agreement between the employee and the employer (Haggard and Turban, 2012), meditated the relationship between PO fit and affective organisational commitment. However, there are some issues related to this study. First, the author used six different items to assess PO fit expressing goals, values and personality traits of employees. This procedure of combining these different items is doubtful as these items may represent correlated concepts rather than dimensions of a single construct. In addition, the author followed the direct method of measuring PO fit. That is, respondents were asked to determine the extent to which their characteristics (i.e. values, goals, and personality traits) are consistent with that of the organisation. This type of assessing fit is known to convey obvious bias (Kristof, 1996). Additionally, the statistical method employed to test the study's hypotheses, including the mediation one, was the multiple linear regression in which the author adopted the Baron and Kenny's (1986) method for testing the potential mediating role of psychological contract in the relationship between PO fit and affective organisational commitment. This method, as indicated before, has been criticised as being an inaccurate and may cause misleading results as it mistakenly assumes that the distribution of mediation effect is normal. Moreover, the hierarchical regression approach is based on the assumption that the measured variables are without errors whereas in reality variables are usually measured with errors. The existence of measurement errors might lead to biased estimation of the mediation effects and confidence intervals (Cheung and Lau, 2008)

In the same vein, this study is considered one of the few studies, if any, to examine the construct of psychological climate in the Arab business environment. Although the resulting factors were different from the results of the original study and those other replicated studies in the Western business context, it matches with them in terms of the existence of a general factor that could be interpreted as an employee's perception of his/her work environment as beneficial versus personally detrimental to his/her organisational well-being (James and James, 1989). Moreover, this study tried to improve the validity of Brown and Leigh's (1996) psychological climate scale through devising four items representing the concept of *work group* dimension, which had been overlooked due to the nature of the original study. These four items were driven, as mentioned in the study measures section, from the ethnographic research by Kahn (1990). However, more research work is needed to assess the psychometric properties of these items given that these four items did not load on a single factor. Similarly, in response to the recommendation of Finegan (2000), a statement representing the concept of achievement was added to both the scales of preferred values and perceived organisational values. This procedure was hoped to increase the content validity of the value scales used to assess values congruence especially when we recognise that the value of achievement is common in universal values taxonomies (e.g. Schwartz, 1992; Schwartz, 1994; Schwartz and Bardi, 2001).

Finally, this study has been in line with the most recent research work regarding the construct of organisational commitment. Although the three dimensions proposed by Allen and Meyer (1990) are considered the most frequently used scale in literature, recent criticism argued against its use based on the notion that only affective commitment could relatively represent the concept of organisational commitment. That is, affective commitment expresses the attachment bond between an employee and organisation on contrary to the other bonds of continuance and normative commitment, perceived costs and moral obligations, respectively, which represent other constructs (Klein et al., 2012).

In summary, the current study demonstrated some advantages in terms of theory and empirical findings. Concerning theory, it tried to increase our knowledge of why PO values fit may associate with affective organisational commitment through psychological climate. Empirically, this study was conducted in non-Western environment and supported two common relationships

in the extant literature between affective organisational commitment and both PO values fit and psychological climate and this may add to the literature of cross-cultural studies.

### 6.3.2 Contribution to method

To date, the majority of person-environment fit, including person-organisation fit, studies have used conventional statistical methods to address their research enquires. Although one cannot deny the significant contributions these studies presented to the literature and field, they suffered from methodological defects due to the fact that these methods do not estimate measurement errors when estimating model parameters. Actually, this is very important given that according to the simulation study of Cheung and Lau (2008), the bias in regression coefficients due to measurement error used in path analysis may exceed 16% on average. Therefore, studying congruence under the framework of SEM in turn would increase the accuracy and the significance of the congruence-related studies.

In response to this, this thesis attempted to fill this void by using the Cheung's (2009a) LCM technique, which is considered a significant progress in the congruence measurement literature. The LCM technique is able to assess measurement errors and simultaneously test all the hypotheses, which increases the validity of proposed models. Moreover, this new technique addresses the problem of the absolute level (mean) of the person and organisation measures which is a critical issue in the difference method literature (Tinsley, 2000). Based on this, the LCM technique employed in the study has the advantage of calculating the values congruence controlling for the grand mean of values which provide us with more accurate results of congruence studies based on the difference method.

A previous study that used the LCM method was that of Chen et al. (2009). In this study, the authors investigated the extent to which how the congruence between employees' preferences for segmenting their work domain from their family domain and the supplies from their work environment that enable individuals to segment work and home life, is associated with lower work-to-family conflict and higher work to- family positive spillover. However, from a methodology perspective, the current study has an advantage over Chen et al.'s study, as not only the current study used the LCM method to address a direct relationship, but also employed it in a

mediational context. This gives its application more flexibility through employing it in more complicated design.

In addition, another advantage of current study is the adoption of the bootstrapping technique when testing the mediation role of psychological climate in the relationship between values congruence and affective organisational commitment. Numerous published studies utilised the common methodology of causal steps strategy (Judd and Kenny, 1981; Baron and Kenny, 1986) to test mediation hypotheses based on its widespread use and acceptance among many researchers. However, these studies neglected the more recent results that have criticised the causal steps strategy as this methodology undermines the reliability of their empirical findings. This criticism is based on the notion that this technique violates the fundamental statistical assumption that the sampling of the indirect effect has a normal distribution. However, the bootsrapping technique does not follow this assumption (Hayes, 2009). Moreover, the causal steps strategy suffers from low statistical power (Mackinnon et al., 2002; Preacher et al., 2007), and ultimately could lead to misleading results (MacKinnon, 2008). Therefore, this study avoided the common methodological pitfall in the mediation literature. Relatedly, the number of resamples used for bootstrapping was 5000, which was sufficient. Literature showed that one of the problems that may arise due to using the bootstrapping technique is the small resample size. The difference between the confidence intervals two researchers may obtain could be non-trivial if a small resample size was used. To avoid this potential problem some scholars recommend a resample size of 500 to 1000 (Cheung and Lau**,** 2008**;** Lau and Cheung, 2010). The 5000 bootstrapping samples is also in consistent with the adopted perspective by other researchers that at least 1000 bootstrap samples should be used to compute confidence limits (Mackinnon, 2008).

Furthermore, there were few studies that applied the technique of SEM to PO fit research. Moreover, few studies used this technique using the indirect method of measuring PO fit. For example, although the study of Gutierrez et al. (2012), as mentioned above, used SEM to investigate how PO values fit and job autonomy impacted organisational commitment, it applied the direct method of assessing PO values fit and that in turn resulted in some obvious limitation on this study's results, whether conceptually or methodologically. Taken together, this study employed state-of-the-art techniques in testing the model hypotheses in terms of considering and

controlling measurement errors and applying the most accurate and conservative statistical method of testing mediation hypotheses.

### 6.3.3 Contribution to practice

From a managerial perspective, this study may attract managers' attention to the importance of looking at the concepts of PO values fit and psychological climate from an integrated perspective. That is, based on these study results, PO values fit exerts part of its effect on affective organisational commitment through psychological climate and failure to deal with these concepts as connected variables may deprive the organisation of the hoped-for outcomes of values congruence**.** Given that employees' perceptions of organisational values may be shaped, in part, by the human resource (HR) system (Howell et al., 2012), HR managers are encouraged to make sure that there is a good level of values congruence in the organisation. They are also encouraged to support the programs that help employees develop positive perceptions of organisational values and work environment.

In this respect, it is expected that employees will note the organisation's direction and associated values when these values are properly communicated. Accordingly employees will interpret and make attributions about the influence of these values. For example, when a particular organisation emphasises the importance of 'innovation', employees are expected to be recruited on this basis, participate in innovative projects, be assessed based on their contribution in successful projects and rewarded on this innovation basis (Howell et al., 2012). Therefore, it is good practice to publicly and clearly emphasise the core values of an organisation and follow these programs that could foster employees' perception of the significance of these values to both the individual and organisation, which in turn could achieve the targeted values congruence between the person and organisation.

Moreover, research shows that the complexity of the work environment is believed to lead employees to use social cues besides their own perceptions to make sense of the situation and that the cognitive representation of the organisational experience is determined by both individual patterns of thinking and understanding and influential relationships and organisational norms (Schulte et al., 2006). Based on this, it is recommended that the HRM systems and

practices are aligned with an organisation's core values, as this could facilitate employees' perception that these organisational values are aligned with their own. In addition, these HRM practices could help develop employee's positive attitudes towards their work environment. For example, an organisation that emphasises *innovation* as a significant organisational value should not have contradictory HR practices or regulations that may prevent or slow the innovative flows of ideas, as this could represent an obstacle to values congruence and also could negatively impact perception of work environment. Relatedly, it is important to make sure that managers' practices and decisions match with the adopted core values in the organisation.

This study also further supports the importance of fit between person and organisation, particularly values fit. Therefore, it is expected that the more recruited employees have similar values to the organisations' values, the more their perceptions of their work environment and their attitudinal commitment to their organisations. However, research showed that the relationship between PO fit and hire selection decision is problematic. For example, Although research indicated that PO fit plays an important role in the hiring and selection decisions in organisations (e.g. Cable and Judge, 1997; Kristof-Brown, 2000; Sekiguchi and Huber, 2011), the meta-analytic study of Arthur et al. (2006) indicated that the relationship between PO fit and job performance is weak and they argued that PO fit should not be used as a pre-selection strategy though it could be used as a post-use strategy (such as placement). They further argued that much of the weak relationship between PO fit and job performance was due to the mediating effect of work attitudes including organisational commitment. Nevertheless, there are some remarks about these findings. The same study showed that PO fit is a promising predictor of turnover. That is, the estimated true criterion-related validities for P-O fit and job performance, turnover, and work attitudes were .15, .24, and .31, respectively. This in turn opens the possibility of the existence of other mediating or modifying variables that could have an impact on the previously mentioned relationship. However, research should be directed to this area for any claim to be valid.

Relatedly, this study indicated that employees report better levels of psychological climate and affective organisational commitment when their perceptions of the importance of organisational values are close to the extent to which they prefer these values in their work environments.

Therefore, organisations are advised to periodically analyse their organisational values and try to identify these fundamental and more stable values and make certain that their employees perceive these values as similar to theirs. That is, it could be helpful if organisations adopt the practice of periodically surveying their employees to assess the change in their perceptions of the core organisational values and their own values to assess their employees' values congruence. This could help to identify the change in their perceptions and the pattern of these changes and this could also help organisations take the necessary actions to address any possible issues.

In this respect, Edwards and Cable (2009) suggest that the potential benefits of values congruence could be achieved by carrying out strategies that directly impact the key mediators in the relationship between values congruence and other variables. These strategies do not necessarily affect values congruence itself. Accordingly, taking these procedures that maximise the effects of psychological climate on employees could lead to more fruitful results from values congruence. For example, investing in initiatives that may increase trust in the organisation, an aspect of psychological climate, could be helpful. This could be done through clarifying reasons behind actions and decisions made in the organisation, holding sessions that include a question-and-answer dialogue between employees and senior management, and making certain that performance management processes are fair. Another example relates to organisational communication. Managers are preferred to make sure that such organisational communications are regular, open, and consistent (Edwards and Cable, 2009). Moreover, Wu and Guan (2009) think that some procedures could be followed to establish an effective career planning management system that matches between the personal development of staff and the organisational needs. Employees should demonstrate the willingness and abilities to work and organisations should be aware of their employee's personality, attitudes, performance level and potential for development. Based on this, employees and organisations should continue to communicate with each other to develop the career planning program in line with their interests.

Nevertheless, keeping PO values fit at a satisfying level whether for newly recruited employees or for tenured employees cannot be guaranteed**.** Therefore, training could be helpful in such situations as one of the benefits of training is to help employees learn and start to accept the organisational goals and values. This could enhance their level of person-organisation fit

subsequently. This could be explained from the perspective that the individual socialisation practice make organisational atmosphere exert an imperceptible influence on employees. Accordingly, they begin to show the characteristics of the organisation, resulting in a higher level of matching (Wu and Guan, 2009). Relatedly, the training programs should also be directed to managers themselves to make sure that their actions and dictions are derived from the core values of the organisation and also they foster their employees' perception that there is a state of integration between the declared organisational values and managers' actions in practice. In this respect, Kristof-Brown et al. (2005) see that managers should be very clear when they communicate work unit and organisational values and this should be followed from the beginning of the recruitment process through long-term employment. This should aid in the attraction, hiring, and retention of individuals who share those values and are inspired by an organisation that reinforces them. This approach may also lead employees who are not able to fit the organisation to quit. Relatedly, this also may attract our attention to the necessity of maintaining a healthy level of diversity in order to avoid the drawbacks associated with excessive homogeneity (Kristof-Brown et al., 2005). Moreover, Hoffman et al (2011) refer to the distinguished role of transformational leadership in fostering employees' perception of values congruence. They think that leaders who exude self-confidence and deep personal concern for the well-being of their employees are able to develop the feeling of pride, commitment among employees. Moreover, this will lead employees to emulate the leader's attitude and behavior, fostering the perception that their personal values are congruent with those of the leader.

Finally, this positive relationship between psychological climate and affective organisational commitment in the non-Western context reaffirms the prior results that psychological climate could be considered a good predictor of psychological attachment to the organisation (e.g. Hackett et al., 1994; Allen and Meyer, 1996; Chew and Chan, 2008). Importantly, there are some practices that could be carried out by HR managers to facilitate and help employees achieve involvement and identification with the organisation (Gellatly et al., 2009), including effectively using human resources, information sharing, participative decision making and training to achieve employees' cohesion and morale (Van Vuuren et al., 2007) as this could help improve their perceptions of work settings and ultimately their commitment to organisations.

### 6.4 Study limitations

As with any other study, this research effort has some limitations. Due to the research design of the study (i.e. the cross-sectional design), one cannot claim any causal implications. However, one may draw on the plausibility of the theory and argument developed to support the proposed model (MacKinnon, 2008).

Furthermore, common method variance (CMV) could have impacted these results as all the data were collected from the same source. CMV could be defined as this portion of variance that could be attributed to the measurement method rather than to the construct the measures represent. CMV has a variety of sources including collecting the data set about the predictors and criterion variables from the same source or rater (Podsakoff et al., 2003), as is the case in the present study. However, the extent to which CMV could distort research results is controversial (Reio, 2010). Although several scholars think that CMV may represent a real hazard to the validity of our research results, as it could inflate or deflate the correlations among variables (e.g. Podsakoff and Organ, 1986; Podsakoff et al., 2003), others question the notion that CMV could have a significant impact on organisational research results (e.g. Spector, 2006; Reio, 2010). Moreover, Spector (2006) criticised the common practice of many reviewers and editors of blindly rejecting mono-method manuscripts despite the uncertainty about CMV's link to systematic bias. In addition, he thinks that automatically attributing systematic bias to mono-method studies is a state of urban legend. Recently, Lance et al (2010) reviewed the multitrait-multimethod (MTMM) studies that tried to assess the magnitude of CMV and concluded that there is an overestimation of the likely effect of CMV. Importantly, this potential inflationary effect on observed relationships could be completely offset by the attenuating effect of measurement error.

Nevertheless, to assess the extent to which CMV could alter this study' results, the hypothesis that only one factor (due to CMV) could account for all of the variance for the key variables in the data (Podsakoff et al., 2003) was tested. The model fit indexes suggested that this model poorly fitted the data ($\chi^2_{MLM}$ [122] = 666.6, $p < .0001$; RMSEA = .14; CFI = .56; SRMR = .14). Whilst these results do not preclude the possibility of the presence of CMV, they suggest that

CMV does not represent a serious problem in this study (Andersson and Bateman, 1997; Podsakoff et al., 2003).

Alternatively, conducting the study using the longitudinal design could have been a better approach to avoid the problems related to CMV. However, due to the data access limitation, this option was not available. Relatedly, given that this study employed EFA before confirming its results using CFA and that the two sub-samples utilised in this study are not independent (Kline, 2011), replication of the results of both CFA and SEM would have been more appropriate to validate this study's findings. However, once again data access restriction deprived me from attaining this goal.

In addition, although the sample size used in this study met the rule of thumb of 200 respondents for acceptable results, it hardly exceeded the N:Q ratio of 3 which is considered marginal. Moreover, although such rules of thumb are widely used to guide researchers in their decisions about the appropriate sample size, these rules could not be applied to all situations. The sample size suitable for a given study relies on various factors including the size of the model, distributions of the variables, amount of missing data, reliability of the variables, and strength of the relations among the variables. Another issue that should be considered when deciding on the sample size is power. Whilst a sample may be large enough for unbiased parameter estimates, there are also some cases where a sample may not be large enough to detect an important effect in the model. (Muthén and Muthén, 2002). Accordingly, power analysis has been used to determine the minimum sample size for a given SEM study that is necessary to detect a particular effect with a desired level of power (MacCallum et al., 2010). There are a group of alternatives and programs to compute the power for CFA/SEM models including Monte Carlo studies (Muthén and Muthén, 2002), consulting special tables, some software macros (e.g. SAS/STAT) (Kline, 2011), or using some webpages (e.g. Preacher and Coffman, 2006). Nevertheless, these tools, though superior to the previously mentioned rules of thumbs, are still not very common in terms of application. Reviewing the literature shows that a few empirical studies applied the power analysis technique to determine the sample size for CFA/SEM studies. However, with more of these applications in the future the CFA/SEM study results are expected

to be more reliable. Taken together, replication of the current study employing a larger sample size is expected to provide us with more accurate results.

Another limitation comes from the fact that this study was conducted in a single organisation. However, some other similar studies that have significant impact in the literature were also conducted in a single organisation including the study of Finegan (2000). Nevertheless, the limitation of generalising the results from one study arises from the notion that a single organisation, even with a large number of participants, may produce idiosyncratic results, representing the unique characteristics of the studied organisation. In particular, as organisations have their own cultures and also tend to attract people with similar characteristics, including values (Schneider, 1987; Abbott et al., 2005), it is possible that employees in organisations with considerably different cultures may report different results. Therefore, more similar research is needed for any conclusive evidence to be derived from the current study.

Furthermore, this proposed model may have other alternatives. For example, whilst the model in which PO values fit may mediate the relationship between psychological climate and affective organisational commitment (see alternative model 1, Table 5.17) was tested, the model expressing a reciprocal relationship between PO values fit and psychological climate and implying the possible mediating role of these two constructs in predicting affective organisational commitment was not examined. This proposed model could be further conceptually supported given the potential impact of psychological climate on employees' perception of values congruence. That is, research posits that individuals are motivated to develop a thematically coherent story of their fit experience in the organisation. Achieving this thematic coherence may require reconstructing past events, imagining future events, and synthesizing the stream of experience into a coherent whole (Shipp and Jansen, 2011). This may attract our attention to the potential role of psychological climate in developing employees' perception of values congruence. However, this suggested model is a non-recursive model (i.e. reciprocal causation). Given that the information regarding temporal precedence is usually not available when using the cross-sectional design, a longitudinal study would be more appropriate to address this proposed model (Mackinnon, 2008).

Another limitation is related to the assessment of organisational commitment. Based on the statistical analysis, the items used to assess the construct of affective organisational commitment were the positive statements only after removing the negative ones. The proponents of using mixed-worded scales think that this technique would reduce the dangers of response bias such as acquiescence. However, the mixed-worded scales are accused of reducing a scale's internal consistency and distorting its dimensionality (Wong et al., 2003). In addition, previous literature showed that using mixed-worded scales in non-Western environments produces mixed results. That is, whilst some of these scales revealed good validities, others do not. Moreover, the reasons why these problems with mixed-worded scales occur in cross-cultural settings have not been clear enough yet (Wong et al., 2003). Taken together, although every caution was taken before removing the negative items of Allen and Meyer's (1990) affective organisational commitment scale, there is a possibility of some bias as a result of this exclusion.

Relatedly, removing the four negative items of the scale left only four items. However, this number does not pose a threat on the adequacy of these items to assess the affective organisational commitment construct given that research showed that a scale with as few as three items is enough to assess the internal consistency reliability of a particular construct (Hinkin, 1995). Nevertheless, it is supposed that any measure should have a minimum of items that are able to tap the domain of interest. Therefore, some researchers suggest that the retention of four to six items is desired. However, the ultimate number of the items should be done in light of the evidence that supports the construct validity of the proposed measure (Hinkin, 1998). This is also consistent with the recommendation of Harvey et al. (1985) that at least four items are needed to assess the homogeneity of items within any latent construct. Overall, although the four positive items used in the current study are not optimal, they can be reasonably considered theoretically and empirically enough to assess the affective organisational commitment.

Moreover, another limitation here has to do with the method used to measure values congruence, the subjective congruence method. That is, the congruence between an employee's own values and his/her perception of organisational values (Kristof-Brown et al., 2005). Although this measurement of congruence is less biased than the direct measurement of congruence, it is more biased than objective congruence (i.e. the extent to which an employee's own values match with

the organisational values as assessed by other employees in the organisation). However, the nature of this study required the subjective congruence. That is, the study's main purpose was to explain why values congruence is related to affective organisational commitment, which is a subjective variable. Therefore, it is expected that affective organisational commitment relates more to the congruence between employees' own values and organisational values as perceived by employees than as seen by other members of the organisation (Edwards and Cable, 2009).

In addition, there is a limitation related to the goodness of fit of the values congruence model. As indicated in the data analysis chapter, three statistical tests were conducted on the values model before applying SEM analysis. These tests or conditions were configural equivalence, metric equivalence, and scalar equivalence. Whilst configural equivalence was readily met and metric configural equivalence was partially met, the present data set did not support the scalar equivalence and this should be considered when interpreting the results. However, this absence of scalar equivalence was consistent with that of Chen et al. (2009). Nevertheless, it is noteworthy that the invariant intercepts or scalar equivalence test is known to be highly restrictive and least frequently used compared to the other two conditions (Vandenberg and Lance, 2000; Chen et al., 2009). Also, due to the necessity of achieving an acceptable level of model fit for the values congruence model, three of the error terms of individual and organisational values were correlated. However, these respecifications to improve the model fit are exploratory and not confirmatory in nature and replication studies are required to make certain that this particular model could be validated (Byrne, 2012).

Finally, as this study was conducted in a non-Western context, therefore the results driven from it could not be generalised to a Western environment unless a replication study could further support the current results. This issue is important given that cross-cultural studies indicated that there are fundamental differences making clear distinctions between national cultures especially between Western cultures and the East, Arabic and Middle-Eastern cultures in particular in terms of the underlying value dimensions held by people. Specifically, Egypt could be classified as a collectivist culture compared to the Western environment which is characterised to be more individualistic (Hofstede, 1980, 1984, 1991). The nature of these culture differences and its potential implications are discussed in the next section.

### 6.5 Directions for future research

Further replications of the study is encouraged to further validate its results whether in similar settings or in different environments. Such replications will allow us to increase our knowledge about these hypothesised relationships and this proposed model. In addition, developing variants of this proposed model is also urged as the literature may contain some indicators that other criterion variables, including job satisfaction, may be associated with values congruence and psychological climate. For example, literature shows that job satisfaction is one of the most frequently studied variables as a criterion for values congruence (Kristof-Brown et al., 2005). However, few studies have tried to examine the process by which values congruence is attached to job satisfaction. One of these attempts is the study of Edwards and Cable (2009) in which they employed the method of polynomial regression to express values congruence. The study supported the partial mediational roles of trust and communication among organisational members in explaining how values congruence affects job satisfaction. However, the relationship between values congruence and job satisfaction needs more clarification given that Edwards and Cable (2009) posited that other related psychological climate variables, including role ambiguity and role conflict, may also explain the previously mentioned relationship. This in turn may attract our attention to the need of adopting a more comprehensive (i.e. holistic) approach of psychological climate (as the one adopted in the current study) as a potential mediator of the relationship between values congruence and job satisfaction. In addition, it is recommended that besides investigating the associations between values congruence and attitudinal variables, researchers should give more attention to the relationships between values congruence and behavioural variables, such as job performance, turnover and absenteeism (Edwards and Cable, 2009) to explore if similar theories and models could be developed to explain the nature of the relationship between values congruence and behavioural outcomes.

Regarding job performance, reviewing the literature on values congruence and its relationship with this variable may let us follow a different perspective studying the relationship between them. In terms of the magnitude of the linkage between values congruence and job performance, this relationship is weak or moderate at the most (Arthur et al., 2006; Hoffman and Woehr, 2006). Given that moderators are usually utilised when the relationship between two variables is weak or inconsistent across studies (Frazier et al., 2004), investigating the nature of the

relationship between values congruence and job performance using the moderation framework may increase our understanding of this important relationship.

As mentioned in the data analysis and findings chapter, the theory developed in this study lends itself more to the difference score method. However, other research inquiries may require employing the polynomial regression method to assess the distinctive effects of individual and organisational values besides the interaction effect on other studied attitudes. Therefore, using the polynomial regression through the SEM technique would be an addition to both the theory and method for the fit literature (Edwards, 2009). However, one limitation of using the polynomial regression under the framework of SEM is the need for large samples to accurately estimate product (interaction) parameters. For example, at least a sample size of more than 400 cases may be needed when estimating even relatively small models of such nature (Kline, 2011).

Another limitation to this study was the cross-sectional design due to the difficulty of getting access to the data; therefore, it is recommended to replicate this study using the longitudinal method and compare its results to the current study's to see if its results could hold. Relatedly, the longitudinal design allows researchers to examine the reciprocal relationships between variables (Mackinnon, 2008), which in turn would mean the possibility of examining the non-recursive model in which it is hypothesised that there is a mutual relationship between values congruence and psychological climate. Moreover each of them mediates the relationship between the other and affective organisational commitment. Another approach to address the limitation of the cross-sectional design is the experimental technique. Some scholars think that using the experimental approach is the optimal choice for addressing research enquiries about mediation. This position is based on the notion that nonexperimental studies could produce erroneous inferences and even the use of nonexperimental longitudinal designs does not ameliorate the issue of ambiguous causal direction. Moreover, mediation inferences are strongest when the study results are based on experimental designs (Rosopa and Stone-Romero, 2008). However, research showed that sometimes there are ethical or logistical issues that could preclude the use of an experimental design to test a mediation hypothesis. Although quasi-experimental and nonexperimental designs could be used instead, Rosopa and Stone-Romero (2008) think that researchers employing nonexperimental designs should avoid using inappropriate causal

language in the interpretations of their study results. However, experimental studies are not without limitations. For example, research indicates that information obtained about relevant organisations is likely to have greater external validity than experimental data where characteristics are assigned to fictitious organisations (Cable and Judge, 1994). Therefore, every caution should be exerted when developing the design of experimental studies. This could be one reason why little experimental work has been carried out in the area of PE fit.

Furthermore, the replication of this study should be looked at from the perspective of cross-cultural differences. In other words, culture may have impact on the extent to which we could obtain similar results in Western environments. The seminal research work of Geert Hofstede could be relevant in this respect. Hofstede (1980, 1984) indicated that there are four (he later added the fifth dimension of Long versus Short-Term Orientation; Hofstede, 1991) underlying value dimensions in any culture and the scores we obtain on these underlying values could distinguish cultures from each other. These value dimensions are (1) Individualism versus Collectivism (The degree of interdependence a society maintains among individuals, is this society characterised by the domination of self-interest or there is high focus on group relationships?), (2) Large versus Small Power Distance (People in large power distance societies accept the hierarchical order the authority in power imposes, whereas people in small power distance societies seek for power equalisation and ask for justification when there are power inequalities), (3) Strong versus Weak Uncertainty Avoidance (In societies where there is strong uncertainty avoidance, people maintain rigid codes of belief and behaviour and are intolerant towards persons with different ideas, whilst weak uncertainty avoidance societies hold more relaxed positions and different ideas are more easily tolerated), and (4) Masculinity versus Femininity (This dimension relates to the social roles a given society allocates to males and females. In masculinity societies men are given the more outgoing, important roles and women are given the caring and nurturing roles. In femininity societies, this differentiation significantly diminishes).

Importantly, the category to which Egypt belongs, Arab countries (Egypt, Iraq, Kuwait, Lebanon, Libya, Saudi-Arabia, and United Arab Emirates), scores differently on all these four underlying values compared to Western countries. For example, out of the scores of 50 countries

and regions, Arab countries scored relatively low on the Individualism (rank 25) whilst Great Britain scored very high on Individualism (rank 3). This implies that Arab world has more collectivist-based culture. In contrast, Arab countries scored higher on Power Distance and Masculinity than Western societies (Hofstede, 1984). Regarding, the fifth underlying value suggested by Hofstede (1991), Long-term orientation stands for the fostering of virtues related to the future (e.g. perseverance and thrift). On the other hand, Short-term orientation is related to the fostering of virtues associated to past and present (e.g. respect for tradition, and fulfilling social obligations). Moreover, out of 93 countries and regions based on data from the period 1995–2004, Egypt had a very low rank (91) and demonstrated tendency toward Short-term orientation. However, Great Britain showed moderate tendency towards Long-term orientation (rank 40-41) (Hofstede et al., 2010). Accordingly, the research that investigates the extent to which the differences in these underlying national values could affect employees' values and perceptions is encouraged.

Finally, it is encouraged to conduct more research in the direction of assessing the effect of using both positively and negatively phrased items (i.e. mixed-worded scales) in the Egyptian business context, as the current study showed that the mixed-worded structure of the affective organisational commitment scale did not work well. At the same time, this research effort would also be in response to calls for exploring such a dilemma in non-Western business settings (Steenkamp and Burgess, 2002). Specifically, this research could investigate the problems related to the mixed-worded scales in the Egyptian setting to determine if this issue could be attributed to the low educational level of respondents and their ages or to significant cultural differences.

**Final conclusion**

Although there are significant research contributions regarding the impact of values congruence on other individual and organisational variables, the existing literature does not have adequate theory or empirical examinations of the process that could explain how values congruence may affect employees' behaviours and attitudes. In this study, the mechanism by which values congruence relates to affective organisational commitment was investigated. The technique of structural equation modelling (SEM) or Latent Congruence Model (LCM) was used to test the

hypotheses that values congruence has positive relationships with both psychological climate and affective organisational commitment. Importantly, psychological climate was hypothesised to mediate the relationship between values congruence and affective organisational commitment.

The current study was conducted in a medium-sized textile organisation in Port Said, Egypt. The findings offered further support for the well-documented relationships between values congruence and both psychological climate and affective organisational commitment, but this time in a non-Western context. More important, the mediational role of psychological climate in the relationship between values congruence and affective organisational commitment, using the statistical technique of bootstrapping, was supported**.**

These findings are particularly important, as this study explored the potential integrated relationship between supplementary fit paradigm as represented by values congruence and complementary fit paradigm as expressed by psychological climate; represented an attempt to fill a void in the literature by addressing a possible justification of how values congruence is related to affective organisational commitment; utilised state-of-the-art statistical analysis (SEM) to investigate the hypotheses; and was conducted in a non-Western business context, reaffirming the positive relationships between affective organisational commitment and both values congruence and psychological climate. Hopefully, this study will represent a contribution and step further towards more understanding of the concept of PO fit. Moreover, it is hoped that it stimulates other research efforts that could help the advancement of the fit theory in our organisations.

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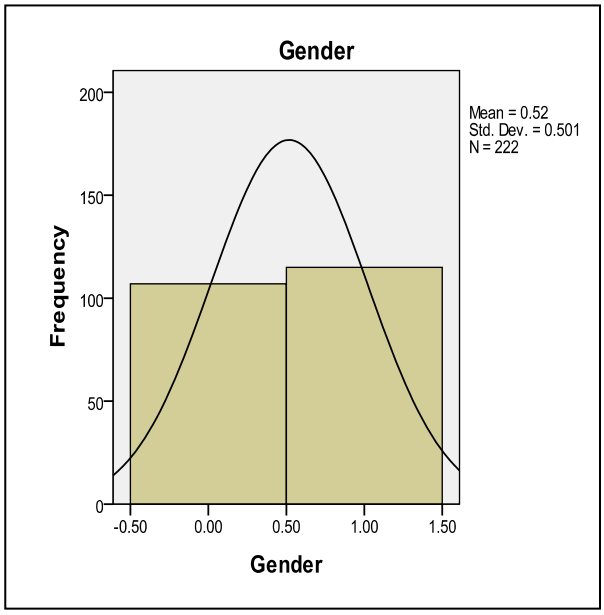
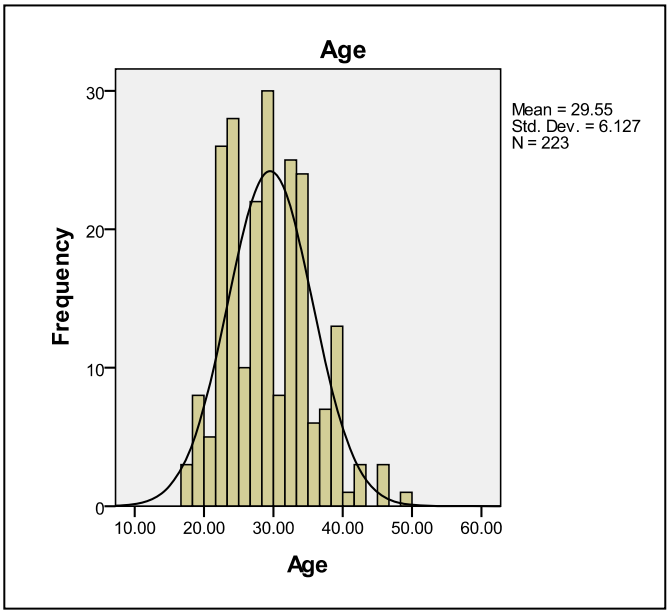
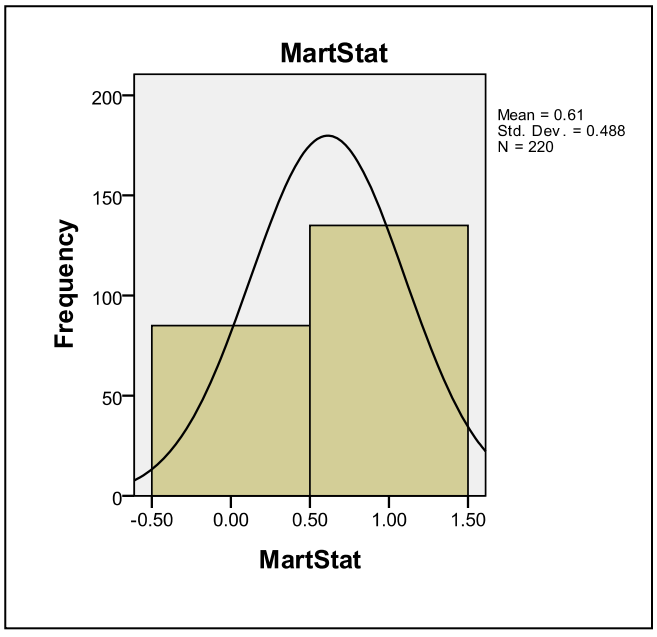
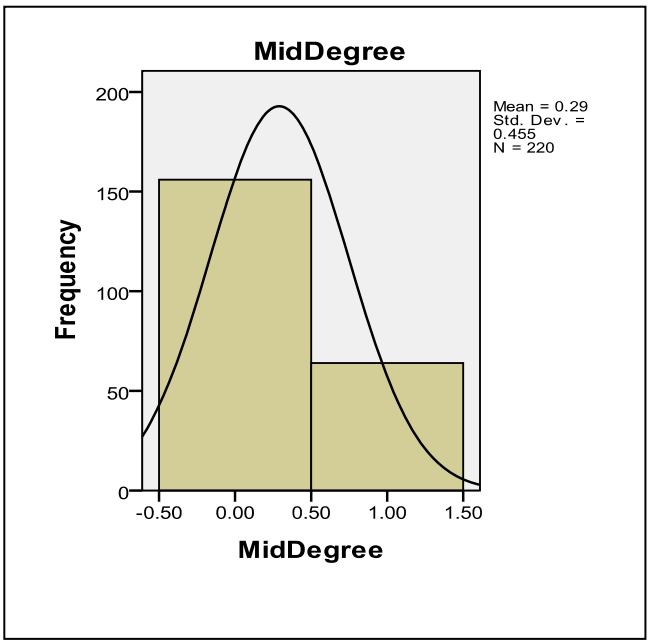
# APPENDIXES

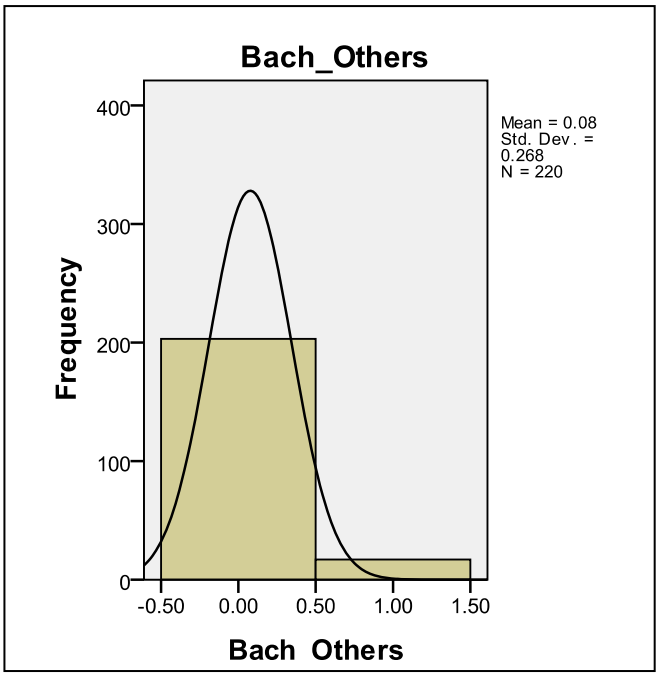
**Appendix 1** The frequency distributions of the study variables

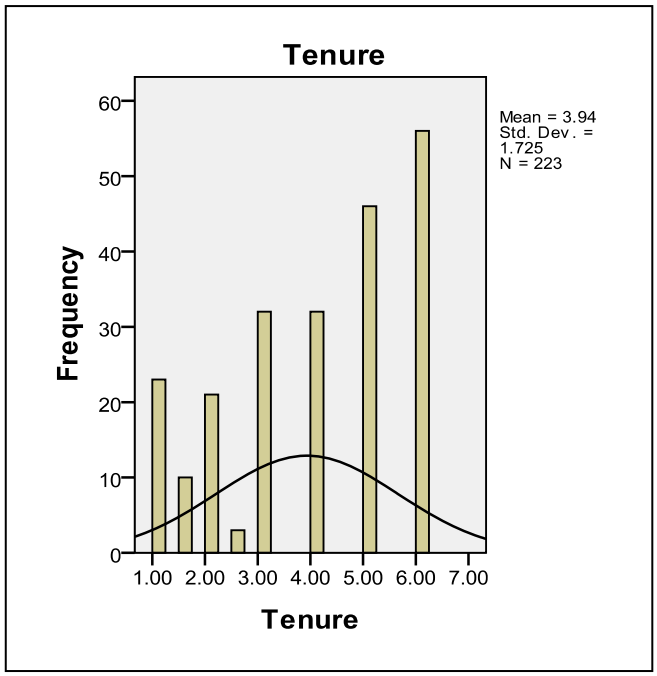


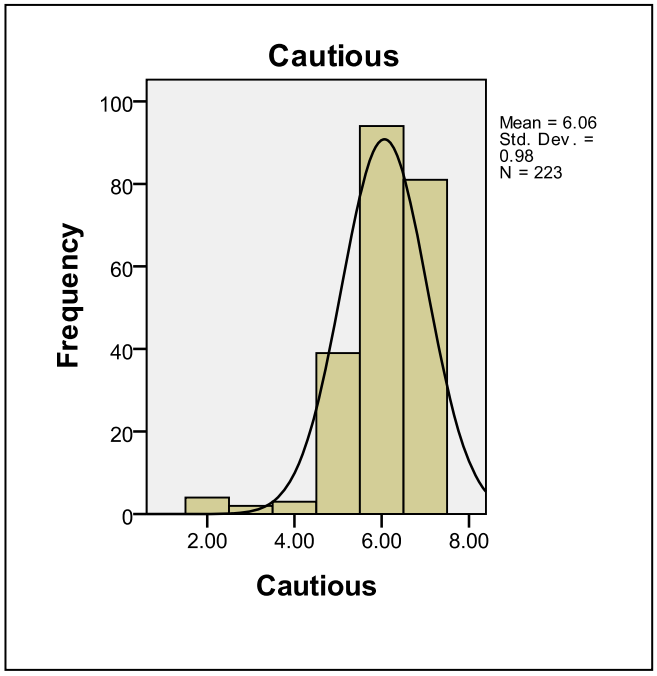



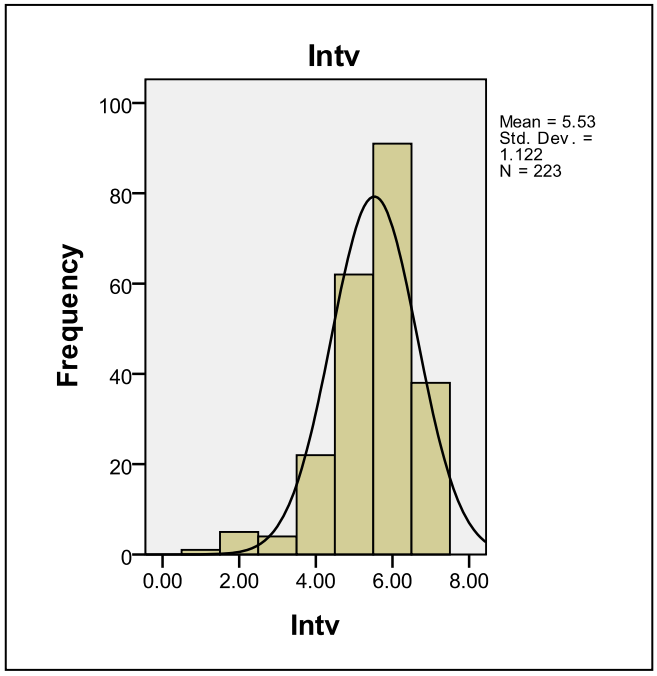



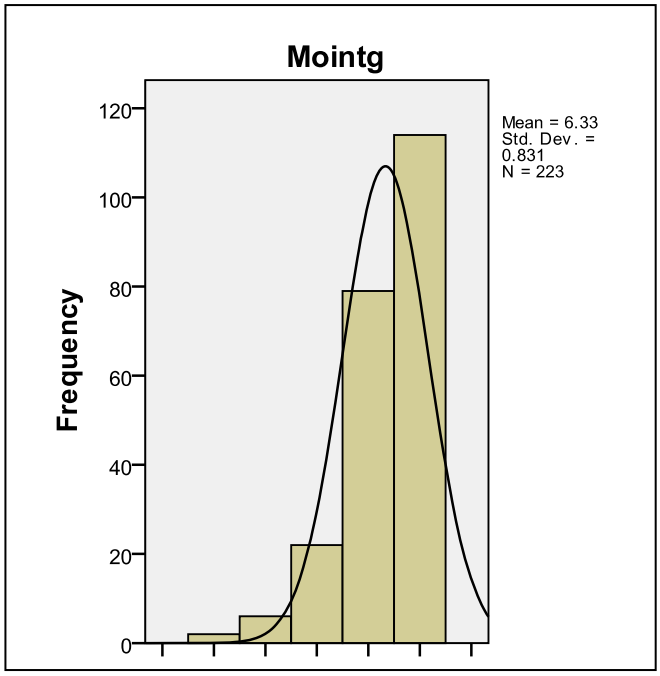



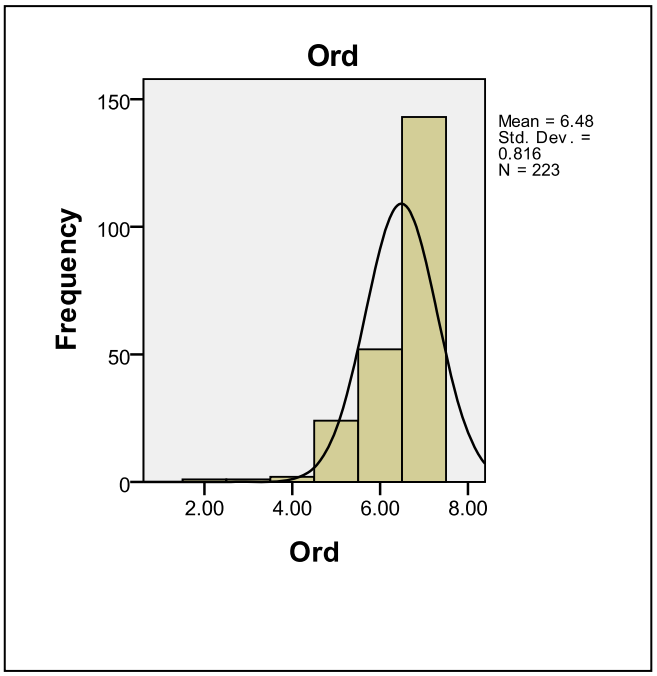

Bach_Others
Mean = 0.08
Std. Dev. = 0.268
N = 220
Frequency
Bach Others

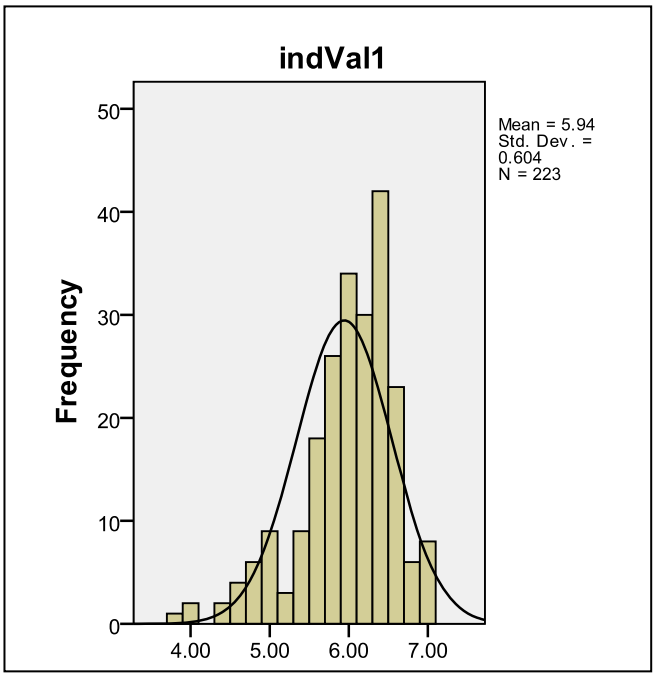

Tenure
Mean = 3.94
Std. Dev. = 1.725
N = 223
Frequency
Tenure

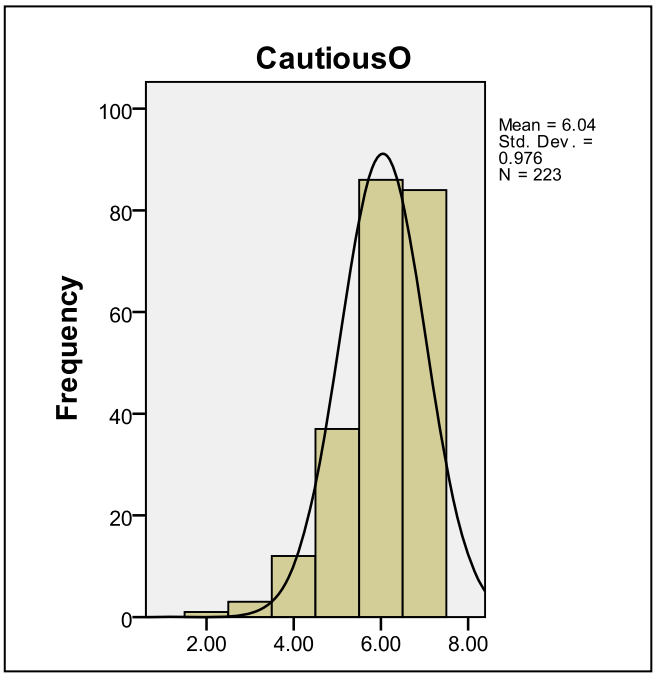

Cautious
Mean = 6.06
Std. Dev. = 0.98
N = 223
Frequency
Cautious

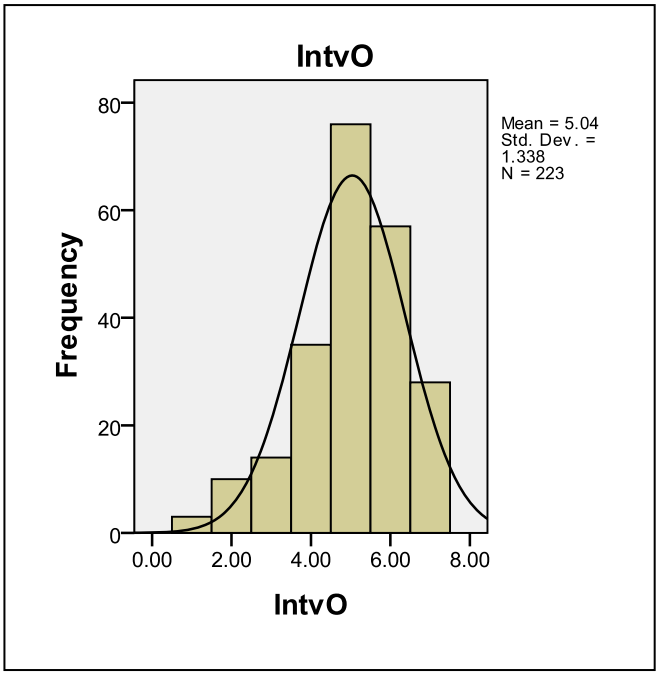

Intv
Mean = 5.53
Std. Dev. = 1.122
N = 223
Frequency
Intv

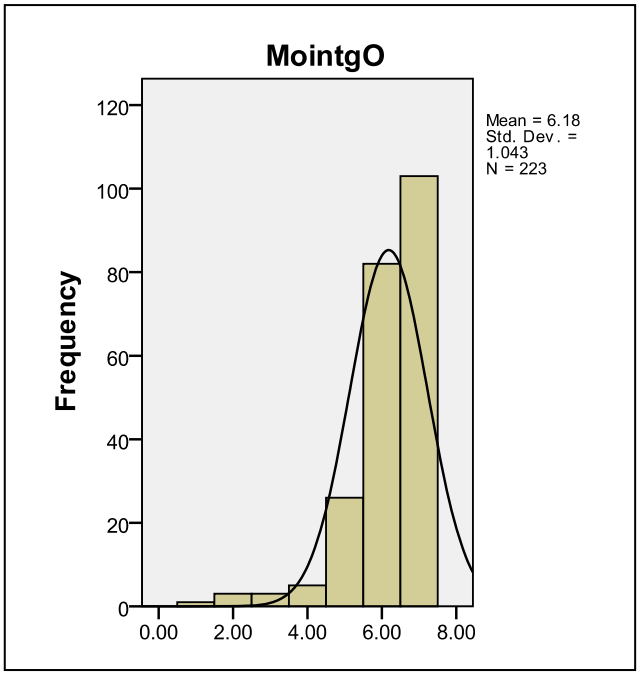

Mointg
Mean = 6.33
Std. Dev. = 0.831
N = 223
Frequency
120
100
80
60
40
20
0

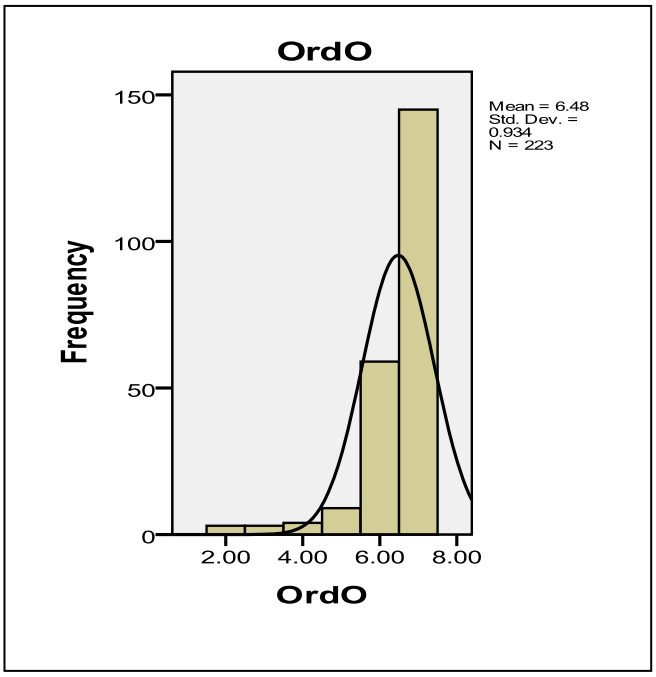

Ord
Mean = 6.48
Std. Dev. = 0.816
N = 223
Frequency
150
100
50
0
2.00
4.00
6.00
8.00
Ord

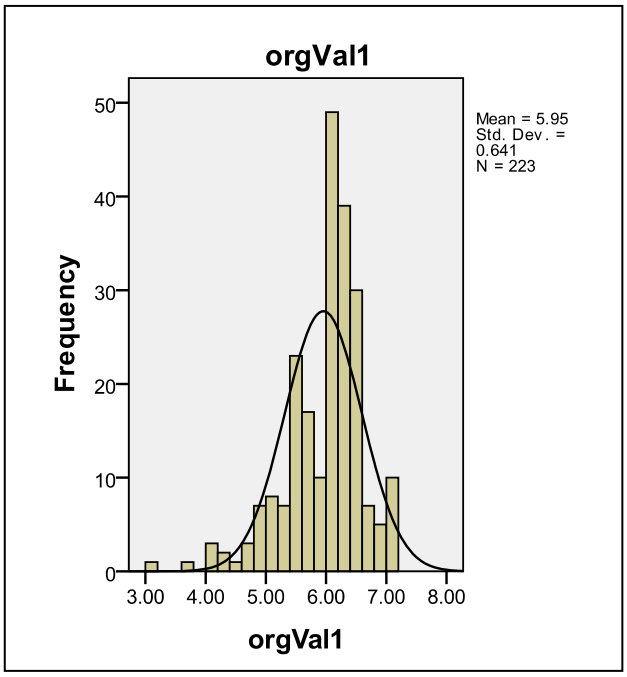

indVal1
Mean = 5.94
Std. Dev. = 0.604
N = 223
Frequency
50
40
30
20
10
0
4.00
5.00
6.00
7.00

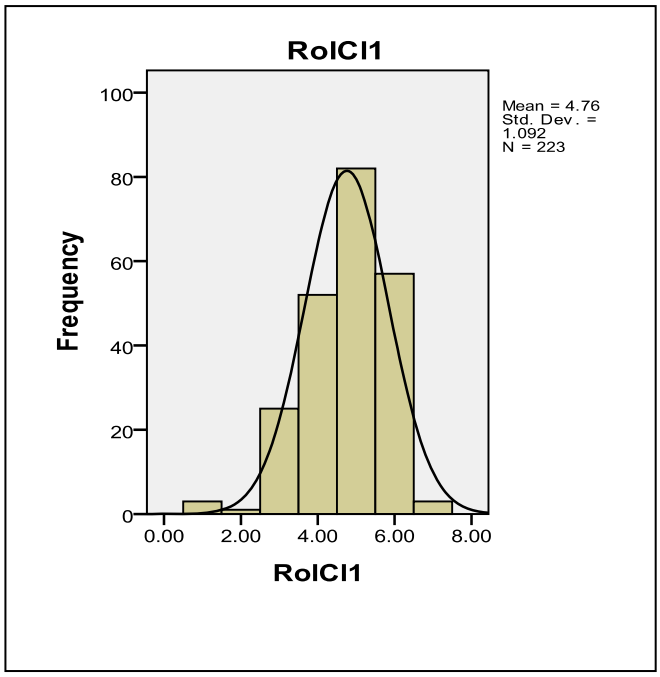

CautiousO
Mean = 6.04
Std. Dev. = 0.976
N = 223
Frequency
100
80
60
40
20
0
2.00
4.00
6.00
8.00

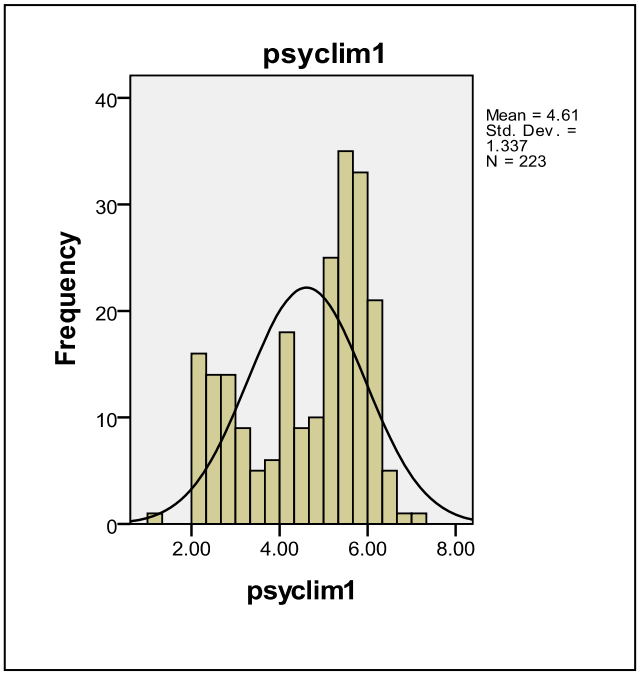

IntvO
Mean = 5.04
Std. Dev. = 1.338
N = 223
Frequency
IntvO

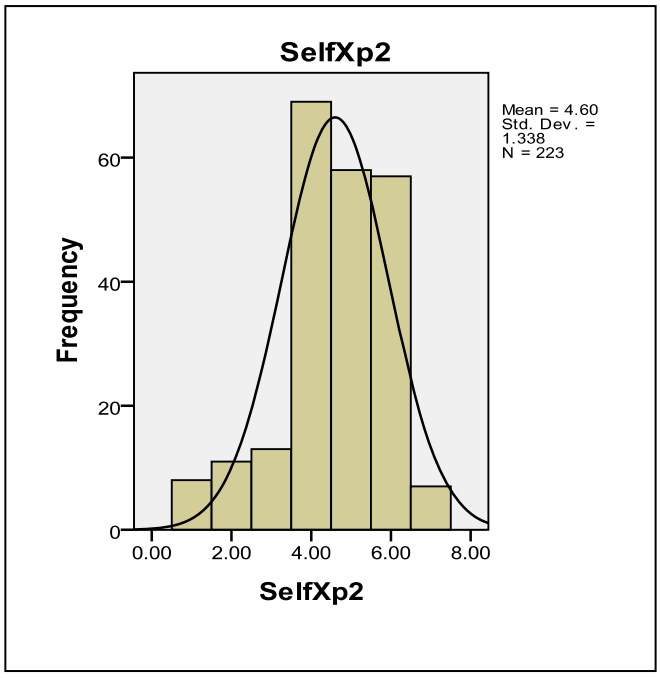

MointgO
Mean = 6.18
Std. Dev. = 1.043
N = 223
Frequency

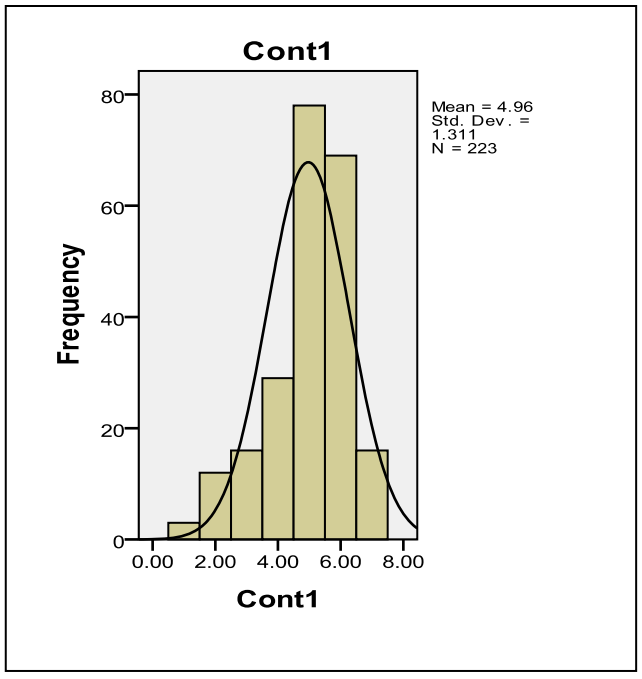

OrdO
Mean = 6.48
Std. Dev. = 0.934
N = 223
Frequency
OrdO

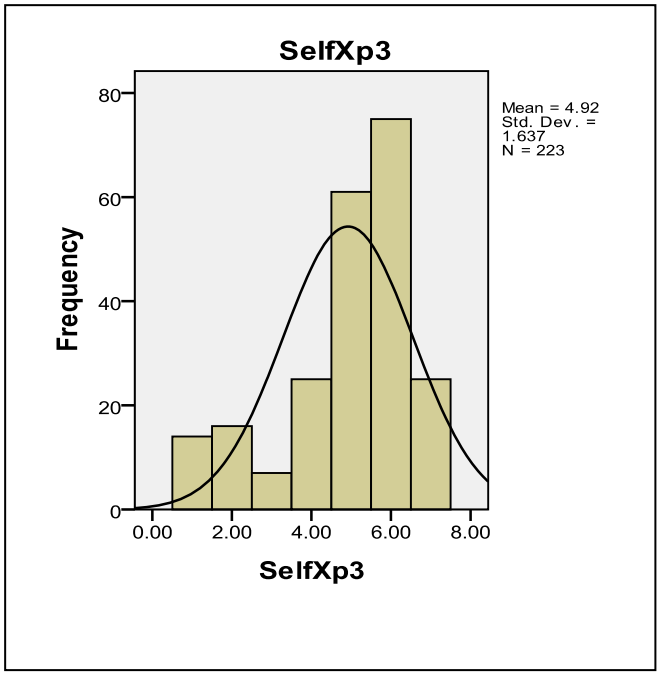

orgVal1
Mean = 5.95
Std. Dev. = 0.641
N = 223
Frequency
orgVal1

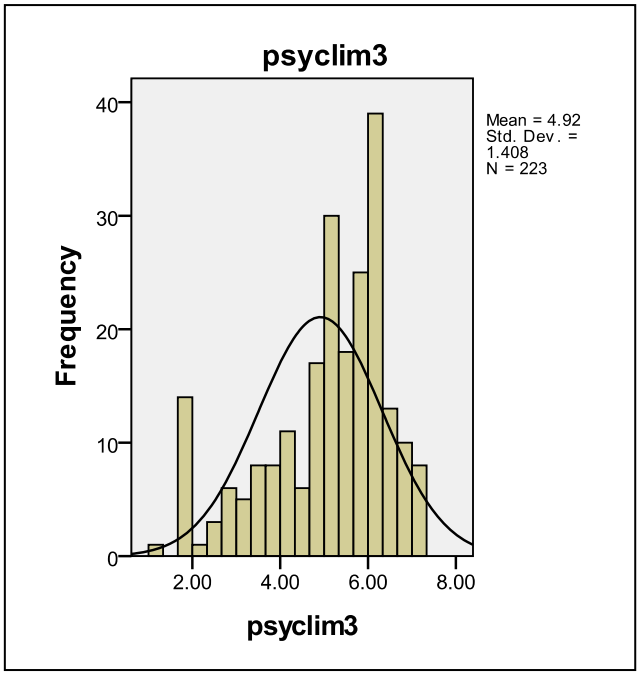

RolCl1
Mean = 4.76
Std. Dev. = 1.092
N = 223
Frequency
RolCl1

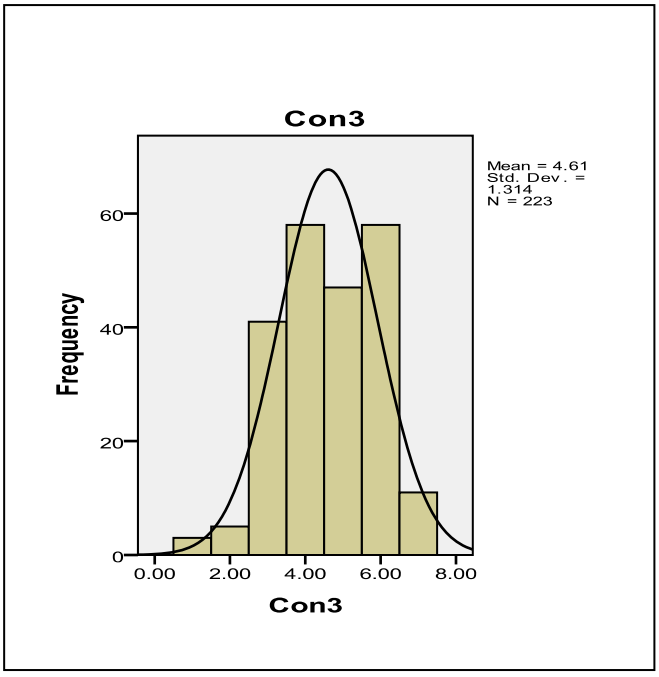

psyclim1
Mean = 4.61
Std. Dev. = 1.337
N = 223
Frequency
psyclim1

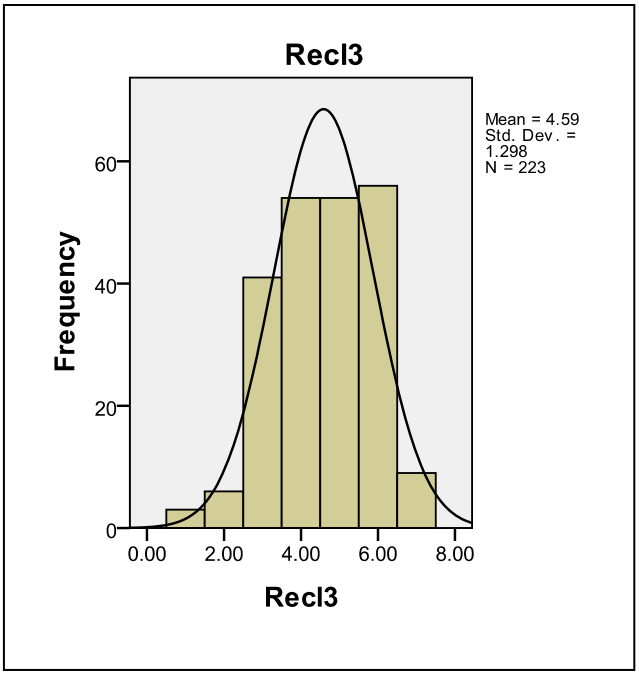

SelfXp2
Mean = 4.60
Std. Dev. = 1.338
N = 223
Frequency
SelfXp2

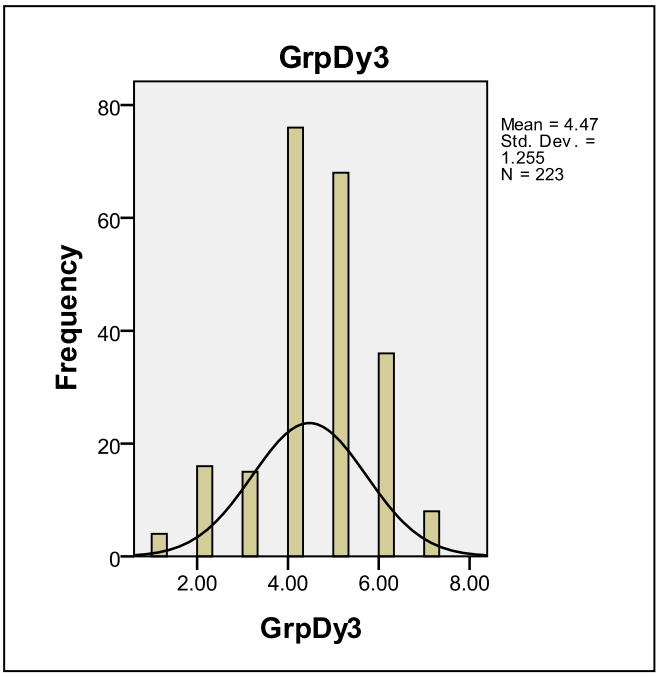

Cont1
Mean = 4.96
Std. Dev. = 1.311
N = 223
Frequency
Cont1

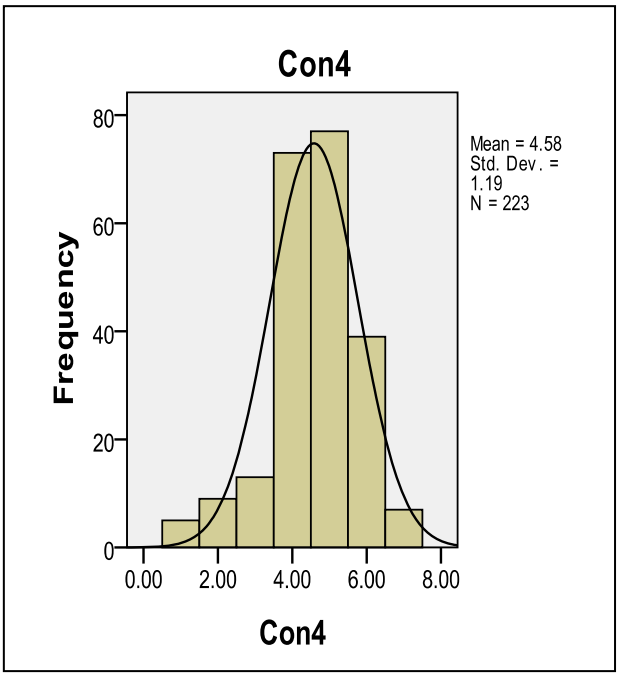

SelfXp3
Mean = 4.92
Std. Dev. = 1.637
N = 223
Frequency
SelfXp3

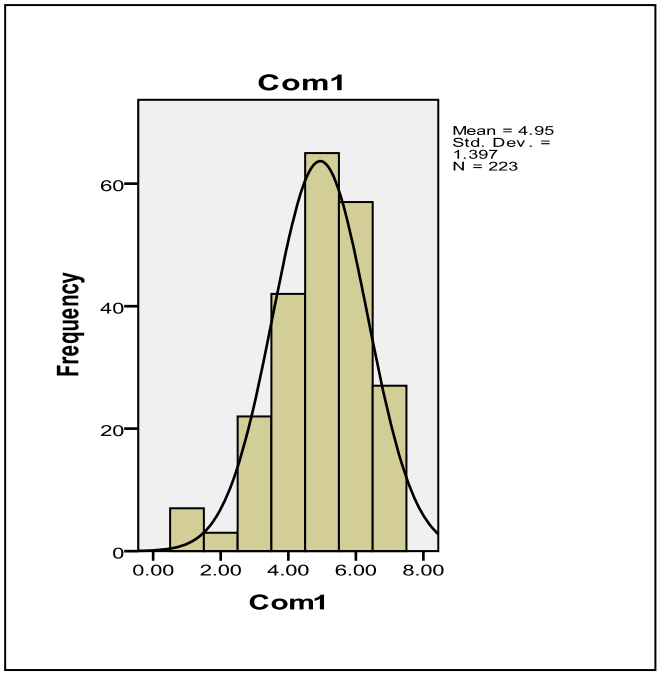

psyclim3
Mean = 4.92
Std. Dev. = 1.408
N = 223
Frequency
psyclim3

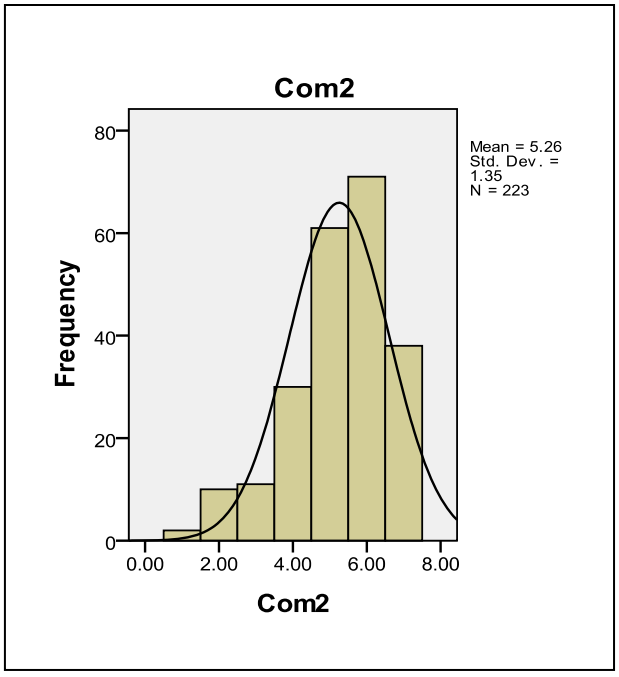

Con3
Mean = 4.61
Std. Dev. = 1.314
N = 223
Frequency
Con3

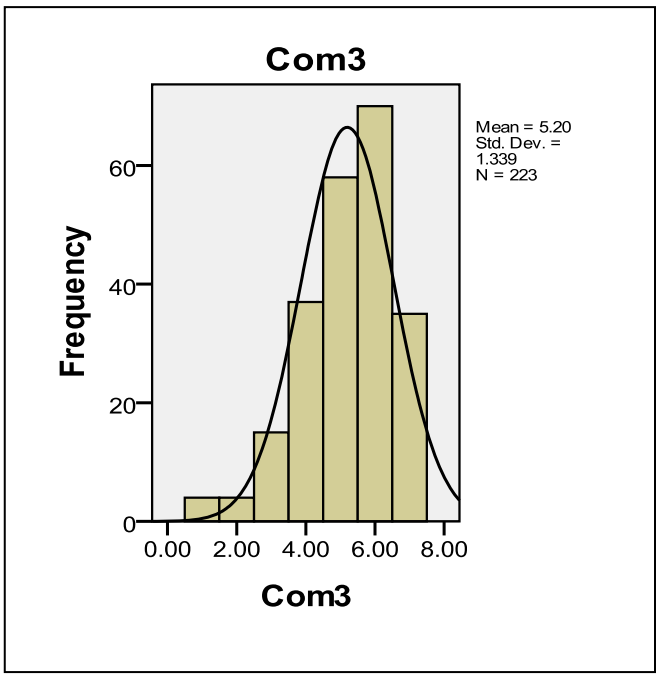

Recl3
Mean = 4.59
Std. Dev. = 1.298
N = 223
Frequency
Recl3

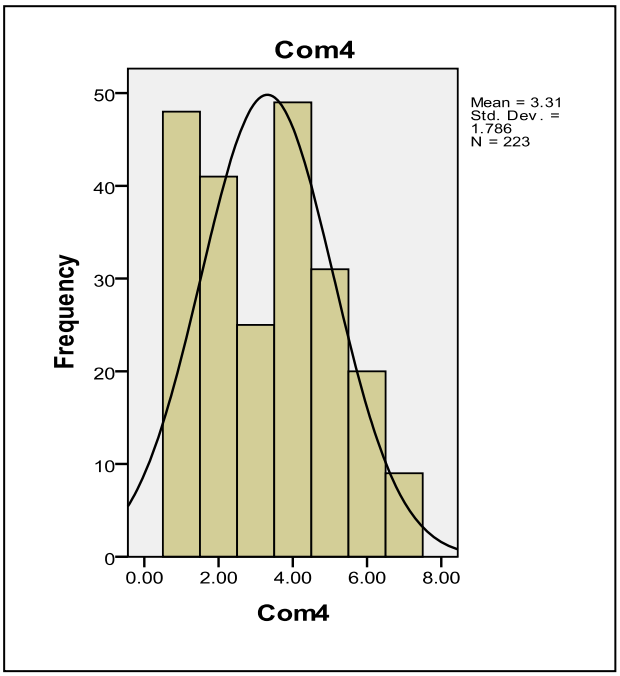

GrpDy3
Mean = 4.47
Std. Dev. = 1.255
N = 223
Frequency
GrpDy3

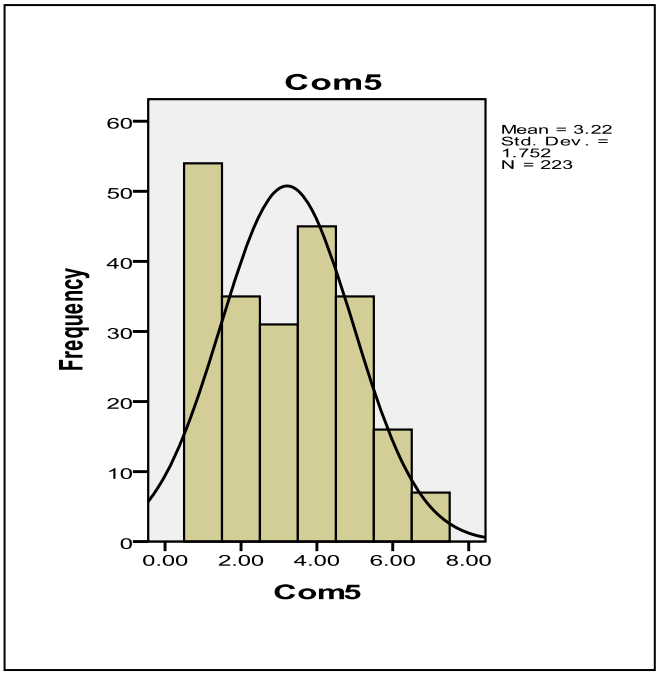

Con4
Mean = 4.58
Std. Dev. = 1.19
N = 223
Frequency
Con4

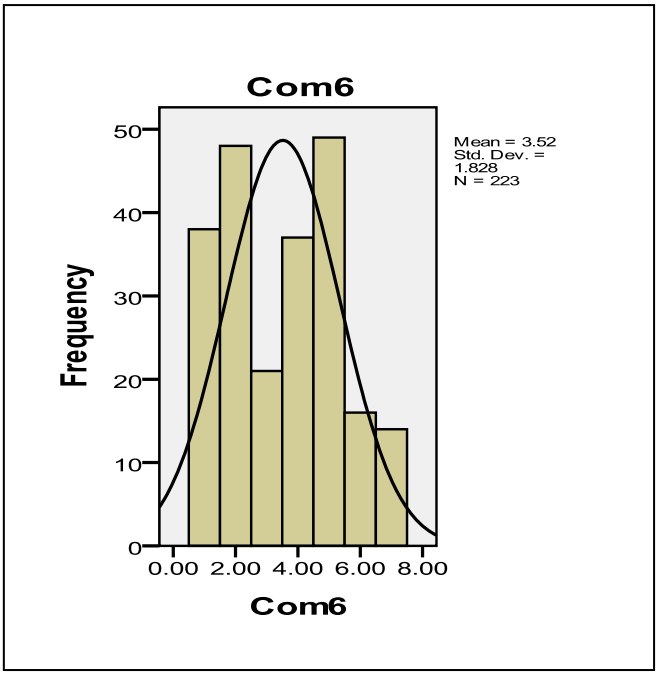

Com1
Mean = 4.95
Std. Dev. = 1.397
N = 223
Frequency
Com1

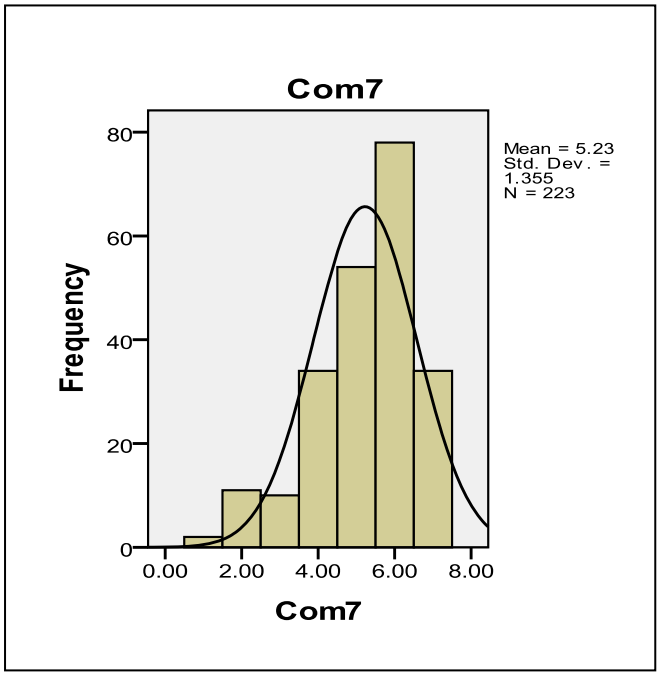

Com2
Mean = 5.26
Std. Dev. = 1.35
N = 223
Frequency
Com2

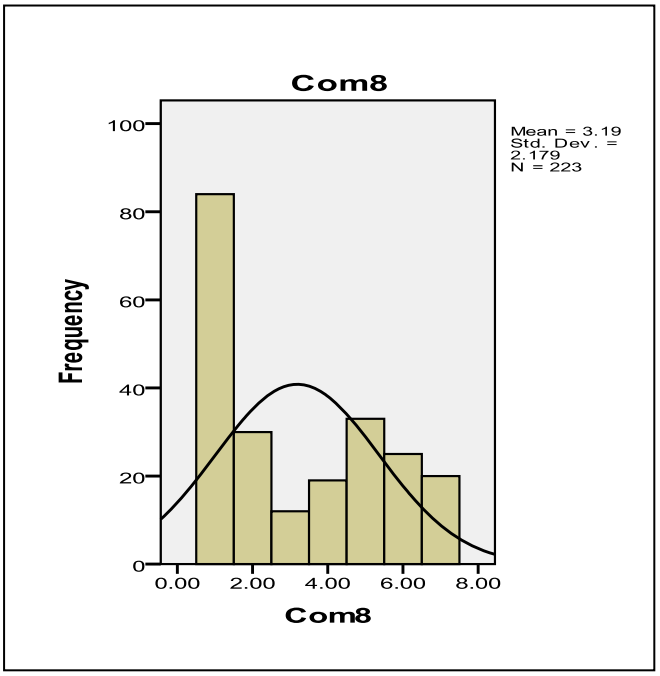

Com3
Mean = 5.20
Std. Dev. = 1.339
N = 223
Frequency
Com3


Com4
Mean = 3.31
Std. Dev. = 1.786
N = 223
Frequency
Com4


Com5
Mean = 3.22
Std. Dev. = 1.752
N = 223
Frequency
Com5

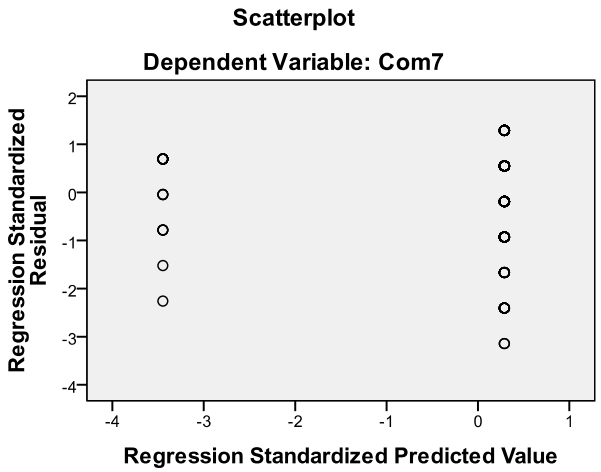

Com6
Mean = 3.52
Std. Dev. = 1.828
N = 223
Frequency
Com6


Com7
Frequency
Mean = 5.23
Std. Dev. = 1.355
N = 223
0
20
40
60
80
0.00
2.00
4.00
6.00
8.00
Com7

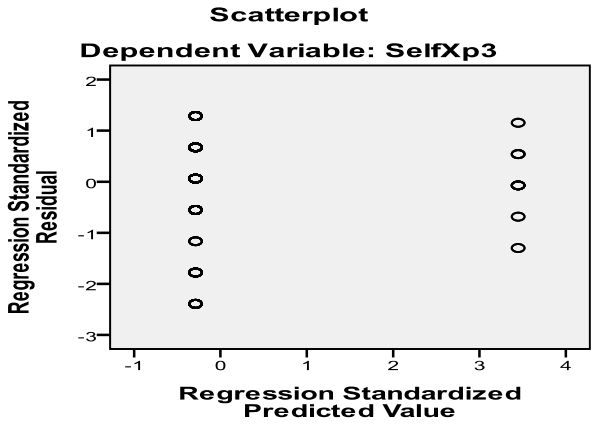

Com8
Frequency
Mean = 3.19
Std. Dev. = 2.179
N = 223
0
20
40
60
80
100
0.00
2.00
4.00
6.00
8.00
Com8

**Appendix 2** A sample of testing the linearity and homosedasdicity for the study variables using residual plots

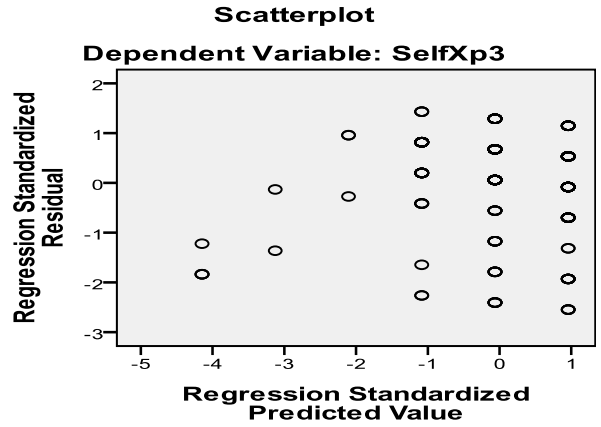
The relationship between bachelor and other degrees and commitment 7



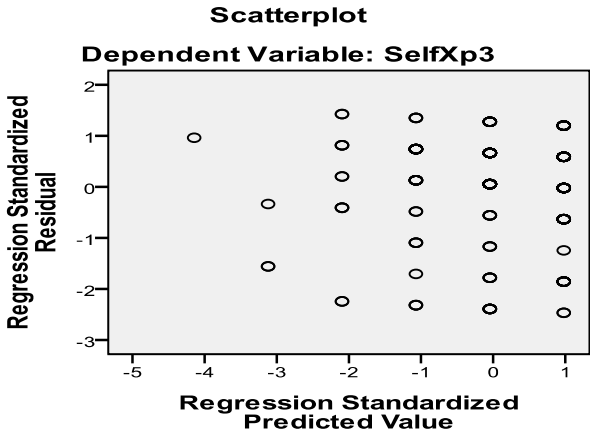

The relationship between bachelor and other degrees and self expression (3)



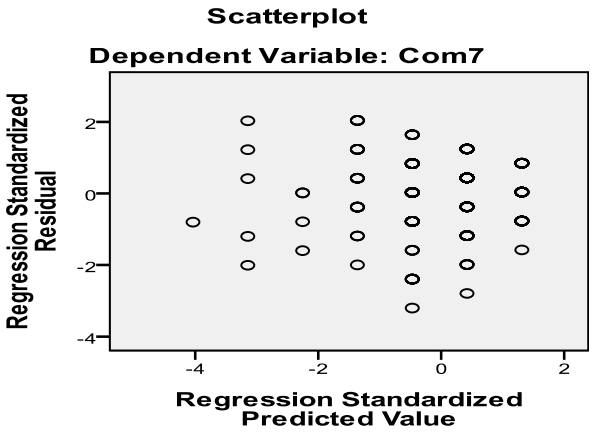

The relationship between cautiousness and self expression (3)



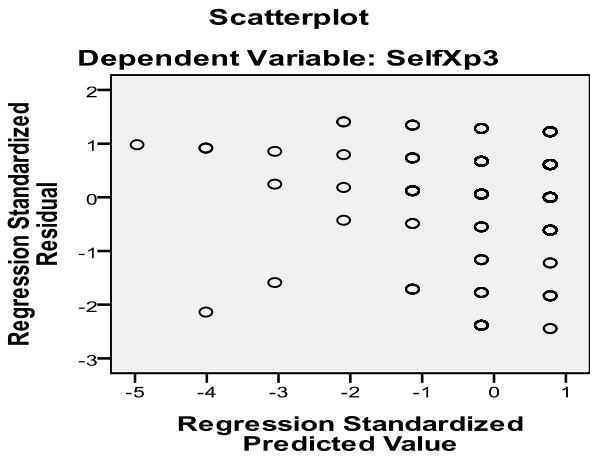

The relationship between organisational cautiousness and self expression (3)



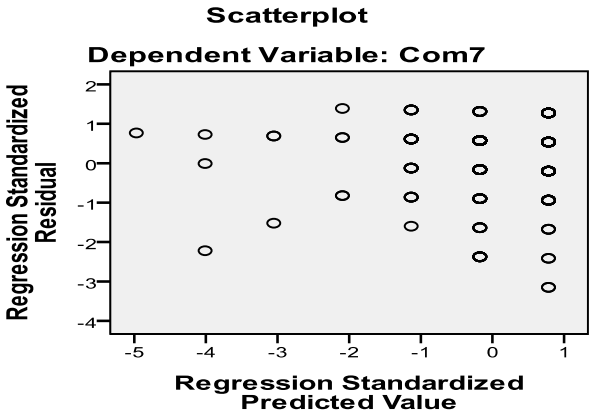
The relationship between initiative and organisational commitment (7)



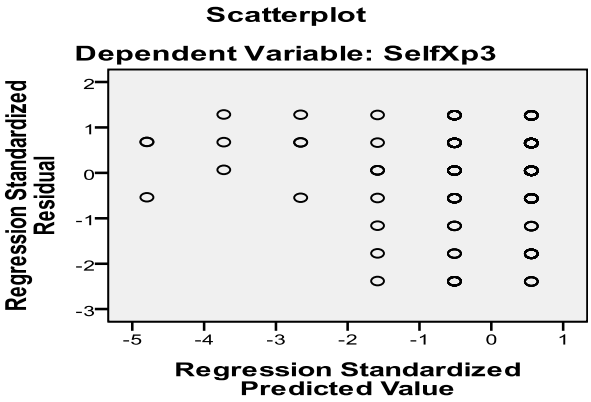

The relationship between organizational moral integrity and self expression (3)



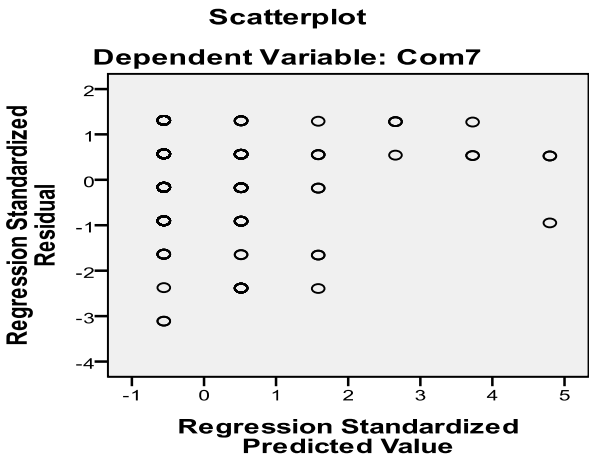

The relationship between organizational moral integrity and organisational commitment (7)



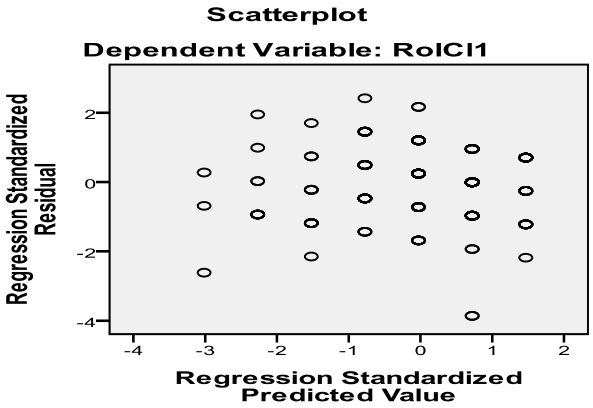

The relationship between organizational orderliness and self expression (3)



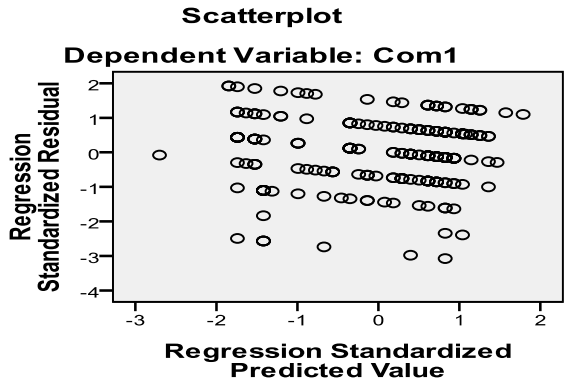
The relationship between organizational orderliness and organisational commitment (7)



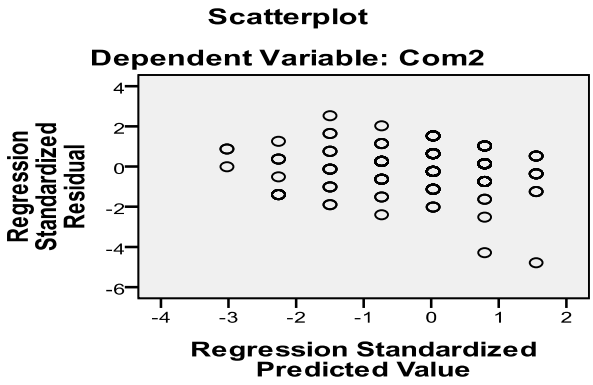

The relationship between organizational initiative and role clarity (1)




The relationship between psychological climate parcel (1) and organizational commitment (1)




The relationship between contribution (1) and organizational commitment (2)



**Appendix 3** The original version of the survey used in the study before translating it into Arabic

### Section A: BACKGROUND

Please answer the following questions:

**Gender:**

❑ Male ❑ Female

**Age:**

…… years

**Marital status:**

❑ Single ❑Divorced or Separated

❑ Married ❑ Widowed

**Education:**

**What is your highest education degree?**

❑High school ❑Bachelor degree ❑Masters

❑ Doctorate ❑Other (please mention): .....

**Length of service:**

**How long have you been with your current organisation?**

…… years

### Section B: YOUR OWN VALUES

Using the scale below, please rate the extent to which the following values are important as guiding principles in your LIFE.

| Not important at all | Not important | Somewhat Not important | Neutral | Somewhat important | Important | Very important |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| Value | Meaning | Rate |
|---|---|---|
| **e.g. adaptability** | Being flexible and changing in response to new circumstances | **4** |

| | | |
|---|---|---|
| **1. Adaptability** | Being flexible and changing in response to new circumstances | |
| **2. Aggressiveness** | Being aggressive and pursuing goals vigorously | |
| **3. Autonomy** | Being independent and free to act | |
| **4. Broad-Mindedness** | Accepting different viewpoints and opinions | |
| **5. Cautiousness** | Being cautious and minimizing exposure to risk | |
| **6. Cooperation** | Being cooperative and working well with others | |
| **7. Courtesy** | Being polite and having respect for individual dignity | |
| **8. Creativity** | Developing new ideas and applying innovative approaches | |
| **9. Development** | Achieving personal growth, learning and development | |
| **10. Diligence** | Working long and hard to achieve results | |
| **11. Economy** | Being thrifty and careful in spending | |
| **12. Experimentation** | Taking a trial and error approach to problem solving | |
| **13. Fairness** | Being fair and providing just recognition based on merit | |
| **14. Forgiveness** | Being forgiving and understanding when errors occur | |
| **15. Formality** | Upholding proper ceremony and maintaining tradition | |
| **16. Humor** | Creating fun and being light-hearted | |
| **17. Initiative** | Seizing opportunity and taking responsibility without | |

| | | |
|---|---|---|
| | hesitation | |
| **18. Logic** | Being rational and thinking in terms of facts and figures | |
| **19. Moral Integrity** | Being honourable and following ethical principles | |
| **20. Consideration** | Being caring, kind and considerate | |
| **21. Obedience** | Complying with directions and conforming to rules | |
| **22. Openness** | Being straightforward, sincere and candid in discussions | |
| **23. Orderliness** | Being neat, tidy and well-organised | |
| **24. Social Equality** | Being equal to others and avoiding status differences | |
| **25. Achievement** | Personal success through demonstrating competence according to social standards (ambitious, successful, capable, influential) | |

**Section C: ORGANISATIONAL VALUES**

Using the scale below, please rate the extent to which the following values are ACTUALLY guiding principles in your ORGANISATION.

| Not important at all | Not important | Somewhat Not important | Neutral | Somewhat important | Important | Very important |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| Value | Meaning | Rate |
|---|---|---|
| **1. Adaptability** | Being flexible and changing in response to new circumstances | |
| **2. Aggressiveness** | Being aggressive and pursuing goals vigorously | |
| **3. Autonomy** | Being independent and free to act | |
| **4. Broad-Mindedness** | Accepting different viewpoints and opinion | |

| | | |
|---|---|---|
| **5. Cautiousness** | Being cautious and minimizing exposure to risk | |
| **6. Cooperation** | Being cooperative and working well with others | |
| **7. Courtesy** | Being polite and having respect for individual dignity | |
| **8. Creativity** | Developing new ideas and applying innovative approaches | |
| **9. Development** | Achieving personal growth, learning and development | |
| **10. Diligence** | Working long and hard to achieve results | |
| **11. Economy** | Being thrifty and careful in spending | |
| **12. Experimentation** | Taking a trial and error approach to problem solving | |
| **13. Fairness** | Being fair and providing just recognition based on merit | |
| **14. Forgiveness** | Being forgiving and understanding when errors occur | |
| **15. Formality** | Upholding proper ceremony and maintaining tradition | |
| **16. Humor** | Creating fun and being light-hearted | |
| **17. Initiative** | Seizing opportunity and taking responsibility without hesitation | |
| **18. Logic** | Being rational and thinking in terms of facts and figures | |
| **19. Moral Integrity** | Being honourable and following ethical principles | |
| **20. Consideration** | Being caring, kind and considerate | |
| **21. Obedience** | Complying with directions and conforming to rules | |

| | | |
|---|---|---|
| **22. Openness** | Being straightforward, sincere and candid in discussions | |
| **23. Orderliness** | Being neat, tidy and well-organised | |
| **24. Social Equality** | Being equal to others and avoiding status differences | |
| **25. Achievement** | Personal success through demonstrating competence according to social standards (ambitious, successful, capable, influential) | |

**Section D: WORK ENVIRONMENT PERCEPTIONS**

Using the scale below, please rate the extent to which you agree with the following statements:

| **Strongly disagree** | **Disagree** | **Slightly disagree** | **Neutral** | **Slightly agree** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | |
|---|---|
| 1. My boss is flexible about how I accomplish my job objectives. | |
| 2. Management makes it perfectly clear how my job is to be done. | |
| 3. I feel very useful in my job. | |
| 4. I rarely feel my work is taken for granted. | |
| 5. The feelings I express at work are my true feelings. | |
| 6. My job is very challenging. | |
| 7. The cooperation between the various work groups achieves what beyond each group solely can achieve. | |
| 8. My manager is supportive of my ideas and ways of getting things done. | |
| 9. The amount of work responsibility and effort expected in my job is clearly defined. | |
| 10. Doing my job well really makes a difference. | |
| 11. My superiors generally appreciate the way I do my job. | |
| 12. I feel free to be completely myself at work. | |
| 13. It takes all my resources to achieve my work objectives. | |
| 14. My relationship with my work group members is friendly and productive. | |

| | |
|---|---|
| 15. My boss gives me the authority to do my job as I see fit. | |
| 16. The norms of performance in my department are well understood and communicated. | |
| 17. I feel like a key member of the organisation. | |
| 18. The organisation recognizes the significance of the contributions I make. | |
| 19. There are parts of myself that I am not free to express at work. | |
| 20. My work group members express their feelings and ideas freely. | |
| 21. I'm careful in taking responsibility because my boss is often critical of new ideas. | |
| 22. The work I do is very valuable to the organisation. | |
| 23. It is okay to express my true feelings in this job. | |
| 24. There is clarity of communication between my work group members. | |
| 25. I can trust my boss to back me up on decisions I make in the field. | |

## Section E: ORGANISATIONAL COMMITMENT

Using the scale below, please rate the extent to which you agree with the following statements:

| **Strongly disagree** | **Disagree** | **Slightly disagree** | **Neutral** | **Slightly agree** | **Agree** | **Strongly agree** |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | |
|---|---|
| 1. I would be very happy to spend the rest of my career with this organisation. | |
| 2. I enjoy discussing my organisation with people outside it. | |
| 3. I really feel as if this organisation's problems are my own. | |
| 4. I think that I could easily become as attached to another organisation as I am to this one. | |
| 5. I do not feel like part of the family at my organisation. | |
| 6. I do not feel emotionally attached to this organisation. | |
| 7. This organisation has a great deal of personal meaning for me. | |
| 8. I do not feel a strong sense of belonging to my organisation. | |

**Thank you for your participation.**