CHAPTER 3

RESEARCH METHODOLOGY

The respondents for the study comprised executives of engineering companies primarily involved in the oil & gas and power industry. The questionnaires were distributed to executives in 57 major engineering companies. The questionnaire used for the survey is attached in the appendix section. In total about 137 responses were collected and analysed using SPSS10.0.

The questionnaire had six sections, the first of which, respondents were asked to indicate the knowledge management methods used within their organisation. The second section contained questions related to the challenges facing the organisation in managing knowledge. This was followed by questions regarding the competitive environment, innovation and financial performance of the organisation. In the fifth section respondents were asked questions related to organisational factors such as centralised decision making, adaptability and management. The next section was on employee attitude such as sharing and exchanging information and teamwork and knowledge processing. All items were scored on 5-point scales: 1=strongly agree, 5=strongly disagree. Section 7 had questions concerning respondent's
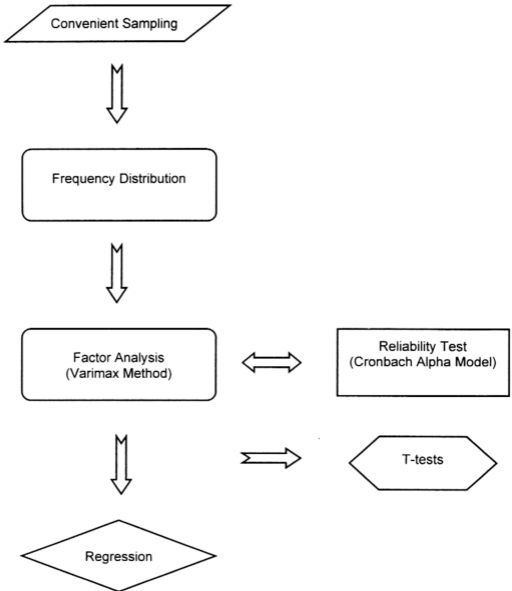
position, experience, company size and industry sector. The schematic of the research methodology is illustrated in Figure 1.

Reliability analysis procedure calculates a number of commonly used measures of scale and provides information about the relationships between individual items in the scale. Cronbach Alpha model measures the internal consistency, based on the average inter-item correlation. Linear regression was used to test the propositions.

The Frequency Distribution provides statistical analysis that is useful for describing many types of variables. Factor analysis is used to identify variables or factors that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis.

Linear Regression estimates the coefficients of the linear equation, involving one or more independent variables, that best predict the value of the dependent variable. The measure of 95% confidence intervals for each regression coefficient. The T-Tests procedure compares means for two groups of cases. Ideally, for this test, the subjects should be randomly

Figure1: Schematic of Research Methodology

Convenient Sampling

Frequency Distribution

Factor Analysis
(Varimax Method)

Reliability Test
(Cronbach Alpha Model)

T-tests

Regression

assigned to two groups, so that any difference in response is due to the treatment and not to other factors.