CHAPTER 5

METHODOLOGY AND RESEARCH DESIGN

5.1 INTRODUCTION

Based on the review of extant outsourcing literature in Chapter 3 and the research questions identified thereon, the theoretical model and hypotheses were developed in Chapter 4. The main objective of this chapter is to explain the process of how data is collected, how the sample is determined, how the variables are measured and how the data collected is analysed in order to test the hypotheses developed. To meet the research objectives, the study used the quantitative approach using questionnaire survey. The rest of this chapter is organised as follows. Section 5.2 discusses the methodology in which this study is situated. Section 5.3 explains the measurement used for the dependent and mediating variables followed by an explanation of the measurement used for independent variables. Section 5.4 discusses how the questionnaire used in the survey is developed for this study. Section 5.5 explains how the samples are selected for the study. Section 5.6 offers a brief discussion of how data is collected. Section 5.7 provides an explanation of the response rate. Section 5.8 examines response bias analysis. Section 5.9 provides a brief of explanation of the method of analysis used in order to test the hypotheses proposed in the study. The chapter ends in Section 5.10 with a chapter summary. The Research questions and objectives are shown in Table 5.1.

Table 5.1: Research questions and objectives

N	Research questions	Research objectives
1	What types of accounting functions do Iranian SMEs outsource to a professional (external) accountant?	To identify the types of accounting activities (functions) that SMEs outsource to a professional accountant
2	To what extent are accounting functions outsourced by Iranian SMEs?	To examine to the extent to which Iranian SMEs outsource their accounting functions
3	What are the factors that influence the Iranian SMEs' decision to outsource accounting functions (outsourcing intensity)?	To identify the factors influencing Iranian SMEs' decision to outsource accounting functions (outsourcing intensity)
4	Is there a link between outsourcing intensity of accounting functions and SME performance	To examine whether there is an association between outsourcing intensity and SME performance
5	Does outsourcing intensity mediate the relationship between factors (i.e. TCE and RBV variables), and firm performance?	To investigate the mediating role of outsourcing intensity on the relationship between important factors (e.g. TCE and RBV variables), and firm performance

5.2 METHODOLOGY

Research is a complex process and complicated by a variety of expectations. Given this complexity, it may not be surprising that scholars build their endeavours on differing beliefs about how research should be done and what the results of the study should achieve (Krauss, 2005). These differing beliefs are categorised under three paradigms, namely, positivist, intepretivist and critical research (Krauss, 2005). Accordingly, the methodology employed should match the particular paradigm (Krauss, 2005). Different paradigm may need the use of different methodologies (Krauss, 2005). Generally there are three dominant paradigms in accounting research- the positivist, interpretivist and critical (Chua, 1986). In this study the positivist paradigm is most appropriate to reflect the research objectives as explained below.

In the positivist paradigm, the object of research is independent of researchers including facts are determined by taking apart a phenomenon to examine its component parts and knowledge is found out and verified via direct measurements of phenomena (Krauss, 2005; Healy and Perry, 2000). Positivist researcher usually utilises quantitative data (Krauss, 2005; Darke, Shanks and Broadbent, 1998; Landry and Banville, 1992). In addition, in positivist paradigm, researchers develop hypotheses then try to disprove these assumed relationships by concentrating on the null hypotheses (Krauss, 2005). In positivist paradigm, data is collected using quantitative data and analysed using statistical methods (Krauss, 2005). In positivist paradigm, another researcher should be able to conduct the same study in the same way and achieve with comparable results (Darke, Shanks and Broadbent, 1998). Therefore, according to above discussion, this study uses deductive reasoning- beginning with a theoretical framework and moving towards real empirical evidence using the quantitative method - to identify a set of universal laws that can be used

to predict general systems of human activity (Krauss, 2005; Krauss, 2005; Landry and Banville, 1992).

Interpretivist research deems that it is possible that people experience social and physical reality in various ways, whereas positivist research believes that all people share the same meaning systems (Walsham, 1995). The interpretevist researcher believes that the world is fundamentally what people perceive it to be (Trauth and Jessup, 2000; Walsham, 1995). Hence, reality is socially constructed (Lincoln and Guba, 2000; Trauth and Jessup, 2000). The interpretivist scholars are interested in understanding the lived experience of human beings (Walsham, 1995). The interpretivist researcher identifies what is meaningful to each individual being examined and becomes fully involved with these individual subjects. This involvement allows the scholars to discover the socially constructed meaning as it is understood by a group of individuals or an individual (Trauth and Jessup, 2000). Interpretivist researcher typically utilises qualitative methods (Trauth and Jessup, 2000). In general, this study tries to explain laws that can predicted by using quantitative methods, hence this is consistent with in the positivist paradigm, whereas an interpretivist paradigm focuses on the context and singular occurrences to obtain meaning and making sense, naturally utilising qualitative approaches (Krauss, 2005; Lincoln and Guba, 2000; Trauth and Jessup, 2000). Therefore, it is not appropriate to meet the objectives of this study.

Critical research aims to empower people to produce a better world for themselves (Krauss, 2005; Healy and Perry, 2000). The critical approach achieves this aim by discovering, and going beyond, surface illusions. Critical research should concentrate on discovering myths and revealing hidden meanings. These meanings are hidden because reality has multiple layers, with basic meaning systems behind the observable, surface reality (Trauth and Jessup, 2000). Critical research assumes that, once people see these

surface illusions for what they are, the less powerful will be motivated to change to their lives (Krauss, 2005; Healy and Perry, 2000). The critical researchers should present the research findings in such a way that they become catalyst that leads the transformation (Krauss, 2005; Healy and Perry, 2000). Critical researchers use both qualitative and quantitative methodologies for researching the basic mechanisms that drive actions and events (Krauss, 2005; Healy and Perry, 2000). However this study does not sit well under the critical paradigm either as seen from above.

However, although most of prior studies have used qualitative methods to draws insights, these insights have not been comprehensively tested (Devi and Samujh, 2010; Hamzah et al., 2010; Jayabalan et al., 2009; Nicholson et al., 2006). Most samples used are small and inhibit generalisability (Everaert et al., 2007, 2010). Therefore, this study used the survey method to obtain a larger sample so that results can be generalisable to a larger segment of the SMEs in the manufacturing sector.

5.3 DEPENDENT, MEDIATING AND INDEPENDENT VARIABLES MEASUREMENTS

In general, research is a procedural process of getting information with the purpose of finding a solution to specific problems. At the empirical study, variables should be examined the properties and are employed to test the hypotheses identified at the first stage of study (Cooper and Schindler, 2003). There are three types of variables such as independent, dependent and mediating variables investigated in this study. Hence, all the measurement items were generated from prior studies. To measure the variables, a Seven-Point Likert Scale (except frequency variable) was utilised to explain in the details of the

measurement scale in the next section. The measurements of the variables are discussed in the next section.

5.3.1 Dependent Variable-Firm Performance

Previous studies examined impact of outsourcing on several measures of financial and non-financial firm performance (Görzig and Stephan; 2002; Görg and Hanley; 2004; Jiang et al., 2006; Espino Rodríguez and Padrón-Robaina; 2004), but the evidence indicates the link between outsourcing and financial and non-financial performance is not clearly established (Görg and Hanley, 2004; Espino Rodríguez and Padrón-Robaina; 2004). In addition, those measurements of firm performance in terms of financial and non-financial performance are not appropriate for SME environment because firm performance in SMEs is assessed in terms of the goals (motives) of the owner/managers (Blackwood and Mowl 2000; Jarvis et al., 1996). For example, SME owner/managers pursue a range of goals in addition to profit maximisation (Sarapaivanich and Kotey, 2006). In many cases, the desire to make money is the main goal or is not entirely goal (Sarapaivanich and Kotey, 2006; Barsley and Kleiner 1990). In this view, SME performance is measured by both financial and non-financial goals in this study (Sarapaivanich and Kotey, 2006; Blackwood and Mowl 2000; Kasey and Watson 1987).

Main financial goals pursued by owner/managers of SMEs include profitability, growth in sales, return on assets, and cash flow (Dyer and Ross, 2008: Sarapaivanich and Kotey, 2006; Jarvis et al. 1996). Therefore, financial performance was measured with a modified version of an instrument developed by Gupta and Govindarajan (1984) and Govindarajan and Fisher (1990). Furthermore, lifestyle, independence and job security are measures extensively utilised to capture non-financial goals in SME environment (Sarapaivanich and

Kotey, 2006; Fielden et al., 2000; Akande, 1994; Glancey, 1998; Kuratko et al., 1997). Consequently, firm performance was tested in term of financial and non-financial goals in SME environment (Sarapaivanich and Kotey, 2006).

The utilisation of subjective measures of firm performance is proposed as the most suitable surrogates of performance when objective data is not available (Dyer and Ross, 2008; Sarapaivanich and Kotey, 2006; Dess and Robinson 1984; Venkatraman and Ramanujam 1987; Govindarajan, 1984). The sources of items measurement adopted are presented in Table 5.2.

Table 5.2: Items for Measuring Firm Performance

Variables	Items	Scale	Source
Performance	1. Profitability 2. Growth in Sales 3. Return on Assets 4. Cash Flow 5. Lifestyle 6. Independence 7. Job Security	First: 7-point Likert scale: 1-not at all important, 7-very important Second: 7-point Likert scale: 1-strongly dissatisfied 7-very satisfied	Dyer and Ross (2008); Sarapaivanich and Kotey (2006); Fielden et al.(2000); Gupta and Govindarajan (1984); Akande (1994); Glancey (1998); Kuratko et al. (1997)

Similar to previous studies (Sarapaivanich and Kotey 2006; Dyer and Ross, 2008; Gupta and Govindarajan, 1984; Govindarajan and Fisher 1990), this study asked respondents to indicate the level of the importance attached to the seven financial and non-financial performance goals on a 7-point Likert type ranging from 1-not at all important to 7-very

important. Then, respondents were asked to indicate their satisfaction with the seven financial and non-financial performance goals over the preceding two financial years on a 7-point Likert type ranging from 1-strongly dissatisfied to 7-very satisfied. Each satisfaction scores were multiplied by the corresponding importance scores to calculate (compute) a weighted average performance index for each firm (Dyer and Ross, 2008; Sarapaivanich and Kotey, 2006).

5.3.2 Mediating Variable-Outsourcing Intensity

Although Iranian professional accountants provide many types of services to Iranian firms, they may not be applicable for SMEs (Naderian, 2010). In order to achieve the objective of this research, an interview was conducted to identify the services provided by professional accountants to Iranian SME sector. For example, in an early stage of this research, two explorative interviews were conducted with ten external accountants and eight SME executives, to identify the accounting functions provided by external accountants to SME sector, and also familiarise with the accounting functions outsourcing. According to the interview, twelve types of accounting functions that Iranian SMEs outsource to external service providers were identified. Those functions were compared with the previous studies (Doran, 2006; Everaert et al., 2007; Ong et al., 2008; Reddy and Ramachandran, 2008; Jayabalan et al., 2009; Devi and Samujh, 2010; Hamzah et al., 2010). Those functions are also consistent with the rules of the use of the services of Iranian Certified Public Accountants identified by Naderian (2010) and IACPA (2003). However, additional accounting functions are advisory services to SMEs that were excluded from this study because these functions are carried out on an ad hoc basis and significantly different in terms of content (Everaert et al., 2010).

This study considers outsourcing intensity to be the mediating variable and defines it as the degree of outsourcing, expressed as the degree of the accounting activities outsourced by SMEs to a professional accountant (Everaert et al., 2007, 2010). Outsourcing intensity will be considered for the entire accounting process, the so called outsourcing intensity for accounting functions (Everaert et al., 2007, 2010). Consequently, by using the measurement developed by Espino-Rodríguez and Padrón-Robaina (2004, 2005), Espino-Rodríguez et al. (2008), and Lamminmaki (2007, 2008), respondents were asked to indicate the level of outsourcing of twelve types accounting functions on a 7-point Likert type scale, with 1= not outsourced (not at all), and 7= totally outsourced (To a greater extent).

However, some authors, such as Gilley et al. (2004a) and Everaert et al. (2007) ask for the percentage of the services that is outsourced, but they faced difficulty in fixing a percentage (Espino-Rodríguez et al. 2008), hence, in this study a numerical scale is choosen (see, Espino-Rodríguez and Padrón-Robaina, 2004, 2005; Espino-Rodríguez et al., 2008; Lamminmaki, 2007, 2008).

Nevertheless, some routine functions such as payroll accounting and financial statements preparation are those functions for which the output is rather standardised, which need less judgment on the part of the accountant (Nicholson et al., 2006). In a similar vein, other accounting function such as management accounting and financial management services need more judgment from the accountant, in order that the decisions are less standardised and need valuable opinions (Nicholson et al., 2006). The accounting functions are interconnected, so the firm's decision to outsource one function relies on the outsourcing decision concerning other functions (Everaert et al., 2010). For example, firms that decide to fully outsource payroll and financial statements may also need to rely on complete

outsourcing for bookkeeping work or other accounting functions, since the firm may no longer have the information that is needed to process the bookkeeping work or other accounting functions internally (Everaert et al., 2010). The details are seen in Table 5.3.

Table 5.3: Items for Measuring Outsourcing Intensity

Variables	Items	Scale	Source
Outsourcing Intensity	1. Bookkeeping work (i.e. entry of invoices and financial transactions) 2. Preparation of financial statements 3. Payroll accounting 4. Budgeting / forecasting 5. Customer profitability analysis 6. Product costing 7. Financial planning (i.e. cash flow management, investment planning, insurance planning, and tax planning) 8. Financial management services (i.e. financial control and financial decisions making including Investment decision, Financing decision and Dividend decision) 9. Design/review internal control systems 10. Tax returns 11. Property accounting 12. Firm secretarial services (i.e. submission annual returns to firms registration office, applications for audit exemption, and etc)	7-point Likert scale: 1-Not outsourced (not at all) 7 - Totally outsourced (To a greater extent)	Espino-Rodríguez and Padrón-Robaina (2004,2005); Espino-Rodríguez et al. (2008); Lamminmaki (2007, 2008)

On the whole, tax returns, property accounting and firm secretarial services were excluded in final analysis for two reasons. Firstly, those items were correlated very low with the particular factors based on pilot test (see, Table 5.12 (a, b). Secondly, tax returns and firm secretarial services are compliance services and does not affect on sourcing decisions (Doran, 2006; Everaert et al., 2007).

5.3.3 Independent Variables

5.3.3.1 Asset specificity

Firm-specific assets are those human and physical assets that do not have alternative use (Dibbern and Heinzl, 2009; Espino-Rodríguez et al., 2008; Williamson, 1985). Therefore, items 1, 2, 3 and 4 are as human assets are specific when accountants require specialised information and knowledge of the specific characteristics of the firm in order to process a particular accounting function (Everaert et al., 2010; Espino-Rodríguez et al., 2008; Poppo and Zenger, 1998). In addition, item 5 (the accounting software) was included to obtain the extent to which physical assets were specific to the firm (Everaert et al., 2010). These five items allowed measuring the extent to which human and physical assets utilised to make the accounting functions were "custom-tailored to the firm" (Everaert et al., 2006, 2010). Therefore, based on the measurement of prior studies (Everaert et al., 2010; Espino-Rodríguez et al., 2008; Poppo and Zenger, 1998), asking respondents "whether the accountant needs to obtain firm-specific information to adequately perform the accounting functions".Table 5.4 shows the details of items of asset specificity.

Table 5.4: Items for Measuring Asset Specificity

Variables	Items	Scale	Sources
Asset Specificity	1. To perform (process) the routine accounting functions (e.g. bookkeeping work and preparation of financial statements) the accountant needs to obtain firm specific information 2. To perform the non-routine accounting functions (i.e. product costing and financial planning) the accountant needs to obtain firm-specific information 3. The way we perform the accounting functions is unique to our firm 4. It would be costly in terms of time and resources to switch to a professional accountant at the end of the financial year 5. The accounting software is custom-tailored to our firm	7-point Likert Scale: 1-Totally disagree 7-Totally agree	Everaert et al.(2010); Espino-Rodríguez et l. (2008); Poppo and Zenger, (1998)

5.3.3.2 Environmental Uncertainty

Environmental uncertainty is referred to as the predictability and stability of the workload related to accounting functions in consequence of the instability or volatility of business activities (Everaert et al. 2010; Ellram et al., 2008; Widener and Selto, 1999). Consistent with the measurement used by Everaert et al. (2010), Lamminmaki (2007) and Widener

and Selto (1999), respondents were asked to indicate to what extent the accounting functions "workload may vary in their firm" (see item 1 and 2). Accounting functions change when the corporate structure changes, so a third item (Item 3) was added to measure whether the firm's business organisation had changed in the previous year (Everaert et al., 2010). The details are shown in Table 5.5.

Table 5.5: Items for Measuring Environmental Uncertainty

Variables	Items	Scale	Source
Environmental uncertainty	1. During the previous year, there was a lot of variation in the workload related to routine accounting functions (e.g. bookkeeping work related unstable number of purchase and sales invoices because of seasonal trends) 2. During the previous year, there was a lot of variation in the workload related to non-routine accounting functions (i.e., financial planning and financial management services, etc) 3. During the previous year, there were relevant changes in the business organization of the firm (e.g., acquisitions, changes in corporate structure)	7-point Likert Scale: 1-Totally disagree 7- Totally agree	Everaert et al. (2010); Lamminmaki (2007);Widener and Selto (1999)

5.3.3.3 Behavioural Uncertainty

In this study, behavioural uncertainty is defined as the difficulty of assessing whether the accountant processed the accounting functions correctly and to the best of his or her ability or capacity (Poppo and Zenger, 1998; Lamminmaki, 2007; Everaert et al., 2006, 2010). Hence, for measuring behavioural uncertainty, present study applies the measurement developed by Everaert et al., (2010) and Lamminmaki (2007), asking the respondents to "determine whether the accountant has correctly (accurately) performed" (following accounting functions) over previous year. The details of measurement of behavioural uncertainty are demonstrated in Table 5.6.

Table 5.6: Items for Measuring Behavioral Uncertainty

Variables	Items	Scale	Source
Behavioral Uncertainty	1. Bookkeeping work 2. Preparation of financial statements 3. Payroll accounting 4. Budgeting / forecasting 5. Customer profitability analysis 6. Product costing 7. Financial planning 8. Financial management services 9. Design/review internal control systems 10. Tax returns 11. Property accounting 12. Firm secretarial services	7-point Likert Scale: 1-Totally disagree 7-Totally agree	Lamminmaki (2007); Everaert et al., (2010)

5.3.3.4 Frequency

The measurement of frequency should be combined "a periodicity measure with a volume measure" (Lamminmaki, 2007). In this study, frequency of accounting functions is measured in two ways (Everaert et al., 2006, 2010; Widener and Selto, 1999). First, frequency is measured as the periodicity of the accounting function (Everaert et al., 2006, 2010). Second, frequency is also measured in terms of the size of the activity (volume measure) (Everaert et al., 2006, 2010; Lamminmaki, 2007; Widener and Selto, 1999). Accordingly, frequency was measured as follows:

a) Periodicity

Table 5.7 shows the details of measure of the periodicity of accounting functions.

Table 5.7: Items for Measuring Frequency

Variables	Items	Scale	Source
Frequency	1. Bookkeeping work 2. Preparation of financial statements 3. Payroll accounting 4. Budgeting / forecasting 5. Customer profitability analysis 6. Product costing 7. Financial planning 8. Financial management services 9. Design/review internal control systems 10. Tax returns 11. Property accounting 12. Firm secretarial services	6-point Likert Scale: 1= daily, 2=weekly, 3=monthly, 4=quarterly, 5=semi-annually, and 6= annually	Everaert et al. (2010); Lamminmaki (2007); Murray and Kotabe (1999)

In line with Murray and Kotabe (1999), Lamminmaki (2007) and Everaert et al. (2010), respondents were asked about the "periodicity with which each of the twelve types of accounting functions had been performed over the previous year". Their responses might be stated as "daily, weekly, monthly, quarterly, semi-annually, and yearly".

b) Size of the activity (volume measure)

The size of the transaction was measured as the "total volume of activities handled by the accountant" over the whole year (Everaert et al. 2006, 2010). For this purpose, an exploratory interview was conducted with professional accountants and SME executives as mentioned in Section 5.3.2. The interviews revealed that the "size (volume) of the accounting function (length of the function) as well as its periodicity (e.g., the number of times an accounting function recurs during a year) both are important components of the frequency of recurrent services". This was consistent with prior studies in outsourcing of accounting functions (Everaert et al., 2006, 2010). Accordingly, size of activity (volume measure) was measured by six categories because this would be easier for respondents to complete (Everaert et al., 2006, 2010). In accordance with Murray and Kotabe (1999), Lamminmaki (2007) and Everaert et al. (2010), "respondents were asked to indicate total amount (volume) of invoices (sales and purchases) that the accountant has processed for their firm during the previous year in six categories" as shown in the Questionanire in Appendix 1 (Refer Section 3).

For computing of the overall frequency measure, the periodicity measure of accounting functions was combined with the size measure (volume of invoices) (Everaert et al., 2006, 2010).

5.3.3.5 Trust in accountant

Definition of trust in professional (external) accountant includes (1) professional accountant is capable, (2) professional accountant will perform in a consistent way, and (3) professional accountant will charge honestly for accounting practices provided (Everaert et al., 2006, 2010). The details of measurement are shown in Table 5.8.

Table 5.8: Items for Measuring Trust in Professional Accountant

Variables	Items	Scale	Source
Trust in accountant	1. The firm owner/manager has confidence that the (external) professional accountant will treat us fairly, this means to correctly charge for the performed duties 2. The firm owner/manager has confidence that the professional accountant will inform us correctly 3. The firm owner/manager has confidence that the professional accountant will accurately perform the duties 4. The relationship between the firm owner-manager and the professional accountant is based on trust	7-point Likert Scale : 1- Totally disagree 7-Totally agree	Zaheer et al. (1998); Everaert et al. (2010)

Furthermore, many scholars have emphasised the importance of trust in SME – professional accountant relationships (Bennet and Robson, 1999; Blackburn et al., 2010; Gooderham et al. 2004; Everaert et al., 2006, 2010). For example, SMEs will tend to purchase services to professional accountants only after they have nurtured a relationship

with their professional accountants to minimise uncertainty and recognise that a competitive advantage can lie in the professional relationship (Blackburn et al., 2010). Consistent with Zaheer et al. (1998) and Everaert et al. (2010), respondents were asked to indicate the extent to which they trust the professional accountant with each of the following statements.

5.3.3.6 Technical Competence

Technical competence derived by Carey et al. (2006), including six items (e.g., expertise in internal control, experience and qualifications, specialized industry wide knowledge, depth of understanding of your organization, expertise in risk management, expertise in computerized information systems (CIS) accounting and auditing).

Table 5.9: Items for Measuring Technical Competence

Variables	Items	Scale	Source
Technical Competence	1. Specialized industry wide knowledge 2. Expertise in internal control 3. Experience and qualifications 4. Depth of understanding of your firm 5. Expertise in computerized information systems (CIS) accounting and auditing 6. Expertise in risk management	7-point Likert Scale: 1-very limited competence 7 = very highly competent)	Carey et al. (2006); Gooderhan et al. (2004)

Therefore, similar to Gooderhan et al. (2004), respondents were asked to indicate degree to which the firm perceives its professional accountant as a technical competent source of accounting functions in each item (see Table 5.9), using 7-point Likert scale where (1-very limited competence and 7 = very highly competent).

5.3.3.7 Degree of Competition

The degree of competition is measured with five items that evaluate the degree of competition regarding product characteristics, access to distribution channels, promotional strategies among rivals, service strategies to customers derived by Rivard et al. (2006) and product variety was taken by Lamminmaki (2008). This study used the measure developed by Rivard et al. (2006) and Lamminmaki (2007, 2008), asking respondents to record the intensity of their firm competition on a 7-point Likert scale (1- very weak competition and 7- very fierce competition). Details are shown in Table 5.10.

Table 5.10: Items for Measuring Degree of Competition

Variables	Items	Scale	Source
Degree of Completion	1. Product characteristics 2. Promotional strategies among rivals 3. Access to distribution channels 4. Service strategies to customers 5. Product variety	7-point Likert Scale: 1-very weak competition 7- very fierce competition	Rivard et al. (2006) ; Lamminmaki (2007, 2008).

5.4 QUESTIONNAIRE DESIGN

A questionnaire was applied to collect the relevant data for this study. From the literature review, developed measures from related fields were incorporated in the questionnaire in order to measure asset specificity, environmental uncertainty, behavioral uncertainty, frequency and trust in accountant, technical competence and degree of competition, outsourcing intensity and firm performance.

5.4.1 Questionnaire

The data was collected for this study through the structured questionnaire. Questionnaire survey is suitable for the present study because it is a more cost effective technique that can boost response rate (Sekaran, 2000). All questions for main variables in this study were developed using a seven-point Likert scale except frequency (i.e., using a six point-scale for frequency). Because frequency variable is measured based on the periodicity of the accounting functions and the size of the activity (Everaert et al., 2010; Lamminmaki, 2007; Widener and Selto, 1999). This study used a seven-point scale in order to preclude the clustering of responses at the neutral point (Ling, 1998). However, guideline is outlined on the subject of developing scales is that all the items of questionnaire should be linked with the relevant theories (Hinkin, 1995; Schriesheim and Hill, 1981). For example, reverse scoring of items may diminish the validity of questionnaire responses and systematic error to a scale is created (Schriesheim and Hill, 1981). Hinkin (1995) suggested double barrel questions were not utilised, nor were reverse scored items. Overall, it is not a good idea to reverse code an item by introducing a negative term (Hinkin, 1995; Schriesheim and Hill, 1981). This leads to a confusing sentence, and

respondents who are not careful may fail to miss the negative term and will wrongly respond to the item (Hinkin, 1995; Schriesheim and Hill, 1981). Accordingly, all items generation of questionnaire of this study follow TCE and RBV theories and relevant literature.

The questionnaire included seven sections and each section separated by a specific headline. After each heading for ease of the respondents, the instructions were precisely and clearly stated. The demographic profile was stated in the final section of the questionnaire. Zikmund (2003) suggested that sensitive questions should be stated at the end of the questionnaire. Thus, section 1 consisted of nine questions on accounting function outsourcing. The purpose of this section is to determine the types of accounting practices that Iranian manufacturing SMEs outsource to professional accountants. In addition, this section also has one additional question related to outsourcing of other functions. Section 2 included four questions to evaluate on trust in external accountant and six questions technical competence of professional accountant. Section 3 encompassed five questions for assess asset specificity and ten questions for frequency. Section 4 includes three questions for environmental uncertainty and nine questions for behavioral uncertainty. Section 5 includes five questions about degree of competition. Section 6 has 14 questions that evaluate firm performance, and section 7 pertained to demographic profile (Appendix 1 for the questionnaire applied by this study).

Considering the main language in Iran is Persian (Farsi), it is required to have the revised items translated into national language of Iran. A simple translation process may possibly misconstrue the meaning of the original language due to several factors, such as issues related to culture and translator's skill (Zikmund, 2003). Hence, a back-translation method is adopted to ensure the equivalence of meaning between the original and (national)

translated measures of the questionnaire survey (Brislin, 1970). Hence, the back-translation technique is necessary because the translated measurement scale should be translated back into the original language to maintain the original meaning in the translated version (Behling and Law, 2000). Then, the original and the back-translated versions are compared to identify inconsistencies or contradictions (Cha, Kim and Erlen, 2007). Zikmund, (2003, p. 361) suggested that the back-translation process should be conducted by a person "whose native tongue is the language that will be used in the questionnaire". In this case, revised questionnaire was translated to Persian language, and then sent to five academic staffs who were expert in English language to be back-translated into the English version. Then, another accounting lecturer who was expert in English language compared both original and back-translated scales. Then, the results of comparison are agreed with the supervisor of this study and where necessary, some of the items in the translated scale have been revised accordingly.

5.4.2 Pilot Test

Pilot Test / pre-testing provides an opportunity to revise the instruments and data collection methods to make certain that sutiable questions are being asked, the accurate data will be gathered, and the data collection procedures will work (Saunders, Lewis and Thornhill, 2003). For example, the purposes of a pilot test noted by Abdul-Halim (2009 p.110) as: "1) checking for face and content validity of the questionnaire, 2) assuring that the questions are understood and correctly interpreted, 3) checking for the comprehensiveness, syntax errors and the general layout format".

 In the Pilot Test, first, the questionnaire was distributed to students and colleagues in the Faculty of Business and Accountancy, University Malaya to comment on the layout,

wording and arrangement of content. Then, the questionnaire survey was mailed to English professional editor to verify the phrasing, use of the language and the flow of the sentences. The questionnaire was next modified and refined based on the feedback from the editor and colleagues. Furthermore, all items employed in the present study were established through the adoption of validated instrument by other researchers, the content validity is established. In addition, as aforementioned, revised questionnaire was translated to Persian language, and then sent to five academic staffs to check it. Indeed, with satisfactory content validity established; the final draft of the questionnaire was then pretested using a sample of 50 SME owner-managers to ensure that there is no ambiguity with the wording of the measurement and the respondents easily understand the questions posed. This was very important to check that the questions asked were understood and relevant to owner/mangers of SMEs in manufacturing sector. Before conducting actual field study, it would be wise to rectify any inadequacies and inaccuracies. The length of time for completing the questionnaire was also estimated. Additional information was received from this group of respondents (SME owner-managers) on their general opinions and reactions to the questionnaire and how the respondents felt about the questionnaire. These respondents were also asked to evaluate ease of comprehension, the level of language in terms of sensitivity, the clearness of the wording, format, length, and instructions for overall survey in order to minimise ambiguities and communication errors. Respondents who had participated in the pretest (Pilot Test) were not included in the main study.

Based on the feedback from the SME respondents and five experts in the area of accounting, several modifications and corrections were made to the initial instrument. These corrections include: (1) The structure and design of the overall questionnaire (e.g.,

font size and design and layout, spacing), (2) The contents of the questionnaire (i.e. meaning of several items), (3) The ease of the comprehension of the language was utilised, and (4) The duration of time needed to answer all the questions in the questionnaire survey. Therefore, the feedback and comments gained from the SME owner/managers were collected and usefully criticised before the modifications were made. Before it became the final version to be utilised in the actual field work, the modifications were made to the questionnaire based on pilot test feedback.

Table 5.11: Results of Pilot (Pretesting) Study (n=50)

Variables	No. of items	Cronbach's alpha
Firm performance	7	0.97
Outsourcing intensity	12	0.92
Asset specificity	5	0.95
Environmental uncertainty	3	0.90
Behavioral uncertainty	12	0.92
Frequency	13	0.92
Trust in accountant	4	0.87
Technical competence	6	0.92
Degree of competition	5	0.82

In general, the SME respondents took between 15-20 minutes to complete the questionnaire. A preliminary reliability assessment (Cronbach coefficient) was conducted for pilot test (Malhotra, 2004). Therefore, alpha coefficient between 0.50 and 0.60 is considered sufficient for pre-test/pilot test results (Nunnally, 1978). Overall, the alpha

scores for all the main variables were exceeded the benchmark of 0.70. Some questions were dropped (See, Table5. 11) and others changed because of the pilot study.

Another method of reliability establishes by examining the item-to-total correlations of each variable. Lu, Lai and Cheng (2007) indicated that item-to-total correlations provide information on the extent of correlations among indicators of the same scale. They also suggested that an item with a value that is lower than 0.5 is taken into account very weak and does not have any significant role in conceptualizing the given factor. Item-to-total Correlations is shown in Table 5.12 (a , b).

Table 5.12(a): Item-to-total Correlations (Pilot test)

Performance		Outsourcing		Asset specificity		Environmental uncertainty		Behavioral uncertainty	
P1	.929	Ou1	.728	As1	.916	Env1	.768	Be1	.812
P2	.922	Ou2	.830	As2	.916	Env2	.801	Be2	.871
P3	.889	Ou3	.774	As3	.833	Env3	.839	Be3	.858
P4	.898	Ou4	.825	As4	.880			Be4	.897
P5	.877	Ou5	.795	As5	.872			Be5	.874
P6	.858	Ou6	.861					Be6	.779
P7	.878	Ou7	.853					Be7	.845
		Ou8	.866					Be8	.769
		Ou9	.785					Be9	.821
		Ou10	**.252**					Be10	**.395**
		Ou11	**.259**					Be11	**.210**
		Ou12	**.241**					Be12	**.299**

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Table 5.12 (b): Item-to-total Correlations (Pilot test)

Frequency		Trust		Technical Competence		Competition	
Fe1	.769	Tru1	.711	Tec1	.876	Co1	.517
Fe2	.865	Fru2	.729	Tec2	.895	Co2	.579
Fe3	.887	Tru3	.805	Tec3	.853	Co3	.713
Fe4	.885	Tru4	.665	Tec4	.721	Co4	.535
Fe5	.891			Tec5	.662	Co5	.781
Fe6	.837			Tec6	.682		
Fe7	.785						
Fe8	.768						
Fe9	.874						
Fe10	**.222**						
Fe11	**.350**						
Fe12	**.153**						
Fe13	.889						

As shown in Table 5.12 (a, b), some items are found to be correlating very low with the respective factors (e.g., fe10=.222, fe11=.350, fe12=.153, ou10=.252, out11=.259, out12=.241, be10=.395, be11= .210 and be12=.299). Therefore, three types of accounting functions (tax returns, property accounting and firm secretarial services) dropped and did not use in final study because those items were found to be correlating very low with the respective factors in pilot study test. Furthermore, these three items were excluded, since some of those items (tax returns and firm secretarial services) are legally-determined and SMEs cannot influence these items (Doran, 2006; Everaert et al., 2007).

5.5 SAMPLING PROCEDURES

The sample included manufacturing SMEs with fewer than 250 employees and firms that have been in operation for at least two years. These firms were selected from the Iran Small Industries & Industrial Parks Organization (ISIPO) database[7] 2010, which demonstrates the population of manufacturing firms as being quite large. The mailing list provided by the ISIPO has comprehensive information on the manufacturing SMEs across Iran such as years of establishment, owner-managers' names, types of product manufactured, addresses, contact numbers, number of employees, and so forth. According to prior studies as discussed in chapter 2, SMEs are defined as firms with employing fewer than 250 employees, while excluding micro firms because they hardly have any choice between outsourcing and in-house accounting activities (Everaert et al., 2007). Furthermore, small and medium sized enterprises (10- 250 employees) account for a quite significant share of Iran's exports (UNIDO, 2003). Consequently, this study utilised the Iran Small Industries & Industrial Parks Organization (ISIPO) database, excluding services and public firms, and included only manufacturing sector SMEs with fewer than 250 workers. This resulted in a population of 17,100 enterprises.

5.5.1 Unit of Analysis

Unit of analysis explains the level of analysis where information regarding the research is collected (Zikmund, 2003). It could be departments, work groups, the entire organisation, and individuals (Zikmund, 2003). Although determining unit of analysis is very simple, it is very critical to ascertain the unit of analysis on the threshold of the study. The reason is

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[7] http://isipo.ir/

that the determination of variables for the theoretical model, sample size, suitable data collection approaches are reliant on the unit of analysis (Zikmund, 2003). This study chose the manufacturing SMEs in Iran as the unit of analysis. This is because the manufacturing SMEs are the dominant group among the Iranian firms. In fact, the population of this study constitutes Iranian-manufacturing SMEs because manufacturing SMEs are highly significant in view of producing both manufacturing value added and exports in the context of Iran (UNIDO, 2003). The trend towards accounting function outsourcing is recognised in the manufacturing industries and is now continuous growing (Everaert et al., 2006, 2007, 2010). Therefore, it is an interesting phenomenon to examine the trend of accounting function outsourcing among manufacturing SMEs.

5.5.2 Sample Size

It has been recognised that the sample size is imperative as it impacts the level of difference in covariance matrices (Loehlin, 2004). For example, "using an adequate sample along with high quality data collection efforts will result in more reliable, valid, and generalizable results" (Bartlett, Kotrlik and Higgins, 2001, p. 50). For using structural equation modeling (SEM) method is generally needed to have a sample size from ranges 150 to 200 respondents. Nevertheless, a large sample size from the ranges 400 – 500 may be more appropriate as the larger the sample is the easier the model to achieve precise solution (Anderson and Gerbing, 1988). Consequently, many scholars agreed with a sample size larger than 150 (Schumacker and Lomax, 2004). Bentler and Chou (1987) suggested five respondents for each parameter a rule for sample size while use multivariate assumptions. According to the guideline suggested by Bentler and Chou (1987), the

minimum sample size should be 410 (82 x 5). With 658 usable responses, the sample of the present study is evidently above the threshold size.

5.6 DATA COLLECTION PROCESS

Before posting the questionnaires, the manufacturing SMEs were contacted to enquire on their willingness to contribute. To make easy the response to the survey, stamped return envelopes were comprised with the questionnaires mailed to the 1750 manufacturing SMEs. Then, a sample of 1750 manufacturing SMEs was selected randomly, utilising a systematic probability technique. Therefore, this questionnaire supplement with a cover letter was mailed to the owner/managers of SMEs of the sampled 1750 firms. The cover letter explained the nature of the study, a request for the full cooperation from the firms, objectives of the study, the time for completing the questionnaire, and introducing the researcher and the supervisor. It was also informed to the respondents about the confidentiality of the study and all access to reports of the study. To obtain a copy of the summary of this study, it was indicated that respondents to provide their contact numbers.

The questionnaires were posted for the manufacturing SMEs in batches starting 5 March 2010, with each batch being tracked by its due date. The respondents were given 14 days to compete and return the questionnaire. A follow up call and reminder letter developed in cases in which there was no response after the given period of date. Another follow up reminder letter and questionnaires were sent to non-respondents starting at 5 April to boost the response rate. Similar to the first phase of data collection, the respondents were given 14 days to complete and return.

5.7 RESPONSE RATE

The data collection took approximately three months to complete, which started at 5 March 2010 and ended in May 2010. Table 5.12 shows the details of response rate.

Table 5.13: Response Rate

Descriptions	Number	Percent (%)
Total Targeted sample	1750	100
First phase :		
Total questionnaires distributed at 5 March 2010	1750	100
Total questionnaires received at 30 March 2010	350	20
Unusable	40	
Total usable responses	310	17.7
Second phase:		
Total questionnaires distributed at 5 April 2010	1400	100
Total questionnaires received at 30 May 2010	420	30
Unusable	72	
Total usable responses	348	24.9
Total	658	37.6

In the first phase of the data collection, out of the 1750 questionnaires distributed on 5 March 2010, only twenty percent (350 respondents) responded by the end of March 2010. From 350 completed questionnaires, only 310 questionnaires were usable. Due to the tremendously low response rate, the second stage of data collection was conducted. At 5 April 2010, 1400 questionnaires with a reminder letter were posted once more to those SMEs not responded to the survey. Another 420 responses were received at 30 May 2010, giving a total of 770 questionnaires. However, in this stage, seventy-two (72) of

questionnaires were not suitable because of the repeated and incomplete responses by the respondents.

Overall, after two phases of data collection, only 658 respondents (a response rate of 37.6%) were usable. This response rate was deemed to be satisfactory compared with other surveys in on SME sector, which tend to obtain a standard response of between 10 percent (Everaert et al., 2007). By the end of June 2010, the data collection process was completed with 658 questionnaires coded and utilised for data analysis.

5.8 RESPONSE BIAS ANALYSIS

Since only 658 out of 1750 questionnaires were returned, given only 37.6% response rate, and many questionnaires were not returned within stimulated date, so an analysis of response and non- response bias was deemed to be necessary. Possible response bias can be tested by examining whether differences exist between early and late responses, where late responses are utilised to proxy non-respondents (Armstrong and Overton, 1997).There are two stages for collecting data and ensuring that the sample is representative, an independent sample t-test was conducted. The results of the t-test are shown in Table 5.14. Group one (1) was the group of 310 respondents that completed the questionnaires in the first stage of data collection (early response). Group two (2) were those that respondents who completed the questionnaires in the second stage of data collection. This group was considered to be proxies of those who did not respond in the first stage of data collection. A total of 348 questionnaires were collected in the second stage of the data collection and these respondents were considered as the late responses. In conducting the t-test, all the main variables were considered as the test variables.

Table 5.14: The Result of Differences (T-Test) Of Early and Late Response on the Research Variables

Variables	Mean		t-value	Sig.
	Early response N=310	Late response N=348		
Asset specificity	3.24	3.41	-1.353	.176
Behavioral uncertainty	5.01	4.78	1.558	.120
Environmental uncertainty	3.60	3.78	-1.248	.212
Frequency	2.92	2.73	1.396	.163
Trust in accountant	4.59	4.79	-1.277	.202
Technical competence	5.07	4.93	1.095	.274
Degree of competition	4.68	4.77	-.788	.431
Outsourcing intensity	3.64	3.72	-.752	.452
Firm performance	3.93	4.13	-1.508	.132
Note: Level of significance using t-tests; the mean difference is significant at p < .05				

The result showed that the mean of all the variables for the two groups of respondents were quite closed, so there was not any significant difference between early and late respondents in terms of the main variables.

5. 9 METHOD OF ANALYSIS

A total of 82 items were keyed in into Statistical Package for the Social Sciences (SPSS). The data entry process was double checked to minimise error. This was followed by the

data cleaning process whereby frequencies for all variables were examined to detect any missing data in the data set. The detailed data analysis discussion is in the next chapter

5.10 CHAPTER SUMMARY

The first part of this chapter discusses the research objectives, research methodology and variable measurement. The second part of this chapter discusses the research method applied in this study. In order to meet the overall research objectives, this study utilised a quantitative method based on a questionnaire survey. A sample of 1750 manufacturing SMEs in Iran, giving a total of 658 questionnaire survey has been collected in the study to see the factors affecting outsourcing and its impact on firm performance. Furthermore, a pilot test has been conducted to make sure the instruments are normally valid and reliable to be employed in the final study. The next chapter presents and discusses the research results using several statistical techniques to examine the exploratory analysis.