**CHAPTER 4**

**RESEARCH DESIGN AND METHODOLOGY**

**4.1      Introduction**

The chapter is concerned with the methodology and methods used in the study.  The first section of this chapter, provide a detailed description and justification of the methodology used in the present investigation. This includes a discussion on the research design, targeted informant, data collection procedures, the research instruments employed and methods used for the data analysis in this study. Subsequently the chapter provides a discussion on the description about the operationalisation of constructs used in the second section and consequently, the discussion focuses on the reliability and validity assessment of the constructs at the third section of the chapter.

**Section One: Research Design and Strategy**

**4.2      Research Design**

Matching the research design with an appropriate research methodology is an important consideration in any research project. The methodology must not only be appropriate to the type of research but also to the environment in which the research is being undertaken (Cresarell, 1994). This is because a good research design can provide a context in which relatively unambiguous can be drawn. In other words, it is a form of a carefully developed and controlled plan to carry out the research investigation.

A research design, according to Malhotra (2004) is a framework or blueprint that specifies the detail of the procedures necessary for obtaining the information to be used to structure and/or solve the research problems of the study. He categorised it into exploratory and conclusive research. The main objective of exploratory research is to provide insights and understanding of the research problem, while conclusive research is to test specific hypotheses and examine the relationship between the investigated factors. Figure 4.1 describes the different stages of research process.

In the earlier stage of this study, an extensive literature search pertaining to the related independent variables such as social capital, organisational culture, organisation structure, leadership behaviour, quality of work life orientation as the mediating variable, and organisational commitment as the dependent variable, was undertaken and focused on in order to provide an understanding on these subjects. The literature review is important to formulate the conceptual framework and further led to the research propositions and hypotheses. The search also indicates that the work utilizes conclusive research based on a cross-sectional design and that the findings of this research can be used as input into managerial decision making (e.g. Slater and Narver, 1994). The preliminary design of the questionnaire was structured based on the identified constructs. The questionnaire was pre-tested and feedback received was used to refine the key constructs. Administration of the questionnaire was carried out, and responses was analyzed and interpreted. Finally, results are reported.
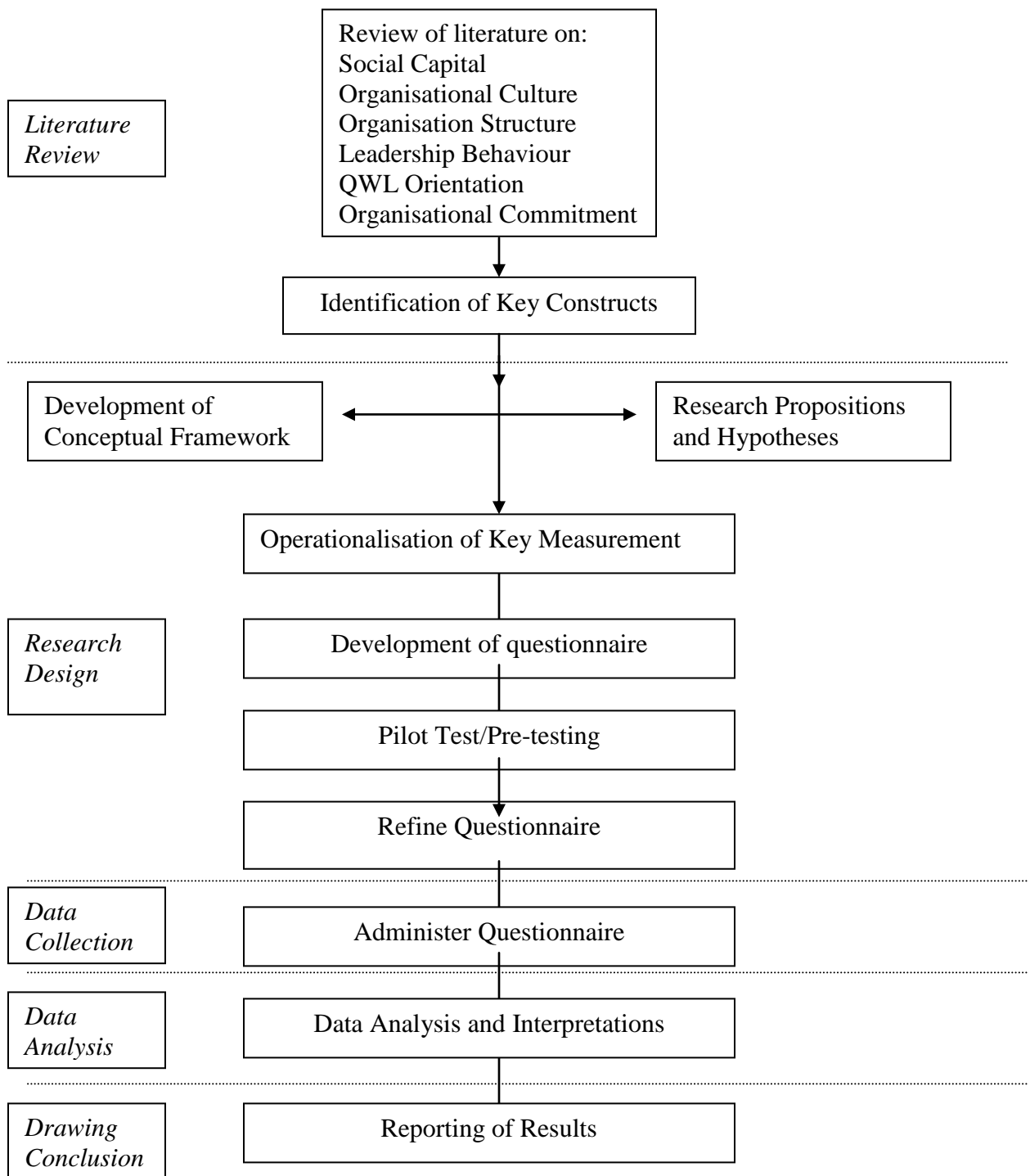
**Figure 4.1: The Research Process Chart**

By using the survey design the author would be able to test whether the existing models,

and theoretical and empirical findings on the effects of QWL orientation on

organisational commitment, based on the Western prescriptions, describe the Malaysian context. The survey research is also chosen due to its practicality and feasibility in terms of gaining access to organisations, i.e., public service organisations. Furthermore,compared to other methods,survey design is more transparent and accountable; the methods and procedures used are accessible to other parties, thus making it possible to assess the implementation and the overall research design.

## 4.3    Unit of Analysis

The unit of analysis is where information about the study is collected. It describes the characteristics or level of analysis of the study (De Vaus, 2002). According to Zikmund (2003) the level of the analysis can be organisation, departments, work groups, dyads, individuals or objects. It is important to determine the unit of analysis at the early stage, particularly at the problem definition stage, as variables in the conceptual framework, data collection methods, and sample size are dependent on this (Zikmund, 2000).

This study selects the public service organisations in Malaysia as the unit of analysis. This is because as Malaysia is forging ahead into achieving its vision, goals and objectives stated in its macro policies and development plans, the Malaysian Public Service is expected to play its role as a pace setter, facilitator, regulator and strategic integrator in cooperation with the private sector and the community-based organisations in meeting the challenges posed by the changing environment. Therefore, various policies measures and programmes have been introduced to strengthen the management of its human resource as well as enhance the effectiveness and efficiency of the overall

administrative machinery of the public service organisations. Hence, it is an advantage to have an overall view of the studies by examining the responses from the survey of these organisations. In fact, this is particularly meaningful given the relatively new topics that are being discussed and researched by this study.

### 4.3.1   Key Informant

The questionnaire was mailed to the Head/Director/Manager of the Human Resource Management/Administrative and Management Services Division of the sample agencies.These targeted informants were chosen due to their expertise in the subject-matter and their hands-on experiencebecause they are presumed to have a wide knowledge of the operations of the organisation, and would be able to provide accurate information (Kumar et al, 1994). As such, they played both roles as respondent and also informant of their organisations.

### 4.4   Sampling Procedures

According to Tudd, Smith and Kidder (1991:130), a population is the aggregate of all the cases that conform to some designated set of specifications. The population ofinterest of this study consisted of public service agencies in Malaysia. Using a purposive sampling technique a sample of 500 out of 720 organisations both at the Federal and State level including statutory bodies and local government authorities was chosen.The balance 220 organisations were not included in this sample of studymainly consists of all districts councils and small organisations which is under existing departments and statutory bodies that work towards achieving the goals of their parent agencies including some off-

budget agencies which are formed under the Companies Act or the Society Act and do not follow the policies and procedures of personnel management of the public sector. The purposive sampling technique is used in this study because it is a non-random technique that does not need underlying theories and it allows researcher to home in on organisations which have good grounds in what we believe will be a critical for the research.

The mailing list was taken from the Malaysian Public Service Department (PSD) a central agency under the Prime Minister Department and the Malaysia Government's Official Portal.The sample of 500 organisations was taken with the anticipation that it provides useable responses in the range of 30 percent to 40 percent, or approximately 150 to 200 responses.

Several other factors were also considered in determining the sample, such as, sufficient data to do Structural Equation Modeling, as well as time and resource constraints on the part of the researcher in implementing the survey. These issues correspond with the factors recommended by Hair, Black, Babin, Anderson, and Tatham(2006) in determining the sample size.

## 4.5    Research Instrument

A structured set of questionnaire was used to gather the relevant data for this study. From the literature review, established measures from related fields were incorporated in the questionnaire in order to evaluate the constructs of this study which include social capital,

organisational culture, organisation structure, leadership behaviour, quality of work life orientation and organisational commitment.

### 4.5.1 Scaling of Measurement

Scaling is the "procedure for the assignment of numbers (or other symbols) to a property of objects in order to impart some of the characteristics of numbers to the properties of objects" (Cooper and Schindler, 2006:332). It can be classified into comparative scales and non-comparative scales (Malhotra, 2004). Comparative scales involve one of two types of scaling techniques in which there is direct comparison of stimulus objects of the study with one another, whereas non-comparative scales are independent of one another. This study uses the non-comparative scales where the itemised rating scales can be further classified as Likert, semantic differential or staple scales. The semantic differential-liked scale was applied to most of the constructs of this study.

The semantic differential scale measures the psychological meanings of an attitude object using bipolar adjectives (Cooper and Schindler, 2006). The method consists of a set of bipolar rating scales, by which one or more participant's rate one or more concepts on each scale items. A six point semantic differential-liked scale was used to measure all the constructs involve. For the purpose of data interpretation, the descriptive phrases for the scale were (1) "strongly agree", (2) "moderately agree", (3) "slightly agree", (4) "slightly disagree", (5) "moderately disagree", and, (6) " strongly disagree". The scale contains a series of bipolar items for the various properties of the construct. The bipolar scale provides the opportunities for respondents to view the alternative at the other side of the continuum as well as enables the researcher to probe into both directions and the intensity

of respondents' perception (Green et. al, 1988). Thus, the scales would lead to a high degree of reliability (Dickson and Albaum, 1977). The scale also specifies more precisely the dimension rather than allowing one pole of the scale to be interpreted idiosyncratically (Goldberg and Kilkowski, 1985). All items generated for all bipolar scales in this study have been reviewed by an expert in English language to ensure its accuracy.

An even-numbered six-point scale was used in this study, to avoid the clustering of responses at the neutral point, which will turn out to make the result unreliable (Ling, 1998). Most people use a neutral response as a dumping ground when they would prefer not to have to choose, don't care, or have no opinion. Thus, by using a six-point scale, the validity of the question will be improved. After all, results of a study comparing an odd scale (seven-point) with an even scale (six-point) concluded that there was no significant difference in the results between scales (Kinnear and Taylor, 1996). Furthermore, decades of psychological research have shown that a six-point scale with three levels of agreement and three levels of disagreement works best for the assessment of psychological attributes. Osuagwu (2001) argued that by forcing the subjects to decide on one half of the scale may be some otherwise hidden biases could be revealed.

### 4.5.2 Questionnaire Structure and Sequencing

The survey instrument was a structured ten (10) pages questionnaire with two (2) pages allocated for important contact details, instructions on answering the questionnaire and assurance on the confidentiality of the information supplied. The questionnaire was divided into seven (7) parts with each part separated by a specific heading. Instructions

were clearly and precisely stated at the first page before each heading. This is to avoid repeated instructions at every page besides keeping the usage of pages at minimum level. The background information of the organisation was presented on the final part of the questionnaire. This procedure was adopted following suggestions that sensitive questions were to be set towards the end of the questionnaire (Dillman, 1999, Zikmund, 2000). As such, if this part was not completed, it would not significantly affect the propositions and hypotheses testing of the study.

## 4.6    Pre-testing

Pre-testing is carried out to identify any items that may be difficult to comprehend and revise them prior to conducting the survey. Dillman (1991) indicates that measurement errors result from the way questions are asked and from the sequence of the questionnaire might impede respondents in answering correctly to the survey questions. In fact, it is considered as the last step in questionnaire design before final questionnaires are mailed-out (Diamantopoulos et al., 1994). Thus, a pre-test is conducted for the purpose of:

    (i)       Checking for face and content validity of the questionnaire;

    (ii)     Assuring that the questions are understood and correctly interpreted;

    (iii)   Checking for its comprehensiveness, syntax errors and the general layout format.

For the purpose of this study, the questionnaire was first distributed to colleagues in three public service organisations for comments on the questions form and layout, wording, content, sequence, question difficulty and instructions. The second draft of the questionnaire was then distributed to another group of colleagues for second pre-testing

in another two public service organisations in Kuala Lumpur. This was important in order to make sure that the questions asked were understood and relevant to the Malaysian public service context.

All the feedback received from the pre-test was considered in the final revision of the survey instrument. Most of the respondents had a favourable attitude to the questions, structure and design of the questionnaire. The major feedbacks obtained from the pre-test to further improve the instruments are as follows:

(a)    Some of the wording and language used in the questionnaires need to be rephrased for clarity purposes and to suit the Malaysian public service culture environment. It was suggested that:

   (i)    the number of questions need to be reduced especially questions which is redundant and not relevant in order to shortened the time to complete the whole questionnaire from 30 minutes to 20 minutes.

   (ii)   Some of the respondents did suggest a personal telephone call be made to the respondents as a reminder after the due date. This is associated with Malaysian public service culture that emphasises personal relationships to any dealing within the organisations.

   (iii)  Such a suggestion was incorporated in the administration of the survey. This is also conforms to the recommendation made by De Vaus (2002) on the use of telephone calls as part of the reminder to respondents.

(b)    Respondents were also given contact details if they had queries on the survey, which included the address of the Faculty of Business and Accountancy, University Malaya on the cover letter and on the second page of the questionnaire.

## 4.7    Data Collection Method

Data were collected form respondents using a structured questionnaire, which meant that questions asked were limited to certain responses of alternatives stated.  Such a method has been proven to be reliable (Malhotra, et al., 1999).  The mail survey method was used for reasons of anonymity and privacy of respondents, low cost and simplicity of the procedure (Dillman, 1991). The questionnaire was 12 pages with 10 pages contained the relevant questions. Although the questionnaire is considered slightly long, but the effects of questionnaire length did not influence the response rate.

As the questionnaire was self-administered, questions asked were simple to comprehend, and detailed instruction was provided.  The questionnaires began to be posted in the middle week of June 2006.  Questionnaire was posted in batches to assist the researcher to recognize the due date for each of the batch. The first batches of questionnaires were posted to all Ministries and Federal Government Agencies in the KlangValley. This was followed by the second batches to all Federal Departments and Statutory Bodies (Federal and State level) in the first week of July 2006. The third batches of questionnaires were posted to all state government offices and local government authority nationwide by end of July and early August 2006. Respondents were given a month to respond to the

questionnaire. This took into account delays in posting and receiving of the questionnaire nation-wide.

As suggested by various authors (e.g. Kerlinger and Lee; Dillman, 1978) one of the possible problems that may arise from gathering data by mail questionnaire is the failure of participants to respond. To some extent, a slow and low response rate in the present study was to be expected. It is typical for mail surveys to have poor response rate, and as a result they have been criticised for non-response bias (Maholtra, 1999). It has been suggested that the best way to protect against non-response bias is to improve the response rate (e.g. Armstrong and Overton, 1977). Thus, to encourage participation, a follow-up call was made to all those organisations that do not respond after a month's time to remind the personal assistant of the identified managers of the survey. By middle of August, all questionnaires were posted.

In order to increase the participation and response rate of the study a total design method was applied in the implementation of the survey (Dillman, 1991). This includes the mail package consisting of an outgoing envelope, cover letter, questionnaire and a return envelope.

### 4.7.1 Outgoing Envelope and Return Envelope

A 9"x12.75" sized envelope was used. The size of the envelope was selected to allow enough space for the questionnaire and a return envelope but most importantly, to allow a professional presentation of the survey so that it would be able to attract attention and

interest in the questionnaire. The outgoing envelope was personalised to the Head/Director/Manager of the Human Resource Management/Administrative and Management Services Division of each public service agencies. To facilitate respondents to return the questionnaire, an A4 sized reply paid envelope was included. This was done for the convenience of respondents, to cut their cost, to encourage them to respond to the survey, and to lessen their time taken in responding (Newman and McNeil, 1998).

### 4.7.2 Cover Letter

The cover letter that was included in the questionnaire was printed on a Faculty of Business and Accountancy, University Malaya letter head and was signed by both the principal supervisor and the researcher. The department letterhead was used not only to differentiate this study from other commercial research that was going on at that time, but also reflect the commitment of the faculty to the importance of the study. The cover letter was addressed to the Head/Director/Manager of the Human Resource Management/Administrative and Management Services Division of the public service agencies. The introduction introduced the researcher and the supervisor and specified the purpose of the study. It, then, specified the objectives of the study, the contribution of the study and the time needed to finish the questionnaire. Respondents were informed about the confidentiality of the study and reassured that only the researchers and the supervisor would have access to the information given and all reports of the study would be presented on an aggregate level only. Contact details of the researcher and the supervisor were also made available in the cover letter.

### 4.7.3  Questionnaire

The questionnaire was bound in a booklet format with University Malaya printed on top of the cover, followed by the title of the survey.  A simple graphic was used to enhance the cover and to attract attention and interest in the questionnaire. The idea to bind the questionnaire in a booklet style was not only to allow for a professional look, but most importantly, to generate interest among respondents to answer the survey.  The professional look was also meant to differentiate this study from many other studies that were received by respondents at the same time. The booklet was 12 pages, double sided, with the first page allocated for the title, time needed to answer the questionnaire, the due date and contact details of the researcher.  The phrase "ALL INFORMATION WILL BE STRICTLY CONFIDENTIAL" was also included on the first page.  The second page concerned the instructions of the survey ad reiteration of the confidentiality of the responses given.  The content of the survey began with the topic related to the title that was stated on the cover of the questionnaire (Dillman, 1991**).  (Please refer to Appendix 1 for the booklet of the questionnaire).**

### 4.8  Response Rate

The data collection took slightly more than two months to complete, which started in the middle of June and ended in August 2006. Out of 500 questionnaires mailed out, 208 responses were received by the end of October.  Two hundred and three (203) were useable and 3 questionnaires were incomplete and two (2) were returned to the sender for reason that the identified respondents were not with the organisations.  As a result, the response rate of the survey was at 40.6 percent. This percentage is above the expected

rate for mail surveys that are randomly sampled with no prior contact established with respondents (Malhotra, 1999). Table 4.1 exhibits details of the response rate.

**Table 4.1: Response Rate**

| Item | Descriptions | N | Percent (%) |
|---|---|---|---|
| Total target population | 720 organisations | 720 | 100.0 |
| Total target sample | 500 organisations | 500 | 69.74 |
| Total questionnaires mailed | 500 organisations | 500 | 100.0 |
| Total questionnaires received | | 208 | 41.6 |
| Responses | ▪ Ministries/Federal Govt. Agencies…34<br>▪ Departments…………………………...48<br>▪ Statutory Bodies………………………44<br>▪ State Government Offices…………..53<br>▪ Local Government Authorities……...24 | | |
| **Total usable responses** | | **203** | **40.6** |
| Non-responses | | 292 | 58.4 |

## 4.9    Cleaning the Data

### 4.9.1   Detecting the Missing Data

Missing data were reduced as much as possible by checking all the questionnaires at the time of collection. When there was a case whereby some of the questions were not answered, it was immediately brought to the attention of the related respondents. Since

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all the data had been keyed into the SPSS manually, before any tests were conducted using the data set, frequency distributions for each variable in the study as well as missing value analysis were run to ensure that the data were "clean". The results indicate that there was no missing data exists in the data set of this study.

### 4.9.2 Detecting the Outliers

Hair et al (1998) defined outliers as "the observations with a unique combination of characteristics identifiable as distinctly different from the other observations". It is important to make a distinction between outliers that ought to be deleted and those that ought not to be. Outliers that require deletion are incorrect data entry, recorded missing values that have been read as real values and data from respondents who are not members of the intended population (Tabachnick and Fidell, 2001).

In this study, from the output of the descriptive tables, all the items in each section of the questionnaire were examined to ensure that the responses were within the range of the items or scales, and the extreme values were identified. The results indicated that no error was detected in the data set of the study.

### 4.9.3 Data Coding

For some scales, the wording of particular items has been reversed to help prevent response bias. Thus, all the negatively worded questions as shown in Table 4.2 needed to be reversed before performing the statistical analyses on the data. The negatively worded items needed to be reversed before a total score can be calculated for that particular scale. Therefore, the range of the six-point bipolar scale for the negatively worded items was

transformed from 1 (Strongly Agree) – 6 (Strongly Disagree) to 1 (Strongly Disagree) – 6 (Strongly Agree).

**Table 4.2: Negatively Worded Questions**

| Work Environment (Part E) | |
|---|---|
| No. | |
| 3 | My present job is only a tiny part of the overall work |
| 9 | My present job is quite simple and repetitive |
| 10 | My present job gives me little chance to get to know other people |
| 12 | My present job is not significant, where the outcome of my work are not likely to have any effect on other people |
| 22 | At this workplace my abilities are not fully utilized |
| 28 | At this workplace I find it difficult to cope with the amount of work I have to do |
| 31 | At this workplace I often face difficulties in balancing my work and family lives |
| **Organisational Performance – commitment towards the organisation (Part F)** | |
| No. | |
| 3 | I feel very little loyalty to this organisation |
| 7 | I could just as well be working for a different organisation as long the type of work were similar |
| 9 | It would cause very little change in my present circumstances to leave this organisation |
| 11 | There's not too much to be gained by sticking with this organisation indefinitely |
| 12 | Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees |
| 15 | Deciding to work for this organisation was a definite mistake on my part |

## 4.10    Response Bias Analysis

Before proceeding to the data analysis steps, absence of response bias was established first. Response bias is the effect of non-responses on survey estimates (Fowler, 1988). This procedure examines the scenario if the non-respondents had responded; their responses would have substantially changed the overall results of the survey. In this study, a wave analysis (Leslie, 1972) was deployed. The process entails monitoring the

response pattern for items of the main variables for over eight weeks. The procedure assumes that those who return surveys in the final weeks of the response period can be considered non respondents. The results indicated that there is no statistical change from week to week; hence a case for absence of response bias was established.

## 4.11 Data Analysis

The study used statistical software SPSS version 14.0 and AMOS software to analyze the data derived from the questionnaire survey. The nature of the sample was examined through descriptive statistics. Coefficient alpha and factor analysis with varimax rotation and confirmatory factor analysis was used to purify the data and examine the reliability and validity of the measures. In order to test the hypotheses of the study, statistical techniques ranging from correlation, multiple regressions, to structural equation modelling and path analysis were used. These analytical techniques are discussed in Chapters 5.

**Section Two – Measurement of Research Construct**

## 4.12 Operationalisation of Constructs

Most of the constructs were measured by adapting established scales from the extant literature. A major concern when using a scale developed in other contexts is its validity across societies. Even though the validity was theoretically proven, some of these measures have not been tested its validity in a Malaysian setting. Therefore, steps were taken to ensure that the scales were interpretable and could be understood by the respondents. For example, some modifications were implemented to suit the language

and the public service environment of the respondents. This was done as a result of feedback from the pre-testing. The modification however, does not alter the content of the constructs.

Table 4.3 to Table 4.8 show measurement items used. On average, each construct was measured using to three to five items. This number of items is considered acceptable by methodologists (Fabrigar et al. 1999). It is argued that a construct with more items can more fully capture the underlying factor, while a construct that have fewer items in a scale can reduce the 'stray' loading and may strengthen the discriminate validity, particularly for a narrowly defined measure (Ferratt et al., 1981). The following discussion of the constructs used for the study is based on the sequence that they are presented in the conceptual framework.

## 4.13    Measurement Scales

### 4.13.1  Organisation Structure

This study viewed organisation structure as having three main dimensions namely centralization, formalization and complexity (Robbins, 1990). In order to measure organisation structure, this study employed a survey approach which is based on perceptual measure. According to other behavioural science research, this measure is suggested to be adequately and accurately reflect the degree of structure experienced by an individual (Duncan, 1972) and influence pattern within a group (March, 1955).

The widely used scales developed by Hage and Aiken (1969) were adapted to measure the organisation structure dimensions of centralization and formalization.These scales were selected due to its high reliability and popularity among researchers in the organisational behaviour studies (Lau et al. 2003). The original measurement for both dimensions scored on a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). However, the scales are modified to meet the needs of this study. For the measurement of complexity two items were modified from John and Martin (1984) while the other two was adapted from the vertical differentiation scale developed by Aiken et al. (1980). The six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6) is applied. Table 4.3 shows the items used.

**Table 4.3: Measures for the Organisation Structure**

| Construct | Original Measure | Measures use in the Study | |
|---|---|---|---|
| **Organisational Structure (Part A)** | | | |
| | | Items | Alternative Items |
| Hage and Aiken (1969) | There can be little action in this organisation until a supervisor approves a decision | I can only take minimal action until my supervisor approves a decision (central – A1) | I can act on a decision without my supervisor's approval |
| | Even small matters have to be referred to someone higher up for a final answer in this organisation | even small matters have to be referred to the supervisor (central – A2) | only important matters have to be referred to the supervisor |
| | A person who wants to make his own decision would be quickly discouraged in this organisation | I am discouraged from making decisions on my work (central – A3) | I am allowed to make a lot of decisions on my work |

**Table 4.3 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Organisation Structure (Part A)** | | | |
| | | Items | Alternative Items |
| Hage and Aiken (1969) | Employees in this organisation have to ask their supervisors before they can do almost anything | I have to ask my supervisor before I do almost anything (central – A4) | I do not have to ask my supervisor before I can do something |
| | I have enough authority to correct mistakes as they occur | I need to refer to my supervisor to correct mistakes that occur (central – A5) | I have enough authority to correct mistakes as they occur |
| | I am given enough involvement in decisions that affect my work | I participate minimally in decisions that affect my work (complexity – A6) | I am given enough involvement in decisions that affect my work |
| | Going through proper channels is constantly stressed | - same measure used - (formal – A7) | Going through proper channels is not constantly stressed |
| | I am free to decide on the methods used in my job | I have little chance to decide on the methods used in my job (formal – A8) | I am free to decide on the methods used in my job |
| | Employees in this organisation have to follow strict operating procedures at all times | I am required to obey all the rules to do my work (formal – A9) | I do not have to follow all the rules to do my work |
| | Written schedules, programs and work specifications are available to guide me in my work | clearly written rules are available to guide me in my work (formal – A10) | vaguely written rules prohibit my work efforts |
| | There are complete written job descriptions for most jobs in this organisation | my duties are documented in job descriptions (formal – A11) | my duties are ambiguous |

**Table 4.3 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Organisation Structure (Part A)** | | | |
| | | Items | Alternative Items |
| Hage and Aiken (1969)  Cook et al (1981)  John and Martin (1984) | People in this organisation feel as if they were being watched constantly to see they obey all the rules | I feel that I am constantly being watched by my supervisor (central – A12) | I am relatively free from being watched by my supervisor |
| | I often face barriers in expressing my ideas to upper management | - same measure used - (complexity – A13) | I have enough opportunities to express my ideas to upper management |
| | Employees in this organisation tend to be widely dispersed geographically | Employees tend to be widely dispersed spatially (complexity – A14) | Employees are closely linked to each other |
| | This organisation is highly departmentalized | The organisation structure is comprised of many sub-units (complexity – A15) | The organisation structure is relatively flat |

### 4.13.2 Organisational Culture

Organisational culture refers to "the deep structure of organisations, which is rooted in the values, beliefs and assumptions held by organisational members (Denison, 1996). Organisational culture is a means by which organisational members develop a collective identity, relationships within the organisation, and the ways of working together. This study adopted the new, shortened version of the Organisational Culture Profile (OCP) by Sarros et al., (2001).

OCP consist of seven dimensions as follows: supportiveness, innovation, competitiveness, performance orientation, stability, emphasis on rewards and social responsibility. The scales however, are modified to meet the needs of this study (amending the five point Likert scales used by Sarros et al. 2001). The six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6). Table 4.4 exhibits the measures for organisational culture.

**Table 4.4: Measures for the Organisational Culture**

| Construct | Original Measure | Measures use in the Study | |
|---|---|---|---|
| **Organisational Culture (Part B)** | | | |
| | | Items | Alternative Items |
| Sarros, Gray, Densten and Cooper (2005) | To what extend is your organisation recognized for its… | | |
| | Achievement orientation | I think of better ways of doing work (competitive – B1) | I am comfortable with my existing ways of doing work |
| | An emphasis on quality | quality initiatives are a top priority with the management where I work (competitive – B2) | quality initiatives are given low emphasis by the management |
| | Being distinctive – Different from others | I take every opportunity to be different from my co-workers (competitive – B3) | I comply with the demands of my co-workers |
| | Being competitive | the management is recognized for being competitive (competitive – B4) | the management is recognized for being complacent with its achievement |

**Table 4.4 (Continued)**

| Construct | Original Measure | Measures use in the Study | |
|---|---|---|---|
| **Organisational Culture (Part B)** | | | |
| | | Items | Alternative Items |
| Sarros, Gray, Densten and Cooper (2005) | To what extend is your organisation recognized for its… | | |
| | Being innovative | I seek innovative approaches to improving my work (innovative – B5) | I comply to the standard operating procedures of my work |
| | Quick to take advantage of opportunities | I am quick in taking advantage of opportunities (innovative – B6) | I rarely take advantage of opportunities |
| | Risk taking | I am willing to take risks on the job (innovative – B7) | I avoid taking any risk on the job |
| | Taking individual responsibility | I take individual responsibility over the tasks given by my supervisor (innovative – B8) | I follow others in working on the tasks given by my supervisor |
| | Being results oriented | I am willing to be bold in my actions (perform – B9) | I have to be discreet in showing my capabilities |
| | Having high expectations for performance | the organisation is recognized for having high expectations on performance (perform – B10) | the organisation is recognized for being indifferent towards performance |

**Table 4.4 (Continued)**

| Construct | Original Measure | Measures use in the Study | |
|---|---|---|---|
| **Organisational Culture (Part B)** | | | |
| | | Items | Alternative Items |
| Sarros, Gray, Densten and Cooper (2005) | To what extend is your organisation recognized for its… | | |
| | Enthusiasm for the job | I take pride in doing my job as best as I can (perform – B11) | I am not much affected by how well I do in this job |
| | Being highly organized | employees' work objectives are clearly defined (perform – B12) | employees have unclear work objectives |
| | Being team oriented | teamwork is used to get work done (support – B13) | work is done individually |
| | Being people oriented | the management values people above everything else (support – B14) | the management values output above everything else |
| | Collaboration | it is easy to get collaboration from other units in completing my tasks (support – B15) | it is difficult to get collaboration from other units in completing my tasks |

**Table 4.4 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Organisational Culture (Part B)** | | | |
| | | Items | Alternative Items |
| Sarros, Gray, Densten and Cooper (2005) | To what extend is your organisation recognized for it's… | | |
| | Sharing information freely | information flows openly between the management and employees (support – B16) | information is filtered at the management level |
| | Fairness | I am fairly paid for what I contribute to this organisation (rewards – B17) | I feel the amount of money I make is less than what I deserve |
| | Praises for good performance | my supervisor praises me for my good performance (rewards – B18) | my supervisor seldom praises me for my good work |
| | Opportunities for professional growth | I am given appropriate opportunities for professional growth (rewards – B19) | I hardly receive opportunities for professional growth |
| | High pay for good performance | employees get fixed benefits regardless of performance (rewards – B20) | employees are paid based on their merits |
| | Having clear guiding philosophy | corporate values guide the decisions of the management team (socres – B21) | corporate values are rarely referred by the management team when making decisions |
| | Being socially responsible | the organisation is recognized for being socially responsible towards community activities (socres – B22) | the organisation generally does not participate in community activities |

**Table 4.4 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Organisational Culture (Part B)** | | | |
| | | Items | Alternative Items |
| Sarros, Gray, Densten and Cooper (2005) | To what extend is your organisation recognized for its… | | |
| | Having a good reputation | the organisation is consistently responsive to stakeholders' demands (socres – B23) | the organisation often ignores stakeholders' demands |
| | Being reflective | employees always behave in an ethical manner (socres – B24) | employees tend to demonstrate unethical behaviour |
| | Stability | the organisation is recognized for its stability (stability – B25) | the organisation tends to be slightly unstable |
| | Being calm | the management remains calm when encountered with crisis (stability – B26) | the management tends to be easily distracted when encountered with crisis |
| | Security of employment | the management keeps us informed of changes affecting the organisation (stability – B27) | the management doesn't tell us much about what's going on in the organisation |
| | Low conflict | compromise is the best way to resolve any disagreement between employees (stability – B28) | employees argue persuasively with peers to resolve any disagreement |

### 4.13.3 Social Capital

Social capital characterizes the structure of social relations or network among individuals or group within the organisation (Leana and Van Buren, 1999; Requena, 2003; Lowe et al. 2001). It is the ability of people to work together, trust in others, to participate and engage for common purposes in groups and organisations. The dimensions consist of trust, social relation, influence, engagement and communication. The scale by Lowe et al (2001) and Requena (2003) was adapted to examine this perspective with some modification to meet the needs of this study. The six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6). Table 4.5 exhibits the measures for social capital.

**Table 4.5: Measures for Social Capital**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Social Capital (Part C)** | | | |
| | | Items | Alternative Items |
| Requena (2003)<br><br>Lowe and Schellenberg (2001) | I trust my employer to treat me fairly | the management always treats its employees fairly<br>(trust – C1) | the management tends to give more opportunities to a few groups of employees |
| | Someone at work shows concern for my well-being | the management gives top priority to employee well-being<br>(trust – C2) | the management shows minimal concern for employee welfare |
| | Your employer treats you with respect | the management treats its employees with respect<br>(trust – C3) | the management shows little respect to its employees |

**Table 4.5 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Social Capital (Part C)** | | | |
| | | Items | Alternative Items |
| Requena (2003)<br><br>Lowe and Schellenberg (2001) | In my organisation people who work together trust each other because that is the best and easiest way to get the work done | I trust my co-workers because it is the best way to get work done (trust – C4) | I prefer to do my work without getting help from my co-workers |
| | I feel really close to most of my co-workers | I have close friendships with all my colleagues (socrel – C5) | I have superficial friendships with most of my colleagues |
| | We often discuss work issues and/or problems during lunch or coffee break | work issues and/or problems are discussed during lunch or coffee break (socrel – C6) | work issues and/or problems are discussed at formal meetings only |
| | I know what is happening in sections outside my own | - same measure used- (socrel – C7) | I have little information about what's going on in other sections |
| | The people you work with are friendly and helpful | employees and the management have a good relationship with each other (socrel – C8) | employees and the management tend to be distant from each other |
| | You can influence management decisions that affect your job or work life | I have the support to make the necessary decisions to complete my task (influ – C9) | I feel powerless in my current task |
| | At work I can put my ideas into practice | I can put my ideas into practice to implement the tasks given to me (influ – C10) | I seldom get the opportunity to practise my ideas in doing my work |

**Table 4.5 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Social Capital (Part C)** | | | |
| | | Items | Alternative Items |
| Requena (2003)<br><br>Lowe and Schellenberg (2001) | My organisation cares about my opinion | the management pays careful attention to employees' suggestions (influ – C11) | the management rarely accepts any suggestion from its employees |
| | You are free to decide how to do your work | the management gives me the freedom to decide on my work schedule (influ – C12) | the management outlines my work schedule |
| | Give more input to help my organisation succeed | I am willing to work hard beyond my job expectations to help my organisation succeed (engage – C13) | I am not willing to go out of my way just to help the organisation |
| | I would be sad if I had to move to another organisation | - same measure used- (engage– C14) | I would be happy to move to another organisation |
| | I plan to continue to work here until I retire | - same measure used- (engage – C15) | I would change to some other organisation if I had the chance |
| | In my organisationcollaboration exists because there is a hierarchy which ensures that tasks are completed | collaboration exists because there is a hierarchy which ensures that tasks are completed (engage – C16) | collaboration exists because that is the way employees work to complete a given task |

Table 4.5 (Continued)

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Social Capital (Part C)** | | | |
| | | Items | Alternative Items |
| Requena (2003)

Lowe and Schellenberg (2001) | Communication is good among the people you work with | communication is good among the people I work with (comm – C17) | communication is poor among the people I work with |
| | I am kept well informed about the progress of my work | - same measure used- (comm – C18) | often I am not informed of any changes affecting my work |
| | You receive recognition for work well done | I receive appropriate recognition for the work well done (comm – C19) | I am seldom acknowledged for my good performance |
| | Essential information is always communicated to me in a very timely manner | - same measure used- (comm– C20) | essential information is not given to me on time |

### 4.13.4  Leadership Behaviour

Bass and Avolio's (1995) multifactor leadership questionnaire (MLQ – leader form – form 5X) was selected to measure this construct. It represents one of the few measures available that attempts to assess the full range leadership behaviour using the multi-factorial model. The MLQ 5X identifies three types of leadership behaviour: transformational, transactional and laissez-fair. Transformational (measures of relation-oriented leadership behaviour) refers to the leader's effect on the followers where the leader transforms and motivates followers by making them aware of the importance of

task outcome, inducing them to transcend their own self-interest for the sake of the organisation and activating their higher-order needs (Block, 2003).

The subscales of transformational include charisma/inspirational (CH) (a combination of inspirational motivation, idealized attributed and idealized behaviour subscales), intellectual stimulation (IS), and individualized consideration (IC) (Avolio et al., 1999). Transactional (measures of task-oriented leadership behaviour) involves motivating followers by fulfilling their needs in exchange for performance that meets expectations.

The subscales of transactional were contingent reward (CR) and management by exception active/passive (MA) Bass (1985) note that this category of leaders operates within the existing environment and prefer to avoid risks and focus on efficiency and predictability rather than change and innovation. The third types of leadership, laissez-fair (passive/avoidant − PA) is considered non-leadership and this factor indicated an absence of leadership in which there is no "transaction" between the leader and the follower (Block, 2003).

The MLQ 5X consists of behavioural items uses a five-point Likert rating system (0 = not at all; 1 = once in a while; 2 = sometimes; 3 = fairly often; 4 = frequently, if not always) was adapted to examine this perspective. However, some modification was made to the scale to meet the needs of this study. The six points on the semantic differential-liked scale ranging from strongly agree (1) to strongly disagree (6) was used instead. Table 4.6 exhibits the measures for leadership behaviour.

## Table 4.6: Measures for the Leadership Behaviour

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Leadership Behaviour (Part D)** | | | |
| | Scales | Items | Alternative Items |
| Bass and Avolio (1995) | models ethical standards (CH) | creates an atmosphere of mutual trust (chains – D1) | creates a tensed atmosphere |
| | display power and confidence (CH) | demonstrates courage in all transactions (charins – D2) | tends to be cautious in all transactions |
| | proud of him (CH) | sets a positive example for others to follow (charins – D3) | rarely 'practises' what he/she 'preaches' |
| | arouses awareness about important issues (CH) | arouses awareness about important issues (charins – D4) | is ignorant about surrounding issues |
| | goes beyound self-interest (CH) | takes responsibility for decisions without finger-pointing (charins – D5) | tends to blame others when wrong decision are made |
| | emphasizes the collective mission (CH) | treats all employees equitably (inconsider – D11) | practices favoritism |
| | Individualizes attention (IC) | supports my effort to study and develop in my work (inconsider – D6) | is neither interested in me nor in my development at work |
| | Teaches and coaches (IC) | gives clear directions on my work (inconsider – D7) | rarely provides directions on my work |
| | Focuses your strengths (IC) | involves me in decisions that affect my work (inconsider – D8) | limits my involvement in decisions that affect my work |

**Table 4.6 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Leadership Behaviour (Part D)** | | | |
| | Scales | Items | Alternative Items |
| Bass and Avolio (1995) | Differentiates among us (IC) | delegates responsibility sensibly to subordinates (inconsider – D9) | delegates responsibility excessively to subordinates |
| | Clarifies rewards (CR) | demonstrates full commitment to quality initiatives (conreward – D10) | is tolerant to sub-standard work |
| | Assists based on effort (CR) | assists subordinates who show effort (conreward – D12) | fails to provide the necessary assistance to subordinates |
| | Recognizes your achievement (CR) | provides me with the opportunity to receive recognition for my contributions (conreward – D13) | gives me little chance to receive any recognition for my contributions |
| | Rewards your achievement (CR) | rewards my achievements (conreward – D14) | discredits my achievements |
| | Re-examines assumptions (IS) | is willing to compromise when necessary in order to reach an agreement (instimulate – D15) | is authoritative when disagreements occur |
| | Seeks different views (IS) | seeks better ways to get work done (instimulate – D16) | is comfortable with the existing ways of doing work |
| | Suggest new ways (IS) | uses informal networks to get things done (instimulate – D17) | is generally very bureaucratic |

**Table 4.6 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Leadership Behaviour (Part D)** | | | |
| | Scales | Items | Alternative Items |
| Bass and Avolio (1995 | Suggest different angels (IS) | generates innovative ideas and solutions to problems (instimulate – D18) | prefers the traditional way of solving problems |
| | Focuses on your mistakes (MA) | foresees problems before they arise (mgtexep – D19) | reacts to problems as and when they arise |
| | 'Puts out fire' (MA) | works well in tensed situations (mgtexep – D20) | is disorganized in tensed situations |
| | concentrates on failure (MA) | is transparent about problems and/or mistakes (mgtexep – D21) | is secretive about problems and/or mistakes |
| | tracks your mistakes (MA) | learns from mistakes and treats errors as lessons (mgtexep – D22) | is intolerant to mistakes |
| | absent when needed (PA) | is accessible at all times (pasavoid – D23) | absent when needed |
| | delays responding (PA) | delays response to arising issues (pasavoid – D24) | responsive to important issues |
| | avoids involvement (PA) | takes full charge when important issues arise (pasavoid – D25) | avoids getting involved when important issues arise |
| | avoids deciding (PA) | avoids making decisions (pasavoid – D26) | makes accurate decisions |

### 4.13.5  Quality of Work Life (QWL) Orientation

QWL orientation in this study serves as the mediator that may affect the relationship between antecedents and organisational commitment. QWL orientation measures are group into two themes. These include job characteristic (Job Diagnostic Survey - JDS) and work environment (a combination of several QWL survey and organisational climate questionnaire).They are mechanisms that organisations employ to gauge employee's experiences within a particular organisation and issues that are specific or of importance to an organisation (Considine and Callus, 2002; Lau and Bruce, 1998).

The measures by Hackman and Oldham (1975) pertaining to job characteristic are adopted for this study.  JDS proposed five core dimensions for evaluating the job environment which is associated significantly with job satisfaction and a high sense of workers' motivation. The five jobs design characteristics (skill variety, task identity, task significance, autonomy and feedback) produces three critical psychological states (experienced meaningfulness of the work, experienced responsibility for outcomes of the work and knowledge of the actual results of work activities) which increase the likelihood of positive personal and work outcomes (Hackman and Oldham, 1976). In other words, employees are more likely to perceive their jobs as good jobs that are meaningful and challenging.

The original measurement for all dimensions scored on a seven-point Likert scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). These items measure asked informant to describe a specific job objectively. However, the scales are modified to meet the needs of this study and the six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6) is applied instead.

The work environment category measures various dimensions of work and people in the organisation. The various dimensions consistently arose in the literature on quality of work life (e.g. Walton, 1974; Carlson, 1978; Saklani, 2004). In order to examine this perspective, the general items identified by the Australian Quality of Work Life Survey (AQWL) (2001) were adapted. These include performance appraisal, interesting and satisfying work, pay/benefits, working condition (physical and resources), chance for advancement, opportunity for skill development, health and safety, amount of work, work and life balance, amount of control over work, relations with people at work and management treatment to staff. Some modification was made to the items and scale that would reflect the Malaysian public service environment. Again, each item is measured using the six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6). Table 4.7 shows the items used.

**Table 4.7:  Measures for the QWL Orientation**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Work Environment (QWL Orientation (Part E)** | | | |
| | Dimensions | Items | Alternative Items |
| Hackman and Oldham (1975)<br><br>Australian Quality of Work Life Index (2002)<br><br>Cook et al (1981) | Job Characteristic dimensions:<br><br>Autonomy<br><br>Task identity<br><br>Skill variety<br><br>Task significance<br><br>Feedback from others<br><br>Dealing with others | requires a lot of cooperative work with other people (jobcha - E1)<br><br>gives me considerable freedom to do my job (jobcha - E2)<br><br>is only a tiny part of the overall work (jobcha - E3)<br><br>requires me to do a number of different things  (jobcha - E4)<br><br>has the ability to influence decisions that significantly affect the organisation (jobcha - E5)<br><br>enables me to receive feedback from my supervisor/co-workers (jobcha - E6)<br><br>provides me with information about my work performance (jobcha - E7) | requires very little dealing with other people<br><br>denies me the use of my personal initiatives to get my job done<br><br>involves doing the entire work from start to finish<br><br>requires that I do the same things over and over<br><br>is not very important in the broader scheme of things<br><br>give me little chance to receive feedback from my supervisor/ co-workers<br><br>gives me few clues about my work performance |

**Table4.7 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Work Environment (QWL Orientation (Part E)** | | | |
| | Dimensions | Items | Alternative Items |
| Hackman and Oldham (1975)<br><br>Australian Quality of Work Life Index (2002)<br><br>Cook et al (1981) | Job Characteristic dimensions:<br><br>Autonomy<br><br>Task identity<br><br>Skill variety<br><br>Task significance<br><br>Feedback from others<br><br>Dealing with others | enables me to act independently in performing my job functions (jobcha - E8)<br><br>is quite simple and repetitive (jobcha - E9)<br><br>gives me little chance to get to know other people (jobcha - E10)<br><br>provides me with the chance to completely finish the pieces of work I begin (jobcha - E11)<br><br>is not significant, where the outcomes of my work are not likely to have any effect on other people (jobcha - E12)<br><br>gives me almost no personal 'say' about how and when the work is done (jobcha - E13)<br><br>gives me many chances to figure out how well I am doing (jobcha - E14) | gives me little chance to make my own judgments<br><br>requires a high level of skill<br><br>gives me the opportunity to develop networking with other people<br><br>is arranged so that I do not have the chance to do the entire piece of work<br><br>is one where a lot of other people can be affected by how well the work gets done<br><br>provides me with the opportunity for independent thought and action<br><br>provide little opportunity to find out how well I am doing |

**Table 4.7 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| | | Dimensions | Items | Alternative Items |

| Construct | Dimensions | Items | Alternative Items |
|---|---|---|---|
| **Works Environment (QWL Orientation (Part E)** | | | |
| Hackman and Oldham (1975)<br><br>Australian Quality of Work Life Index (2002)<br><br>Cook et al (1981) | Work environment includes:<br><br>performance appraisal<br><br>interesting and satisfying work<br><br>pay/benefits<br><br>working condition (physical and resources)<br><br>chance for advancement<br><br>opportunity for skill development<br><br>health and safety<br><br>amount of work<br><br>work and life balance<br><br>amount of control over work<br><br>relations with people at work<br><br>management treatment to staff | provides me with the tools and resources to do my job effectively (workenv - E15)<br><br>provides adequate chances for me to pursue professional development and growth (workenv - E16)<br><br>gives me a great sense of personal satisfaction (workenv -E17)<br><br>allows me to see the results of my own work (workenv - E18)<br><br>requires that I work very fast (workenv - E19)<br><br>often requires me to handle unpredictable situations (workenv - E20) | gives me little access to the resources required to do the job<br><br>gives me little chance for personal development and growth<br><br>often makes me think of quitting<br><br>gives me little chance to know the impact of my work<br><br>allows me to control my own work pace<br><br>gives me the opportunity to know what to expect from the job |

**Table 4.7 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Works Environment (QWL Orientation (Part E)** | | | |
| | Dimensions | Items | Alternative Items |
| Hackman and Oldham (1975)

Australian Quality of Work Life Index (2002)

Cook et al (1981) | Work environment includes:



- Similar scales - | I am provided with more than enough training skills (workenv - E21) | I am deprived from getting sufficient training |
| | | my abilities are not fully utilized (workenv - E22) | my abilities are fully utilized |
| | | the allocation for employee training is small (workenv -E23) | the allocation for employee training is big |
| | | I am always treated fairly with regards to career opportunities (workenv - E24) | I am rarely treated fairly with regards to career opportunities |
| | | communication between the management and employees is open (workenv - E25) | communication between the management and employees is guarded |
| | | the amount of fringe benefits I receive is reasonable and good (workenv - E26) | the amount of fringe benefits I receive is insufficient |
| | | I rarely share my expertise with co-workers (workenv - E27) | I share my expertise extensively with co-workers |
| | | I find it difficult to cope with the amount of work I have to do (workenv - E28) | I receive a reasonable amount of work that I am expected to do |

**Table 4.7 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Works Environment (QWL Orientation (Part E)** | | | |
| | | Scales | Items | Alternative Items |
| Hackman and Oldham (1975)

Australian Quality of Work Life Index (2002)

Cook et al (1981) | - Similar scales - | employee morale is high (workenv - E29) | employee morale is low |
| | | management takes care of employee welfare (workenv – E30) | management gives low priority to employee welfare |
| | | I often face difficulties in balancing my work and family lives (workenv – E31) | I am able to balance my work priorities with my personal life |
| | | work assignments are fairly distributed among employees (workenv – E32 | work assignments are distributed to only a few employees |
| | | my safety at work is seriously taken care of by the management (workenv – E33) | my safety at work is often neglected by the management |
| | | the working environment is flexible (workenv – E34) | the working environment is restrictive |
| | | my chances for career advancement are good (workenv – E35) | my chances for career advancement are poor |
| | | I work under a great deal of pressure (workenv – E36) | I feel at ease and relaxed while doing my work |
| | | employee performance is evaluated fairly (workenv – E37) | employee appraisals are not done fairly |

**Table 4.7 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Works Environment (QWL Orientation (Part E)** | | | |
| | Dimensions | Items | Alternative Items |
| Hackman and Oldham (1975)<br><br>Australian Quality of Work Life Index (2002)<br><br>Cook et al (1981) | - Similar scales - | there are essentially no continuing problems that reduce my efficiency at work (workenv – E38)<br><br>conflicts are accepted and "worked through" (workenv – E39)<br><br>the physical working conditions are very pleasant (workenv – E40) | there are many problems that reduce my efficiency at work<br><br>conflicts are always avoided or suppressed<br><br>the physical working conditions are very unpleasant |

Using factor analysis the criteria are prioritize into five interrelated dimensions. These dimensions interestingly found to be similar to the quality of nursing work life (QNWL) empirical dimensions (Villeneuve et al. (1995), and similar to criteria of QWL conceptualized by Walton (1975). The five dimensions are further defined by a synthesis of criteria from prior work in STS, the QWL and QNWL as shown below.

The first dimension is termed the work setting issues and is a broad dimension that involves physical work environment and the circumstances surrounding. This includes relationships with supervisory personnel, co-workers, team colleagues, performance evaluation, communication, welfare, safety and promotion of lifelong learning by the organisation.This dimension is also referred as characteristics of the organisation (Attridge and Callahan, 1990) or organisational context (Turcotte, 1988). In this context,

organisational or management support appears to play a key role in shaping the environment of the organisation (Wilson et al., 2004).

**Table 4.8: Five Dimensions of the Conceptual QWL Framework**

| Dimensions | Definition | Instrument Items |
|---|---|---|
| **Work Setting Issues** | As the physical work environment and the circumstances surrounding including the social and interpersonal aspects of the work | Open communication among members<br>Pleasant working conditions<br>Management takes care employee welfare<br>Receive reasonable fringe benefits<br>Management serious on work safety<br>Fair treatment for career opportunities<br>Career advancement are good<br>No continuing problems<br>Performance evaluated fairly<br>Employees morale is high<br>Provide enough training skills<br>Flexible work environment<br>Conflicts are accepted and work through<br>Gives me freedom to my job<br>Work assignment fairly distributed |
| **Job itself** | As the composition of work an individual perform or the actual work an employee do | Chance to pursue professional development<br>Provide information on work performance<br>Gives personal satisfaction<br>Able to see my work results<br>Chance to figure how work is done<br>Enables me to act independently<br>Ability to influence decision that affect organisation<br>Receive ample resources to do my job<br>No personal say about how work to be done |

**Table 4.8 (Continued)**

| Dimensions | Definition | Instrument Items |
|---|---|---|
| **Challenge of work** | As the work practice settings in which employee work and the impact of the work environment. | Requires cooperative work with others<br>Requires me to do a number of different thing<br>To receive feedback from others<br>Handle unpredictable situations<br>Require me to work fast<br>Chance to finish the whole work |
| **Feeling about work** | As employee perception towards his/her job | Little chance to get to know other people<br>Simple and repetitive<br>Only a tiny part of the overall work<br>Small employee training allocation<br>Abilities not fully utilized |
| **Work-home life interaction** | As the interface between the life experience of employee in their workplace and in the home | Difficult to cope with workload<br>Difficult to balance work and family lives<br>Rarely share expertise with others<br>Work not significant and no effect on others<br>Work under great pressure |

The aspect of job characteristics emphasizes employee individual perceptions of their immediate work tasks. These aspects have been categorized into three dimensions: the challenge of work which includes work practice settings in which employee work and the impact of the work environment. Another aspect of the job characteristic dimension is the job itself or the nature of work, the composition of work an individual perform or the actual work an employee do. Here are items that define employees' immediate environment such as autonomy, the provision of resources to do the job, workload

control, and job content. Such work arrangements are usually design to accommodate individual needs and consistent with the social structure (Parker and Wahl, 1998).

The feeling for work is another aspect of job characteristics which reflect an individual perception toward his/her job. These includes the extent the work provide experience meaningfulness in terms of variety, identity and significant. The fifth dimension is termed as work-home life interaction. This dimension reflect the balanced role of work where work schedules, career demands and other job requirement do not take up leisure and family time on a regular basis (Walton, 1975; Hackman and Oldham, 1975; Villeneuve et al.,1995). Organisation of items in such fashion will allow exploration of the field as well as documentation of the empirical referent underlying the frame work.

### 4.13.6  Organisational Commitment

Organisational commitment has been widely defined as identification and involvement with the organisation. This encompasses multiple attitudes of an employee such as loyalty to the organisation, willingness to contribute, exerting effort on behalf of the organisation and desire to remain in the organisation (Mowday, Steers and Porter, 1979). In this study, organisational commitment was measured as a whole attitudinal construct by using a widely used questionnaire, developed by Mowday et al. (1979). It consists of 15 statements, which assesses the magnitude of an employee identification and investment in an organisation. The scales however, are modified to meet the needs of this study (amending the five point Likert scales used in the original measurement). The six points on the semantic differential-liked scale are ranging from strongly agree (1) to strongly disagree (6). Table 4.9 exhibits the measures for organisational commitment.

**Table 4.9: Measures for the Organisational Commitment**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| | | Items | Alternative Items |
| **Organisational Commitment (Part F)** | | | |
| Mowday, Steers and Porter (1979) | I am willing to put in a great deal of effort beyond that which is normally expected in order to help this organisation be successful | same measure used | I avoid going out of my way just to help the organisation |
| | I talk about this organisation to my friends as a great organisation to work for | | I would not recommend a close friend to join my organisation |
| | I feel very little loyalty to this organisation | | I feel a strong sense of loyalty towards this organisation |
| | I would accept almost any type of job assignment in order to keep working for this organisation | | If I got another offer for a better job elsewhere, I would certainly leave this organisation |
| | My values and the organisation's values are similar | | My values and the organisation's values are different |
| | I am proud to tell others that I am part of this organisation | same measure used | I do not feel proud to be part of this organisation |
| | I could just as well be working for a different organisation as long the type of work were similar | | It would be very hard for me to leave this organisation right now, even if I wanted to |
| | This organisation really inspires the very best in me in the way of job performance | | This organisation does not inspire me in the way of job performance |

**Table 4.9 (Continued)**

| Construct | Original Measure | Measures use in The Study | |
|---|---|---|---|
| **Organisational Commitment (Part F)** | | | |
| | | Items | Alternative Items |
| Mowday, Steers and Porter (1979) | It would cause very little change in my present circumstances to leave this organisation | same measure used | Too much of my life would be disrupted if I decided to leave this organisation |
| | I am extremely glad that I chose this organisation to work for, over others I was considering at the time I joined | | I think I have made a terrible mistake to work in this organisation |
| | There's not too much to be gained by sticking with this organisation indefinitely | | Barring unforeseen circumstances, I would remain in this organisation indefinitely |
| | Often, I find it difficult to agree with this | | I think most of the time the |
| | organisation's policies on important matters relating to its employees | | organisation tries to be honest and fair in dealing with its employees |
| | I really care about the fate of this organisation | same measure used | I have no particular sentiments towards this organisation |
| | For me this is the best of all possible organisations for which to work | | I have always felt that this organisation was a cold and unfriendly place to work |
| | Deciding to work for this organisation was a definite mistake on my part | | I think I have made the right decision to work in this organisation |

**Section Three: Validity and Reliability Assessments**

**4.14    Introduction of Validity and Reliablity**

A critical aspect in any studies is the development of good measures to obtain valid and reliable estimates of the constructs of interest. It is the hallmarks of good measurement and a researcher first line of defense against spurious and incorrect conclusions (Salkind, 2000:105).By establishing the validity and reliability of the constructs, it will be easier to standardize the measurement scales and eventually measure the constructs. Moreover, it involvesa measurement of accuracy and applicability (Malhotra, 2004). The main reason behind validity and reliability is the reduction of measurement errors. The idea is to develop a measurement that reflects a true score of the variables being measured (Churchill and Iacobucci, 2002).  Figure 4.2 illustrates the possible test used to examine the reliability and validity of measurement.

**4.15    Validity**

Validity is defined as the "extent to which a measure or set of measures correctly represents the concept under study – the degree to which it is free from any systematic or non-random error (Hair et al. 2006).    Validity is concerned with how well the concept is defined by the measure(s)."  Perfect validity requires that there be no measurement error $(X_o = X_T, X_R = 0, X_S = 0)$ (Maholtra, 2004). In testing the validity of the instrument, the notion of construct, the most important validity tests namely content, convergent, construct and finally discriminant validity are highlighted in this study.
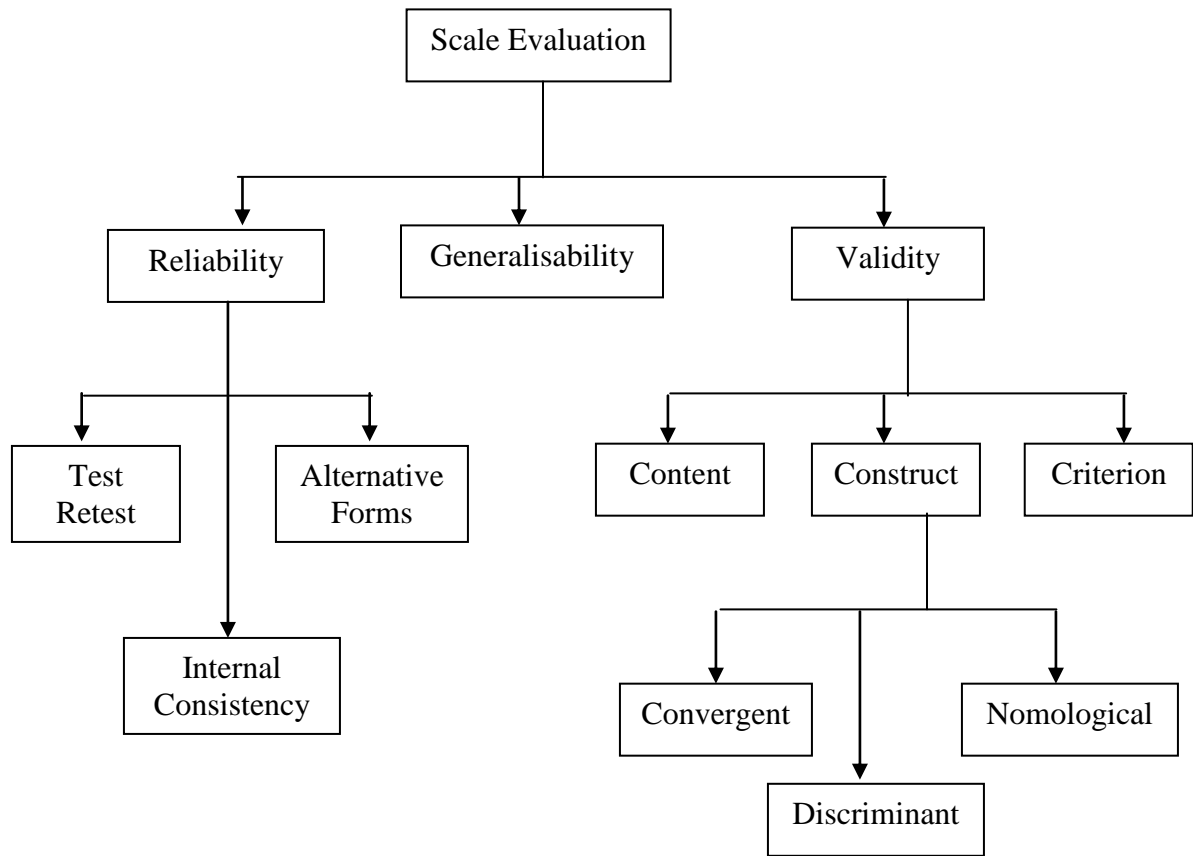
**Figure 4.2:  Scale Evaluation**
*Source***:** Adapted from Malhotra, (2004)

### 4.15.1  Content Validity

Content validity or face validity is the degree to which the content of the items adequately represents the universe of all relevant items under study (Cooper and Schindler, 2006).  The evaluation of content validity is a rational judgment process not open to numerical justification. An instrument has content validity if there is a general agreement among the subjects and researchers that the measurement items that cover all important aspects of the variable being measured (Maholtra, 2004). Churchill (1979), in this regard, recommends that the scale development process discussed earlier helps to ensure content validity. Given that the method used to evaluate content validity are

subjective and judgmental (Cooper and Schindler, 2006) where the adequacy of the item can be argued by other people or researchers, a more formal measure can be obtained by examining construct and criterion validity (Malhotra, 2004).

### 4.15.2  Construct Validity

Construct validity addresses the issue of what the constructs or characteristics of scales are actually measuring (Maholtra, 2004). It lies at the very heart of the scientific process (Churchill, 1979) and embodies the process of theory development and testing (Mentzer and Flint, 1997). Evidence of construct validity provides confidence that item measures taken from a sample represent the actual true score that exists in the population. In this study, each measurement scale was evaluated by analyzing its convergent and discriminant validity using factor analysis. Nunnally (1978) indicate that factor analysis has a role in testing those aspects of validity.  Both types of factor analysis, i.e., the exploratory factor analysis and followed by the confirmatory factor analysis were used in this study to measure construct validity of the scales. The discussion on the results of construct validity checking based on factor analysis is shown below:

### 4.15.2.1      Methods of Assessing Construct Validity

**Factor Analysis**

According to Maholtra (2004), factor analysis is a class of procedures primarily used for data reduction and summarization. The underlying principle of factor analysis is data parsimony and data interpretation (Churchill and Iacobucci, 2002, Zikmund, 2003).  The items are condensed into a smaller set of new, composite dimensions with a minimum

loss of information (Hair et al., 2006). The procedures also help researchers to discover patterns in the relationships amongst variables and enables reduction of the number of variables into factors combined from these variables. In terms of sample size suitable for factor analysis, Tabachnick and Fidell (2001) concede that a smaller sample size (e.g. 150) should be sufficient while Hair et al (2006) indicated that the technique can be performed on observation of more than 50. With the sample size of 203, thus, the data set is suitable for factor analysis for this study.

Pallant (2005) state that there are two main approaches to factor analysis describes in the literature namely, exploratory and confirmatory factor analysis. These factor analyses are designed to explore and confirm the relationship of measures in the research and are also meant to be an alternative for one another.

(i)      **Exploratory Factor Analysis (EFA)**

EFA is often used in the early stages of research for data exploration to generate hypotheses. The technique enables researchers to determine the structure of factors to be examined and can be conducted although the relationship between latent and observed variables is unknown or uncertain (Bryne, 2001). The distinctive feature of this technique is that the factors were derived from statistical results (Hair et al, 2006).

In this study, exploratory factor analysis was conducted to establish dimensionality and convergent validity of the relationship between items and constructs. The Kaiser-Meyer-Olkin (KMO) and Barlett's Test of Sphericity (Bartlett's Test) were also employed as they are measures of sampling adequacy (Pallant, 2005). KMO index that ranges from 0

to 1 indicates whether significant correlations are present in the data matrix, which allow researcher to determine the appropriateness of factor analysis. The index can be interpreted as follows: 0.8 or above, as meritorious; 0.7 or above as middling; 0.6 or above, as mediocre; 0.5 or above as miserable; and below 0.5 as unacceptable (Hair et al., 2006). Bartlettt's Test with a significance value of less than 0.05 ($p < 0.05$) and KMO with more than 0.60 are considered appropriate for factor analysis (Pallant, 2005). Bartlett's Test shows whether or not the correlation among the factors in the matrix is identical while KMO is an index used to examine the appropriateness of factor analysis.

The method of principal component with varimax orthogonal rotation was employed for analysis, because the method is robust and produces more easily interpretable results (Pallant, 2005). The varimax rotation also maximizes the variance of the loading (Hair et al, 2006). In this context, the factor loading indicate the strength of the relationship between the item and the latent construct. A coefficient of more than 0.30 indicates a reasonable loading (De Vaus, 2002). The factor loading is useful in assessing the convergent and discriminant validity of the scales (Hair et al, 2006).

The results of factor analysis of all the constructs are exhibited in Table 4.10. The KMO shows meritorious results of 0.80 and above. This signifies that the variables share a large amount of common variance. Likewise, Bartlett's Test exhibits a significance of 0.00, suggesting that the correlation matrix is not an identity matrix and the null hypothesis can be rejected. Results from Bartlett's and KMO point to the appropriateness of the factor model.

From Table 4.10, the four factors of social capital were produced from the result with eigen values greater than one. None of the twenty items was dropped. The four factors contributed 62.80% to the total variance explained and the factor loadings of the items were between 0.402 and 0.836. The four factors were labelled as relational, network ties, engagement and communication.

**Table 4.10: Exploratory Factor Analysis of the Constructs**

| Social Capital : α = 0.915; KMO = 0.884 ; Bartlett's: Sig. = 0.000 | | | | |
|---|---|---|---|---|
| **Relational** | **F1** | **F2** | **F3** | **F4** |
| Treats employees with respects (rela1) | 0.836 | | | |
| Top priority to employee well-being (rela2) | 0.826 | | | |
| Management treat employees fairly (rela3) | 0.743 | | | |
| Pays attention to employees suggestion (rela4) | 0.727 | | | |
| Information communicated timely (rela5) | 0.718 | | | |
| Received recognition for doing good job (rela6) | 0.704 | | | |
| Good relationship between management and employee (rela7) | 0.682 | | | |
| Received support to make work decision (rela8) | 0.592 | | | |
| **Network Ties** | | | | |
| Trust co-workers as the best way to work (nwork1) | | 0.825 | | |
| Close friendship with all colleagues (nwork2) | | 0.756 | | |
| Good communication among people (nwork3) | | 0.668 | | |
| Kept informed about work progress (nwork4) | | 0.509 | | |
| **Engagement** | | | | |
| Plan to work here until retire (engage1) | | | 0.822 | |
| Sad if had to move to other organisation (engage2) | | | 0.798 | |
| Work hard beyond expectation (engage3) | | | 0.722 | |
| Collaboration exists because of hierarchy (engage4) | | | 0.480 | |
| **Communication** | | | | |
| Work issues discussed during break (comm1) | | | | 0.716 |
| Have freedom to decide work schedule (comm2) | | | | 0.654 |
| Can put ideas to practice (comm3) | | | | 0.483 |
| Aware what's going on with other sections (comm4) | | | | 0.402 |

Five factors of organisational culture were derived from the output (Table 4.10) with eigen values greater than one. Out of the 26 items, 24 items were found to have reasonable factor loading (>0.30). The factor solution accounted for approximately 59.07% of the total variance explained by five factors labelled as stability, peopleorientation, innovation, aggressiveness and team orientation. The values of factor loading were ranged between 0.404 and 0.830.

**Table 4.10 (Continued)**

| Organisational Culture : α = 0.916; KMO = 0.903 ; Bartlett's: Sig. = 0.000 | | | | | |
|---|---|---|---|---|---|
| **Stability** | **F1** | **F2** | **F3** | **F4** | **F5** |
| Stable organisation (stab1) | 0.729 | | | | |
| Management calm when encountered crisis (stab2) | 0.727 | | | | |
| Employees behave ethically (stab3) | 0.705 | | | | |
| High performance expectation organisation (stab4) | 0.697 | | | | |
| Resolve disagreement through compromise (stab5) | 0.613 | | | | |
| Management informed changes affecting organisation(stab6) | 0.610 | | | | |
| Management recognized for being competitive (stab7) | 0.464 | | | | |
| **People Orientation** | | | | | |
| Opportunities for professional growth (peo1) | | 0.761 | | | |
| Supervisors praises performance (peo2) | | 0.701 | | | |
| Openly flows of information (peo3) | | 0.677 | | | |
| Contribution was paid fairly (peo4) | | 0.645 | | | |
| Easy to collaborate with others (peo5) | | 0.630 | | | |
| Corporate values guide management decisions (peo6) | | 0.514 | | | |
| **Aggressiveness** | | | | | |
| Think of better ways to do work (aggres1) | | | 0.774 | | |
| Different from others (aggres2) | | | 0.677 | | |
| Top priority for quality initiatives (aggres3) | | | 0.600 | | |
| Take pride in doing good job (aggres4) | | | 0.479 | | |
| Fixed benefits regardless of performance (aggres5) | | | 0.404 | | |
| **Innovation** | | | | | |
| Willing to take risks on the job (innov1) | | | | 0.830 | |
| Take advantage on opportunities (innov2) | | | | 0.799 | |
| Take bold actions (innov3) | | | | 0.661 | |
| Take individual responsibility (innov4) | | | | 0.578 | |
| Seek innovative approaches (innov5) | | | | 0.477 | |
| **Team Orientation** | | | | | |
| Used teamwork to get job done (team1) | | | | | 0.735 |
| Objectives clearly defined (team2) | | | | | 0.626 |
| Organisation responsive to stakeholder demands (team3) | | | | | 0.619 |
| Socially responsible organisation (team4) | | | | | 0.576 |

Following item analysis, the fifteen items of organisation structure constructs were also subjected to exploratory factor analysis with principal component factor analysis and varimax rotation used to confirm the number of factors to be extracted (Hair et al., 1998). As in Table 4.10, three factors were derived from the output with eigen values greater than one. The three factors contributed 58.28% to the total variance explained with the values of factor loadings between 0.427 and 0.831. The factors were labelled as centralization, complexity and formalization.

**Table 4.10 (Continued)**

| Organisation Structure : $\alpha = 0.805$; KMO = 0.846 ; Bartlett's: Sig. = 0.000 | | | |
|---|---|---|---|
| **Centralization** | **F1** | **F2** | **F3** |
| Ask supervisor before doing anything (central1) | 0.831 | | |
| Refer to supervisor to correct mistake (central2) | 0.792 | | |
| Minimal action until supervisor approves (central3) | 0.749 | | |
| Discourage from making decision (central4) | 0.737 | | |
| Participate minimally (central5) | 0.677 | | |
| Small matters refer to supervisor (central6) | 0.663 | | |
| Little chance to decide on work method  (central7) | 0.543 | | |
| **Complexity** | | | |
| Employees widely dispersed spatially (complex1) | | 0.782 | |
| Face barriers to express ideas (complex2) | | 0.755 | |
| Going through proper channels (complex3) | | 0.543 | |
| Constantly being watched by supervisor (complex4) | | 0.427 | |
| **Formalization** | | | |
| Clear written rule available (formal1) | | | 0.797 |
| Duties documented in job descriptions (formal2) | | | 0.797 |
| Required to obey all work rules (formal3) | | | 0.692 |
| Organisation structure with subunits (formal4) | | | 0.632 |

For leadership behaviour, two factors were extracted from the 26 items of this construct. Two items were dropped and the remaining 24 items were found to have high factor loadings (>0.5). The two factors labelled as relation-oriented and task-oriented accounted

for approximately 67.42% of the total variance explained and the values of factor

loadings were ranged between 0.591 and 0.848.

**Table 4.10 (Continued)**

| Leadership Behaviour : α = 0.975; KMO = 0.968 ; Bartlett's: Sig. = 0.000 | | |
| --- | --- | --- |
| **Relation-oriented** | **F1** | **F2** |
| Treats employees equitably (relo1) | 0.795 | |
| Assists subordinate who show effort (relo2) | 0.777 | |
| Opportunity to receive recognition (relo3) | 0.773 | |
| Accessible at all time (relo4) | 0.742 | |
| Takes responsibility for decision made (relo5) | 0.739 | |
| Rewards my achievement (relo6) | 0.732 | |
| Full commitment to quality initiatives (relo7) | 0.730 | |
| Compromise to reach agreement (relo8) | 0.715 | |
| Gives clear directions on work (relo9) | 0.700 | |
| Involves me in decision affecting my work (relo10) | 0.699 | |
| Create mutual trusts atmosphere (relo11) | 0.697 | |
| Sets positives example for others (relo12) | 0.689 | |
| Arouses awareness on important issues (relo13) | 0.664 | |
| Learns from mistakes (relo14) | 0.664 | |
| Take full charge on important issues (relo15) | 0.655 | |
| Delegates responsibility sensibly (relo16) | 0.634 | |
| Supports employees to study and develop(relo17) | 0.630 | |
| Works well in tensed situations (relo18) | 0.626 | |
| **Task-oriented** | | |
| Uses informal network (task1) | | 0.848 |
| Seeks better ways to get work done (task2) | | 0.759 |
| Foresee problems before arise (task3) | | 0.733 |
| Courage in all transaction (task4) | | 0.661 |
| Transparent about problems (task5) | | 0.658 |
| Generates innovative ideas (task6) | | 0.591 |

**Table 4.10 (Continued)**

| Quality of Work Life: α = 0.887; KMO = 0.900 ; Bartlett's: Sig. = 0.000 | | | | | |
|---|---|---|---|---|---|
| **Work setting issues** | **F1** | **F2** | **F3** | **F4** | **F5** |
| Open communication among members (workset1) | 0.747 | | | | |
| Pleasant working conditions (workset2) | 0.720 | | | | |
| Management takes care employee welfare (workset3) | 0.716 | | | | |
| Receive reasonable fringe benefits (workset4) | 0.697 | | | | |
| Management serious on work safety (workset5) | 0.695 | | | | |
| Fair treatment for career opportunities (workset6) | 0.691 | | | | |
| Career advancement are good (workset7) | 0.670 | | | | |
| No continuing problems (workset8) | 0.656 | | | | |
| Performance evaluated fairly (workset9) | 0.646 | | | | |
| Employees morale is high (workset10) | 0.644 | | | | |
| Provide enough training skills (workset11) | 0.610 | | | | |
| Flexible work environment (workset12) | 0.556 | | | | |
| Conflicts are accepted and work through (workset13) | 0.533 | | | | |
| Gives me freedom to my job (workset14) | 0.525 | | | | |
| Work assignment fairly distributed (workset15) | 0.446 | | | | |
| **Job itself** | | | | | |
| Chance to pursue professional development (job1) | | 0.651 | | | |
| Provide information on work performance (job2) | | 0.619 | | | |
| Gives personal satisfaction (job3) | | 0.615 | | | |
| Able to see my work results (job4) | | 0.580 | | | |
| Chance to figure how work is done (job5) | | 0.565 | | | |
| Enables me to act independently (job6) | | 0.556 | | | |
| Ability to influence decision that affect organisation (job7) | | 0.502 | | | |
| Receive ample resources to do my job (job8) | | 0.498 | | | |
| No personal say about how work to be done (job9) | | 0.424 | | | |
| **Challenge of work** | | | | | |
| Requires cooperative work with others (chaw1) | | | 0.727 | | |
| Requires me to do a number of different thing (chaw2) | | | 0.666 | | |
| To receive feedback from others (chaw3) | | | 0.590 | | |
| Handle unpredictable situations (chaw4) | | | 0.579 | | |
| Require me to work fast (chaw5) | | | 0.577 | | |
| Chance to finish the whole work (chaw5) | | | 0.487 | | |

**Table 4.10 (Continued)**

| Quality of work life : | | | | | |
|---|---|---|---|---|---|
| **Work home life interaction** | **F1** | **F2** | **F3** | **F4** | **F5** |
| Difficult to cope with workload (wkhom1) | | | | 0.724 | |
| Difficult to balance work and family lives (wkhom2) | | | | 0.723 | |
| Rarely share expertise with others (wkhom3) | | | | 0.568 | |
| Work not significant and no effect on others (wkhom4) | | | | 0.517 | |
| Work under great pressure (wkhom5) | | | | 0.412 | |
| **Feeling about work** | | | | | |
| Little chance to get to know other people (feel1) | | | | | 0.727 |
| Simple and repetitive (feel2) | | | | | 0.699 |
| Only a tiny part of the overall work (feel3) | | | | | 0.585 |
| Small employee training allocation (feel4) | | | | | 0.483 |
| Abilities not fully utilized (feel5) | | | | | 0.408 |

As illustrated in Table 4.10, five factors of QWL orientation were extracted representing 52.71% of the total variance explained. The five factors were identified as work setting issues (explained 19.32% of the total variance), job itself (explained 10.41% of the total variance), challenge of work (explained 9.23% of the total variance), work-home life interaction (explained 7.78% of the total variance) and feeling about work (explained 5.97% of the total variance). None of the 40 items were dropped and the values of factor loadings were ranged between 0.408 and 0.747.

Finally, three factors of organisational commitment were derived from the output (Table 4.10) with eigen values greater than one. None of the 15 items were dropped and the three factors contributed 59.32% of the total variance explained with the values of factor

loadings between 0.466 and 0.834. The three factors were identified as active, passive and no commitment.

**Table 4.10 (Continued)**

| Organisational Commitment : α = 0.871; KMO = 0.889 ; Bartlett's: Sig. = 0.000 | | | |
|---|---|---|---|
| **Active  commitment** | **F1** | **F2** | **F3** |
| work beyond expectation for organisation (acom1) | 0.781 | | |
| care about the fate of this organisation (acom2) | 0.705 | | |
| proud to be with this organisation (acom3) | 0.700 | | |
| have similar values with organisation (acom4) | 0.671 | | |
| accept all work in order to be in this organisation (acom5) | 0.638 | | |
| promote organisation as good workplace (acom6) | 0.609 | | |
| organisation gives inspiration to do the best (acom7) | 0.601 | | |
| **Passive commitment** | | | |
| it's a mistake to work with this organisation (passive1) | | 0.765 | |
| often disagree with organisation employees policies (passive2) | | 0.713 | |
| regard this organisation as the best workplace (passive3) | | 0.650 | |
| glad to choose and work in this organisation (passive4) | | 0.617 | |
| feel little loyalty to organisation (passive5) | | 0.466 | |
| **No commitment** | | | |
| can work with other organisation with similar job (no1) | | | 0.834 |
| present circumstances not affected if leave job (no2) | | | 0.790 |
| not much gain receive if work in this organisation (no3) | | | 0.692 |

ii)      **Confirmatory Factor Analysis: Structural Equation Modeling - Measurement Models**

For the purpose of this study, structural equation modeling (SEM) using AMOS was used as the primary construct validation tool. That is, confirmatory factor analysis (CFA) is used to analyze convergent and discriminant validity, by assessing the measurement model developed for testing each of the main variables in this study. The advantages of using confirmatory factor analyses (Bagozzi et al. 1991: 429) are:

(i)      measures of the overall degree of fit are provided in any particular application (e.g., the chi-square, goodness-of-fit test),

(ii)     useful information is supplied as to if and how well convergent and discriminant validity are achieved (e.g., through 'chi-square difference tests, the size of factor leadings for traits and the estimates for trait correlations), and;

(iii)     explicit results are available for partitioning variance into trait, method, and error components (e.g., through squared factor loadings and error variance).

Cheng (2001) states that there are two methods commonly used by researchers in evaluating the validity of measurement model: testing each construct separately, or testing all construct together at one time.

CFA is used to examine convergent and discriminant validity. Convergent validity would be accessed through the inspection of the statistical significance of factor loadings (the estimated parameter between latent variables and their indicators). In terms of the value of standardized loading, the commonly considered threshold value is 0.4 (Ford, MacCallum and Tait, 1986).

In assessing the convergent validity, the proposed model has to exhibit a holistic fit. In this context, researchers should use multiple indices of model of model in determining the fit model fit of the model, choose the indices that operationalise different aspects of model fit, and be consistent with the choice of decision rule within and across any

analysis (Kelloway, 1995; Hair et al., 2006). To evaluate the overall model fit, Garver and Mentzer (1999) indicate two strategies: (i) selecting fit indices which represent different families of fit indices, and (ii) specifying a stringent criteria and selecting fit indices that best represent this criteria.

Despite a number of fit indices available to evaluate the overall fit, there is little consensus regarding the best index to be used or which index performs better under different conditions. According to Hair et al., (2006) and Schumacker and Lomax, (1996) the hypothesised models need to illustrate a satisfactory fit in terms absolute fit, incremental fit and model parsimony. Model fit means that the hypothesised model fits the data well. Absolute fit indices are a direct measure of how well the model specified by the researcher reproduces the observed data. These indices include chi-square statistics ($\chi 2$), normed chi-square or relative chi-square ($\chi 2$ /df), goodness-of-fit (GFI), adjusted goodness-of-fit (AGFI) and root mean-square error of approximation (RMSEA).

Incremental fit indices differ from absolute fit indices in that they assess how well a specified model fits relative to some alternative baseline model. The most common baseline model is referred to as a null model, one that assumes all observed variables as uncorrelated. Here, the results of relationship from the models are compared with the independent models. The score for the incremental fit model ranges from 0 to 1. A score close to 1 suggests a perfect fit whereas 0 refers to there being no difference between and independent model. The indices of the incremental fit comprising of the Normed Fit Index (NFI), the Comparative Fit Index (CFI), Tucker Lewis Index (TLI) or Non-Normed Fit Index (NNFI) and Relative Noncentrality Index (RNI).

Finally, parsimony fit indices refer to the application of parameters or the coefficient of model. The fewer the estimated parameters used in the model, the more parsimonious the model (Hair et al., 2006; Bentler, 1995). The indices include the Parsimony Goodness-of Fit Index (PGFI), The Parsimony Normed Fit Index (PNFI) and Aikaike Information Criterion (AIC).

It was argued that many fit indices do not meet the above criteria because they are adversely affected by sample size (Garver and Mentzer 1999). The chi-square for example, is the most common method used in evaluating the overall model fit. However, it is often criticized because of its high sensitivity to sample size, and the fact that the significance level can be misleading (Hair et al., 2006). In relation to the criteria used, Garver and Mentzer (1999) recommended three (3) fit indices: (1) the Tucker-Lewis index (TLI); (2) the comparative fit index (CFI); and the root mean squared approximation of error (RMSEA). The authors further suggest that when samples of the study are small (less than 200) TLI and CFI are preferred as they are less likely to produce biased estimates (Bentler, 1989; Kline, 1998). Others like Kline et al. (1998) suggested the Goodness of fit index (GFI) and Adjusted Goodness of fit index (AGFI) to be used to measure the fitness of the model.

As a result from the discussion above, this study used the fit indices recommended by Garver and Mentzer (1999), which were: (1) the Tucker-Lewis index (TLI); (2) the comparative fit index (CFI); and the root mean squared approximation of error (RMSEA) as they are all scaled on a pre-set continuum (0 to 1) for easy interpretation and relatively independent of sample size effects. Furthermore, this study would also use the goodness-of-fit (GFI) and Normed Fit Index (NFI) as additional important fit indices, which is

commonly used in the previous research, the Chi square, degree of freedom and its significance level as these figures are important in examining the discriminant validity. Table 4.11 defines the indicators used to measure the model fit.

All indices discussed thus far are estimated for the measurement models of the study. They are also used to test for convergent and discriminant validity, which is discussed below. These indices, however, are not the only criteria used to accept or reject the hypothesised model. Other unanticipated extenuating circumstances that may affect the interpretation of model results must also be considered (Hair et al., 2006).

**Convergent and Discriminant Validity**

Convergent validity refers to the degree to which different methods used to measure the same construct produce similar results (Anderson and Gerbing, 1988). In other words, it is based on the correlation between responses obtain by maximally different methods of measuring the same construct. Ideally, convergent validity is tested by determining whether the items in a scale converge or load together on a single construct in the measurement models (Garver and Mentzer 1999). If there is no convergence, the theory used in the study needs to be analyzed, or the purification of measures can be carried out by eliminating the items. As suggested by Garver and Mentzer (1999) for examining convergent validity, the overall fit of the measurement model will be assessed. In this case to evaluate the overall fit of the model, the Chi Square statistics, GFI, CFI, TLI and RMSEA will be used as fit indices.

**Table 4.11: Summary of Fit Indices**

| Type | Name | Abbrev. | Acceptable level | Comments |
|------|------|---------|------------------|----------|
| Model Fit | Chi - square | $\chi^2$ *(df, p)* | p > 0.05 at α = 0.05 | p > 0.05 reflects acceptable fit; 0.1 reflect a good fit<br><br>To get a non-significant $\chi^2$ with an association to degree of freedom (meaning that data fit the model), significant has to be at p > 0.05 or > 0.01 |
| Absolute Fit and Model Parsimony | Normed Chi - square | $\chi^2$/df | 1.0 < $\chi^2$/df < 3.0 | Values close to 1 indicate good fit but values less than 1 may indicate overfit |
| Absolute Fit | Goodness – Of – Fit and Adjusted Goodness – Of – Fit | GFI<br><br>AGFI | GFI and AGFI > 0.95 | Values between 0.90 – 0.95 may also indicate satisfactory fit |
| Absolute Fit | Root mean – Square Error of Approximation | RMSEA | RMSEA < 0.05 | Values between 0.05 – 0.08 may also indicate satisfactory fit. Value 0 indicates a perfect fit |
| Incremental / Comparative Fit | Normed Fit Index<br><br>Tucker – Lewis Index | NFI<br><br>TLI | NFI, TLI > 0.95 | Values between 0.95 – 0.95 may also indicate satisfactory fit. Values greater than 1 may indicate overfit |
| Incremental / Comparative Fit | Comparative Fit Index | CFI | CFI > 0.95 | Values between 0.90 – 0.95 may also indicate satisfactory fit. Values close to 0 indicate poor fit, CFI = 1 indicates perfect fit |

***Source:*** *Adapted from Hair et al (2006) and Rex B. Kline, (1998)*

On the other hand, discriminant validity is the extent to which a construct is truly distinct from other constructs (Hair et al, 2006). It means that items from one scale should not load or converge too closely with items from a different scale and that different latent variables which correlate too highly may indeed be measuring the same construct rather than different constructs (Garver and Mentzer 1999). In other words, high discriminant validity provides evidence that a construct is unique and captures some phenomena other measures do not.

Confirmatory factor analysis, as discussed earlier, is applied in this instance to examine the instruments in terms of their convergent and discriminant validity. Therefore, structural equation modeling with Analysis of Moment Structure (AMOS) version 6 is adopted to examine convergent validity of the constructs used in this study. The section below discusses the results of convergent and discriminant validity in detail.

**Measurement Models**

**(i)    Results of Convergent Validity**

Steenkamp and van Trijp (1991) point out three criteria that are used to assess the convergent validity: (1) the overall fit measurement model; (2) the critical ratio (t-test) for the factor loading; and (3) the magnitude, direction, and statistical significance of the estimated parameters between latent variables and their indicators.

Table 4.12 captures all the results of confirmatory factor analysis on the constructs in this study while, Figures 4.3 to 4.24 exhibit the measurement models for the constructs of the study namely organisation structure, organisational culture, social capital, leadership

behaviour, QWL orientation and organisational commitment. The results from these model shows that based on modification indices and standardized error, a few items were deleted to get the data to fit the model. According to Nijssen and Douglas (2004), dropping items from previous validated scale must be carried out judiciously and sensibly and in this case, there is justification for dropping the items. For instance, the scales for organisational structure, leadership behaviour and social capital were integrated from various researches and are considered exploratory in nature. Therefore, in order to seek greater parsimony and fitness dropping items were considered legitimate. In fact, Nyambegera, Daniels and Sparrow (2001) contend that in most exploratory studies there is a need to delete certain items in the original scales in order to improve their fitness, validity and reliability. Furthermore, the integrated items had never been used in a Malaysian sample compared to the previous studies which used scales that were already established and validated.

Based on the results shown in Table 4.12, all the criteria for the incremental/comparative fit (CFI and TLI) are above the threshold value of 0.90; thus, provide evidence of a good fit model. The chi-square statistics offers the most basis fit measure reflecting the sample size and the value of the maximum likelihood fitting function. Kline (1998) proposed that $\chi^2$/df ratio values of less than 3 are considered favourable for a large sample (i.e. sample sizes of 200 or more). All values of $\chi^2$/df are between 1 and 3, while RMSEA is within the satisfactory fit (0.05 – 0.08). This shows that $\chi^2$/df and RMSEA are good indicators of the absolute fit of the model. Furthermore, the GFI value of over 0.90 also provides evidence of an acceptable fit. All of these fit evidences suggest that the convergent validityis established.

**Table 4.12: Results of Confirmatory Factor Analysis**

| | $\chi^2$ | p | $\chi^2$/df | NFI | GFI | TLI | CFI | RMSEA |
|---|---|---|---|---|---|---|---|---|
| **Organisation Structure** | 70.3 | 0.000 | 2.198 | 0.888 | 0.935 | 0.908 | 0.935 | 0.077 |
| Centralization | 17.5 | 0.042 | 1.939 | 0.965 | 0.970 | 0.971 | 0.983 | 0.068 |
| Complexity | 1.9 | 0.163 | 1.949 | 0.980 | 0.994 | 0.970 | 0.990 | 0.069 |
| Formalization | 2.8 | 0.247 | 1.398 | 0.985 | 0.993 | 0.987 | 0.996 | 0.044 |
| | | | | | | | | |
| **Organisational Culture** | 161.7 | 0.001 | 1.484 | 0.884 | 0.916 | 0.948 | 0.958 | 0.049 |
| Stability | 17.1 | 0.048 | 1.897 | 0.966 | 0.974 | 0.973 | 0.984 | 0.067 |
| People Orientation | 4.3 | 0.118 | 2.136 | 0.983 | 0.990 | 0.972 | 0.991 | 0.075 |
| Aggressiveness | 5.2 | 0.156 | 1.743 | 0.947 | 0.987 | 0.952 | 0.976 | 0.061 |
| Innovation | 3.1 | 0.211 | 1.558 | 0.985 | 0.993 | 0.984 | 0.995 | 0.053 |
| Team Orientation | 1.7 | 0.190 | 1.716 | 0.989 | 0.994 | 0.985 | 0.995 | 0.060 |
| | | | | | | | | |
| **Social Capital** | 146.0 | 0.000 | 2.056 | 0.882 | 0.907 | 0.916 | 0.934 | 0.072 |
| Relational | 14.7 | 0.100 | 1.632 | 0.979 | 0.975 | 0.986 | 0.992 | 0.056 |
| Network ties | 1.9 | 0.164 | 1.941 | 0.989 | 0.994 | 0.984 | 0.995 | 0.068 |
| Engagement | 4.5 | 0.103 | 2.271 | 0.942 | 0.989 | 0.951 | 0.984 | 0.079 |
| Communication | 1.5 | 0.216 | 1.530 | 0.955 | 0.995 | 0.949 | 0.983 | 0.051 |
| | | | | | | | | |
| **Leadership Behaviour** | 105.2 | 0.000 | 1.984 | 0.957 | 0.926 | 0.973 | 0.978 | 0.070 |
| Relation-oriented | 30.1 | 0.007 | 2.148 | 0.980 | 0.961 | 0.984 | 0.989 | 0.075 |
| Task-oriented | 16.9 | 0.050 | 1.881 | 0.977 | 0.973 | 0.982 | 0.989 | 0.066 |

Table 4.12 (Continued)

| | $\chi^2$ | p | $\chi^2/df$ | NFI | GFI | TLI | CFI | RMSEA |
|---|---|---|---|---|---|---|---|---|
| **Quality of Work Life** | 198.00 | 0.000 | 1.816 | 0.864 | 0.901 | 0.916 | 0.933 | 0.064 |
| Work setting issues | 15.6 | 0.076 | 1.732 | 0.977 | 0.974 | 0.983 | 0.990 | 0.060 |
| Challenge of work | 3.1 | 0.375 | 1.037 | 0.980 | 0.993 | 0.999 | 0.999 | 0.014 |
| Job itself | 2.5 | 0.292 | 1.231 | 0.993 | 0.994 | 0.996 | 0.999 | 0.034 |
| Work/home life interaction | 2.7 | .256 | 1.363 | 0.977 | 0.993 | 0.981 | 0.994 | 0.042 |
| Feeling about work | 3.8 | 0.284 | 1.266 | 0.956 | 0.991 | 0.980 | 0.990 | 0.036 |
| | | | | | | | | |
| **Organisational Commitment** | 103.4 | 0.000 | 2.028 | 0.885 | 0.922 | 0.918 | 0.937 | 0.071 |
| Active Commitment | 15.6 | 0.075 | 1.738 | 0.963 | 0.976 | 0.973 | 0.984 | 0.060 |
| Passive Commitment | 2.9 | 0.234 | 1.452 | 0.983 | 0.993 | 0.984 | 0.995 | 0.047 |
| No Commitment | 1.6 | 0.209 | 1.576 | 0.987 | 0.995 | 0.986 | 0.995 | 0.053 |

Apart from assessing the overall fit of the measurement model, the critical ratio (t-test) for the factor loading is often used to assess convergent validity. This is because when the factor loadings show the statistically significant, then the convergent validity exists (Dunn, Seeker and Walter, 1994). The magnitude and direction of the estimated parameters between latent variables and their indicators are also examined for convergent validity (Steenkamp and van Trijp, 1991).
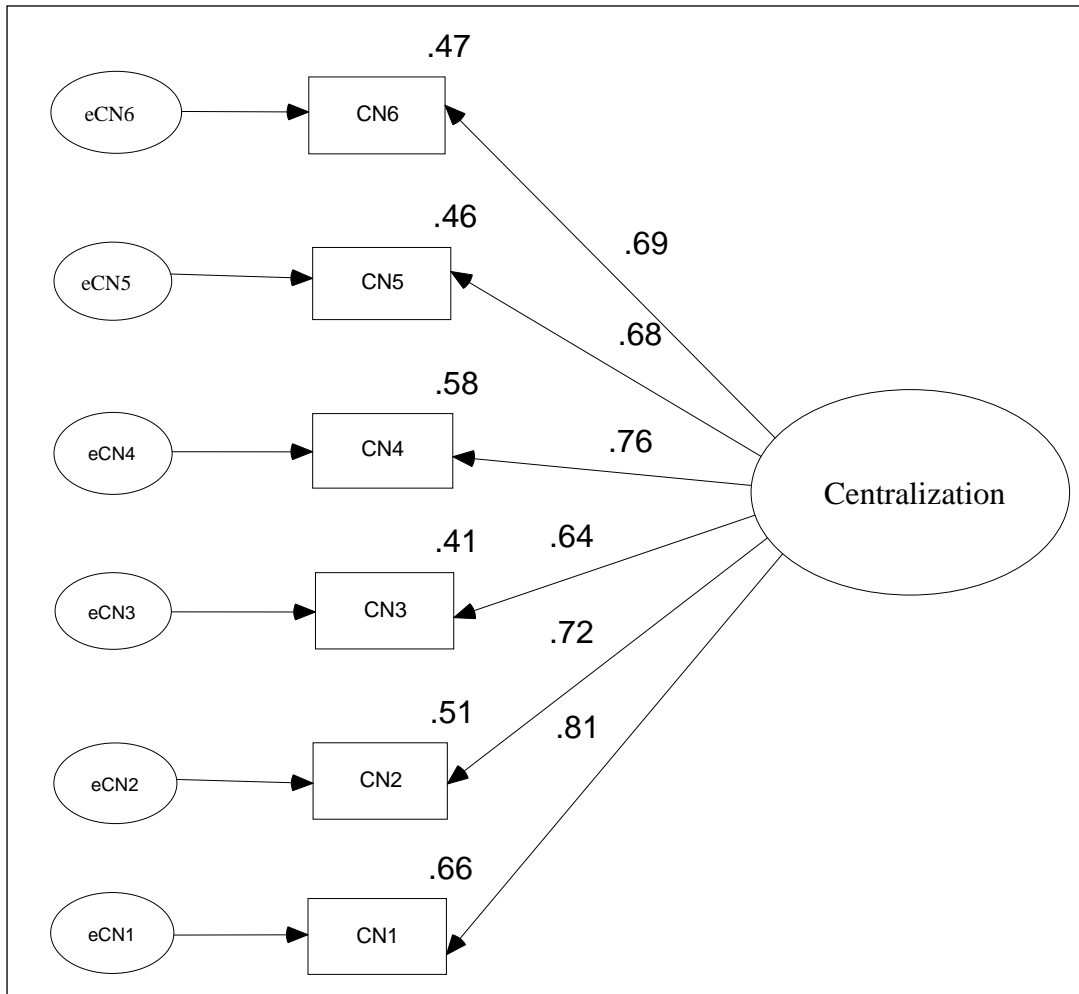
Figure 4.3: Measurement Model for Centralization
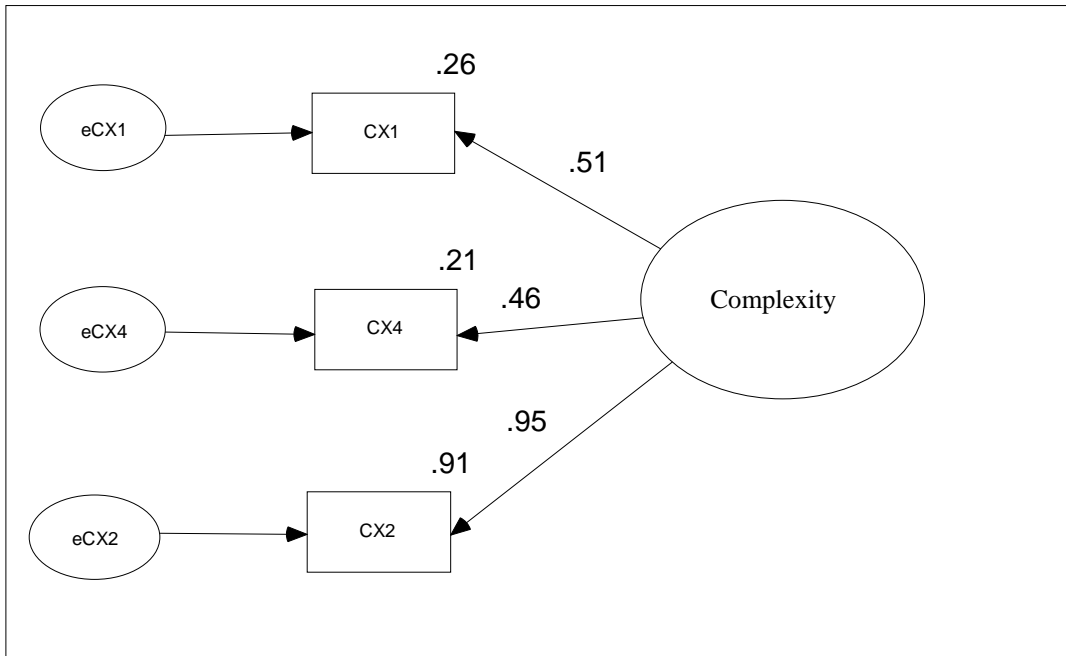
Figure 4.4: Measurement Model for Complexity
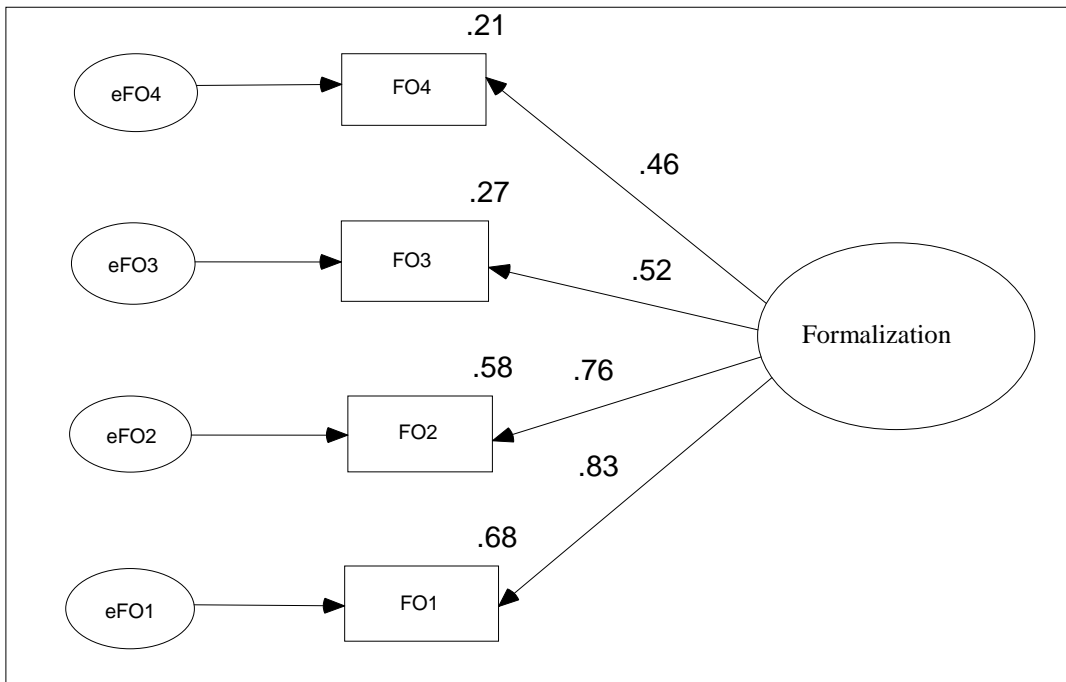


Figure 4.5: Measurement Model for Formalization
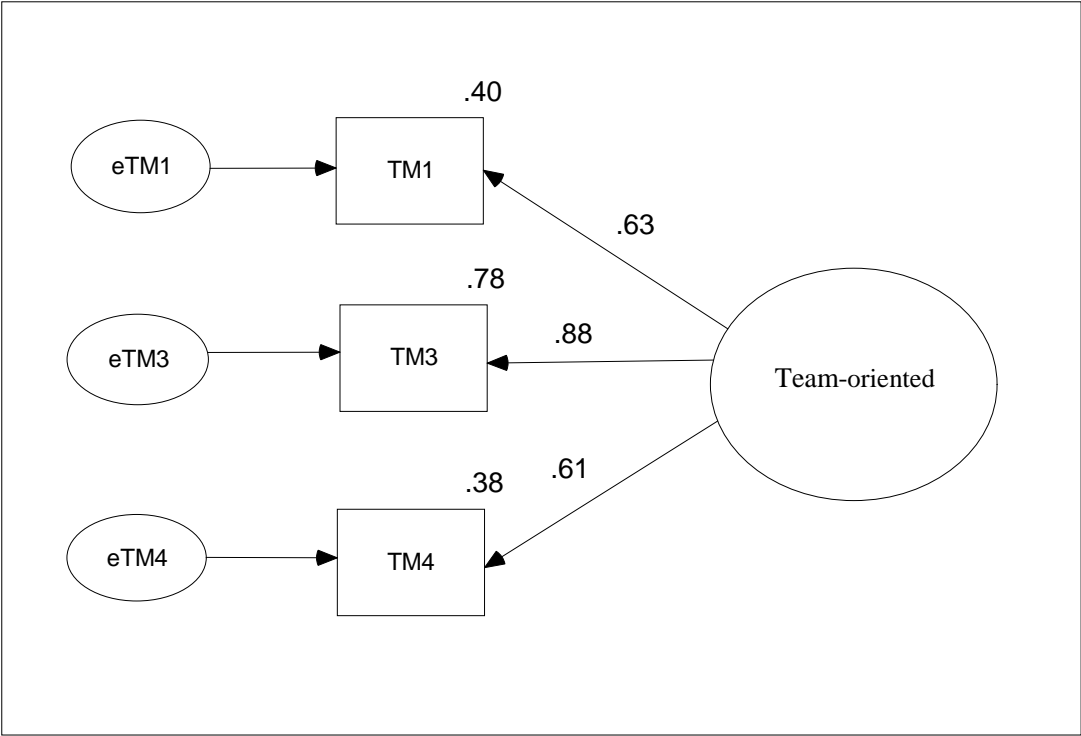
Figure 4.6:  Measurement Model for Team Oriented
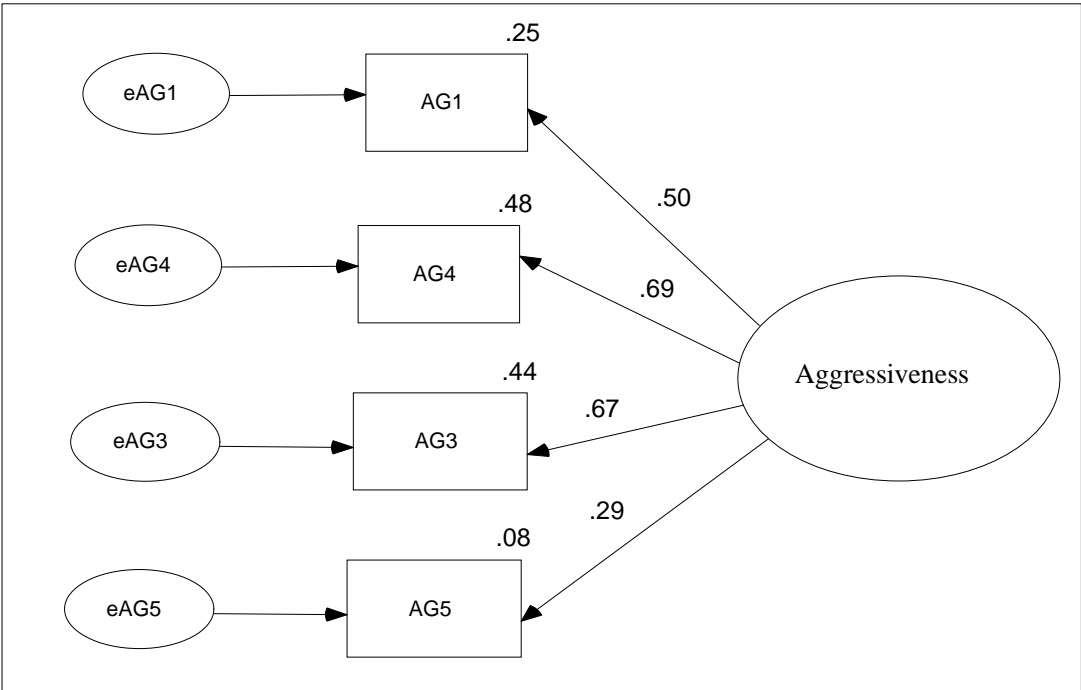

Figure 4.7:  Measurement Model for Aggressiveness
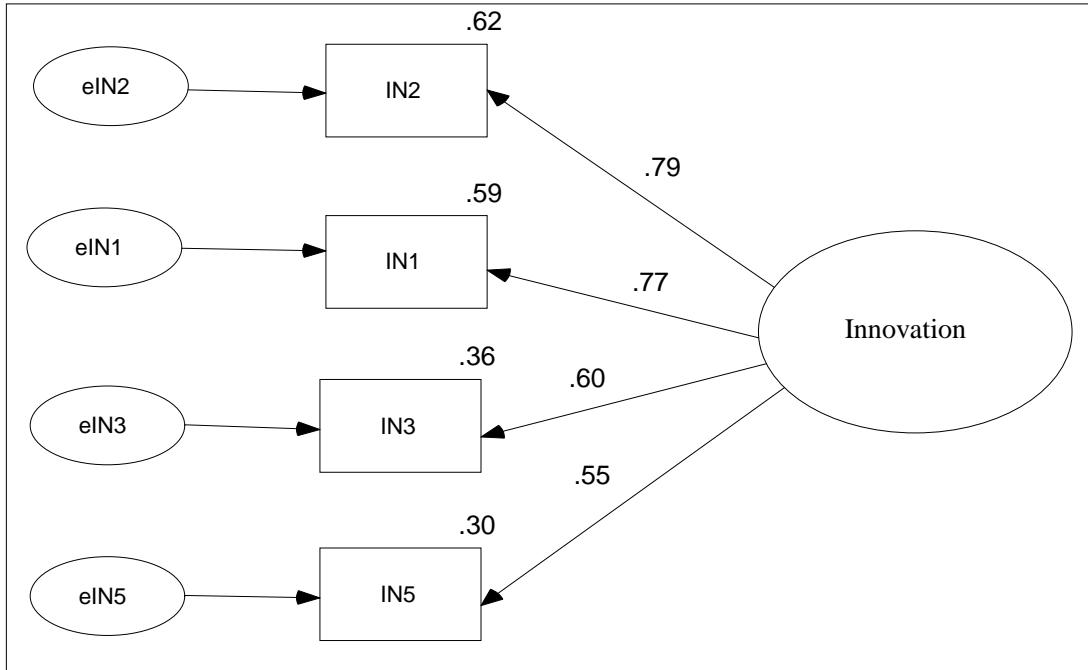
Figure 4.8: Measurement Model for Innovation
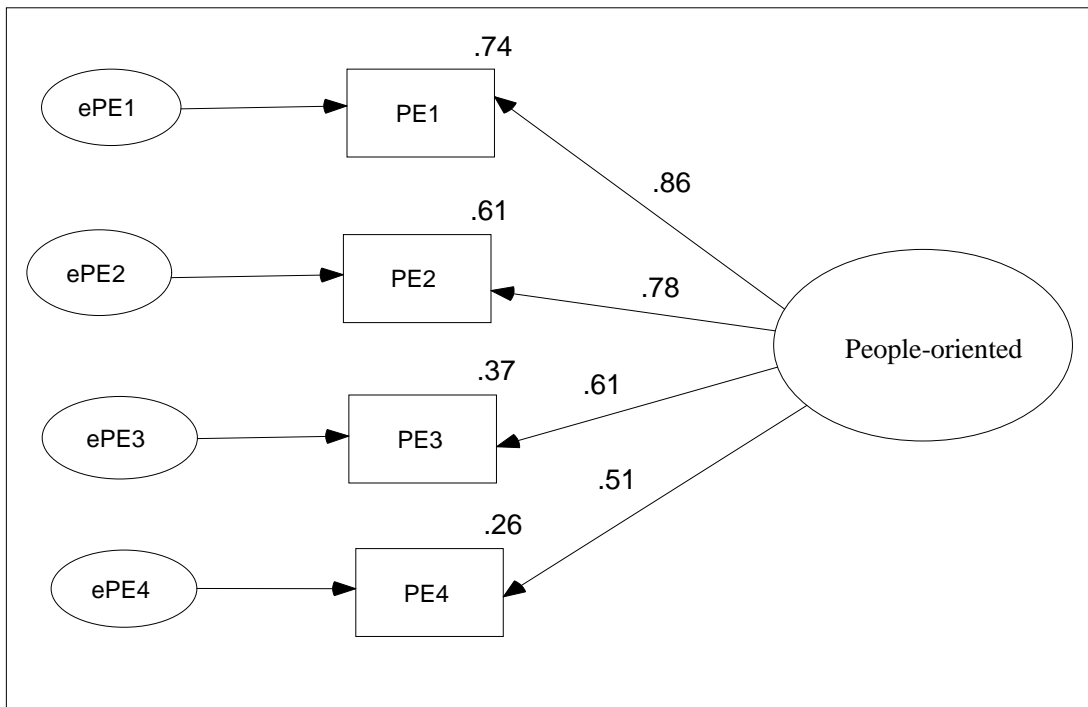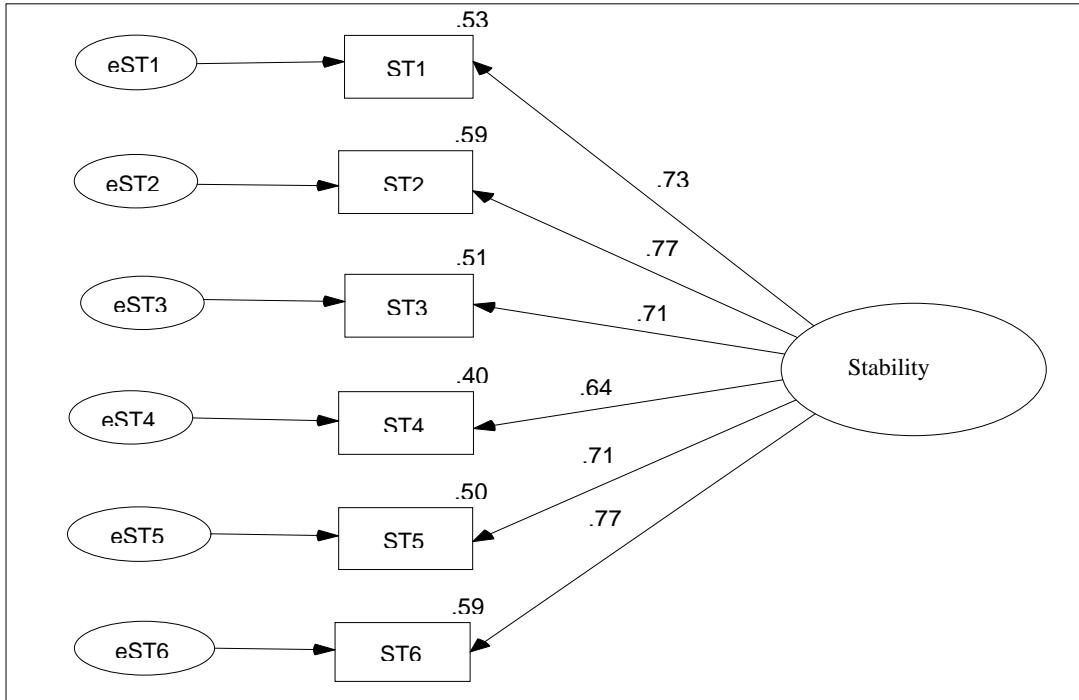


Figure 4.9: Measurement Model for People Oriented
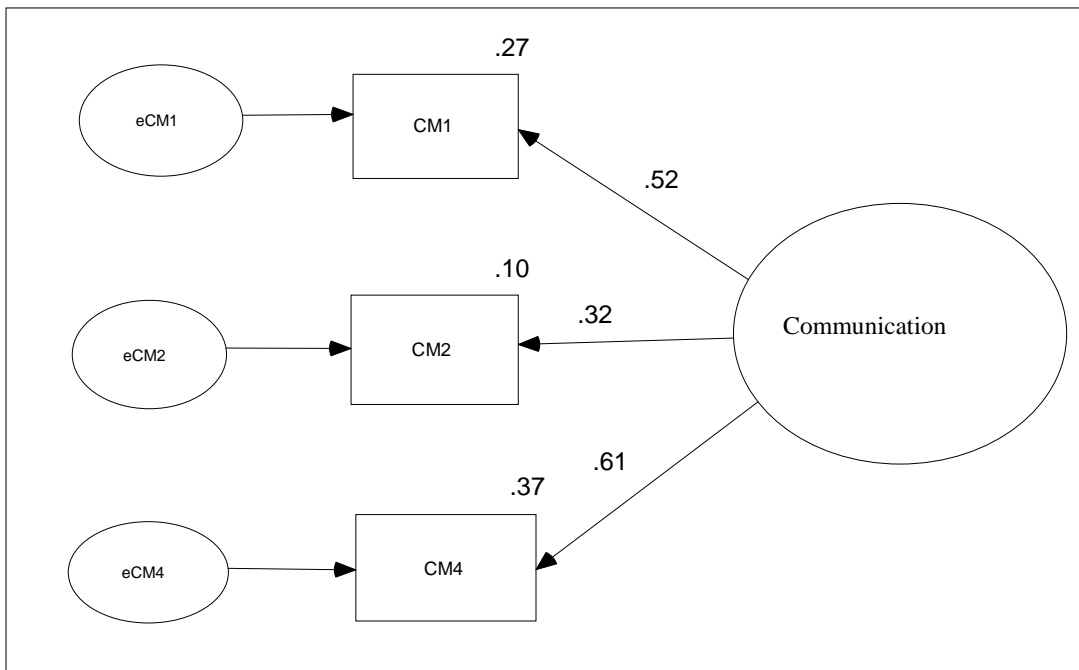
Figure 4.10: Measurement Model for Stability
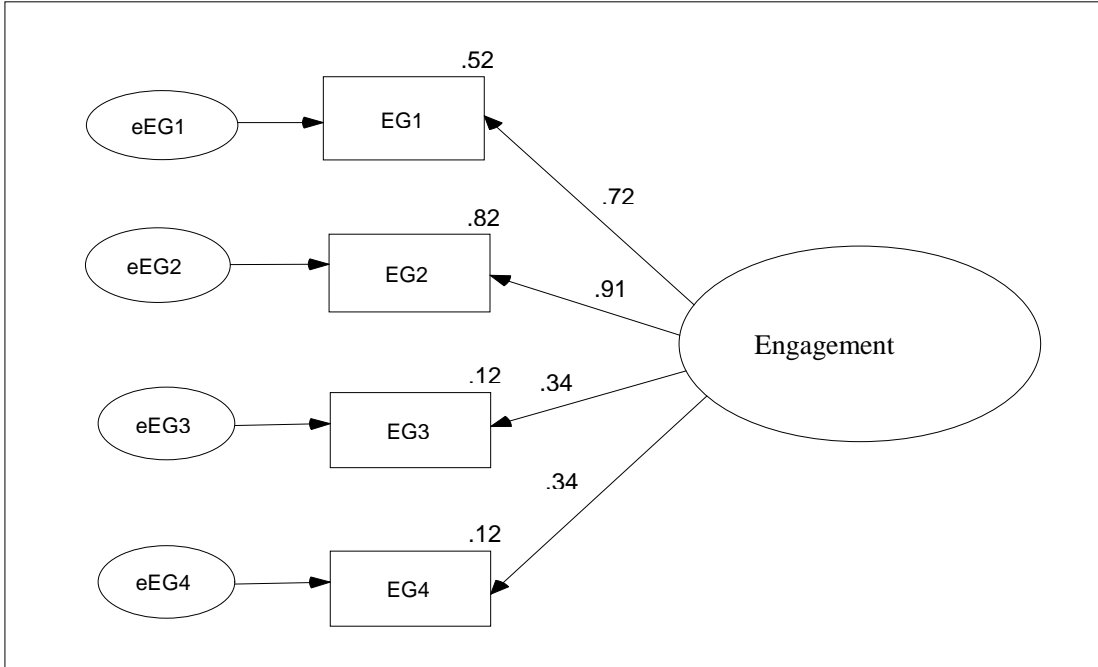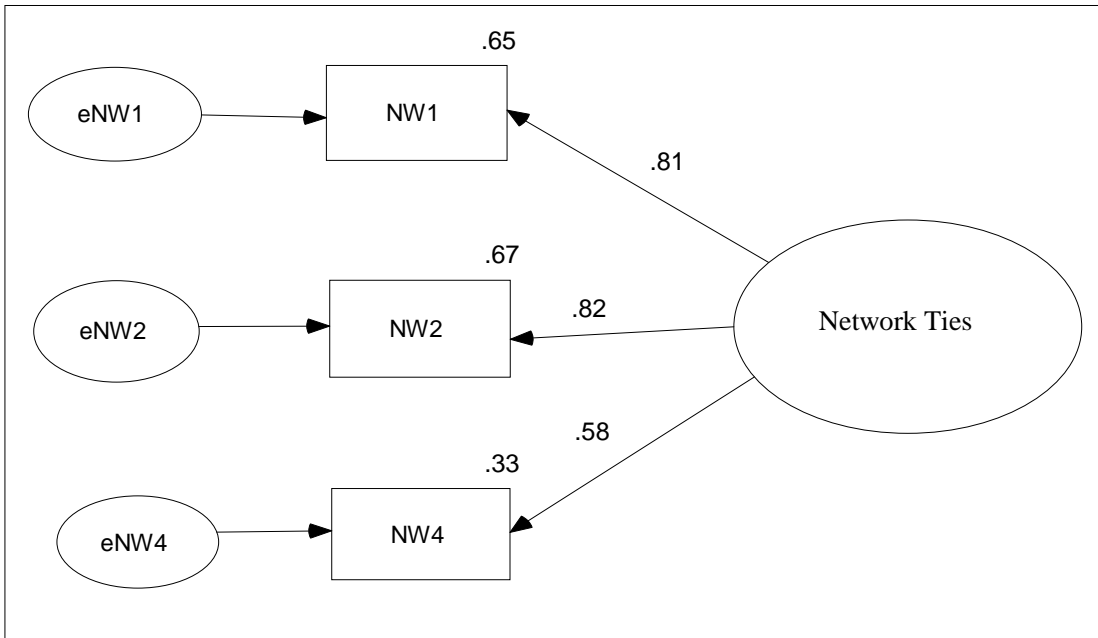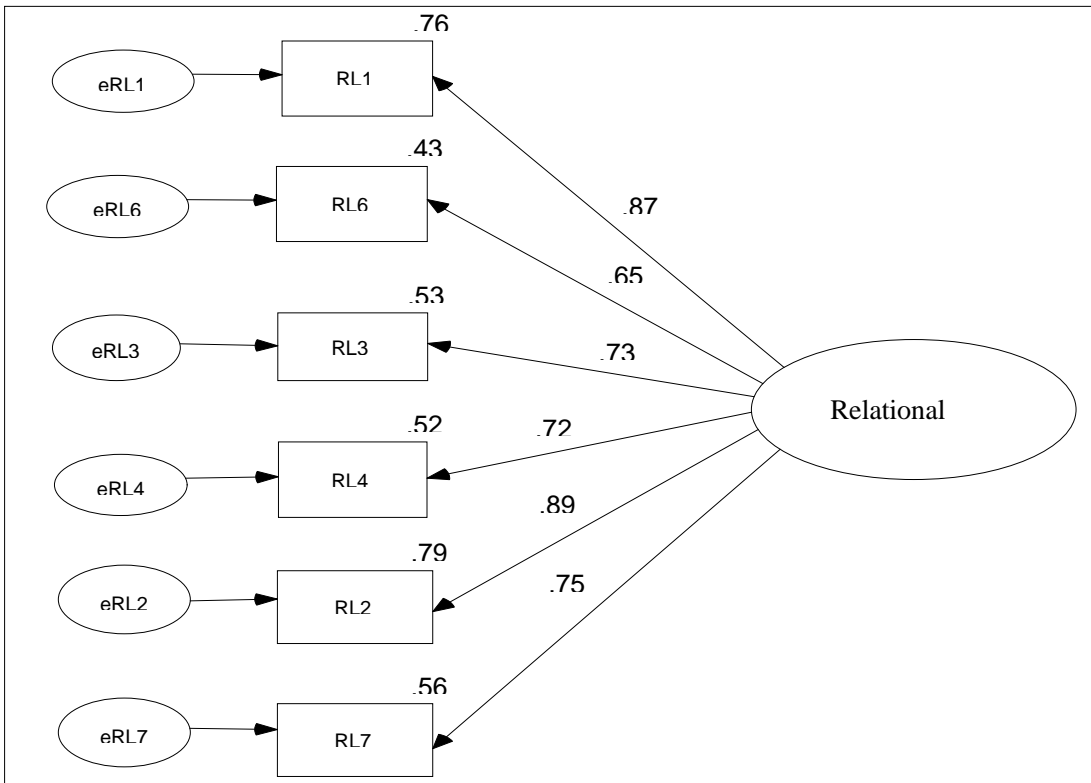


Figure 4.11: Measurement Model for Communication

Figure 4.12: Measurement Model for Engagement



Figure 4.13: Measurement Model for Network Ties

Figure 4.14:  Measurement Model for Relational
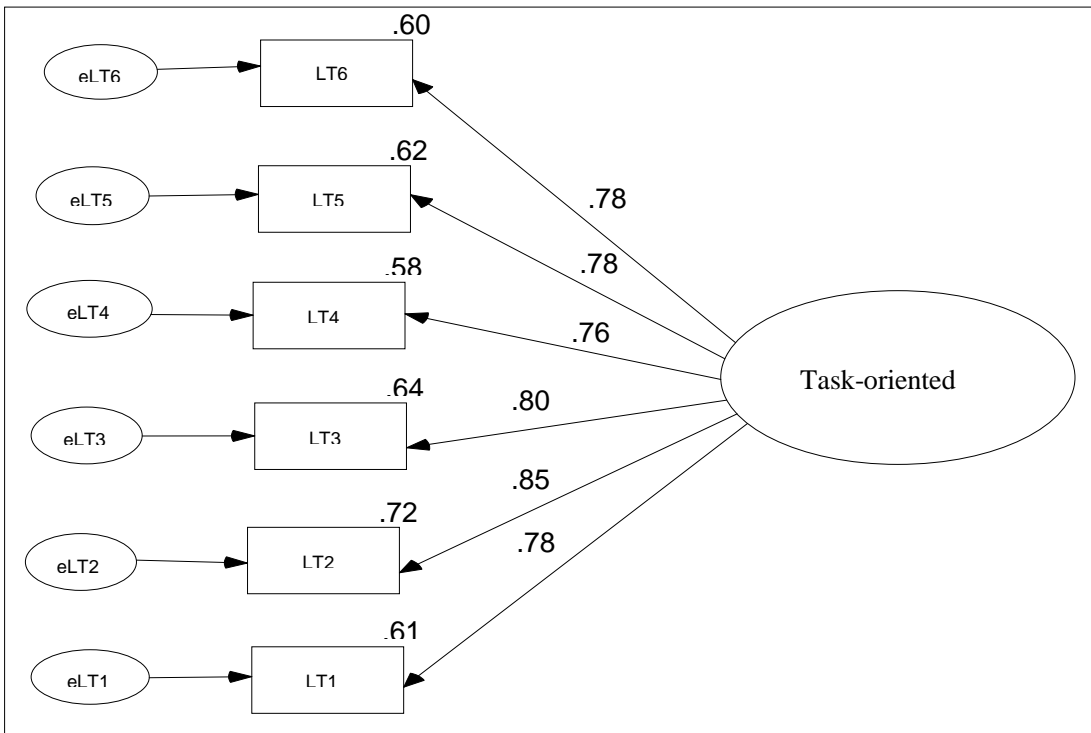


Figure 4.15:  Measurement Model for Task-oriented

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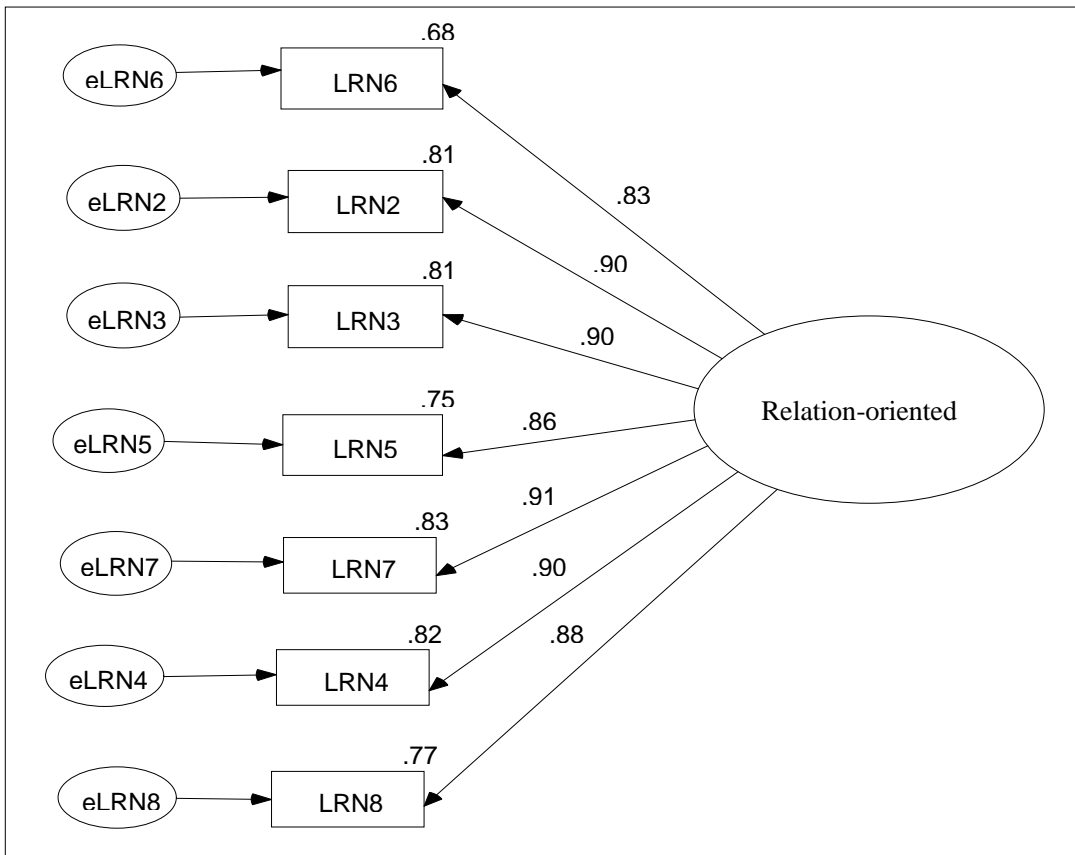
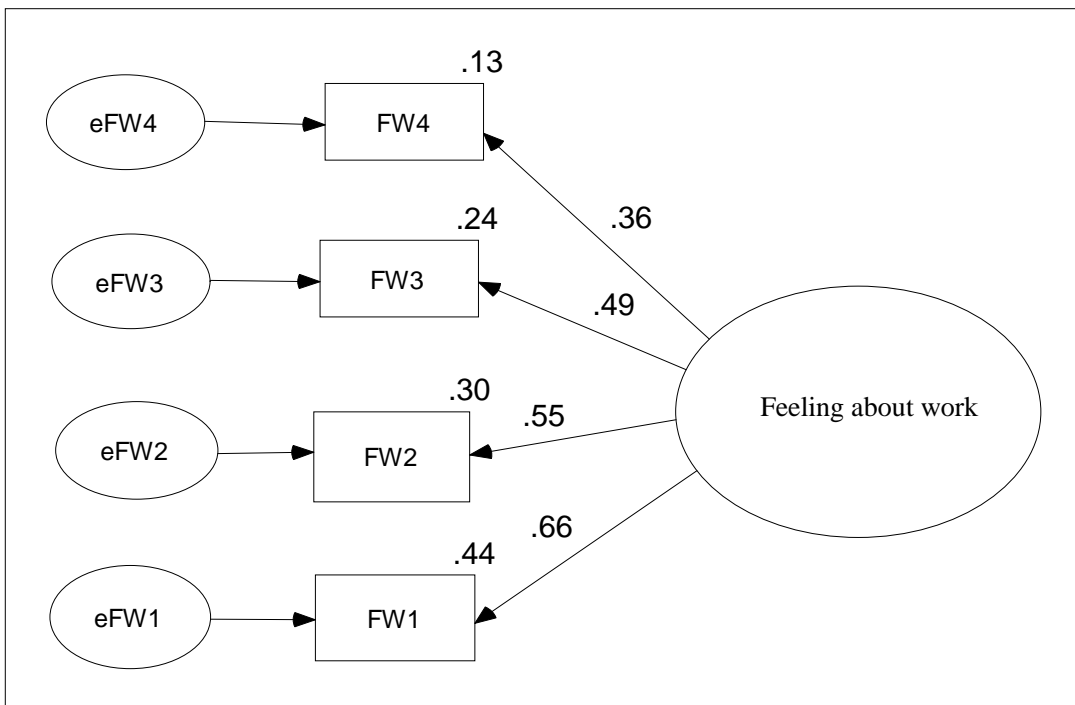Figure 4.16:  Measurement Model for Relation-oriented



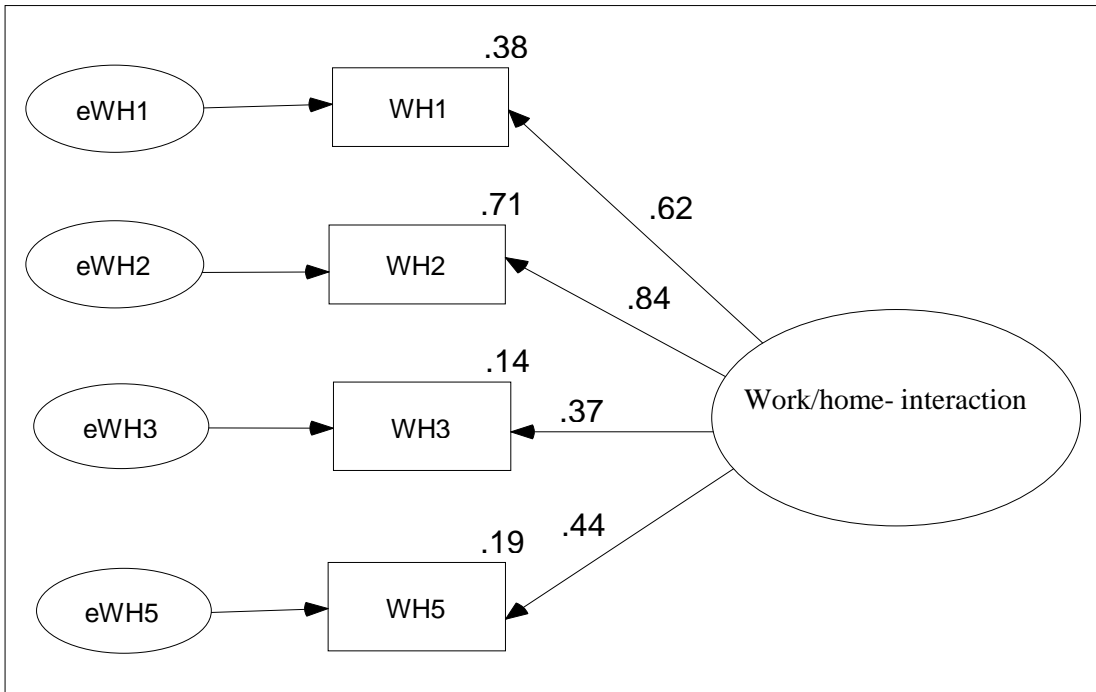Figure 4.17:  Measurement Model for Feeling about work

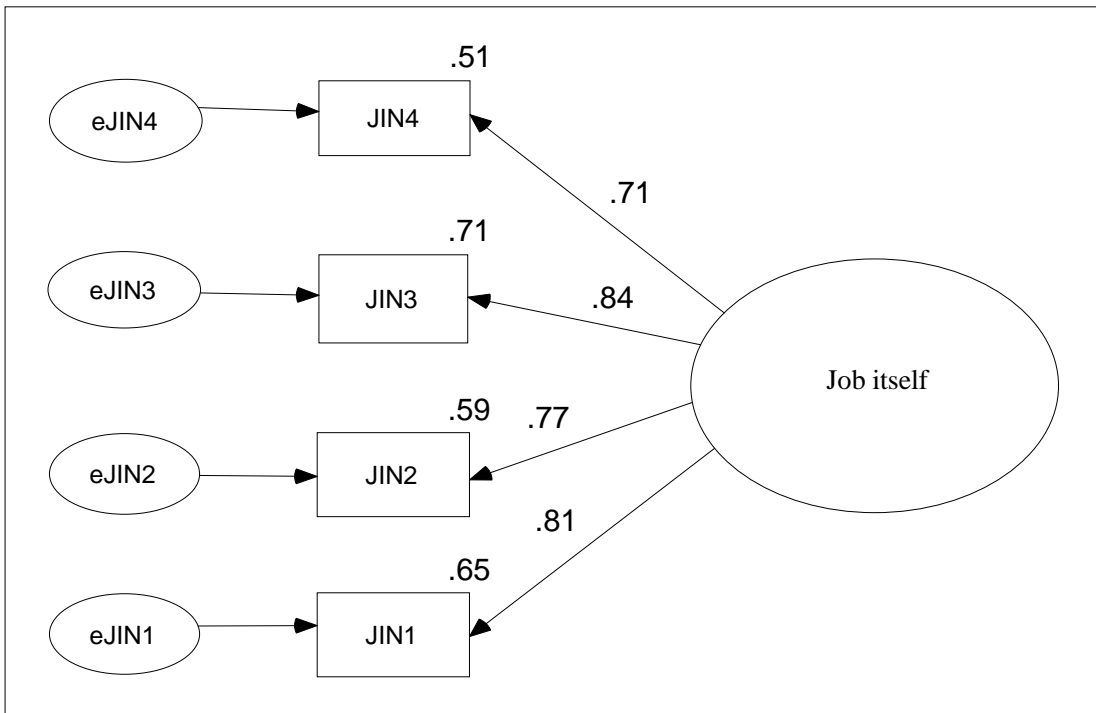Figure 4.18:  Measurement Model for Work home life interaction



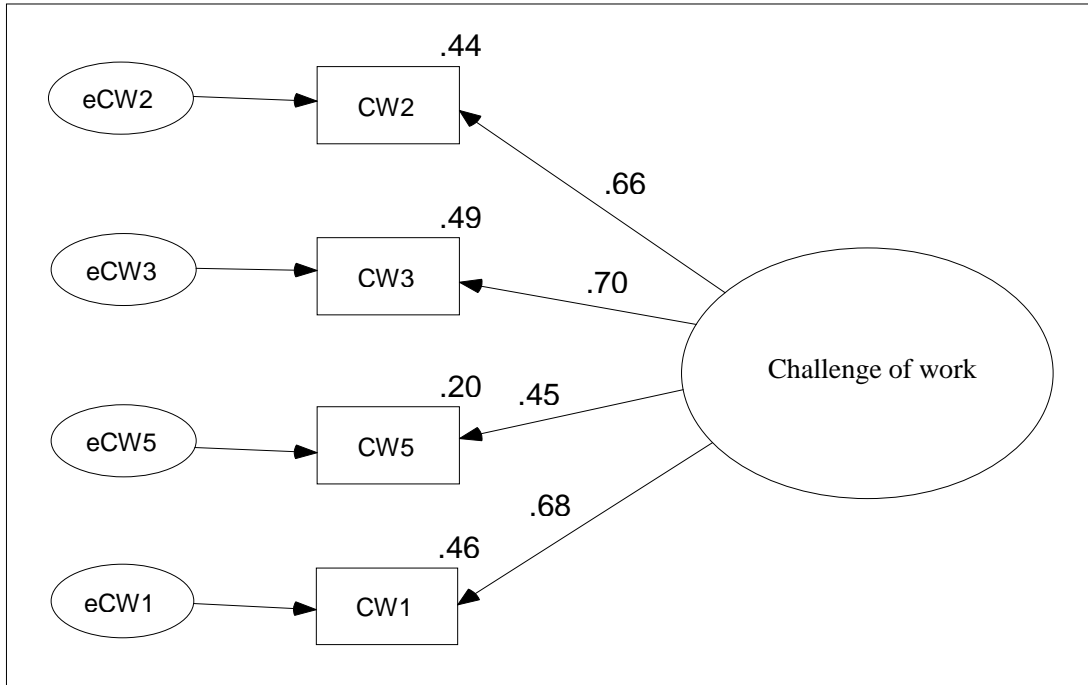Figure 4.19:  Measurement Model for Job itself

Figure 4.20:  Measurement Model for Challenge of work
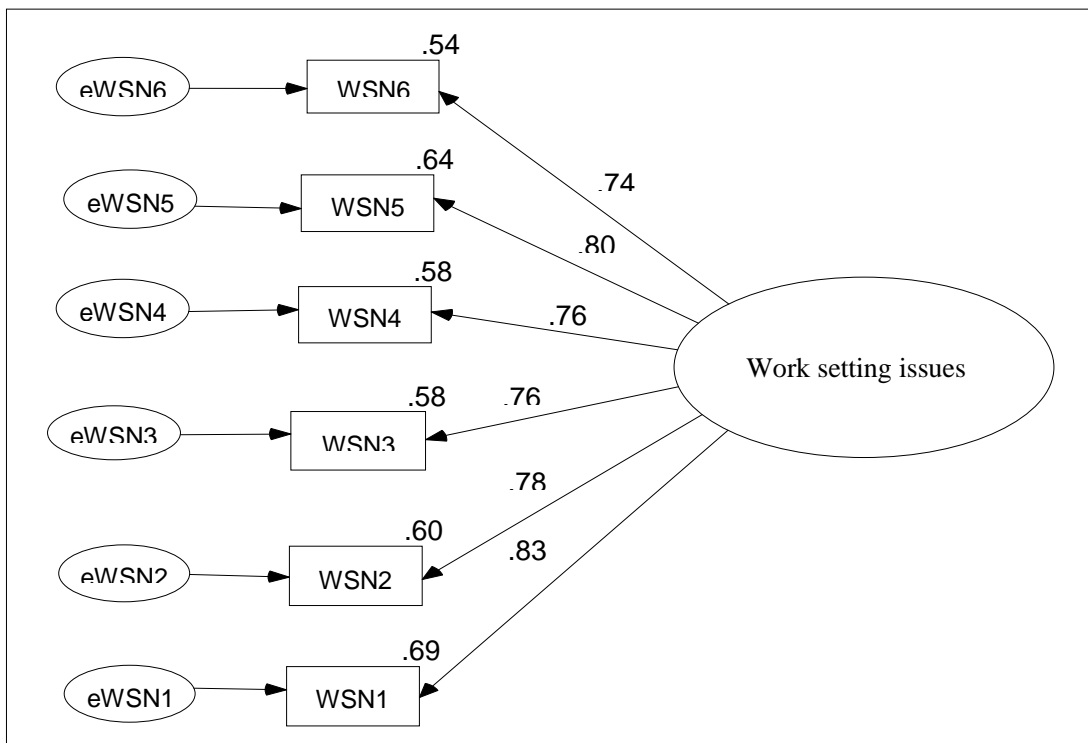


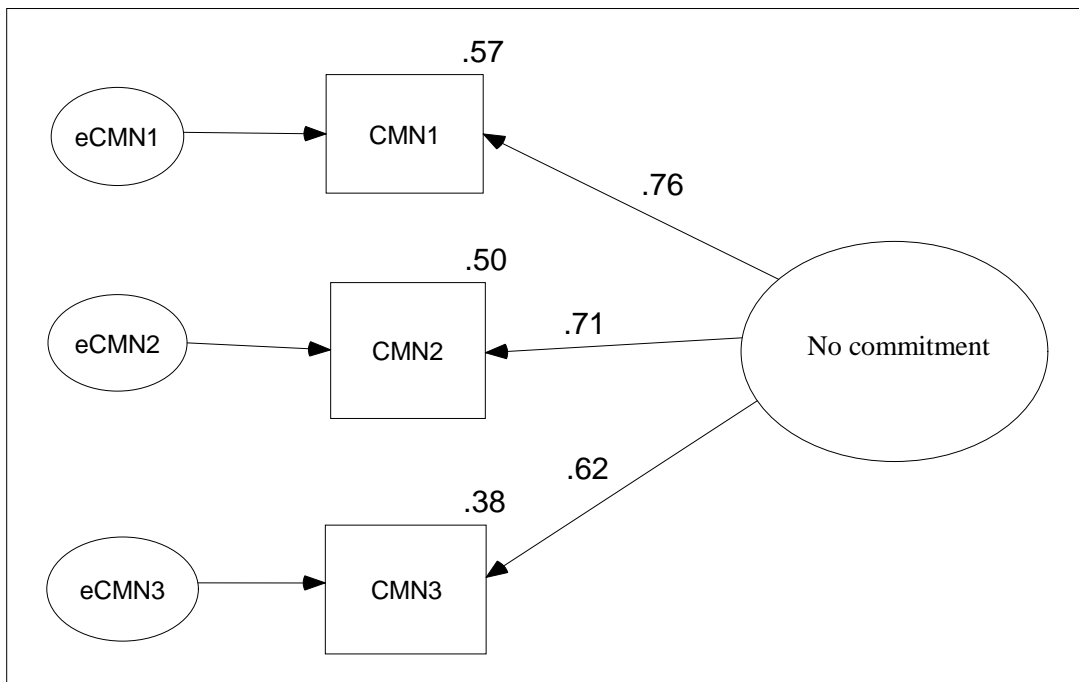Figure 4.21:  Measurement Model for Work setting issues

Figure 4.22: Measurement Model for No commitment
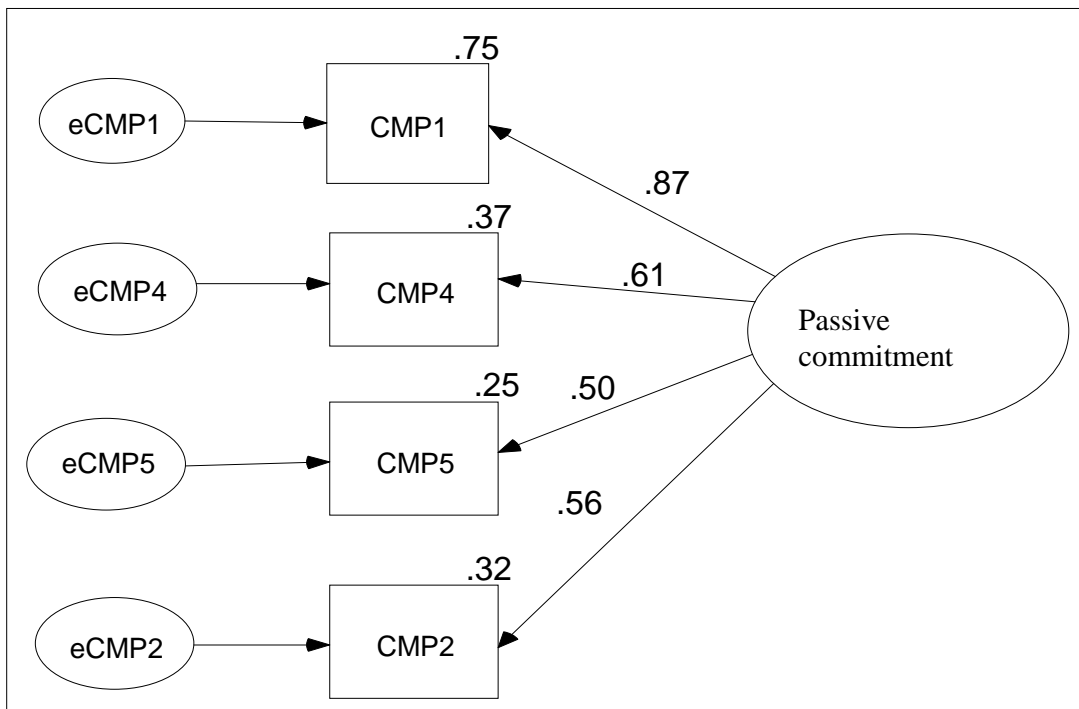


Figure 4.23: Measurement Model for Passive commitment
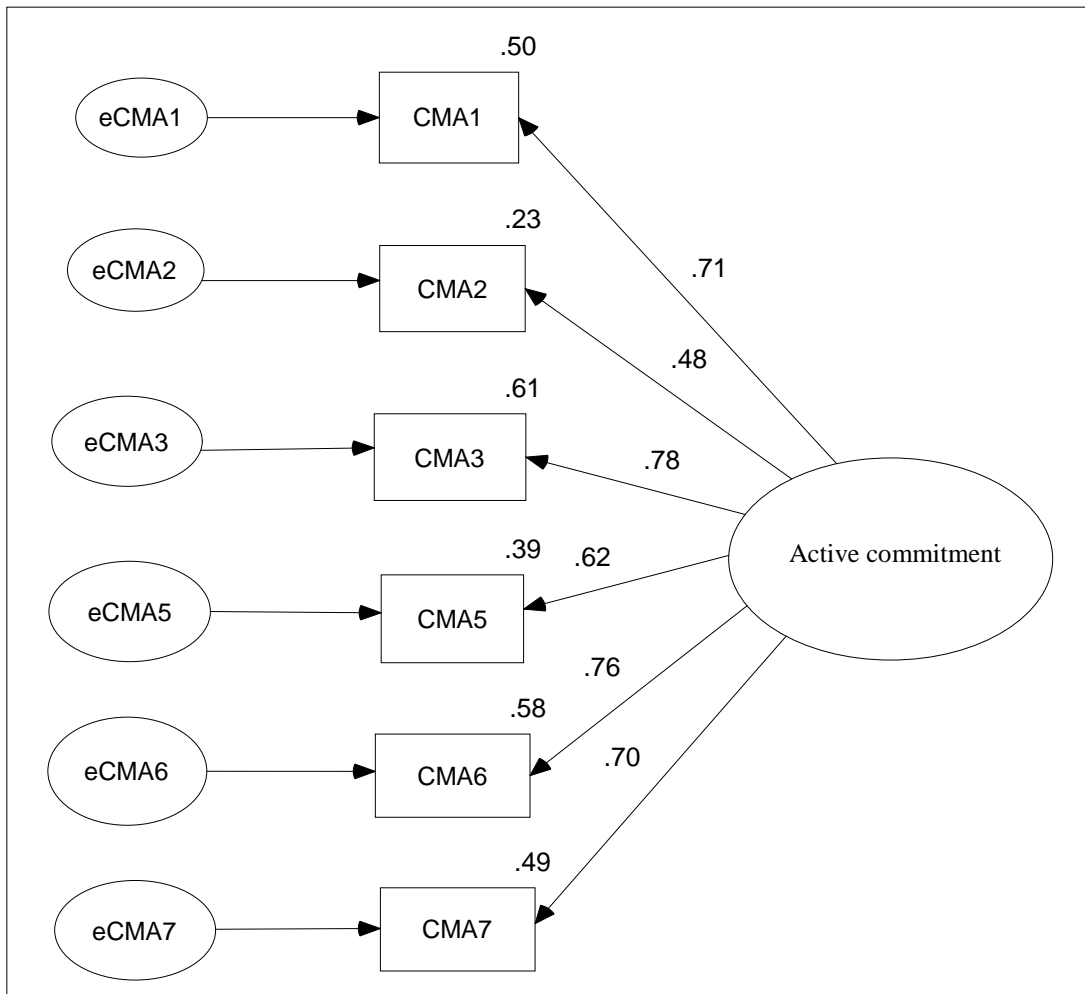
Figure 4.24:  Measurement Model for Active commitment

With regards to magnitude, direction, and statistical significance of the estimated parameters between latent variables and their indicators, the results as in Table 4.13 also show that the magnitude for all variables and their indicators were above the reasonable loading of 0.30 (De Vaus, 2002) indicating the existence of convergent validity (this refer to the "Standardized Regression Weight"). Moreover, the direction for all the estimated parameters were also in the same direction as expected (based on the previous research). In addition, the critical ratio (C.R.) for all the estimated parameters were exceeded the

benchmark of $\pm$ 1.96, which were found to be statistically significant, with the standard

error (S.E.) were not excessively large or small (Byrne, 2001).

**Table 4.13: The Magnitude, Direction and Statistical Significance of the Estimated Parameters between Latent Variables and Their Indicators**

| Organisational Culture | | | | | | |
|---|---|---|---|---|---|---|
| Indicator | | Latent variable | Standard Regression Weight | S.E. | C.R. | P |
| ST6 | <--- | stability | 0.786 | 0.113 | 10.513 | *** |
| ST3 | <--- | stability | 0.714 | 0.096 | 9.732 | *** |
| ST1 | <--- | stability | 0.730 | | | |
| ST2 | <--- | stability | 0.736 | 0.107 | 9.852 | *** |
| ST5 | <--- | stability | 0.721 | 0.109 | 9.580 | *** |
| PE2 | <--- | people | 0.775 | | | |
| PE1 | <--- | people | 0.866 | 0.103 | 10.191 | *** |
| PE4 | <--- | people | 0.510 | 0.106 | 6.714 | *** |
| IN5 | <--- | innovation | 0.685 | | | |
| IN2 | <--- | innovation | 0.630 | 0.122 | 6.556 | *** |
| IN3 | <--- | innovation | 0.618 | 0.121 | 6.050 | *** |
| AG1 | <--- | aggressiveness | 0.392 | | | |
| AG3 | <--- | aggressiveness | 0.727 | 0.276 | 4.780 | *** |
| AG4 | <--- | aggressiveness | 0.695 | 0.264 | 4.891 | *** |
| TM3 | <--- | team | 0.835 | 0.159 | 8.030 | *** |
| TM4 | <--- | team | 0.578 | | | |
| TM1 | <--- | team | 0.717 | 0.174 | 7.311 | *** |

**Table 4.13 (Continued)**

| **Social Capital** | | | | | | |
|---|---|---|---|---|---|---|
| **Indicator** | | **Latent variable** | **Standard Regression Weight** | **S.E.** | **C.R.** | **P** |
| RL1 | <--- | relational | 0.874 | 0.114 | 11.775 | *** |
| RL2 | <--- | relational | 0.880 | 0.118 | 11.850 | *** |
| RL3 | <--- | relational | 0.738 | 0.121 | 10.026 | *** |
| RL4 | <--- | relational | 0.715 | | | |
| RL7 | <--- | relational | 0.759 | 0.108 | 10.371 | *** |
| NW2 | <--- | Network ties | 0.781 | 0.133 | 8.504 | *** |
| NW1 | <--- | Network ties | 0.778 | 0.137 | 8.578 | *** |
| NW4 | <--- | Network ties | 0.661 | | | |
| EG3 | <--- | engagement | 0.676 | 0.217 | 5.093 | *** |
| EG1 | <--- | engagement | 0.390 | | | |
| EG4 | <--- | engagement | 0.365 | 0.198 | 3.879 | *** |
| CM2 | <--- | communication | 0.418 | 0.339 | 3.149 | ,002 |
| CM1 | <--- | communication | 0.331 | | | |
| CM4 | <--- | communication | 0.726 | 0.414 | 3.847 | *** |
| **Organisation Structure** | | | | | | |
| CX2 | <--- | Complexity | 0.860 | 0.385 | 5.372 | *** |
| CX1 | <--- | Complexity | 0.615 | 0.273 | 5.007 | *** |
| CX4 | <--- | Complexity | 0.427 | | | |
| CN5 | <--- | Centralization | 0.716 | 0.085 | 9.559 | *** |
| CN3 | <--- | Centralization | 0.542 | 0.105 | 7.195 | *** |
| CN4 | <--- | Centralization | 0.801 | | | |
| CN6 | <--- | Centralization | 0.711 | 0.096 | 9.401 | *** |
| FO3 | <--- | Formalization | 0.445 | 0.098 | 6.002 | *** |
| FO1 | <--- | Formalization | 0.982 | 0.277 | 4.756 | *** |
| FO2 | <--- | Formalization | 0.648 | | | |

**Table 4.13 (Continued)**

**Leadership Behaviour**

| Indicator | | Latent variable | Standard Regression Weight | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| LRN2 | <--- | Relation | 0.901 | 0.048 | 20.285 | *** |
| LRN3 | <--- | relation | 0.906 | 0.045 | 20.577 | *** |
| LRN4 | <--- | relation | 0.900 | | | |
| LRN5 | <--- | relation | 0.863 | 0.050 | 18.235 | *** |
| LRN6 | <--- | relation | 0.826 | 0.054 | 16.580 | *** |
| LRN7 | <--- | relation | 0.910 | 0.045 | 20.844 | *** |
| LRN8 | <--- | relation | 0.876 | 0.048 | 19.031 | *** |
| LT6 | <--- | task | 0.818 | 0.072 | 12.166 | *** |
| LT4 | <--- | task | 0.761 | | | |
| LT3 | <--- | task | 0.787 | 0.075 | 11.649 | *** |
| LT2 | <--- | task | 0.841 | 0.071 | 12.628 | *** |
| LT1 | <--- | task | 0.758 | 0.069 | 11.133 | *** |

**QWL Orientation**

| | | | | | | |
|---|---|---|---|---|---|---|
| WSN4 | <--- | Work set | 0.757 | 0.095 | 10.948 | *** |
| WSN2 | <--- | Work set | 0.771 | | | |
| WSN1 | <--- | Work set | 0.819 | 0.086 | 12.085 | *** |
| WSN3 | <--- | Work set | 0.751 | 0.079 | 11.093 | *** |
| WSN5 | <--- | Work set | 0.820 | 0.086 | 12.106 | *** |
| CW1 | <--- | challenge | 0.693 | | | |
| CW2 | <--- | challenge | 0.698 | 0.178 | 5.869 | *** |
| CW5 | <--- | challenge | 0.449 | 0.164 | 4.900 | *** |
| JIN1 | <--- | Job itself | 0.819 | 0.074 | 12.468 | *** |
| JIN2 | <--- | Job itself | 0.793 | 0.085 | 11.838 | *** |
| JIN3 | <--- | Job itself | 0.803 | | | |
| FW1 | <--- | Feeling | 0.896 | 0.630 | 3.192 | ,001 |
| FW2 | <--- | Feeling | 0.448 | 0.253 | 4.332 | *** |
| FW3 | <--- | Feeling | 0.424 | | | |
| WH1 | <--- | Work/home | 0.642 | 0.139 | 6.243 | *** |
| WH2 | <--- | Work/home | 0.770 | | | |
| WH5 | <--- | Work/home | 0.492 | 0.120 | 5.176 | *** |

**Table 4.13 (Continued)**

| Indicator | | Latent variable | Standard Regression Weight | S.E. | C.R. | P |
|---|---|---|---|---|---|---|
| CMA1 | <--- | Active com | 0.664 | 0.084 | 9.549 | *** |
| CMA2 | <--- | Active com | 0.465 | 0.113 | 6.373 | *** |
| CMA3 | <--- | Active com | 0.788 | | | |
| CMA5 | <--- | Active com | 0.608 | 0.116 | 8.589 | *** |
| CMA6 | <--- | Active com | 0.786 | 0.086 | 11.445 | *** |
| CMA7 | <--- | Active com | 0.721 | 0.093 | 10.249 | *** |
| CMP1 | <--- | Passive com | 0.634 | | | |
| CMP4 | <--- | Passive com | 0.815 | 0.143 | 8.544 | *** |
| CMP5 | <--- | Passive/com | 0.507 | 0.164 | 6.168 | *** |
| CMN1 | <--- | No com | 0.769 | | | |
| CMN2 | <--- | No com | 0.690 | 0.117 | 7.141 | *** |
| CMN3 | <--- | No com | 0.594 | 0.115 | 6.168 | *** |

## (ii)    Results of Discriminant Validity

Discriminant validity is the extent to which an item does not relate to the measure of other constructs (Maholtra et al, 2004). It is also defined as the degree to which measures of different constructs are unique (Lee and Scott, 2006). In testing for discriminant validity, the researcher needs to verify that the scales developed to measure different constructs are indeed measuring different constructs (Garver and Mentzer, 1999). For discriminant validity to achieved, the average variance extracted (AVE) has to be bigger than the variance of the correlation (Hair et al, 2006). In other words, relatively low correlations between constructs indicate the presence of discriminant validity. Figures 4.25 to 4.30 exhibit the measurement models of the constructs tested for discriminant validity. The discussion of each construct is as follows.

**a)      Organisation Structure**

Centralization, complexity and formalization were well-defined dimensions of organisation structure (Figure 4.25).  That is each of the constructs exhibited a larger average variance than their correlation coefficients.  For instance, to the average variance extracted (AVE) of the centralization, complexity and formalization were 0.69, 0.64 and 0.69 respectively, whereas, the correlation coefficient among the three constructs were 0.69 (covariance between centralization and complexity), -0.29 (covariance between complexity and formalization) and -0.20 (correlation between centralization and formalization).  This shows that each of these constructs is uniquely present in the dimensions of organisation structure.

**b)      Organisation Culture**

Stability and people orientation exhibited the average variance of 0.74 and 0.72 respectively, whereas, innovative and team orientation separately yielded an average 0.64 and 0.71 (refer to Figure 4.26). In contrast, aggressiveness yielded an average variance of 0.61 that is smaller than the 0.77 which was reported for the covariance between aggressiveness and innovative. This indicates that aggressiveness and innovative is a uni-dimensional construct and one latent variable is the appropriate model. The covariance between stability and people orientation was at 0.62, while people orientation and aggressiveness exhibited a covariance of 0.52.  Between stability and aggressiveness, the correlation was at 0.67, while the correlation between aggressiveness and team orientation was at 0.71. The correlation between stability and team orientation exhibited a larger score of 0.79 than the average variance extracted of all constructs that represent a dimension of organisational culture.

## c)   Social Capital

The average variance extracted (AVE) of relational, network ties, communication and engagement was at 0.79, 0.74, 0.49 and 0.48 respectively (refer to Figure 4.27).   The covariance between relational and network ties was at 0.64, while the covariance between network ties and communication was at 0.74. The covariance between communication and engagement was at 0.76 which was larger than the average variance of communication and engagement. This also suggests that communication and engagement are unidimensional construct.

## d)   Leadership Behaviour

The average variance for relation-oriented was 0.88, whereas, for task oriented it was 0.79. These scores were smaller than the 0.92 that was reported for the covariance between relation-oriented and task-oriented. This indicates that relation-oriented and task-oriented is a uni-dimensional construct and one latent variable is the appropriate model (refer Figure 4.28).

## e)   Quality of Work Life

The average variance for all dimensions of quality of work life exhibited a larger score than the correlation coefficient. The average variance extracted (AVE) of work setting issues, challenge of work, job itself, work home life interaction and feeling about work was at 0.78, 0.61, 0.80, 0.63 and 0.59 respectively (refer to Figure 4.29).  The correlation coefficients this shows that each of these constructs that represent a dimension of quality of work life orientation were mutually distinctive.

**f) Organisational Commitment**

The average variance extracted (AVE) of active commitment, passive commitment and no commitment was at 0.67, 0.65 and 0.68 respectively (refer to Figure 4.30). Except for active commitment construct, passive commitment and no commitment constructs exhibited a larger AVE than their correlation coefficient. The AVE of active commitment is smaller than the 0.88 that was reported for the covariance between active commitment and passive commitment. This suggests that active commitment is a unidimensional construct. Therefore, it can be argued that in this study at a reasonable extent of discriminant validity was established.

Overall, it can be judged that the measurement model in this study have an acceptable goodness-of fit and level of reliability and validity to proceed to the structural model.
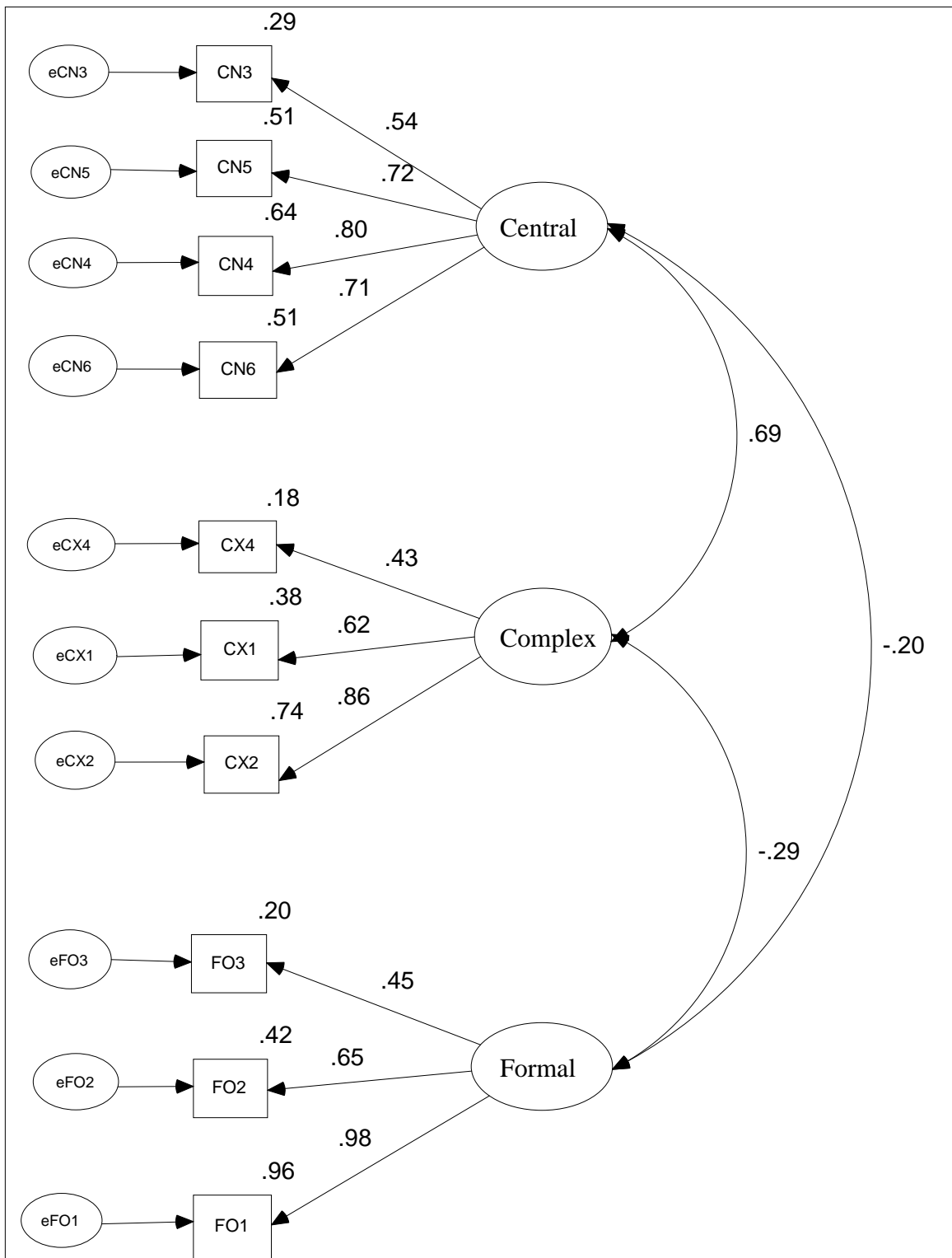
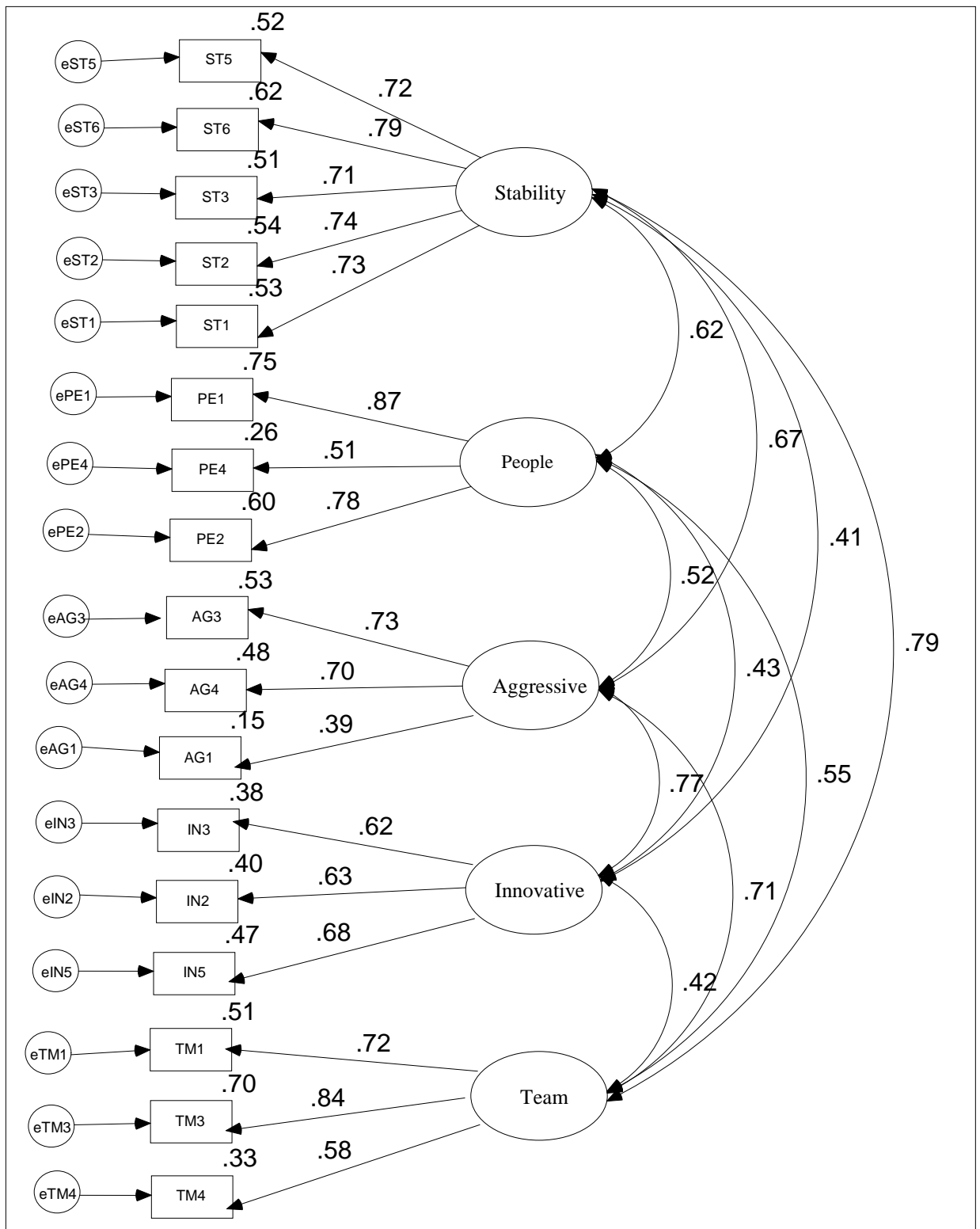Figure 4.25: Measurement Model for Organisation Structure

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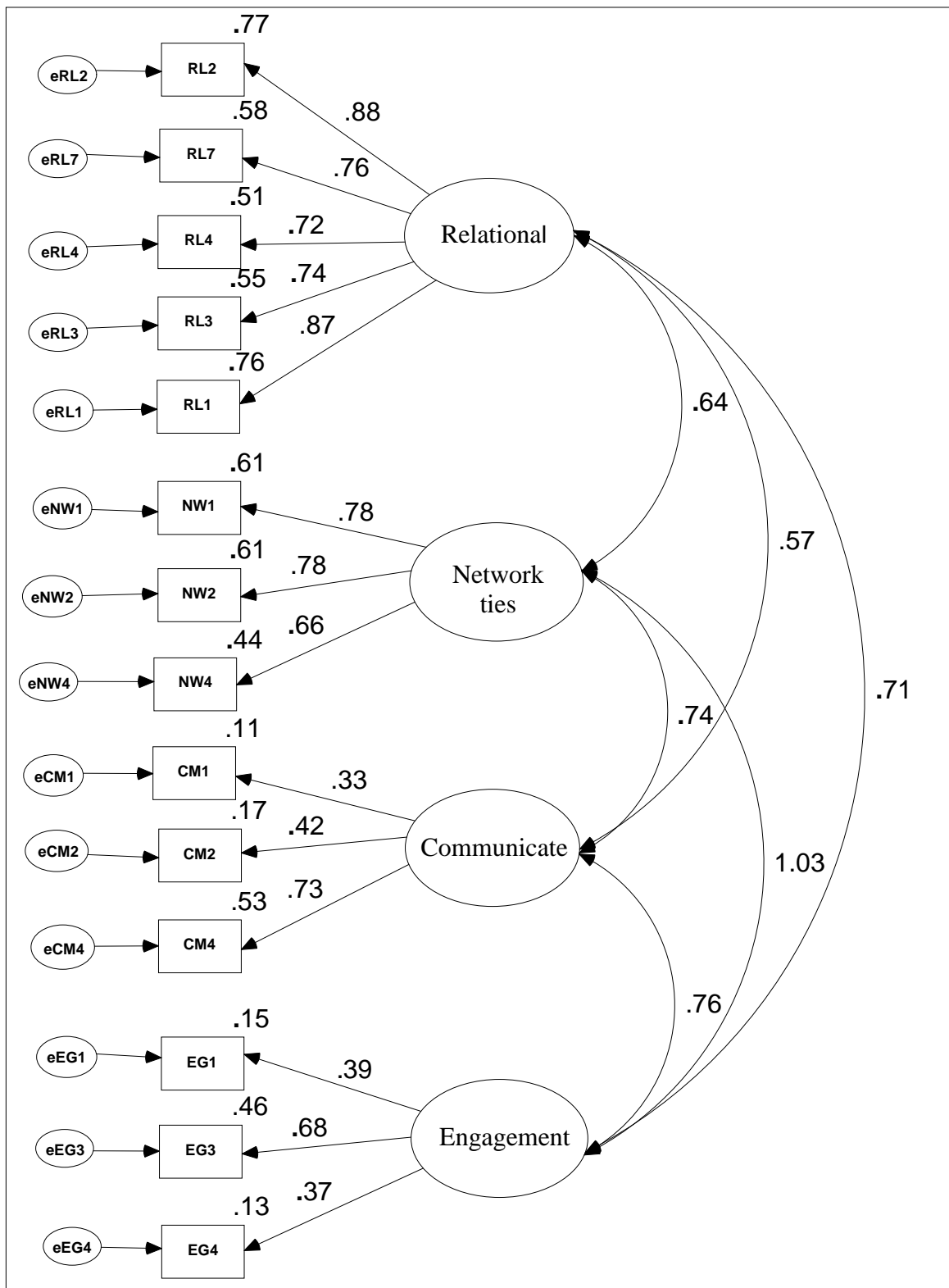Figure 4.26: Measurement Model for Organisational Culture
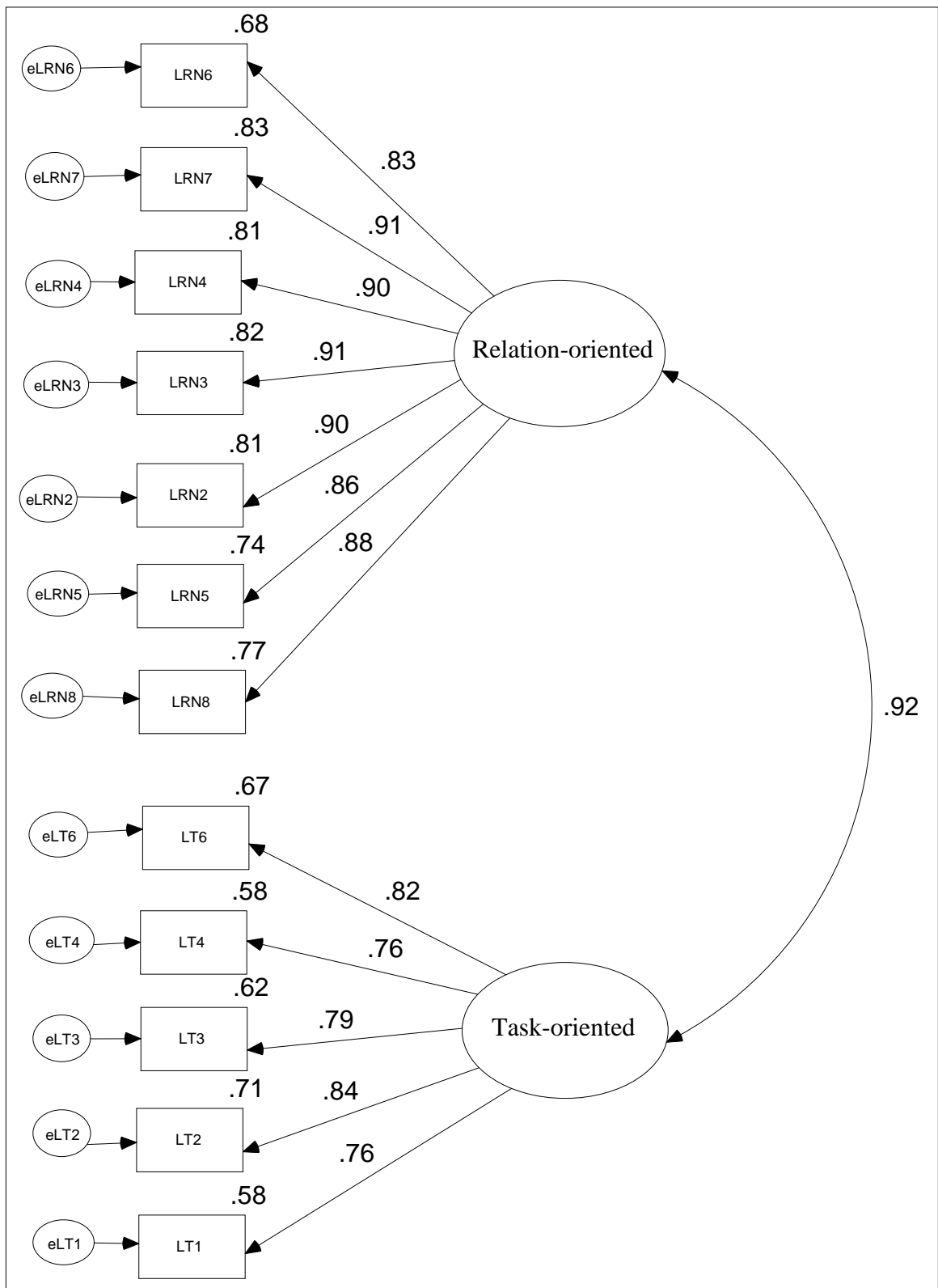
Figure 4.27: Measurement Model for Social Capital

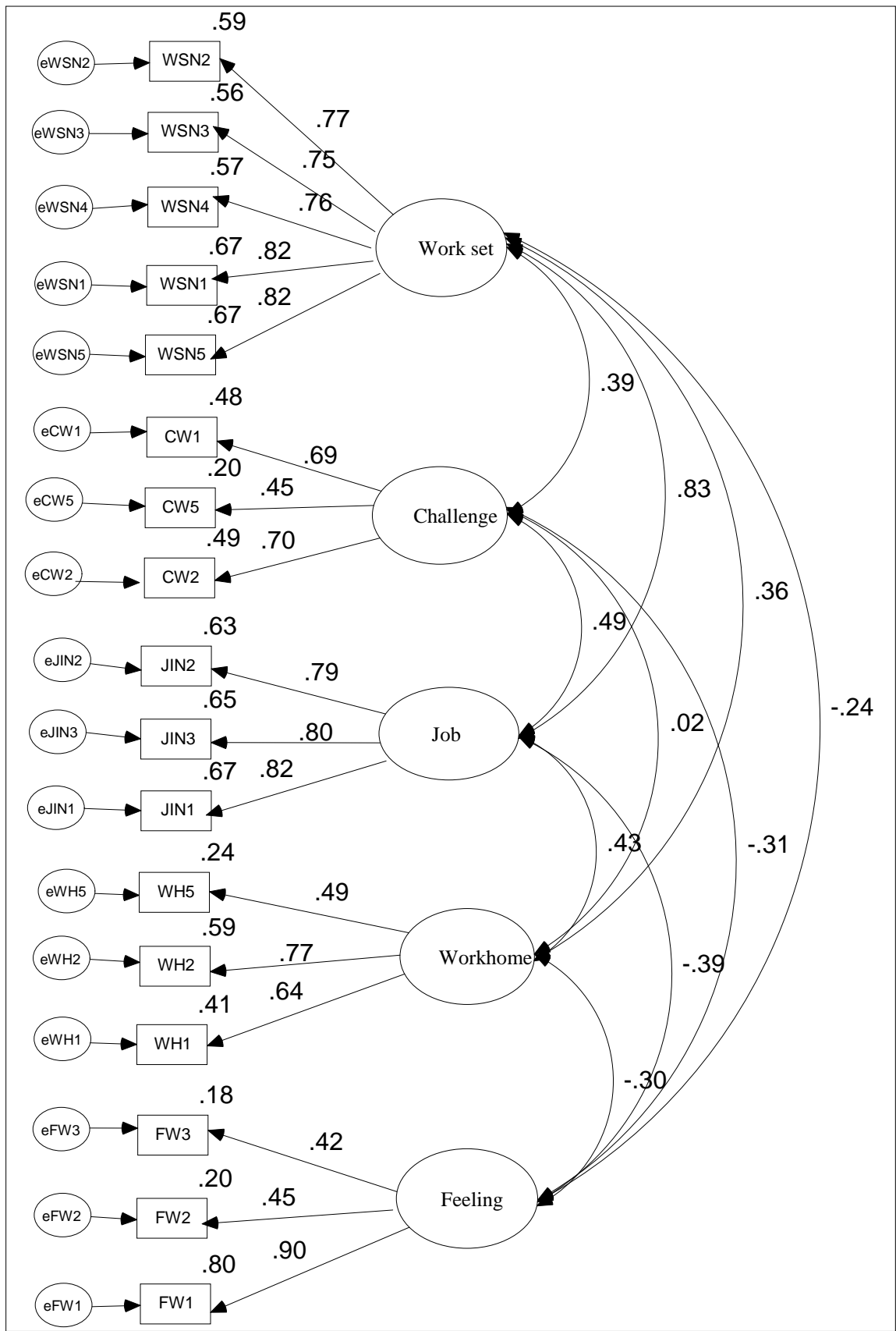Figure 4.28:  Measurement Model for Leadership Behaviour
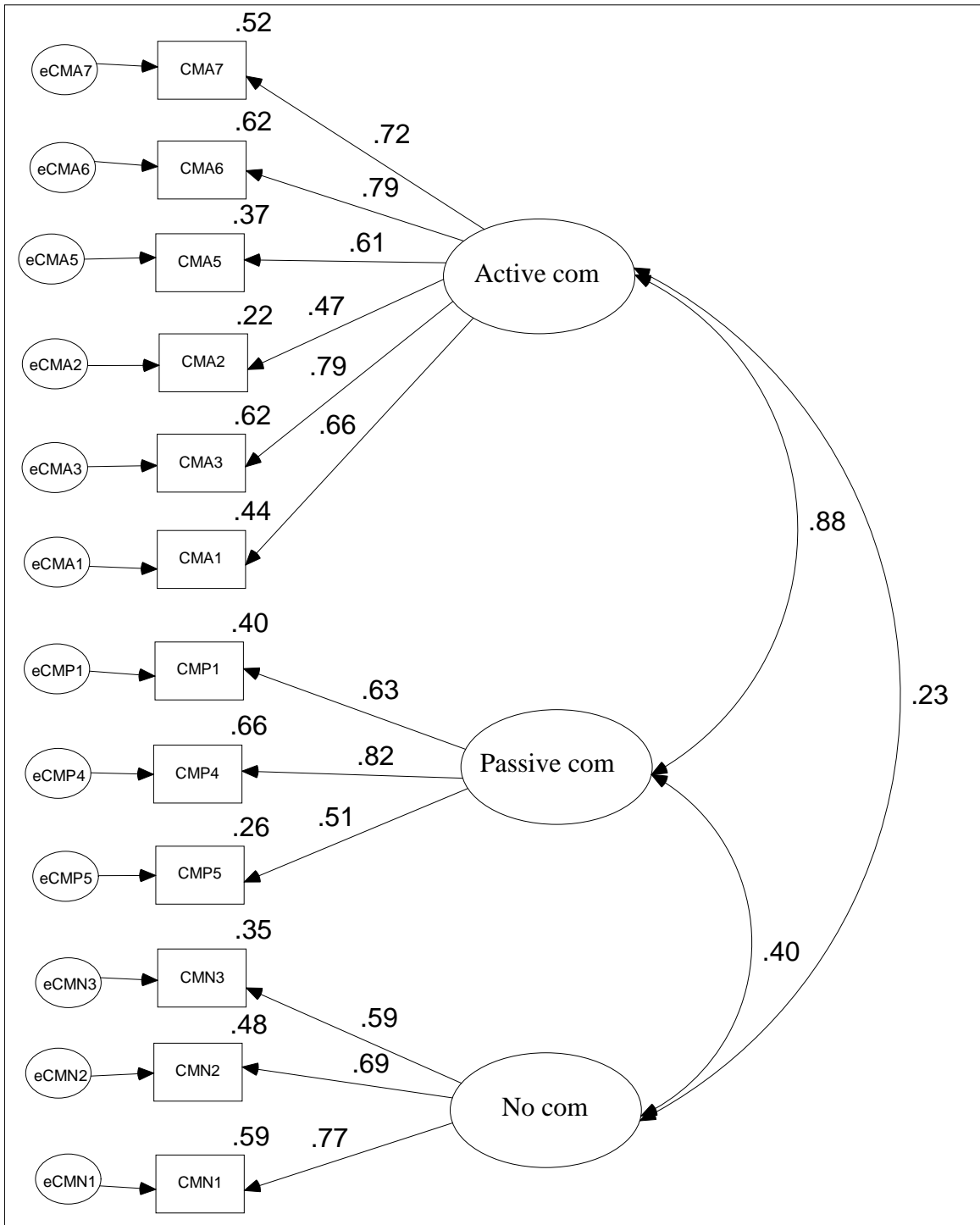
**Figure 4.29: Measurement Model for Quality of Work Life**

**Figure 4.30: Measurement Model for Organisational Commitment**

### 4.15.3 Criterion Validity

The last test of validity that was performed on the data is criterion validity. It specifies "whether a scale performs as expected in relation to other variables selected (criterion variables) as meaningful criteria" (Malhotra, 2004: 269). It emphasises the importance of comparing the scale used with criterion variables. In fact, criterion validity enables researchers to anticipate or predict any relationship between the measure and the behavioural outcomes. It can be divided into two forms, concurrent and predictive validity, which differ from each other on the basis of the time dimension. That is, concurrent validity is a method of assessment where data on scales and criterion variables are collected simultaneously. In contrast, predictive validity, data on scale and criterion variables are collected at different times. In this study, concurrent validity was applied and correlation analysis was used to examine the criterion validity.

Pearson correlation analysis was conducted among all the main constructs in order to understand the relationship between the major constructs as well as the multicollinearity of the independent variables of the study. The results were also beneficial to further elabourate on the findings of the hypotheses testing later. In interpreting the correlation coefficients for this study, the correlation values of $\pm 0.50$ and above reflect strong correlation between two variables. According to Burns and Bush (2000), correlation coefficients that fall between $\pm 1.00$ and $\pm 0.81$ are generally considered to be "very high", which in turn will create multicollinearity, i.e. a problem where very high correlation among clustering variables may overweight one or more underlying constructs. The remaining correlation coefficient values were found to be not significant.

**Table 4.14: Corrélation Coefficient Matrix – Dimensions of Main Variables**

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.Centralization | 1.00 | | | | | | | | | | | | | | | | | | | | | |
| 2.Complexity | .52 | 1.00 | | | | | | | | | | | | | | | | | | | | |
| 3.Formalization | .02 | .12 | 1.00 | | | | | | | | | | | | | | | | | | | |
| 4.Stability | -.19 | -.19 | .47 | 1.00 | | | | | | | | | | | | | | | | | | |
| 5.People orientation | -.29 | -.20 | .39 | .65 | 1.00 | | | | | | | | | | | | | | | | | |
| 6.Innovation | -.11 | .02 | .23 | .35 | .32 | 1.00 | | | | | | | | | | | | | | | | |
| 7.Aggressiveness | -.11 | .15 | .40 | .45 | .32 | .58 | 1.00 | | | | | | | | | | | | | | | |
| 8.Team orientation | -.23 | -.12 | .54 | .71 | .59 | .33 | .45 | 1.00 | | | | | | | | | | | | | | |
| 9.Relational | -.33 | -.30 | .36 | .74 | .76 | .31 | .30 | .65 | 1.00 | | | | | | | | | | | | | |
| 10.Network ties | -.19 | -.09 | .46 | .69 | .52 | .32 | .43 | .68 | .61 | 1.00 | | | | | | | | | | | | |
| 11.Engagement | -.16 | -.11 | .34 | .50 | .45 | .31 | .36 | .51 | .52 | .61 | 1.00 | | | | | | | | | | | |
| 12.Communication | -.28 | -.22 | .26 | .54 | .44 | .50 | .46 | .49 | .54 | .52 | .49 | 1.00 | | | | | | | | | | |
| 13.Relation -oriented | -.29 | -.22 | .36 | .62 | .67 | .39 | .39 | .61 | .74 | .59 | .54 | .53 | 1.00 | | | | | | | | | |
| 14.Task-oriented | -.22 | -.18 | .29 | .54 | .60 | .35 | .32 | .52 | .62 | .50 | .49 | .48 | .86 | 1.00 | | | | | | | | |
| 15.Work Setting issues | -.40 | -.29 | .36 | .70 | .77 | .31 | .29 | .61 | .85 | .63 | .52 | .54 | .75 | .66 | 1.00 | | | | | | | |
| 16.Challenge of work | -.05 | .08 | .32 | .46 | .23 | .45 | .47 | .44 | .32 | .51 | .38 | .42 | .42 | .36 | .35 | 1.00 | | | | | | |
| 17.Job itself | -.47 | -.31 | .24 | .57 | .58 | .43 | .33 | .55 | .67 | .56 | .46 | .53 | .67 | .54 | .72 | .50 | 1.00 | | | | | |
| 18.Work/home interaction | -.47 | -.26 | .16 | .24 | .23 | .02 | .14 | .27 | .29 | .26 | .26 | .20 | .16 | .08 | .31 | .10 | .42 | 1.00 | | | | |
| 19.Feeling about work | .35 | .31 | -.05 | -.17 | -.18 | -.14 | -.11 | -.17 | -.23 | -.16 | -.15 | -.16 | -.19 | -.16 | -.24 | -.11 | -.38 | -.51 | 1.00 | | | |
| 20.Active commitment | -.25 | -.15 | .26 | .57 | .54 | .39 | .36 | .56 | .60 | .57 | .64 | .53 | .57 | .51 | .63 | .40 | .56 | .29 | -.21 | 1.00 | | |
| 21.Passive commitment | -.38 | -.37 | .21 | .48 | .49 | .23 | .22 | .47 | .60 | .48 | .55 | .45 | .51 | .41 | .60 | .17 | .54 | .49 | -.38 | .66 | 1.00 | |
| 22.No commitment | -.10 | -.09 | -.04 | .00 | .05 | -.06 | -.03 | .02 | .07 | .09 | .35 | .02 | -.00 | .04 | .08 | -.02 | .09 | .39 | -.32 | .23 | .38 | 1.00 |

**Figures in bold – Correlation is significant at 0.01 level**; *Figure in italic – Correlation is significant at 0.05 level*

From Table 4.14 the results of the correlation revealed that there is no very strong correlation (above 0.90) (Hair et al, 2006) between any pairs of the 22 variables of this study. Most of the correlation coefficient values of the studied variables were significant at 0.01 levels, and fourteen correlation coefficient values were significant at 0.05 levels. The findings point out that collinearity was not a serious problem to the regression analysis in this context of the study. In sum, the results of the correlation exhibit the existence of significant relationships among constructs and they are congruent with the hypotheses of this study.

## 4.16   Reliability

Reliability is defined as the extent to which measures are free from random or unstable error and therefore yield consistent results (Maholtra, 2004). A perfectly reliable measure is when the random error is zero (XR = 0). Reliable instruments can be used with confidence as they are robust and work well at different times under different conditions (Cooper and Schindler, 2006). Several approaches are used to assess reliability and among the methods used include the test-retest, alternative forms and internal consistency.

In test-retest method, the reliability coefficient obtained with a repetition of the same measure to the same respondents at two different times in almost the same conditions as the first test (Sekaran, 2003).  Results from the correlation coefficient indicate that the higher the correlation coefficient, the greater the reliability and consequently, the stability of the measure across time (Maholtra, 2004). In contrast, the alternative forms method is

where two equivalent forms of the scale are constructed and administered to the same respondent at two different times. The correlation coefficient is tested and the higher the result, the greater the reliability. However, the major problems with this approach it is expensive and time consuming (Malhotra, 2004). One reason is that it is difficult to have a similar content in two different forms.

Conversely, the third approach uses only one administration of an instrument to assess the internal consistency among the items. The split-half technique can be used to measure the indicators that has many similar statements or questions (Cooper and Schindler, 2006), meaning that the statements are divided randomly into two halves. If the correlation gives a high result, the internal consistency is also high.

A most widely approach use to test the reliability of the internal consistency is the Cronbach's Coefficient Alpha (Maholtra, 2004). The coefficient alpha is the average of all possible split-half coefficients resulting from different ways of splitting the scales items. In fact, it is widely used in study that uses multi-items scales. As a result, internal consistency using Cronbach's Alpha was applied to test the reliability of the scales adopted in this study.

(a)     **Internal Consistency Reliability Tests - Cronbach's Coefficient Alpha**

Cronbach's coefficient alpha ($\alpha$) or the reliability coefficient, measures how well a set of items (or variables) measures a single unidimensional latent construct. According to Nunnally (1967: 206) reliability is define as "the extent to which (measurements) are

repeatable and that any random influence which tends to make measurements different from occasion to occasion is a source of measurement error. The alpha coefficient ranges in value from 0 to 1 may be used to describe the reliability of factors extracted from dichotomous and/or multi-point formatted questionnaires or scales. A high coefficient, close to 1, indicates that the items in the group capture the measure well. It suggests that the items are measuring a similar construct.  It also implies that items are reliable as they correlate well with the true score of the measurement.  Reliabilities of 0.70 or higher are acceptable (Nunnally, 1978; De Vaus, 2002) while a value of 0.6 or less generally indicates unsatisfactory internal consistency reliability (Maholtra, 2004).  Nevertheless, the score is dependent on the number of items in the scale.  The more items there are in a scale designed to measure a particular concept, the more reliable the measurement instrument will be. Table 4.15 exhibits the coefficient alpha of the measures used in this study. All results provide strong evidence that internal consistency has been achieved.

**Table 4.15:  Internal Consistency Reliability of the Constructs**

| Variables | No of Items | Cronbach's Coefficient Alpha ($\alpha$) |
|---|---|---|
| **Social Capital** | | |
| Relational | 8 | 0.918 |
| Network Ties | 4 | 0.810 |
| Engagement | 4 | 0.659 |
| Communication | 4 | 0.603 |
| | | |
| **Organisational Culture** | | |
| Stability | 7 | 0.863 |
| People orientation | 6 | 0.836 |
| Innovation | 5 | 0.791 |
| Aggressiveness | 5 | 0.679 |
| Team orientation | 4 | 0.809 |

**Table 4.15 (Continued)**

| Variables | No of Items | Cronbach's Coefficient Alpha (α) |
|---|---|---|
| **Organisation Structure** | | |
| Centralization | 7 | 0.873 |
| Complexity | 4 | 0.634 |
| Formalization | 4 | 0.734 |
| | | |
| **Leadership Behaviour** | | |
| Relation-oriented | 18 | 0.970 |
| Task-oriented | 6 | 0.908 |
| | | |
| **Quality of Work Life Orientation** | | |
| Work setting issues | 15 | 0.920 |
| Challenge of work | 5 | 0.730 |
| Job itself | 9 | 0.882 |
| Work home life interaction | 5 | 0.684 |
| Feeling about work | 5 | 0.809 |
| | | |
| **Organisational Commitment** | | |
| Active commitment | 7 | 0.856 |
| Passive commitment | 5 | 0.769 |
| No commitment | 3 | 0.871 |

b)      **Reliability Test – Using Structural Equation Modelling**

Reliability is also an indicator of convergent validity (Hair et al., 2006). As recommended by Baumgarter and Homburg (1996), researchers should report at least one measure of construct reliability which is based on estimated model parameters (e.g. composite reliability, average variance extracted). This is because coefficient alpha is generally an inferior measure of reliability since in most practical cases it is only the lower bound on reliability.

Hair et al. (2006) also stated that coefficient alpha remains a commonly applied estimate although it may understate reliability. Therefore, in this study, the results of construct reliability, which is often used in conjunction with SEM models, are also presented in order to prove that convergent validity exist for the constructs of study. It is computed from the squared sum of factor loading ($\lambda_i$) for each construct and the sum of the error variance terms for a construct ($\delta_i$) whereby the measurement error is one minus the square of the indicator's standardised parameter estimate, as:

$$\text{Construct Reliability} = \frac{\left( \sum_{i=1}^{n} \lambda_i \right)^2}{\left( \sum_{i=1}^{n} \lambda_i \right)^2 + \left( \sum_{i=1}^{n} 1 - \lambda i^2 \right)}$$

***Source***: Hair, J.F.Jr., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L. (2006:777)

The rule of thumb for the reliability estimates is that 0.7 or higher. This suggests a good reliability (Hair et al., 2006). However, Hatcher (1994) asserts that the reliability estimates of 0.6 and above are considered reasonable for exploratory study. Table 4.16 presents the result of the construct reliability for all construct in the study.

**Table 4.16:  Construct Reliability (CR) and Variance Extracted (VE)**

| Variable | CR | VE |
|---|---|---|
| Organisational Commitment | 0.909 | 0.46 |
| Quality of Work Life | 0.944 | 0.51 |
| Organisation Structure | 0.898 | 0.48 |
| Organisational Culture | 0.940 | 0.49 |
| Social Capital | 0.916 | 0.46 |
| Leadership Behaviour | 0.968 | 0.72 |

The results exhibit that the construct reliability value for all latent variables or factors in this study were above 0.6, as suggested by Hatcher (1994). This is to prove for the existence of reliability.A complementary measure of construct reliability is the variance extract measure (Hair et al., 2006). It measures the total amount of variance in the indicators accounted for by the latent variable, and higher values occur when the indicators are truly representative of the latent construct. The formula is comparable to construct reliability, except that the numerator is equal to the standardised parameter estimates ($\lambda$) between the latent variable and its indicators squared, and then summed. The denominator equals the numerator plus the added measurement error for each item. The measurement error is one minus the square of the indicator's standardised parameter estimate.

$$\text{Variance Extract} = \frac{\sum \lambda^2_{\substack{i=1}}}{\sum_{i=1} \lambda^2 \; + \; \sum_{i=1} (1 - \lambda i^2)}$$

By using the same logic, a variance extracted which is less that 0.5 indicates that, on average, more error remains in the items than the variance explained by the latent factor structure in the measurement model (Hair et al., 2006). Table 4.16also shows the results of the variance extract. Some of the variance extract estimates of that constructs were below 0.5. However, Hatcher (1994) posits that this situation did not cause concern since previous studies show that it is quite frequent to find estimates below 0.50 even when the construct reliability is acceptable.

## 4.17    Chapter Summary

The chapter was divided into three parts.  In the first part the research methodology was discussed, including the research design, key informant, sampling procedures and processes taken to administer the questionnaire. The second part included a description of measurement where the issues of measurement scales used were further discussed as well as a detailed outline of the scales used. The final part of the chapter discussed on the assessment of validity and reliability measurement.The validity and reliability assessment was presented to ensure the validity and reliability of the scale used in the research.  The tests used were also outlines to examine the validity of each construct, and the methods of assessment which included exploratory and confirmatory factors analysis were then described.