

## **CHAPTER 5: METHODOLOGY**

### **5.1 Introduction**

The objective of this chapter is to expand on the research questions set in Chapter 1, and to present the research procedures followed to address the research questions. A mixed research method is employed in this study, the content analysis method and in-depth semi-structured interviews made up the two phases of investigation. It begins with a quantitative research in which the data is obtained from the Internet, and analysed using SPSS 15.0 in the first phase of the study. This study used multiple regression analysis to test the theoretical models. The second phase involved in-depth semi-structured interviews with ten (10) senior managers of the sample companies.

The chapter is organised into five major topics: Section 5.2 presents the research paradigm. Section 5.3 outlines the research design; it includes a discussion of content analysis, unit of analysis, sampling design, data collection procedure, and data analysis techniques for Phase 1. Section 5.4 outlines the research design; it includes a discussion of in-depth semi-structured interviews, unit of analysis, sampling design, data collection procedure, and data analysis techniques for Phase 2. The last Section 5.5 provides a summary of this chapter.

### **5.2 Research Paradigm**

A common set of assumptions about social sciences and society is fundamental to accounting research. It generates a healthy debate about how to extend and enrich our 'practical' accounting knowledge. Mainstream accounting research sees a parallel between physical, social sciences and accounting, justifying in the process a hypothetic-deductive

account of scientific explanation and the need for confirmation of hypotheses (Belkaoui, 1985).

Belkaoui (1985) argues that accounting meets the definition of science, because it is an important issue and includes underlying regularities and uniformities conducive to theories, laws, principles, concepts, authoritative generalisations and empirical relationships. If one supports the argument for the unity-of-science, scientific method can be applied to accounting.

The American Accounting Association published a report titled *Empirical Research in Accounting: A Methodological Viewpoint* (Abdel-Khalid and Ajinkya, 1979), which argues that scientific methods are the ideal or preferred method of accounting research. This method starts from a well-formulated theory, usually derived from a review of previous academic literature and expressed in the form of a mathematical model. This theory is used to formulate hypotheses, which express relationships between a set of dependent and independent variables. A highly structured and predetermined set of procedures are then used to collect data, which is analysed by mathematical and statistical techniques, and almost inevitably validates the hypothesis and, finally, to generalise the results.

According to Davey (2006), human kind has to make decisions to exist; they are prone to searching for regularity and to sorting the world into identifiable parts that are readily understandable and modifiable. The author argues that the scientific approach is a powerful and critical tool (Davey, 2006, p.25), “When used carefully and skilfully it can provide useful information and can be a persuasive tool for decision making”.

Researchers need to recognise the scientific approach as being one method of understanding and it upholds the notion that there exists an objective and observable reality 'out there' in the world.

In contrast, Blumer (1978, p.39) argues that accounting researchers need to adopt a more naturalistic enquiry mode based upon "exploratory" study and "inspection". In "exploration", the researcher forms a close contact with the study field while also:

Developing and sharpening this enquiry so that his problem, his directions of inquiry, data, analytical relations and interpretations arise out of, and remain grounded in, the empirical life under study.

"Exploration" therefore involves flexibility and shifting points of observation and lines of inquiry, in order to gain a clear understanding of how to pose the problem, what data are relevant and how to identify significant lines of relationships for closer inspections (Blumer, 1978, p.39):

In this respect it differs from the somewhat pretentious posture of the research scholar who under established scientific protocol is required, in advance of his study, to present a fixed and clearly structured problem, to know what kinds of data he is to collect, to have an hold to a pre-arranged set of techniques and to shape his findings by previously established categories.

"Exploration" is then followed by "inspection" which involves a gradual deepening of the enquiry following themes, which emerge, from close, but flexible, observations of specific decision contexts. As the study intensifies one investigates an analytical part of the research from different perspectives. For example, checking out how different people view events, which happened or are happening and, indeed, slowly improving understanding of what views each individual holds.

According to Ryan et al. (2002), the distinction between exploration and explanation is rather ambiguous. For instance, an exploratory study may be concerned with generating initial ideas, which will form the basis of an accounting practices explanation. The purpose of this interpretive research, however, is to develop a theoretical framework that is capable of explaining the holistic quality of observation for social systems and human actors' practices. An explanatory study attempts to provide an explanation for observed accounting practices (Ryan, 2002). Theory is not used to produce generalisations but to understand and explain the specific observed practices. Therefore, the researcher uses the explanatory study during phase two of this study to understand the IFR practices among the sample companies listed on Bursa Malaysia.

Writers such as Goffman (1959), Berger and Luckmann (1966), Garfinkel (1967), Glaser and Strauss (1967), and Schutz (1967) are all philosophers or social psychologists. They refer to the above exploration as social action study. Consequently, to the extent that this study is concerned with the accounting reports usage, for what purposes they are produced and the effect on human behaviour, it seems right that a "naturalistic" enquiry style would be most suitable.

The most important quality of the "naturalistic" research style in examining the accountants' behaviour, or behaviour influenced by accounting reports is that the researcher must look for a better understanding of the relevant human behaviour "in its natural setting". Researchers interested in studying the "value" of different accounting procedures and behaviour associated with accounting, need to focus more on studying how the practitioners perceive the world, what issues do they concern, why are they concerned about these issues, how do they perceive the influences of accounting and the accounting

practices. Then, it is more likely that academic research can be related to the practitioners and their worldviews, and those theories about the influences of alternative accounting procedures and reliable theories about accounting in practices can be developed.

Abdel-Khalid and Ajinkya (1979, p.19) argue, “In situations where it is not feasible to develop theoretical models prior to empirical observation, an exploratory approach may be followed.” Abdel-Khalid and Ajinkya (1979) argue that research may best start with a “naturalistic” research method to identify hypotheses; then follows with a “scientific” method for hypotheses testing. With the condition that at the end of the “naturalistic” exploratory research stage, the researcher gains strong confidence to adopt the world-view and associated set of ontological assumptions to enable the usage of the ‘scientific’ method with validity. Abdel-Khalid and Ajinkya (1979, p.21) stated:

- (1) In principle, we prefer the formal structure of the scientific method as a goal for researchers in accounting.
- (2) Infeasibility and intractability may sometimes make it very difficult to use that structure. All approaches to research are desirable, although they have different degrees of strength and reliability.

Therefore, their conclusions suggest that while all methods to research are desirable, the “scientific” method is superior and, where possible, should always be selected in preference. “Other methods” should only be used when it is not practical to use the “scientific” method.

Additionally, Burrell and Morgan (1979) argue that society is regarded, as one system of interrelated parts, with every social life serving a particular function. The researcher’s role is to find out the nature of those functions, which is the same as positive accounting research. Such works begin from an objective society view that looks at human behaviour

as deterministic, and uses experiments and a scientific research methodology. Positive accounting theory is based on experimental data. It appears to offer accounting researchers the possibility of preventing the theoretical speculations of normative model and value judgements. Positive theory is concerned with explanation and prediction (Watt and Zimmerman, 1986), for example positive accounting research can be used to predict stock market reactions to accounting information.

Positive accounting research, and, in particular, research based on agency theory, has stimulated numerous studies concerning the role of financial accounting in contractual relationships between managers and shareholders. These studies rely on the assumption that managers and shareholders are rational economic persons pursuing their own self-interests. There are several distinct strands to this research area, each of which concerns managers' choices with respect to financial information: accounting method choices/changes and voluntary disclosure. The early theoretical disclosure index studies, which related the level of a company's disclosure to various company-specific characteristics such as size, listing status and industry, have been extended. Formal analytical models of voluntary disclosure are now being developed (Verrecchia, 1978; Wagenhofer, 1990). These models allow the main economic forces governing the issue at stake to be focused upon.

In the first phase of the study, the researcher uses agency theory and institutional theory to formulate hypotheses in Chapter 4. It expresses relationships between the IFR (dependent variable), Internet visibility (dependent variable) and firm-characteristics (control variables), corporate governance mechanisms and ownership structures (independent variables). A highly structured and predetermined set of procedures are then used to collect

data, which is analysed by mathematical and statistical techniques – SPSS 15 and almost inevitably validates the hypotheses, and finally to generalise the results in Chapter 6.

For the second phase of the study, the researcher interviewed ten (10) practitioners to seek their views and opinions concerning issues pertaining to IFR as detailed in Chapter 7. According to Saunders et al. (2009), semi-structured interviews may be used in an explanatory study to understand the relationships of variables, and as a mean to validate findings. Semi-structured and in-depth interviews provide an opportunity to the researcher to ‘probe’ answers, where he/she wants an explanation from interviews to build on their responses. Interviewees may use ideas or words in a specific way, and the probing of these meanings will add depth and significance to the data collected. They may also lead the discussion into areas that are important for understanding and had not been previously considered by the researchers. Having considered the research paradigm, the next section outlines the research design.

### **5.3 Research Design – Phase 1**

According to Cooper and Schindler (2006), research design is the blueprint to fulfil the research questions and objectives set. This section outlines the research method, unit of analysis, sampling design, data collection procedures and data analysis techniques for Phase 1 of this study.

### **5.3.1 Content Analysis – Phase 1**

Content analysis is the most popular method among researchers in examining Internet disclosure based on the review of past literature. Indeed, Krippendorff (2004, p.xviii) states that it “is potentially one of the most important research techniques for the social sciences”. Krippendorff defines content analysis as a research technique to make replication and valid inferences from texts to the contexts of their usage.

Krippendorff (2004) identifies three types of reliability for content analysis, stability, reproductivity and accuracy. Stability refers to the ability of a judge to code data the same way over time. It involves a test-retest procedure. In this study, Internet disclosure analysed by 50 research assistants were analysed, and re-analysed by the same research assistants to establish the stability of the analysis.

Reproductivity aims to measure the extent to which coding is the same when multiple coders are involved (Milne and Adler, 1999). It assesses the percentage of coding errors between various coders. The accuracy measure taken in this study involves assessing the disclosure scoring against a predetermined checklist set by the researcher (Appendix A).

There are several different forms of measurement method to ensure the reliability of content analysis (Milne and Adler, 1999). One of the methods is to attest whether the coded data in a specific study have met a certain standard of reliability. The researcher follows formal measures of reliability by giving training to bring the research assistants to a required level of reliability (Debreceeny and Rahman, 2005). The researcher also drew a



small random sample from the samples that previously analysed on disclosure score to check on reliability (Boesso and Kumar, 2007).

This study employed content analysis to measure the extent of IFR on the company Web. The researcher adapts disclosure indicators based on the disclosure index/attributes developed by (1) “Electronic Distribution of Business Report Information” by FASB (2000); and (2) timeliness dimensions (Abdelsalam and Street, 2007). The adopted attributes from FASB (2000) consist of 26 General Attributes [GenAtt], 211 Investor Relations/Financial Information Attributes [FinInfo], 9 Other Annual Report Features [OAR], 15 Other Elements in Financial and Business Reporting Web Pages Not In Annual Reporting Itself [OWeb].

This study includes 261 business-reporting attributes adapted from FASB (2000) and 9 timeliness attributes [Time] from Abdelsalam and Street (2007). The complete 270 attributes [AllAtt] taken into consideration are listed in Appendix A. Each of these 270 attributes may take a value of 1 or 0 depending on whether or not the companies provide such information. For each sample company, the total score is measured as the percentage of the actual score awarded to the maximum possible score, producing an unweighted score for the Internet disclosure index with no weight assigned to any attributes.

With respect to the possible weighting of each attribute, the researcher discounted the use of a weighted index. In order to obtain a correct weighting coefficient, it is necessary to identify the relative importance of each attribute for each specific group of users. The researcher opted to construct the index by simple aggregation, in which the value of the index is the total sum of scores assigned to each category of information. This kind of non-

weighted index, taking the value of 1 or 0, has been widely used in past Internet disclosure studies (Debreceeny et al., 2002; Xiao et al., 2004; Khadaroo, 2005; Bonson and Escobar, 2006; Abdelsalam et al., 2007; Kelton and Yang, 2008).

The main coverage of this study is to take a snapshot of Internet-based reporting within the shortest possible time frame. Since this kind of reporting is dynamic in nature and changing all the time, a team of 50 research assistants who are final year undergraduate students assisted the researcher to collect the data (Khadaroo, 2005). Research assistants visited the Web sites of each sample company (Debreceeny and Rahman, 2005) and collected each attribute on the disclosure score sheet, as shown in Appendix A. The researcher and research assistants recorded data within two months from August to September 2008. Studies by Bonson and Escobar (2006); Kelton and Yang (2008) also recorded the data within two months. According to Abdul Hamid (2005), there is no theoretical basis for choosing the monitoring period for IFR.

In order to improve the reliability of the data (Boesso and Kumar, 2007), the researcher monitored the research assistants closely during the data collection process. At the commencement of the project, the researcher established reliability through direct and extensive consultation with the research assistants. The researcher spent substantial time training the research assistants. After the initial disclosure scoring, the researcher randomly checked the data collected by each assistant to ensure accuracy and consistency of the Internet disclosure index scoring.

### **5.3.2 Unit of Analysis – Phase 1**

The unit of analysis refers to the level of aggregation of the data collected during the data analysis stage (Sekaran, 2003). For phase 1 of this study, the unit of analysis is the financial information and non-financial information disseminated via the World Wide Web of the sample companies listed on Bursa Malaysia.

Phase 1 of this study relies on secondary data. This is the data gathered through existing sources (Sekaran, 2003) – the Internet. According to Sekaran (2003), secondary data is indispensable for most organisational research. Kiecolt and Laura (1985) highlight that the main advantage of secondary survey analysis is that they are less of a burden on resources. They require less money, less time and fewer personnel and, therefore, are suitable for this research, which faces the constraints of time and money. However, the disadvantage of secondary data is that some data might not be easily accessed, as the data might be highly confidential or perhaps the company does not want to share the information (Kiecolt and Laura, 1985).

The Internet offers new opportunities to companies in supplementing, replacing and enhancing the traditional way of communicating with the stakeholders and investors. This study focuses on the financial and investor-related disclosure by Malaysian listed companies via the Internet. The researcher used a comprehensive checklist to measure the two dimensions of business and financial reporting adapted by FASB (2000), which are the corporate Web sites' content and presentation of information, and the timeliness dimension developed by Abdelsalam and Street (2007).

### **5.3.3 Sampling Design - Phase 1**

A sample is a part of the target population, carefully chosen to represent that population (Cooper and Schindler, 2006). A researcher is interested in estimating population values and/or test statistical hypotheses, when he/she undertakes sampling studies. Indeed, Cooper and Schindler (2006) stress that if the data are very large and the processing power is limited, then it is best to draw a sample. Since, it would be practically impossible to collect data from the Web page of all the listed companies, or test or examine every element; the researcher studied 254 sample companies rather than all the listed companies to produce more reliable results. Sample selection reduced fatigue and fewer errors that are likely to result from the data collection process (Sekaran, 2003).

The sample examined contains the Malaysian public companies listed on Bursa Malaysia as at 15th May 2008. First, to gain a general overview about the Internet reporting level of this sample, the Top 100 Malaysian companies' ranked by WAI (Wealth Added Index) were examined. WAI is a metric developed by a management consultant company, Stern Stewart and Co, to measure wealth creation for all shareholders (The Method, 2008). These companies are chosen based on size, hence, big market capitalisation and composite index (CI). Of the 100 companies, 83 companies have a positive WAI. These companies with a higher WAI would definitely be a better stock pick (The Method, 2008). The researcher argues that voluntary disclosure via the Internet is a way for these good performing firms to distinguish themselves from under-performing firms to raise capital at the cheapest cost (Marston and Polei, 2004). Additionally, larger companies have higher agency costs arising from information asymmetry between managers and shareholders (Debreceeny et al., 2002). They tend to disclose more information to reduce these agency

costs. Furthermore, these firms have a larger capital need and, thus, are expected to disseminate more information via the Internet.

An additional 18 government-linked companies, 56 firms owned by the 40 richest Malaysians 2008, and 132 companies with a market capitalisation above RM150 million then increased the initial sample from 100 samples to 254 samples (Table 5.1). The researcher chose these companies because it is assumed that they would be closely scrutinised by investors and actively conducting investor relation activities. This selection is also consistent with Craven and Marston (1999); and Xiao et al. (2004) whose sample consisted of the 206 largest U.K. companies and 203 largest Chinese-listed companies with a Web site, respectively. The researcher examined this sample in detail and used it to test the hypotheses developed in Chapter 4. The researcher accessed Web sites of the sample companies between August and September 2008, to check the presence of each of the 270 attributes. Because of the non-availability of company Web sites and company's data in the Osiris database, 1 government-linked company and 5 companies owned by the 40 richest Malaysians, 46 companies with market capitalisation above RM150 million, a total of 52 companies had to be excluded in this study. The final sample size was 254 listed companies with accessible Web sites.

**Table 5.1 Samples Selection**

	Top 100	Additional Samples	Samples without Web	Total Samples
Companies owned by:				
Government	16	18	-1	33
40 richest Malaysian	31	56	-5	82
Others	53	0	-9	44
Companies with market capitalisation more than RM150 million	0	132	-37	95
<b>Total Samples</b>	<b>100</b>	<b>206</b>	<b>-52</b>	<b>254</b>

### **5.3.4 Data Collection – Phase 1**

This section describes the specifics of gathering the data. It includes the standard procedures and the administration of data collection. This section discusses the data collection of secondary data.

#### **5.3.4.1 Measurement of Dependent Variable: Internet Disclosure [AllAtt]**

Past studies show that disclosure transparency can be improved through the content and presentation format of Internet disclosure. IFR allows alternative disclosures above the mandatory requirement by regulators (Ettredge et al., 2002). In addition, transparency level may be improved by Internet-based technologies that allow extensive financial information to be presented dynamically (Hodge et al., 2004).

The first step is to locate the Web sites of companies. The researcher used the Bursa Malaysia Web site ([www.klse.com.my](http://www.klse.com.my)) to find the Web page of the sample companies. Other popular search tools such as Yahoo, MSN and Google were used if no link was available. Where these two sources failed to yield the company's address, hard copies of the company's annual reports and accounts were consulted.

Krippendorff (2004) and Neuendorf (2002) have given three separate parts for content analysis. The first part is to choose which document to analyse. This study monitored companies' Web pages for duration of two months from August to September 2008. Abdelsalam et al. (2007) used a single day in mid-2005 to identify the presence of Web sites and the disclosure of any financial information. Ashbaugh et al. (1999) took three months to study the Internet financial disclosure of U.S. companies, whereas, Pirchegger

and Wagenhofer (1999) spent one year for their IFR study, as presented in Chapter 2. Therefore, there is no theoretical basis for choosing the monitoring period of Internet reporting on a Web site (Abdul Hamid, 2005).

The second part is to decide the methods of measuring Internet reporting. A review of past studies implies that the incidence of Internet information was used as the measurement of Internet reporting (Pirchegger and Wagenhofer, 1999; Gowthorpe and Amat, 1999; Lymer, 1999). This study adapted a comprehensive checklist to measure the disclosure level quantitatively (FASB, 2000) and the timeliness dimensions developed by Abdelsalam and Street (2007).

The third part is to develop an instrument or a checklist. The attributes can be separated into two types: (1) those attributes related to a company's Web page, and (2) attributes related to financial and investor relations reporting. The checklist includes 261 attributes in total. All these items can be measured on a simple "yes" encoded as 1 or "no" encoded as 0. The researcher used the checklist to develop a total score, which measures the financial reporting practices on the Web site. In addition, the timeliness dimensions satisfy a minimum criterion: (1) the timeliness of the Web site content based on the users' perception, and (2) users can use technology to make the information readily available without delay. The checklist includes 9 attributes in total. The final checklist consists of 270 attributes.

The total score of all the Internet disclosure attributes such as 26 general attributes [GenAtt]; 18 financial information attributes [FinInfo]; 202 annual report attributes [OAR]; 15 other attributes [OWeb]; 9 timeliness attributes [Time] and all attributes [AllAtt]

represents the extent of Internet disclosure in a company. The total score is measured as the percentage of the actual score given to the maximum possible score for each company. Appendix A presents the complete disclosure score sheet.

This study used Cronbach's coefficient alpha to assess the internal consistency of Internet visibility and Internet disclosure measurement scheme (Chapter 6, Section 6.4.1). Cronbach's coefficient alpha assesses the correlation degree of Internet visibility and disclosure items attenuated due to random error (Serrano-Cinca et al., 2007). As a general rule, the correlation is attenuated very little by random measurement error at an alpha of 0.7 – 0.8. However, Botosan (1997); Gul and Leung (2004) obtained the Cronbach's coefficient alpha of 0.64 and 0.51, which are considered relatively low.

#### **5.3.4.2 Measurement of Internet Visibility [FactorIntVis]**

The importance of an entity on the Net is captured by the variable "Internet visibility". During this rapid technological development time, one valuable intangible asset for companies is the Internet visibility. The calculation for this indicator is based on the total number of incoming links to the Web site of a company (Dreze and Zufryden, 2004; Brock and Zhou, 2005; Serrano-Cinca et al., 2007; Gutierrez-Nieto et al., 2008).

According to Brin and Page (1998, p.109), "academic citation literature has been applied to the Web, largely by counting citations or back links to a given page. This gives some approximation of a page's importance or quality". A Web page is more visible when the number of incoming links is higher. The researcher typed "link" followed by a sample company's Web site address in five search engines: Yahoo, MSN, Ask, AltaVista and



AllTheWeb to collect the ratings. Then, through factor analysis, this study identified patterns and grouping of the Internet visibility (Cormier et al., 2009). Any search engines that were very 'different' or 'cannot be classified within the group' were rejected (Serrano-Cinca et al., 2006).

#### **5.3.4.3 Measurement of Independent Variables**

The purpose of the empirical survey is to test whether the selected independent variables is associated with the total score achieved by a company. This section discusses the measurement of independent variables.

Non-executive directors [NED] are measured as the ratio of non-executive directors to total directors. The measurement is consistent with the studies by Leung and Horwitz, (2004); Haniffa and Cooke (2005); Cheng and Courtenay (2006); and Wan-Hussin (2009).

Independent non-executive directors [IndD] are measured as the ratio of independent directors to total directors. The measurement is consistent with the study by Chen and Jaggi (2000); Haniffa and Cooke (2002); Eng and Mak (2003); Ghazali and Weetman (2006); Abdelsalam et al. (2007); and Kelton and Yang (2008).

Duality of Chairman and CEO [Duality] is measured as 1 if the firm's CEO is also chairman of the board of director, and 0 otherwise. The measurement is consistent with the study by Haniffa and Cooke (2002); Gul and Leung (2004); and Abdelsalam et al. (2007).

Education of the directors [DirAccB] is measured by the ratio of directors qualified in accounting or business to total directors. The measurement is consistent with the study by Haniffa and Cooke (2002).

Board size [BSize] is measured by the total number of directors on the board. The measurement is consistent with the study by Haniffa and Hudaib, (2006); and Wan-Hussin (2009).

Family directors on the board [FamDir] are measured as the ratio of family directors to total directors. Family director includes the spouse, parent, child, brother, sister and the spouse of such child, brother or sister. This measurement is consistent with the study by Ho and Wong (2001), Haniffa and Cooke (2002); Ghazali and Weetman (2006); and Wan-Hussin (2009). The researcher obtained this data from “Director Profile” presented in annual reports.

Multiple directorships [MultiDir] are measured as the ratio of directors on the board with directorships in other companies to total directors. The measurement is consistent with the study by Haniffa and Cooke (2005); and Haniffa and Hudaib (2006).

Audit committee size [AcSize] is measured by the number of directors on the audit committee. The measurement is consistent with the study by Braiotta (2000).

Audit committee independence [AcInd] is measured by the ratio of independent audit committee members to total audit committee members. The measurement is consistent with

the study by Abbott and Parker (2000); Klein (2002); Abbott et al. (2004); and Bedard et al. (2004).

Audit committee financial expert [AcFinEx] is measured by the ratio of audit committee members with accounting and finance qualifications. The measurement is consistent with the study by Abbott et al. (2003); Carcello and Neal (2003); and Kelton and Yang (2008).

Audit committee meeting frequency [AcMeet] is measured by the frequency of audit committee meetings held during the financial year. The measurement is consistent with the study by Beasley et al. (2000); Abbott et al. (2003); Bonson and Escobar (2006); and Kelton and Yang (2008). Data for the above board compositions and activities were extracted from the latest companies' annual reports.

Shareholders holding more than 5% [SHNo5] is measured by the number of shareholders owned more than 5%. Top 5 shareholders [Top5] are measured by the ratio of shares owned by the 5 largest shareholders to the total number of shares issued. The measurement is consistent with the study by Haniffa and Hudaib (2006).

Family ownership [FamO] is measured by the ratio of shares held by founder and family members. The measurement is consistent with the study by Ho and Wong (2001); and Chau and Gray (2002).

Institutional ownership [InstO] is measured by the ratio of shares held by institutional investors. The five largest public institutional investors are two pension funds (Employees Provident Fund (EPF) and Lembaga Tabung Angkatan Tentera (LTAT)); an insurance

company (National Social Security Organisation Malaysia (SOCSO)); an investment fund (Pemodalan Nasional Bhd. (PNB)); and a pilgrim fund (Lembaga Tabung Haji (LTH)) (Abdul Wahab, How and Verhoeven, 2007). The measurement is consistent with the study by El-Gazzar (1998); Schadewitz and Blevins (1998); Haniffa and Cooke (2002); and (Abdul Wahab et al., 2007).

Government ownership [GovtO] is measured by the ratio of shares held by government institutions, where the government holds shares in privatised companies (Ghazali and Weetman, 2006). The measurement is consistent with the study by Haniffa and Cooke (2005); Naser and Nuseibeh (2003); and Ghazali and Weetman (2006).

Foreign ownership [ForO] is measured by the ratio of shares held by foreign investors. The measurement is consistent with the study by Haniffa and Cooke (2002).

Director ownership [DirO] is measured by the ratio of shares held by executive and non-independent directors. The measurement is consistent with the study by Haniffa and Hudaib (2006); and Ghazali and Weetman (2006). The above ownership structures were extracted from the Osiris Database or the latest company annual report.

#### **5.3.4.4 Measurement of Control Variables**

This section discusses the measurement of control variables. Industry [Industry (Tech)] is measured as 1 for low technology firms, and 0 for medium to high technology firms. It is classified based on the OECD (1999b) framework where low technology industries are those that use less sophisticated technologies and are less vulnerable to change. These

would include consumer, construction/property, trading/ services and plantation/mining industries. Medium to high technology industries are from those that have more sophisticated technologies, for example, industrial, infrastructure, finance and technology industries.

Firm size [FactorSize] is measured as the natural logarithm of the firm's total assets [LogTA] and turnover [LogT]. The [LogMC] is the natural logarithm of the firm's market capitalisation on 30<sup>th</sup> December 2008.

Financial performance [FactorProfit] is measured as the Return on Shareholders' Fund [ROSH] and Profit Margin [PM]. The researcher used factor analysis to identify the structure of firm size [FactorSize] and financial performance [FactorProfit]. It reduces the variables to a smaller number of composite variables (Hair et al., 2010).

Systematic risk [Beta] captures a firm's systematic risk. It is a proxy for information asymmetry between investors and the company's management. The measurement is consistent with the study by Marston and Polei, (2004), and Cormier et al. (2009).

The researchers extracted the firm's total assets, turnover, Return on Shareholders' Fund [ROSH] and Profit Margin [PM] and Systematic risk [Beta] from the Osiris Database between October and November 2008.

Auditor [Auditor] is measured as 1 if it is one of the Big-4 auditors and 0 if it is not. This was extracted from the latest company annual report.

In summary, this study obtained variables information based on a variety of sources. The researcher used the company's financial statement disclosed on the Bursa Malaysia Web site to gather data relating to the board of directors and audit committee attributes. The Osiris Database supplies data on ownership structure and financial information. Ownership and financial figures that are not available on the Osiris Database are extracted from the financial statements.

### **5.3.5 Data Editing Issues – Phase 1**

Multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single (criterion) variable and several independent (predictor) variables (Hair et al., 2010). The measurement scale, restriction of range in the data values, missing data, outliers, nonlinearity and nonnormality of data affect the variance-covariance among variables and, thus, affect the regression analysis. Therefore, data screening is a very important first step in multiple regression analysis. The researcher has taken the necessary steps to screen the data collected. Detailed results of the measurement are discussed in Chapter 6 (Section 6.4).

### **5.3.6 Data Analysis Techniques – Phase 1**

Data analysis is the process of reducing accumulated data to a manageable size, developing summaries, looking for patterns and applying statistical techniques (Cooper and Schindler, 2006). The researchers are required to explore relationships among the variables based on the research instrument developed. Then, they interpret their findings based on the research

questions set to determine if the results are consistent with the theories applied and hypotheses developed (Cooper and Schindler, 2006).

Multiple regression analysis was employed in this phase of the study to analyse the relationship between a single dependent (criterion) variable and several independent (predictor) variables. It was estimated using the software SPSS 15.0 Version. The independent variables can either be continuous or categorical but the dependent variable must be continuous (Hair et al., 2010). In this study, all corporate governance variables (NED, IndD, DirAccB, BSize, FamDir, MultiDir, AcSize, AcInd, AcFinEx, AcMeet) and ownership variables (SHNo5, Top5, FamO, InstO, GovtO, ForO and DirO) are continuous, except duality of chairman and CEO (Duality); as such it is coded as dummy variable. Both dependent variables (AllAtt and FactorIntVis) are continuous.

Sample size also affects the generalisability of the results by the ratio of observations to independent variables. A general rule is that the ratio should never fall below 5:1, meaning that five observations are made for each independent variable in the variate (Hair et al., 2010). The sample of 254 observations meet the guideline for the minimum ratio of observations to independent variables (5:1) with an actual ratio of 13:1 (254 observations with 19 variables).

A key issue in interpreting the regression variate is the correlation among the independent variables. The ideal situation would be to have a number of independent variables highly correlated with the dependent variable, but with little correlation among independent variables (Hair et al., 2010). Factor analysis attempts to identify groupings among variables based on relationships represented in a correlation matrix, by grouping highly

correlated variables together. It is used to simplify analysis of a large set of variables by replacing them with composite variables (Hair et al., 2010). This study used factor analysis to group firm size and profitability to a composite variable respectively (Figure 6.1 and 6.2).

Descriptive statistics describe the frequency of occurrence for certain phenomena, the average or mean score for data collected, and the degree of variability in the set of data, for example, the dispersions and central tendencies of the dependent and independent variables. The researcher used SPSS 15.0 Version designed for data entry, data editing, data analysis and descriptive statistics.

## **5.4 Research Design – Phase 2**

This section outlines the research method, unit of analysis, sampling design, data collection procedures and data analysis techniques for Phase 2 of this study.

### **5.4.1 Semi-Structured Interview – Phase 2**

Numerous researchers expend considerable effort examining the initial financial disclosure, and studying the managements' decisions in voluntarily non-obligatory disclosure. However, there are limited empirical findings available concerning what drives the companies to incur additional dissemination costs related to Internet reporting. Currently, only limited empirical evidence relating to Internet disclosure is available in the Malaysian accounting literature (Chapter 3); however, the Internet's potential role for disseminating



company information has been debated more in advanced countries such as the U.K. and U.S. This study extends prior studies by interviewing the preparers of Malaysian listed companies concerning their views and opinions, specifically on the influences of firm characteristics, corporate governance and ownership structures on IFR practices.

The main objective of this second phase of the study is to examine the perception of managers on Internet reporting, to test the applicability of disclosure theories and to identify factors that motivate local companies to engage in Internet reporting. The questionnaire is presented in Appendix C.

This study conducted personal interviews with ten (10) senior managers representing IFR preparers of the sample companies in which the researcher sought the views and opinions concerning the perception of the usage and issues relating to IFR in Malaysia. All interviewees had at least five years at the managerial level. Each interview lasted between one and one and a half hours.

The questions are in two categories: the first include five open-ended questions dealing with perception, desired financial information, reporting format and other issues pertaining to IFR. The questions began with a short paragraph providing a definition of Internet reporting. The second included eight theme guided questions dealing with Internet regulation, influences of IFR from various parties or sources such as industry members, firm size, financial performance (profitability), beta (systematic risk), auditor type, ownership structure and board governance structures. It was also made clear that these questions are only related to the IFR of the sample companies.

The researcher pilot tested the questionnaire using four individuals (two audit partners; one regulator and one academician) and revised the content accordingly. The researcher e-mailed the questionnaires to the investor relations department of the sample companies, accompanied by a certified letter from the researcher's supervisor, an explanatory letter giving the background to the study and an assurance of confidentiality of responses. The first mailing to all sample companies took place in May 2009.

#### **5.4.2 Unit of Analysis – Phase 2**

The preparers' views and opinions on the perception of the usage and issues of IFR is the unit of analysis for phase 2 of the study. Interviews are the primary data collection technique for gathering data in qualitative methodologies (Cooper and Schindler, 2006). The researcher collected primary data for phase 2 of this study. Primary sources are raw data or original research works without interpretation or pronouncements that represent an official opinion or position (Cooper and Schindler, 2006). Because the information has not been filtered or interpreted by another party, it is always the most authoritative source. Primary data are gathered from the actual site of occurrence of events (Sekaran, 2003). They include certain types of information such as the perceptions and attitudes of individuals, which are best obtained by talking to them; by observing events, people and objects; or by administering questionnaires to individuals. In phase 2 of this study, the researcher conducted personal interviews with ten (10) senior managers representing IFR preparers of sample companies, to seek their views and opinions on the perception of the usage and issues of IFR in Malaysia.

### **5.4.3 Sampling Design - Phase 2**

This section discusses the sampling procedure adopted in Phase 2 of this study. Sampling is crucial, as the researcher cannot possibly study everything everyone is doing everywhere. In qualitative research, Punch (2005) admits that there are no summarised sampling strategies due to a great variety of purposes, approaches and settings for research. Huberman and Miles (2002) mentioned that qualitative researchers usually studied small samples, which are examined in depth and nested in their context, in contrast to quantitative researchers who aim for larger context numbers such as seeking statistical significance and stripped cases. Punch (2005) argues that the basic ideas of specific sampling strategies change considerably and reflect the study's purposes and questions. He stresses that the direction should be coherent and consistent with the study logic.

Purposeful sampling is employed in this study to select the companies to be sampled. Selection of rich case information for an in-depth study influences the logic and power of purposeful sampling (Patton, 2002). Information rich refers to those cases where the researcher can learn a lot of centrally important issues for the research objective, which is why it is termed as purposeful sampling.

There are sixteen strategies for purposefully selecting information-rich cases (Patton, 2002). This study used a combination of two of the strategies in deciding on the sample. First, is the intensity of sampling. This sampling strategy consists of information – rich cases that manifest the interested phenomenon intensely but not extremely (Patton, 2002). In order to discover the variation type under the investigated situation, exploratory work needs to be done under this sampling strategy.

Companies chosen to be the sample in this part of the study are the listed companies that report a significant amount of information via the company homepage. This coincides with the strategy suggested above. As the purpose of the study is to identify what motivates the firms to engage in IFR, it seems appropriate to study only companies that are currently practising it. Reviewing their company homepage assesses this practice. In order to meet the intensity criteria stated by Patton (2002), this study locates the potential sampling through the list of companies that ranked the highest score under the corporate governance survey 2008, in terms of their compliance with the corporate disclosure and governance. One of the key areas covered is shareholders and investor relations, which emphasised improving the accessibility and transparency of financial disclosures to investors.

The second strategy adopted is to use the maximum variation sampling (Patton, 2002). This aims at describing and capturing the main principles, outcomes or themes that affect a great deal of variation in participants (Patton, 2002). The objective in this study is to explain IFR phenomenon in Malaysia without any restriction on the industry type. In the prior studies, the industry type is considered to be significant in influencing IFR. It attempts to see the various responses across the various industries in the context of Malaysia.

Ten (10) companies were selected as the sample and the data was collected through interviews. The researcher used search engines, e.g. Yahoo and Google to find Web pages of the Top 120 sample companies, of which only 17 companies included the investor relations contact on the Internet. Then, the researcher made a telephone call to arrange an

appointment with these investor relations personnel. They confirmed the appointment after a few follow up calls; finally, the researcher interviewed officials from ten (10) companies.

#### **5.4.4 Data Collection - Phase 2**

This section discusses the data collection of the semi-structured interview data. According to Punch (2005), documents provide a rich data source for social research. The researcher obtained data from published sources such as the Bursa Malaysia Web site and company Web sites to provide a background for the interviews. Reviews of the potential respondents were conducted prior to the selection of the particular respondents. In addition, company backgrounds in terms of their Internet reporting were investigated. The information served to confirm the reliability of the interview responses and permitted more direct and detailed probing in the interviews. For example, the researcher reviewed the selected company Web site before the interview. Punch (2005) states that documents can be important in triangulating the evidence from the interview data. The analysis on the respondents' Web site serves as an indicator of their intensity of Internet reporting.

Since the objective of this study is to understand why companies disclose information via the Internet, as well as to understand their perceptions, the interview technique is seen as an appropriate tool. Punch (2005) observes that interviews are an excellent method of assessing individual perceptions, definitions, situations meanings and reality construction. Additionally, interviews are also a powerful technique to understand others.

Smith et al. (2002) state that the process of semi-structured interviews allows the interviewer to focus on limited point numbers of the questions. This would be done as a

way of obtaining the required information on a certain point that may range quite widely among the interviewees.

The researcher used semi-structured interviews, however, as some questions were not included in the guideline, some respondents were asked further questions in order to obtain more information. The researcher used a standardised set of questions to interview the respondents. These questions served in extracting the required information from them. The purpose of using open-ended questions is to invite participation from the respondents during the conversation (Cooper and Schindler, 2006; Saunders et al., 2009). Since all the respondents are high-ranking personnel with a busy schedule, time management is very important. Only respondents who were seen to be more receptive were probed to obtain more in-depth responses. If time permitted, respondents were asked concerning the aspects of the emerging theory. Every respondent was asked the same kind of questions. Appendix C sets out the list of questions asked during the interview sessions.

The researcher e-mailed a letter together with a set of questionnaires with a standard definition of Internet reporting to the interviewees. The researcher briefly explained the definition and the concept of Internet reporting to all the respondents, as some of them did not read the letter e-mailed to them earlier thoroughly. Before the commencement of the interview, some respondents felt quite stressed when the researcher sought their opinion. The main purpose of the interview was to identify what motivates them to disclose financial information via the Internet. The researcher began by asking the respondent's perception before proceeding to the main questions. Then, by asking a question that is broad in nature, the researcher is able to identify their real motivation. The main objective is to obtain the

information in relation to their opinion and experience, followed by more specific questions. Their opinion on the factors that might motivate them was solicited.

English was the main language used during the interview. The researcher taped the conversation with respondents and transcribed verbatim to assist data analysis. The researcher took note of the important points highlighted by the respondents during the interview.

The overall duration of the interviews ranged between 30 and 60 minutes. The researcher provided an estimate of the interview time to assist the respondents to prepare for the interview. This ensured a comfortable time for conducting the interview. Some respondents were very time conscious and some were more relaxed depending on their schedule for that day. The collection of interview data extended over a period of four months, from May 2009 to August 2009.

#### **5.4.5 Data Quality Issues – Phase 2**

There are a number of data quality issues identified in relation to reliability, validity and generalisability on the use of semi-structured and in-depth interviews. In order to promote the interview credibility the participants were supplied with relevant information before the interview. The researcher e-mailed the questionnaire with a themes list for the interview before meeting with the participants. The list of themes reflects the variables being studied. It should promote reliability and validity by enabling the interviewee to consider the requested information. It also enabled them to compile supporting documents from their organisational files (Saunders et al., 2009).

The researcher tested the level of understanding by summarising an explanation provided by the interviewee during the interview, and encouraging the interviewee to evaluate the adequacy of interpretation; correction was made where necessary (Amran, 2005). For the approach to recording data, the researcher audio-recorded the interview and made notes as the interviews progressed. Immediately after the interview took place, the researcher allocated time to write up a full record of the interview. This was done to ensure the exact nature of the explanation provided was compiled as well as general points of value.

There is great concern surrounding the generalisation of findings from qualitative research (Saunders et al., 2009), which relates to the significance to theoretical propositions (Bryman et al., 2004; Yin, 2009). Where the researcher is able to relate an existing theory to the research project, the researcher will be in a position to demonstrate that finding to have a broader theoretical significance to present the important idea of the research work (Marshall and Rossman, 2006). In this study, the researcher used the disclosure theories to establish this relationship for the demonstration of the broader significance of the findings.

#### **5.4.6 Data Analysis Techniques – Phase 2**

The data transcription took a long time as the researcher listened to the tape several times in order to transcribe all the conversations properly. While listening to the tape, the researcher noted emerging or interesting points. This initial process helped the researcher to be more prepared in the investigation of the subsequent respondents. The emerging pattern was evident from the initial analysis.



The researcher commenced post interview analysis immediately after collecting data for each interview. For each respondent, the average total transcription was four to five pages of A4, single spaced and font 11 Arial characters. The researcher read each respondent transcript several times. The reading was done simultaneously with the transcription process to obtain the big picture.

The data were analysed through the analytic method proposed by Huberman and Miles (2002). According to them, even though there are diverse methodologies, the use of some analytic practices across different qualitative research types is still carried out in approaching qualitative research. They proposed three-linked sub-processes of qualitative analysis, namely, reduction of data, display of data and conclusion drawing or verification of data. Huberman and Miles (2002) state that these sub-processes occur concurrently. The analysis process loosely followed these sub-processes.

The researcher identified the underlying themes based on the evidence collected from the transcribed data. This explanatory study was used to assist the researcher during analysing the evidence. The evidence clearly supports some of this explanatory study. However, further probing was needed in order to uncover more underlying patterns. This was done through an inductive process.

The data reduction process continued by making summaries of the patterns emanating from the evidence. Huberman and Miles (2002) describe the reduction of data as the process of focus, selection, abstraction, simplification and transformation of data from the transcribed data. Solely relying on this explanatory framework would not provide a good picture of the overall evidence. The following stage of the data analysis process was cross-analysing and

comparing the coded summarised data with the respondents' profile, such as their stakeholders, nature of their business, their products or services offered.

The researcher referred to the interview guide and the research question simultaneously during the interpretation process in order to elaborate the findings according to the research questions. First, phase 2 of this study identified the perception of the local companies practising Internet reporting. Second, the influences of various factors on IFR were identified. Third, this study investigated the applicability of disclosure theories to understand the motivation of the companies and determinants of IFR.

The analysis focused on five aspects. First, the analysis identified perceptions. Second, it explored the motivations. Third, it identified the influences of firm characteristics, corporate governance mechanisms and ownership structures on IFR. Fourth, it found support for disclosure theories. Finally, it discussed issues relating to IFR. Even though the division of the scope was clearly stated, the researcher is aware that these aspects overlap in the sense that the first aspect of perceptions cannot be simply ignored in considering the motivation, influence or in finding support for the disclosure theories. This strategy is meant to help the researcher in interpreting the findings. The first, second and third aspects were discussed in narration form. In order to explain the motivations and influences, tables were developed and examined before a detailed explanation was discussed. This fourth part was explained through the lens of disclosure theories.

## **5.5 Conclusion**

This chapter provides an insight on how this research was conducted for Phase 1 and Phase 2. It starts with a discussion on the research paradigm, followed by research design before in depth discussion on the dependent and independent data measurement is carried out. The research method for content analysis and semi-structured interviews are also discussed. This chapter ends with a data analysis review. The findings and interpretation of the content analysis for phase 1 is discussed in the next chapter.