CHAPTER 6

RESEARCH RESULTS: EXPLORATORY ANALYSIS

6.1 INTRODUCTION

This chapter discusses the preliminary data analysis using Statistical Package for the Social Sciences (SPSS 16.0). The rest of the chapter is organised as follows. Section 6.2 discusses the instrument data validation process. Section 6.3 reports the respondent characteristics. Section 6.4 presents the exploratory measurement assessments which included exploratory factor analyses, scale reliabilities and corrected item-total correlations. Section 6.5 examines the test of assumptions for multivariate analysis including, normality, linearity, multicollinearity and homoscedasticity. Section 6.6 examines the descriptive statistics which comprised independent sample t-tests and one-way ANOVA. Section 6.7 describes the justification for using SEM in this study. The chapter ends with Section 6.8 – summary and conclusion.

6.2 INSTRUMENT DATA VALIDATION PROCESS

Before testing the hypotheses, the utilised instruments should be subject to a scale purification process which includes examinations of Cronbach's Coefficient Alpha and item-to-total correlations (Churchill, 1979). Furthermore, the purification of scales should be conducted based on an evaluation of exploratory factor analysis (EFA) results, the assessment of the Cronbach's Coefficient Alpha and item-to-total correlations (Lu et al., 2007). Table 6.1 shows instrument development and validation process.

Table 6.1: Instrument Development and Validation Process

Chapter	Analysis	Description
Chapter 5	Instrument Development	Items generations – scale from previous studies Judge the items for content validity and Pilot test
Chapter 6	Exploratory Measurement Assessment	Descriptive statistics: Corrected item-total correlation >0.5 Exploratory factor analyses (EFA) Reliability =Cronbach's alpha >0.6
Chapter 7	Measurement Model Validity Assessment	Convergent validity AVE 0.5 or greater t-value for each loading, significance Squared correlation Fit Indices and Unidimensionality assessment: Normed $\chi^2 \leq 3$ GFI, CFI, TLI >0.9 RMSEA < 0.08 Discriminant validity AVE vs. squared correlation between factors Construct reliability Composite reliability > 0.6 AVE >0.5
Chapter 7	Specify Structural Model	Convert measurement model to structural model
Chapter 7	Structural Model Validity assessment	Assess χ^2 goodness-of-fit (GOF) and significance, direction, and size of structural parameter estimates

Sources: Adapted from Lu et al. (2007) and Hair, Black, Babin, Anderson and Tatham, (2006)

Item-to-total correlations refer to the correlations of indicators with their variables (factors) while Cronbach's Coefficient Alpha is a measure that determines the degree to which an internal consistency exists among the indicators within the same variable or factor (Lu et al., 2007; Malhotra, 2004). Exploratory factor analysis (EFA) is a type of factor analysis that is utilised to identify the number of latent variables that underlies an entire set of items (Coakes and Steed, 2003). This analytic method needs to be considered exploratory because the links between the indicators and variables (factors) are uncertain. Since in this study, most of the items have been developed from prior studies, it is very important to make sure that they are properly connected to their basic factors (variables). To achieve this purpose, the utilisation of exploratory factor analysis is deemed necessary in this study. Finally, a measurement model (i.e., confirmatory factor analysis) is conducted prior to hypotheses testing in chapter 7.

6.3 RESPONDENT CHARACTERISTICS

In this section, a general profile of the respondents is discussed. Table 6.2 presents the demographic characteristics of respondents. The respondents of the study consisted of 79% male and 21% female. From the 658 completed questionnaires, a high proportion (38%) of the respondents was in the age range of 30 to 39. Most of the respondents were quite well educated (over 70 percent), and the average years of managerial experience were high with nearly three-fourth of respondents having over five years of experience. Table 6.2 shows the profile of the respondents.

Table 6.2: Profile of the Respondents

Demographic Variables	Description	Frequency	Percentage
Gender	Male	521	79.2
	Female	137	20.8
Respondent age	20-29 years	161	24.5
	30-39	250	38
	40-49	172	26.1
	50-59	65	9.9
	60-69	10	1.5
Educational background	High school or lower	5	0.8
	Diploma	49	7.4
	Technical college "College Diploma"	136	20.7
	Bachelor	410	62.3
	Master	51	7.8
	PhD	7	1.1
Experience	less than 5 years	149	22.6
	5 -10 years	185	28.1
	11-15 years	161	24.5
	16-20 years	73	11.1
	More than 20	90	13.7

Table 6.2 (continued)

Demographic Variables	Description	Frequency	Percentage
Firm age	2 years	28	4.3
	3-5 years	128	19.5
	6-10 years	174	26.4
	11-15 years	105	16
	16-20 years	60	9.1
	More than 20	163	24.8
Firm size	Less than 20 employees	148	22.5
	20-30 employees	174	26.4
	31-50 employees	131	19.9
	51-100 employees	77	11.7
	More than 100 employees	128	19.5
Type of manufacturing	Food and Beverages	105	16
	Textiles except clothing	45	6.8
	Garment	85	12.9
	Leather, Bag, Suitcase & Shoe	75	11.4
	Wood & Wood Products, Furniture	50	7.6
	Paper & Paper Products	40	6.1
	Chemical products	75	11.4
	Rubber & Plastic	35	5.3
	Machinery & Equipment	60	9.1
	Radio, TV & Communication Tools	39	5.9
	Optical and Medical Instrument & Watch	25	3.8
	Motor Vehicles	24	3.6

Most of the respondents (16%) are from the Food and Beverages manufacturing sector. Almost 75 percent of the SMEs in the survey employed more than 20 employees and approximately 50 percent of these firms have been in business for the last 11 – 20 years.

6.4 EXPLORATORY MEASUREMENT ASSESSMENTS

Before testing the hypothesised model, there is a need to verify on the validity and reliability of the measures. For example, reliability and validity of the measures are the tools utilised to appraise the characteristics of a sound measurement and these tools comprised a measurement of accuracy and applicability (Lee, 2001). Indeed, the main concern for conducting reliability and validity of the measures is to reduce measurement errors which make the most of the model testing in the hypotheses (Churchill and Iacobucci, 2002). The measurements in this study (i.e. firm performance, outsourcing intensity, asset specificity, environmental uncertainty, behavioral uncertainty, frequency, trust, technical competence and degree of competition) were measured with multi-item scales, hence there is necessary to check the degree to which a specific measurement represents a certain variable.

The exploratory measurement assessment includes exploratory factor analyses, item analysis, corrected item-total correlations and reliability. Content validity of the survey instrument (questionnaire survey) was produced via the adoption of validated instruments by other scholars in the literature and the pretest using outsourcing of accounting practices in the accounting field (Lee, 2001). Since each factor (variable) was measured by the multi item constructs, item analysis and factor analysis were performed to validate the scales (Lee, 2001). Internal consistency (Cronbach's alpha) was calculated in order to assess the

reliability of all variables (Lee, 2001). Convergent validity is the degree to which multiple attempts to measure the same concept in agreement by item-to-total correlation (e.g., the correlation of each item to the sum of the remaining items) (Lee, 2001). Discriminant validity is the degree to which measures of different concepts are distinct (Lee, 2001). To test discriminant validity, a principal component factor analysis with varimax rotation is conducted for each domain of the proposed model (Lee, 2001). Each of the measurement assessment result was presented in the following sub-sections.

6.4.1 Exploratory Factor Analysis

Exploratory factor analysis (EFA) is a procedure for data examination, and it determines the structure of factors to be investigated (Abdul-Halim and Che-Ha, 2009). It is utilised to determine convergent validity and dimensionality of the relationship between items and variables (Abdul-Halim and Che-Ha, 2009). Therefore, exploratory factor analysis is performed on performance, outsourcing intensity, asset specificity, environmental and behavioral uncertainty, frequency, trust in accountant, and degree of competition in order to determine whether all the scales applied in this study have construct validity (Abdul-Halim and Che-Ha, 2009).

To justify the application of Exploratory Factor Analysis in this study, according to Hair et al. (2006) the measure of sampling adequacy, a statistical test to quantify the extent of inter-correlations among the variables was utilised. Hence, the Bartlett's Test of Sphericity (Bartlett's Test) and Kaiser-Mayer-Olkin (KMO) indicate the measure of sampling adequacy (Hair et al., 2006). The Bartlett's Test of Sphericity (Bartlett's Test) is significant at $p<0.05$ for the exploratory factor analysis to be considered appropriate and KMO is

lower than 0.5 is not suitable, and exploratory factor analysis should not be performed (Pallant, 2007). Consistent with Pallant (2007), KMO with a value between 0.5 and 0.7 is mediocre, 0.7 and 0.8 is good, 0.8 and 0.9 is great and above 0.9 is excellent.

Factor analysis under the extraction method of principal component analysis with the rotation method of varimax with Kaiser Normalization is employed to examine the scales of performance, outsourcing intensity, asset specificity, environmental uncertainty, behavioral uncertainty, frequency, trust in accountant and degree of competition. Varimax rotation is favored since it minimises the correlation across factors and maximises within the factors (Nunnally, 1978). Factor loading specifies the strength of the relationship between the item and the latent variable and thus, is utilised to determine the convergent and discriminant validity of the scales (Hair et al., 2006). The dimensions of the scale were examined by factor analysing the items using the principal components analysis with Varimax rotation. Minimum eigenvalues of 1.0 helped determine the number of factors or dimensions for each scale (Hair et al., 2006). Factor loadings greater than 0.50 are generally needed for practical significance (Fen and Sabaruddin, 2008; Hair et al., 2006), the items for a factor are retained only when the absolute size of their factor loading is above 0.50 (Fen and Sabaruddin, 2008). Table 6.3 shows the results factor analysis of the variables.

Table 6.3: Factor Loading For Multiple Items

Items	Factor loading
Firm performance	
1. Profitability (P1)	.953
2. Growth in Sales(p2)	.948
3. Return on Assets(p3)	.945
4. Cash Flow (p4)	.925
5. Lifestyle (p5)	.906
6. Independence(p6)	.909
7. Job Security (p7)	.908
Outsourcing intensity	
8. Bookkeeping work (ou1)	.948
9. Preparation of financial statements (ou2)	.920
10. Payroll accounting(ou3)	.921
11. Budgeting / forecasting (ou4)	.903
12. Customer profitability analysis (ou5)	.914
13. Product costing(ou6)	.879
14. Financial planning (ou7)	.901
15. Financial management services (ou8)	.922
16. Design/review internal control systems (ou9)	.938
Asset specificity	
17. To perform(process) the routine accounting functions (e.g. bookkeeping work and preparation of financial statements) the accountant needs to obtain firm specific information(as1)	.964
18. To perform the non-routine accounting functions (i.e. product costing and financial planning) the accountant needs to obtain firm-specific information(as2)	.967
19. The way we perform the accounting functions is unique to our firm(as3)	.964
20. It would be costly in terms of time and resources to switch to an external accountant (accounting firm or professional accountant) at the end of the financial year (as4)	.950
21. The accounting software is custom-tailored to our firm(as5)	.964

Table 6.3 (continued)

Items	Factor loading
Environmental uncertainty	
22. During the previous year, there was a lot of variation in the workload related to routine accounting functions (e.g. bookkeeping works related unstable number of purchase and sales invoices because of seasonal trends)(env1)	.888
23. During the previous year, there was a lot of variation in the workload related to non-routine accounting functions (i.e. financial planning as a result of changes in tax law)(env2)	.882
24. During the previous year, there were relevant changes in the business organization of the firm (e.g., acquisitions, changes in corporate structure)(en3)	.869
Behavioral uncertainty	
25. Bookkeeping work (be1)	.876
26. Preparation of financial statements (be2)	.911
27. Payroll accounting(be3)	.852
28. Budgeting / forecasting (b4)	.920
29. Customer profitability analysis (be5)	.906
30. Product costing (be6)	.883
31. Financial planning (be7)	.904
32. Financial management services (be8)	.904
33. Design/review internal control systems (be9)	.881
Frequency	
34. Bookkeeping work (fe1)	.933
35. Preparation of financial statements (fe2)	.944
36. Payroll accounting (fe3)	.935
37. Budgeting / forecasting (fe4)	.934
38. Customer profitability analysis (fe5)	.948
39. Product costing (fe6)	.936
40. Financial planning (fe7)	.927
41. Financial management services (fe8)	.913
42. Design/review internal control systems (fe9)	.925
43. Total amount of invoices (sales and purchases) that the accountant has processed during the previous year(fe10)	.932

Table 6.3 (continued)

Items	Factor loading
Trust in Accountant	
44. The firm owner/manager has confidence that the professional accountant will treat fairly, this means to correctly charge for the performed duties(tru1)	.912
45. The firm owner/manager has confidence that the professional accountant will inform correctly(tru2)	.908
46. The firm owner/manager has confidence that the professional accountant will accurately perform the duties(tru3)	.916
47. The relationship between the firm owner-manager and the professional accountant is based on trust (tru4)	.907
Technical competence	
48. Specialized industry wide knowledge (tec1)	.907
49. Expertise in internal control (tec2)	.924
50. Experience and qualifications (tec3)	.913
51. Depth of understanding of your firm (tec4)	.894
52. Expertise in computerized information systems (CIS) accounting and auditing (tec5)	.855
53. Expertise in risk management (tec6)	.792
Degree of competition	
54. Product characteristics (co1)	.788
55. Promotional strategies among rivals (co2)	.791
56. Access to distribution channels (co3)	.854
57. Service strategies to customers (co4)	.803
58. Product variety (co5)	.759

A principal component factor analysis was utilised to determine each variable as seen in Table 6.3. The Bartlett's test of sphericity was significant p = 0.000) for all variables, and the KMO measure of sampling adequacy was adequate (0.921) for firm performance. Table 6.3 shows seven items of firm performance load significantly into one factor higher

than the value of 0.5, explaining 86 percent of the items' variance with eigenvalues of 6.21. Minimum eigenvalues of 1.0 helped to ascertain the number of factors, and a solution of about 60% (variance) as satisfactory in social sciences research (Hair et al., 2006). Factor analysis of the nine differenced outsourcing items shows that all items loaded significantly on a single, one-dimensional factor that explains 84 percent of the items variance with eigenvalues 7.55 (KMO 0.972). Factor analysis for asset specificity also found with KMO value of 0.921 that all five items load into a single, one-dimensional factor higher than the value of 0.5, explaining 92% of the total variance and eigenvalues 4.62. The KMO value of 0.732 indicated that factor analysis was appropriate to use for analysing the environmental uncertainty factors. Accordingly, this study found that the three differenced environmental uncertainty items load significantly on a single factor that explains 77 percent of the items' variance with an eigenvalue of 2.323.

KMO value of 0.90 indicated that factor analysis was appropriate to utilise for analysing the behavioral uncertainty items. This study demonstrated that differenced behavioral uncertainty items load significantly on a single factor that explains 80 percent of the items' variance with an eigenvalue of 7.18. The KMO measure of sampling adequacy was adequate (0.962) for ten items of frequency variable. The principal components analysis with Varimax rotation extracted only one factor with eigenvalues of 8.70 that explains 87 percent of items variance and is one-dimensional. Principal components factor analysis was performed for trust in accountant (KMO value was 0.865). All the four items loaded into a single variable with one factor were having loading higher than the value of 0.5, explaining 83% of the total variance with eigenvalues of 3.321.

A factor analysis was also conducted to determine the dimensionality of technical competence. Therefore, the KMO measure of sampling adequacy was adequate (0.915) for

technical competence variable, and all six items of this variable loaded on one factor higher than the value of 0.5 with eigenvalues of 4.66, accounting for 77% of the total variance. Finally, exploratory factor analysis shows that five items load into a single variable as degree of competition that explains 64 percent of the items' variance with eigenvalues of 3.19, explaining 64% of the total variance (KMO= 0.849).

6.4.2 Reliability

Internal reliability of a measurement is utilised in multi-item scales, and it turns to its consistency (Hair et al., 2006). Internal reliability refers to whether those items are internally consistent or whether the items that constitute the scale are measuring a single concept (Hair et al., 2006; Lee, 2001). Estimates of reliability based on the average correlation among items within test, concern internal consistency (Lee, 2001). The internal consistency will be high if the correlation offers a high result (Lee, 2001). Cronbach's Coefficient Alpha is the most popular indicator of internal consistency was utilised in this study to evaluate the reliabilities of measurement scales adopted (Hair et al, 2006; Lee, 2001). Nunnally (1978) suggested that an acceptable level of coefficient alpha to retain an item in a scale is at least 0.70 score. The reliability analysis and descriptive statistics for for firm performance, outsourcing intensity, asset specificity, environmental uncertainty, behavioral uncertainty, frequency, trust in accountant, technical competence and degree of competition are presented in Table 6.4.

Table 6.4: Mean, Standard Deviation, Corrected Item-To-Total Correlation (CITC) and Cronbach's Alpha

Items	Mean	SD	CITC	Cronbach's alpha
Firm performance				.973
P1	4.20	1.80	.934	
P2	4.19	1.74	.929	
P3	4.12	1.79	.924	
P4	4.01	1.78	.897	
P5	3.84	1.74	.872	
P6	3.87	1.75	.875	
P7	3.93	1.75	.874	
Outsourcing intensity				.976
Ou1	4.49	1.791	.932	
Ou2	4.40	1.778	.897	
Ou3	4.41	1.824	.899	
Ou4	4.38	1.833	.877	
Ou5	4.33	1.894	.890	
Ou6	4.37	1.902	.848	
Ou7	4.37	1.813	.874	
Ou8	4.45	1.787	.900	
Ou9	4.46	1.794	.920	
Asset specificity				.980
As1	3.34	1.693	.944	
As2	3.38	1.696	.948	
As3	3.40	1.717	.944	
As4	3.28	1.611	.921	
As5	3.30	1.675	.944	

Table 6.4 (continued)

Items	Mean	SD	CITC	Cronbach's alpha
Environmental uncertainty				.854
Env1	3.93	2.055	.740	
Env2	3.56	1.970	.729	
Env3	3.61	2.107	.708	
Behavioural uncertainty				.968
Be1	4.05	1.927	.841	
Be2	4.60	1.945	.886	
Be3	4.18	1.809	.813	
Be4	4.65	2.044	.897	
Be5	4.49	1.945	.879	
Be6	4.42	1.812	.852	
Be7	4.49	1.962	.877	
Be8	4.33	1.854	.877	
Be9	4.53	1.955	.848	
Frequency				.983
Fe1	2.92	1.830	.917	
Fe2	2.74	1.837	.930	
Fe3	2.75	1.855	.919	
Fe4	2.78	1.825	.918	
Fe5	2.79	1.888	.935	
Fe6	2.82	1.813	.921	
Fe7	2.90	1.868	.910	
Fe8	2.81	1.899	.892	
Fe9	2.92	1.817	.908	
Fe10	2.82	1.864	.916	

Table 6.4 (continued)

Items	Mean	SD	CITC	Cronbach's alpha
Trust in accountant				.932
Tru1	4.60	2.109	.841	
Tru2	4.51	2.064	.835	
Tru3	4.73	2.095	.848	
Tru4	4.96	2.219	.834	
Technical competence				.941
Tec1	5.056	1.9401	.860	
Tec2	5.102	1.8857	.882	
Tec3	5.190	1.8926	.865	
Tec4	5.108	1.8462	.840	
Tec5	5.103	1.9267	.789	
Tec6	4.444	2.1069	.714	
Degree of competition				.857
Co1	4.81	1.898	.662	
Co2	4.60	1.833	.659	
Co3	4.64	1.776	.747	
Co4	4.94	1.725	.677	
Co5	4.67	1.923	.624	

Item-to-total Correlation (CITC) will be acceptable in above 0.50 score (Lu et al., 2007). Hence, this study found acceptable item-to-total correlation scores which range from 0.624 to 0.948. Consequently, convergent validity was obtained by high tem-to-total correlation (Lee, 2001). Furthermore, based on satisfactory standard ($\alpha \geq 0.70$) suggested by Nunnally (1978), the present study found a very high internal consistency reliability (alpha range =

0.854 to 0.983) for the all variables. Among the main variables, frequency (α = 0.983) scored the highest Cronbach's alpha value and the environmental uncertainty lowest reliability of the (α = 0.854). The Cronbach's alpha coefficient for the environmental uncertainty and frequency measures was higher than the study of Widener and Selto (1999), but Cronbach's alpha coefficient was same to their research regarding asset specificity. For example, Widener and Selto (1999) achieved a Cronbach's alpha coefficient α = 0.98 for asset specificity. In addition, the Cronbach's alpha for the behavioral uncertainty, trust measures was higher than the prior studies (Everaert et al., 2010) which obtained an internal reliability of 0.82 for behavioral uncertainty and 0.89 for trust in accountant. Besides, this study also found a higher Cronbach's alpha for technical competence, degree of competition and performance than prior studies (see, Carey et al., 2006; Lamminmaki, 2008; Espino-Rodríguez et al., 2008).

6.5 TESTING THE ASSUMPTIONS OF MULTIVARIATE ANALYSIS

The test of assumptions should be done because the violations of the assumptions affect consequent use of multivariate statistical methods (Hair et al., 2006). Therefore, Hair et al., (2006) suggested that several assumptions regarding the utilisation of multivariate statistical tools, namely normality, homoscedasticity, linearity, and multicollinearity should be applied before performing any multivariate analysis.

6.5.1 Test of Normality

Hair et al. (2006) noted that normality relates to the shape of the data distribution for an individual metric variable and its relationship to the normal distribution. Assessment of the variables' levels of skewness and kurtosis is one of the method will determine Normality

(Hair et al., 2006). In fact, Skewness provides an indication of the symmetry of the distribution (Hair et al., 2006). Kurtosis turns to the peakedness or flatness of the distribution relative to the normal distribution (Hair et al., 2006). For determining skewness and kurtosis values, if the calculated z value for skewness and kurtosis goes beyond the critical values of ±2.58 at 0.01 significance level or ±1.96 at 0.05 significance level, the distribution of data is considered nonnormal (Hair et al., 2006). The result of the analysis shows that none of the variables falls outside the ± 2.58 range of skewness and kurtosis in this study. Thus, the data for this study is normal in relation to Skewness and kurtosis (Hair et al., 2006). Table 6.5 summarises the skewness and kurtosis for the study's variables.

Table 6.5: Skewness and Kurtosis of the Variables

Variables	Skewness	Kurtosis
Asset specificity	-.322	-.850
Environmental uncertainty	.060	-.826
Behavioral uncertainty	-.458	-.773
Frequency	.572	-1.027
Trust in accountant	-.855	-.450
Technical competence	-.925	.380
Degree of competition	-.380	-.457
Outsourcing intensity	-.229	-.749
Firm performance	-.110	.826

Hair et al. (2006) also suggest that histogram is another method to use for comparing the observed data values with a distribution approximating the normal distribution. It is argued

that the histogram of the research variables supports the expectation for the normal shape distribution of data. Appendix 2 shows all histograms generated for study variables.

6.5.2 Test of Homoscedasticity

Hair et al. (2006) indicated that Homoscedasticity relates to the assumptions that dependent variable explaining equal levels of variance across the range of independent variables. Hair et al. (2006) argue the test of homoscedasticity is required because the variance of the dependent variable being explained in the dependence relationship could not be focus in simply a limited range of the independent values. Consistent with Hair et al. (2006), this study tested the homoscedasticity for metric variables using scatterplot. Scatter plots of standardised residual was conducted for all the variables and the outcomes from the data were shown in Appendix 3. In effect, the scatterplot showed that the pattern of data points does not contain any exact patterns and thus had not violated the assumptions (e.g., no discernible patterns of residuals were indicated).

6.5.3 Test of Linearity

According to Hair et al. (2006), this study performed series of simple linear regression analysis and the residuals using Normal Probability P-P Plot to examine linearity. The results for linearity assumptions are shown in Appendix 4. It was indicated that the points to be approximately a straight line surrounding the diagonal axis so as not to infringe the assumptions on the randomness of the residuals.

6.5.4 Test of Multicollinearity

Multicollinearity occurs when two or more of the independent variables are highly correlated that certain mathematical operations are impossible (Hair et al. 2006; Cooper

and Schindler, 2003). The correlation between independent variables was such that multicollinearity is not a concern because multicollinearity will be created while results of the correlation coefficients are above 0.80 and to be considered "very high" (Burns and Bush, 2000). However, there are two general procedures for assessing collinearity, including tolerance and variance inflation factor (VIF) (Pallant, 2007). The data will be absence of multicollinearity while VIF is less than ten, and tolerance value of greater than 0.10 but less than one (Kline, 2005). The tolerance values and VIF of this study pointed out absence of multicollinearity problem as seen in table 6.6.

Table 6.6: Multicollinearity Test – Tolerance and VIF

Variables	Tolerance	VIF
Asset specificity	.723	1.382
Environmental uncertainty	.945	1.059
Behavioral uncertainty	.964	1.037
Frequency	.815	1.227
Trust in accountant	.731	1.369
Technical competence	.670	1.493
Degree of competition	.607	1.647

6.6 DESCRIPTIVE STATISTICS

6.6.1 A Summary Statistics for variables

Table 6.7 shows mean scale scores and distributional statistics. It is noted that among all the variables, the mean score was highest for technical competence and lowest for asset specificity. The details are presented in Table 6.7.

Table 6.7: Descriptive Statistics

Variables	N	Max	Min	Mean		Std. D
				Statistic	Std. Error	
Asset specificity	658	1	7	3.33	.06295	1.614
Environmental uncertainty	658	1	7	3.69	.07011	1.798
Behavioral uncertainty	658	1	7	4.41	.06679	1.713
Frequency	658	1	6	2.82	.06725	1.725
Trust in accountant	658	1	7	4.69	.07537	1.933
Technical competence	658	1	7	5.00	.06628	1.700
Degree of competition	658	1	7	4.73	.05699	1.461
Outsourcing	658	1	7	4.40	.06512	1.670
Performance	658	1	7	4.03	.06453	1.655

6.6.2 Demographic Differences in main variables

This section reports an examination of demographic differences in the TCE and RBV variables. Initial statistical methods were utilised to examine possible considerable group differences in all the main variables based on gender, age and education. Independent sample t-tests were adopted to examine the gender differences in main variables. Next, one-way analysis of variance was utilised to verify the significant differences in terms of age and education regarding their responses on the TCE and RBV variables measures. Post Hoc Tests (e.g., Scheffe) were utilised to find out the specific groups which differed significantly within a significant overall One-Way Analysis of Variance.

6.6.2 .1 Gender Differences in main variables

The relationships between gender (male and female), the variables were examined by testing the significance of the mean differences between male and female. The results in Table 6.8 showed that the mean differences between male and female were not significant for the all measures.

Table 6.8: Gender Differences Regarding All Main Variables

Variables	Mean		t-value	Sig
	Male	Female		
Asset specificity	3.37	3.21	1.057	.291
Behavioural uncertainty	3.66	3.80	-.812	.417
Environmental uncertainty	4.39	4.49	-.614	.539
Frequency	2.84	2.77	.416	.677
Trust in accountant	4.67	4.79	-.633	.527
Technical competence	4.99	5.03	-.295	.768
Degree of competition	4.72	4.76	-.323	.747
Outsourcing intensity	4.40	4.41	-.094	.925
Firm performance	4.00	4.15	-.957	.339

Note: Level of significance using t-tests; the mean difference is significant at $p < .05$

However, the researcher has not found any prior study that has examined gender differences with TCE and RBV variables.

6.6.2 .2 Age Differences in main variables

A one-way ANOVA compares the mean differences among the five age groups in terms of the TCE and RBV variables. Overall, the one-way ANOVA results showed insignificant association between asset specificity, environmental uncertainty, behavioral uncertainty, frequency, trust, technical competence, degree of competition, outsourcing intensity, firm performance, and respondent age group. Consequently, there were no significant differences between all variables and age group. Nevertheless, the present results found no significant age differences for the TCE and RBV variables. Table 6.9 presents a summary of the ANOVA results.

Table 6.9: Respondent Age Group Differences Regarding All Main Variables

Variables	Respondent age group (Mean)					F	Sig
	20-29 A1	30-39 A2	40-49 A3	50-59 A4	60-69 A5		
Asset-spec	3.40	3.34	3.20	3.47	3.50	.482	.749
Environ-unce	3.72	3.72	3.64	3.65	3.93	.116	.977
Behavio-unce	4.38	4.40	4.40	4.55	4.54	.137	.968
Frequency	2.86	2.87	2.72	2.82	2.83	.201	.938
Trust	4.48	4.70	4.80	4.76	5.70	1.338	.254
Competence	4.93	5.02	4.94	5.21	5.01	.372	.829
Competition	4.79	4.62	4.86	4.53	5.40	1.532	.191
Outsourcing	4.32	4.39	4.40	4.62	4.60	.416	.797
Performance	3.91	4.02	4.06	4.28	4.22	.613	.654

**The mean difference is significant at $p < .05$

Note: environmental uncertainty=Environ-unce; behavioral uncertainty= Behavio-unce

6.6.2 .3 Education Level Differences regarding all main variables

A one-way ANOVA was used to examine the association between asset specificity, environmental uncertainty, behavioral uncertainty, frequency, trust, technical competence, degree of competition, outsourcing intensity, firm performance, and education level. Based on the one-way ANOVA analysis, the results showed that the associations between education level and most main variables were found to be not significant. Indeed, there was only a significant association between degree of competition and education level group. The details are presented in Table 6.10.

Table 6.10: Education Level Group Differences Regarding All Main Variables

Variables	Education level group (Mean)						F	Sig.
	HIS	DEP	TEC	BAC	MAS	PhD		
Asset-spec	1.80	3.20	3.44	3.38	3.16	2.64	1.792	.112
Environ-unce	2.72	3.49	3.51	3.76	4.04	3.07	1.474	.196
Behavio-unce	3.44	4.09	4.44	4.43	4.73	3.35	1.824	.106
Frequency	2.75	2.81	2.83	2.84	2.58	3.37	.413	.840
Trust	5.70	4.68	4.60	4.66	4.89	5.91	1.235	.291
Competence	5.13	4.64	5.00	4.99	5.26	5.59	.914	.471
Competition	5.90	4.47	4.82	4.65	5.07	5.57	2.660	.022**
Outsourcing	5.46	4.39	4.38	4.37	4.46	5.32	1.072	.375
Performance	3.63	4.03	4.04	4.03	3.96	5.04	.763	.577

The mean difference is significant at $p < .05$

Notes: HIS=High school; DEP=Diploma; TEC= Technical college; BAC= Bachelor; MAS= Master; PhD=Philosophy of degree

Furthermore, none of the prior studies have examined the association between education level group differences and such variables. Therefore, this study suggests for future research to examine education level group with TCE and RBV variables to find more support for this finding.

6.6.3 The Extent of the Accounting Outsourcing Usage (Frequency)

As the main objective of this study is to determine the extent to which accounting functions are outsourced by Iranian SMEs. For satisfying this purpose, preliminary descriptive statistics (frequency) was performed for each type of the accounting function outsourcing measures. Therefore, the Table 6.11 provides the outsourcing frequency of each items of the accounting outsourcing measures as included in the questionnaire on the scale ranging from 1(not outsourced) to 7 (totally outsourced).

Table 6.11: Frequency of the Selected Outsourcing Measures (N=658)

Outsourcing measures	Frequency						
	1	2	3	4	5	6	7
Bookkeeping works	48	50	84	151	120	83	122
Preparation of financial statements	49	67	75	138	136	95	98
Payroll accounting	58	66	67	129	128	115	95
Budgeting / forecasting	62	62	76	116	144	101	97
Customer profitability analysis	76	60	66	125	128	103	100
Product costing	69	63	82	99	142	91	112
Financial planning	59	63	74	136	128	104	94
Financial management services	47	68	74	127	134	108	100
Design/review internal control systems	46	65	74	143	135	77	118

Consequently, the results show the extent of accounting function outsourcing among SME respondents range from 4 to 7 (totally outsourced). This means that most Iranian SME outsource their accounting activities to professional accountants

6.6.4 Outsourcing of Other Functions

This study also asked SME respondents whether they outsource other service functions as shown in Table 6.12. Their responses placed into Yes and NO answers. Therefore, for descriptive analysis, this study runs frequency to understand which SMEs outsource other service functions. Consequently, Table 6.12 summarises the results of the SMEs that outsource other functions to the external vendors.

Table 6.12: Outsourcing of Other Functions

Activities	Yes	No
	Number (%)	Number (%)
Human resources (HR)	352 (53.5)	306 (46.5)
Information technology (IT)	381 (57.9)	277(42.1)
Marketing	308 (46.8)	350(53.2)
Research & Development (R& D)	190 (28.9)	468(71.1)

The result shows that SMEs outsource Information technology activities more than other activities.

6.7 JUSTIFICATION FOR USING STRUCTURAL EQUATION MODELLING (SEM) IN THE PRESENT STUDY

Byrne (2001) states that traditional multivariate analysis (SPSS) has several limitations, including (1) exploratory assessments (e.g., exploratory factor analyses) are descriptive by nature, so they face difficulty for testing of the hypotheses, (2) when the traditional multivariate techniques are utilised, the results of study may be biased because of measurement error, (3) traditional regression analyses are ineffective due to absence of model estimation and analyses of several equations simultaneously.

This study employed the SEM technique to overcome the limitations in the traditional multivariate method (SPSS) as discussed earlier. The use of SEM technique is more appropriate than the utilisation of traditional multivariate analysis for several reasons as follows. (1) The assessments in SEM are based on information from the full covariance matrix. (2) SEM technique offers comprehensible estimates of the measurement error (Byrne, 2001). (3) Confirmatory factor analysis is used in SEM technique and it is more comprehensive approach for testing construct validity, but in SPSS only exploratory assessment is examined for analysing data (Byrne, 2001). (4) SEM technique is considered a combination of both interdependence and dependence techniques such as exploratory factor analysis and regression analysis (Hair et al., 2006). (5) SEM is an easily technique to test direct and mediating effect (i.e., the direct and indirect effects) (Davison, Downs and Birch, 2006). (6) Multiple structural relationships are examined in SEM approach simultaneously while sustaining statistical efficiency (Hair et al., 2006). (7) SEM technique can consider both observed and unobserved variables into a theoretical model (Byrne, 2001). Therefore, this study examines mediating role of outsourcing intensity using SEM technique. Although mediation effect can be conducted using SPSS through a series of regression tests, it can be tested by two stages (direct and indirect effects)

simultaneously and easily in SEM model (Hair et al., 2006). More importantly, it is stated that the use of multiple regression analysis to test mediation effect needs absence of measurement error in the mediator (Baron and Kenny, 1986). This study used SEM to reduce those problems as it provides explicit estimates of the measurement error (Byrne, 2001).

6.8 CHAPTER SUMMARY

This chapter discussed the validity and reliability assessment to guarantee the validity and reliability, including exploratory factor analyses, scale reliabilities and corrected item-total correlations. It also examined the test of assumptions for multivariate analysis which included normality, linearity, multicollinearity and homoscedasticity. Finally, the independent sample t-tests and one-way ANOVA were discussed in this chapter. Chapter 7 will test the measurement model using confirmatory factor analysis by SEM technique. Chapter 7 also uses the SEM (AMOS) technique to specify, estimate and test a proposed model effectively (Bentler, 1990).

CHAPTER 7

RESEARCH RESULTS: CONFIRMATORY FACTOR ANALYSIS & HYPOTHESES TESTING

7.1 INTRODUCTION

Chapter 6 described corrected item-total correlation and exploratory factor analyses (EFA) to purify the multi-item scale. The main purpose of this chapter is to report the findings of this study. The rest of this chapter is organised as follows. Section 7.2 describes the Structural Equation Modelling (SEM) using AMOS 18. Section 7.3 examines measurement scale validation, including the assessment of fit, unidimensionality and construct validity of the measurement model (convergent and discriminant validity). Section 7.4 presents the structural model to establish the structural relationships between exogenous and endogenous variables. Section 7.5 reports the results of hypotheses testing. Section 7.6 evaluates the final hypothesized structural model. Section 7.7 discusses the overall findings of the study. The chapter concludes with Section 7.8.

7.2 STRUCTURAL EQUATION MODELLING (SEM)

This study tested the proposed model fit to viewed data utilising SEM technique. The proposed model consisted of seven exogenous variables (i.e., asset specificity, environment uncertainty, behavioral uncertainty, frequency, trust in accountant, technical competence, degree of competition) and two endogenous variables (i.e., outsourcing and firm performance). The proposed research model analysis was performed through three general approaches. First, the proposed model analysis was conducted using covariances

and the most widely utilised maximum-likelihood estimation method with AMOS 18 (Anderson and Gerbing, 1988). Second, the model development strategy was pursued utilising a model re-specification method which aims to identify the source of misfit and then generate a model that attain better fit of data (Byrne, 2001). Third, the proposed model with different hypothetical structural relationships was tested in order to determine the mediating role of outsourcing between independent variables and firm performance, the ultimate dependent variable (Cooper and Schindler, 2003).

Based on suggestions by Bollen (1990) and Hair et al. (2006), this study examined multiple indices of model fit because a model may attain good fit on a particular fit index but inadequate on others. To achieve goodness of fit for the empirical data, both the measurement and structural model should meet the requirements of selected indices (Hair et al., 2006). The overall test of model fit selected was the chi-square test (McIntosh, 2007). As the chi-square test is extremely sensitive to sample size, and this study used the chi-square normalized by degrees of freedom (χ^2/df) (Bentler, 1990). According to suggestion by Hair et al. (2006), an acceptable ratio for χ^2/df value must be less than 3.0.

Hair et al. (2006) indicated that scholars have to state at least one incremental index and one absolute index, as well as the chi-square value; at least one of the indices must be badness-of-fit index. According to recommendation by Sugawara and MacCallum, (1993), Root Mean Square Error of Approximation (RMSEA) was selected as it often provides consistent results across different estimation approach for the badness-of-fit index. Pursuing this guideline and suggestion by Hu and Bentler (1999), except chi-square and normed χ^2/df value, model fit for this study was analysed using multiple indices which include Goodness-of-Fit Index (GFI), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and a badness-of-fit index, RMSEA. An acceptable model fit include a value

greater than 0.90 for GFI, CFI, TLI and a value of less than 0.08 for RMSEA as suggested by Hu and Bentler (1999). Same as many other SEM scholars, the more stringent criteria for approximate fit indices were utilised in the present study (Hu and Bentler, 1999). Table 7.1 provides a summary of the recommended benchmarks for model fit indices utilised in the present study.

Table 7.1: Recommended Benchmark for Model Fit Indices

Fit Index	**Recommended value**
Absolute Fit Measures	
χ^2	The lower, the better
χ^2/df	≤ 3
GFI	≥ 0.90
RMSEA	≤ 0.08
Incremental Fit Measure	
TLI	≥ 0.90
CFI	≥ 0.90

7.3 MEASUREMENT SCALE VALIDATION

The measurement scale was examined for reliability and validity following which; the path model was assessed utilising SEM for hypotheses testing. To test the validity of measurement used, other than exploratory factor analyses (EFA) which have been discussed in previous Chapter, confirmatory factor analysis (CFA) was utilised to assess, and modify the proposed research model.

7.3.1 Measure Validation Methods

This study utilised a method suggested by Anderson and Gerbing (1988). For example, "Good measurement of the latent variables is prerequisite to the analysis of the causal relations among the latent variables" (Anderson and Gerbing, 1988, p. 453). Accordingly, confirmatory factor analysis is strongly needed to be performed because structural analyses are frequently unreliable if the measurement model has low reliability and validity (Hair et al., 2006). Based on data collected from 658 samples, the measurement model was modified and verified utilising confirmatory factor analysis. All variables and its indicators were shown in a measurement model in which all latent variables were permitted to correlate with each other. In general, the validation process for ensuring construct validity includes convergent and discriminant validity (Liao, Chen and Yen, 2007). Consequently, convergent validity, discriminant validity in addition to construct reliability which including composite reliability and average variance extracted was tested to ensure data validity and reliability. After that, the structural model that best fitted the data was identified. This was followed by hypotheses testing.

7.3.2 Confirmatory Factor Analysis (CFA)

Gerbing and Anderson (1988) argued that the traditional exploratory analyses such as item-total correlation and factor analysis are not theory based analysis and therefore they fail to evaluate unidimensionality directly. Hence, confirmatory factor analysis (CFA) was used for the assessment of measurement model fit and unidimensionality to overcome this limitation. This section covers key concerns with regard to CFA which includes identification issues and model specification.

7.3.2.1 Identification Issues

In structural equation modelling, identification is about whether there are adequate pieces of information to determine a solution for a set of structural equations (Hair et al., 2006). It is very important to determine the identification status of a proposed model by checking the number of degrees of freedom related to the model (Byrne, 2001). From the parameter summary in AMOS output, the sample covariance matrix comprises a total of 1711 pieces of information. Of the 219 parameters in the hypothesised model, only 152 parameters were free to be estimated; the remaining 67 parameters were fixed in the model. The present hypothesised model was over-identified with 1559 (1711 – 152) degrees of freedom. As the sample size of the current study is adequately large, it is considered that the proposed model will meet and create reliable results (Hair et al., 2006).

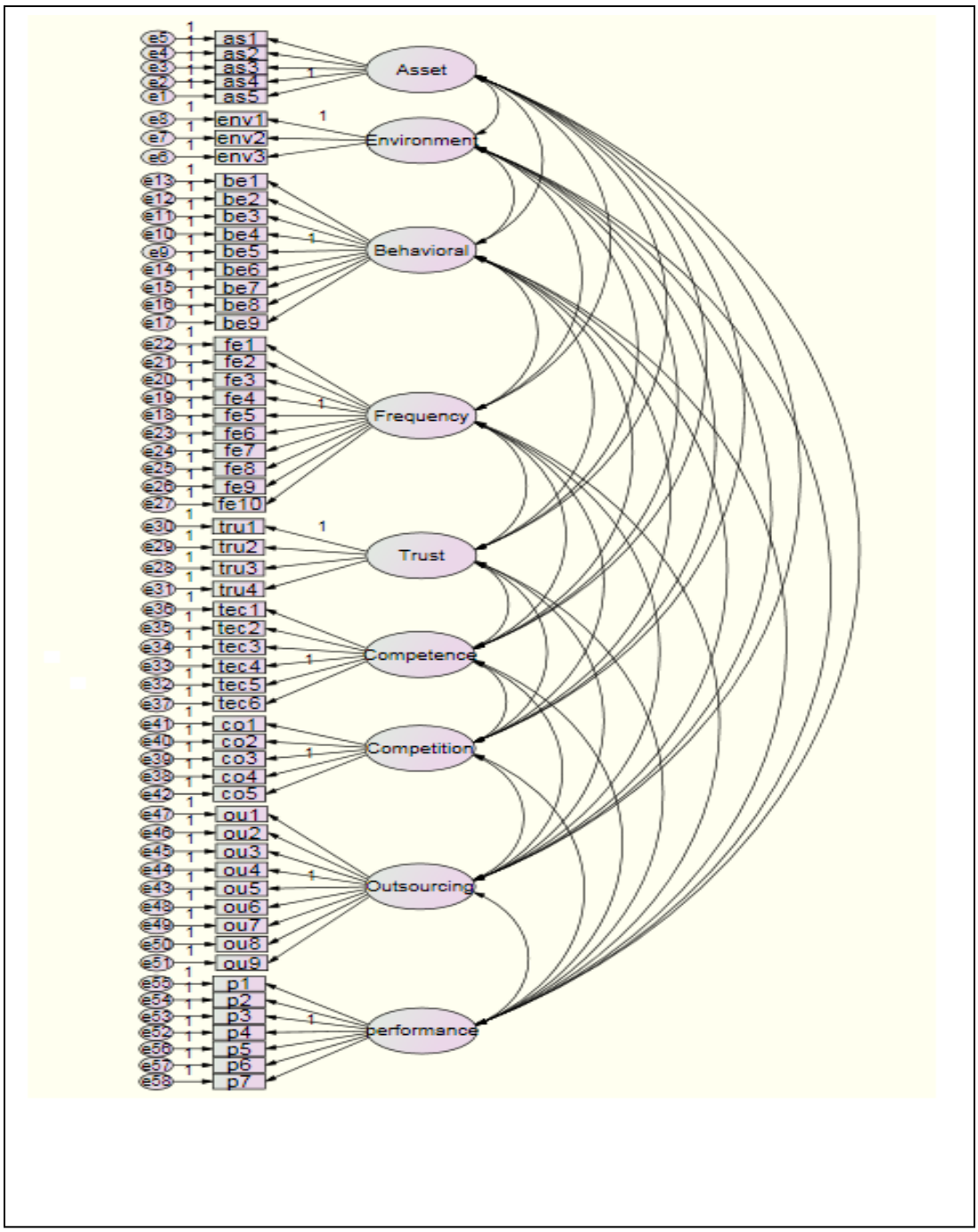
7.3.2.2 Model Specification

For specification of the latent variables or constructs, the loading for one of the indicator of each variable was fixed to 1.0 in the model to generate a scale for the latent variable. This process was conducted automatically with the features in AMOS 18 software.

7.3.3 Assessment of Fit and Unidimensionality of the Measurement Model

The initial measurement model incorporated nine (9) latent variables indicated by respective items pertaining to each scale: asset specificity, environment uncertainty, behavioral uncertainty, frequency, trust, technical competence, degree of competition, outsourcing and firm performance (see Figure 7.1 for the initial measurement model).

Figure 7.1 Initial Hypothesised 58-Items Model of Factorial Structure (CFA1)



The absolute goodness-of-fit measures for the measurement models are displayed in Table 7.2.

Table 7.2: Goodness-of-fit Results for Initial Measurement Model

Model	Goodness-of-Fit Results						
	χ^2	χ^2/df	P	GFI	TLI	CFI	RMSEA
CFA1	6269.459	4.021	0.000	0.831	0.902	0.907	0.068

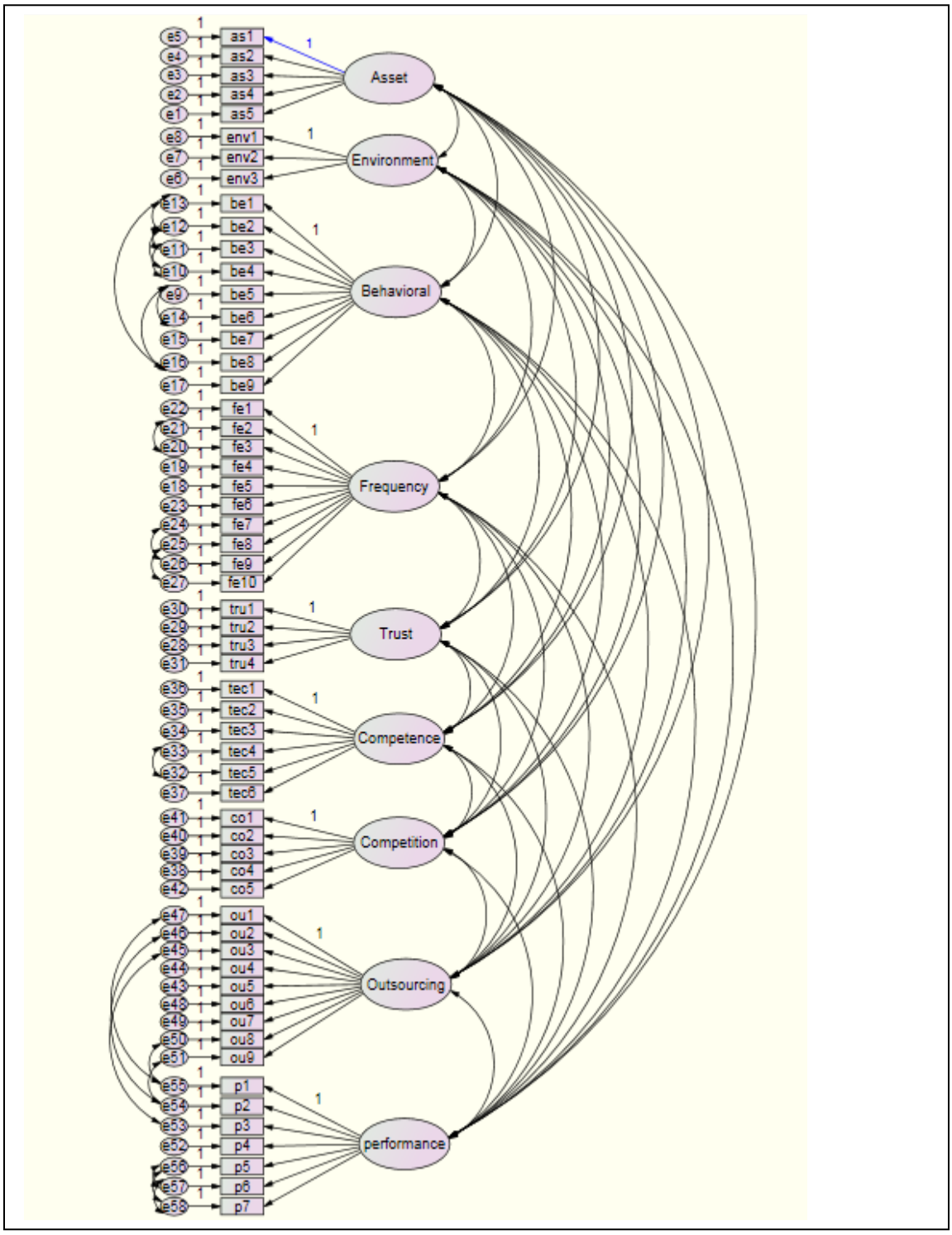
The measurement model should demonstrate good model fit and meet the requirements of certain fit indices. Hence, the initial measurement model (CFA1) of the current study (χ^2 = 6269.459, χ^2/df = 4.021, GFI = 0.831, TLI = 0.902, CFI = 0.907, RMSEA = 0.068) did not yield an adequate model fit for the empirical data. The overall model chi-square was 6269.459 with 1559 degrees of freedom. The p-value associated with the chi-square was 0.000. According to Hair et al. (2006), this significant p-value did not show that the observed covariance matrix matches the estimated covariance matrix in the empirical data. However, other model fit indices need to be investigate closely given the sensitivity of chi-square statistical test to sample size (Byrne, 2001).

7.3.3.1 Post Hoc Analyses

For CFA1 (see Table 7.2), the normed chi-square (χ^2/df) showed a value of 4.021. This value does not fall within the acceptable ratio of less than 3.0 for χ^2/df value (Hair et al. 2006). The TLI and CFI were 0.902, 0.907, respectively. The TLI and CFI are incremental fit indices and these values have exceeded the recommended level of 0.90. For the badness-of-fit index, Root Mean Square Error of Approximation (RMSEA), the value of 0.068 was well below 0.08. However, the goodness-of-fit index (GFI) was 0.831,

indicating a poor fit of the model to the data (should be above 0.90). In summary, the various index of overall goodness-of-fit for the model indicated good fit with the exception of χ^2/df and GFI indices. Clearly, it was noticeable that some model modifications were needed to determine a model that would better fit the data (Byrne, 2001). Therefore, the Modification indices (MIs) are presented in Appendix 5. Based on the initially CFA1model (Figure 7.1), all factor loadings and error covariance terms that were fixed to a value of 0.000 are of considerable interest as they signifies the only meaningful sources of misspecification in a CFA model. As such, large MIs make a case for error covariances. However, consistent with other SEM programs, AMOS computes an MI for all parameters absolutely presumed to be zero, in addition to for those that are clearly fixed to zero and nonzero value or some other. In assessing the list of MIs in Appendix 5, for instance, turning to the MIs related to the Covariances, it can be seen very apparent evidence of misspecification the pairing of error terms related to Items (be1) and (b8) (e13↔e16; MI = 226.412) and so forth. Although, there are a few additionally quite large MI values shown, these two stand apart in that they are significantly larger than the others; they reflect misspecified error covariances. Turning to AMOS Graphics, this study modifies the initially CFA model by adding a covariance between these Item (b1) and Item (be8) error terms and other items by first clicking on the Covariance icon , for example on e13, and, finally, on e16 and so forth as shown in Figure 7.2. The modified model structure for Model 2 is presented in Figure 7.2.

Figure 7.2 Final Measurement Model (CFA2)



Model respecification that contains correlated errors need to be supported by a strong empirical rationale (Jöreskog, 1993), and it is considered that this situation exists here. Taking into consideration (a) obvious item content overlap, (b) the duplication of these same error covariances in preceding studies (Byrne, 1991, 1993; Bentler and Chou, 1987), this study considers respecification of this initial model to be justified. Testing of this respecified model (Final Measurement Model) now falls within the framework of post hoc analyses (Byrne, 2001). Therefore, Goodness-of-fit statistics related to Model 2 (Figure 7.2) exposeed that incorporation of the error covariance between some items made a considerably large improvement to model fit. Particularly, the overall chi square value reduced from 6269.459 to 3401.145 and the RMSEA from 0.068 to 0.043, while the CFI value increased from 0.907 to 0.963, GFI 0.831 to 0.904 and TLI 0.0902 to 0.961. The summary of Goodness-of-fit Results of CFA for Model2 is shown in Table 7.3.

Table 7.3: Goodness-Of-Fit Results for Final Measurement Model

Model	**Goodness-of-Fit Results**						
	χ^2	**χ^2/df**	**P**	**GFI**	**TLI**	**CFI**	**RMSEA**
CFA2	3401.145	2.209	.000	0. 904	0.961	0.963	0.043

7.3.3.2 Unidimensionality

With 1540 degrees of freedoms, the model of this study yields a χ2 value of 3401.145. According to Hair et al. (2006), a badness-of-fit, an SRMR index measures the average difference between the hypothesised and observed variances and covariances in the model, based on standardised residuals. Kline (2005) indicates that a model with an SRMR value of 0.10 or lower is indicated as good fit. With SRMR value of 0.031, the model of this

study exceeds the given cutoff point. To sum up, the results of the GOF index indicate that the measurement model fits the data relatively well ($\chi 2$=3401.145, df=1540, $\chi 2$/df=2.209,p=0.000, CFI=0.963, RMSEA=0.043, SRMR=0.031).

Aside from the evaluation of the model's fit, the element of unidimensionality needs to be verified by investigating the items' path directions and significant levels. This information will be got from the regression weight output as seen by Table 7.4 below. The parameter's variances compared across groups are demonstrated in the Estimate column. According to the results, the value of each parameter estimate, which ranges from 0.762 (Firm Performance to P6) to 1.137 (Behavioral to be 4) is all positive. When the estimates are separated by their relevant standard error (S.E), they create values which are named critical ratios (C.R) (Byrne, 2001). A critical ratios (C.R) score that is larger than 1.96 is significant at 0.05 level (Byrne, 2001). All critical ratios (C.R) values as seen in the Table 7.4 are greater than 1.96, showing the achievement of significance level. The highest value of C.R is 60.342 (Asset to as2) while the lowest is 16.477 (Competition to co5).

Table 7.4: Regression Weights

			Estimate	S.E.	C.R.	P
as1	<---	Asset	1			
as2	<---	Asset	1.004	0.017	60.342	***
as3	<---	Asset	1.013	0.017	59.247	***
as4	<---	Asset	0.925	0.018	51.249	***
as5	<---	Asset	0.985	0.017	57.848	***
be1	<---	Behavioral	1			
be2	<---	Behavioral	1.086	0.036	29.919	***
be3	<---	Behavioral	0.94	0.031	30.029	***

Table 7.4 (continued)

			Estimate	S.E.	C.R.	P
be4	<---	Behavioral	1.137	0.033	34.074	***
be5	<---	Behavioral	1.057	0.032	33.115	***
be6	<---	Behavioral	0.945	0.031	30.225	***
be7	<---	Behavioral	1.051	0.033	31.904	***
be8	<---	Behavioral	0.979	0.023	42.918	***
be9	<---	Behavioral	1.032	0.033	30.953	***
co1	<---	Competition	1.000			
co2	<---	Competition	0.992	0.057	17.343	***
co3	<---	Competition	1.087	0.057	19.119	***
co4	<---	Competition	0.958	0.055	17.442	***
co5	<---	Competition	0.985	0.06	16.477	***
env1	<---	Environment	1.000			
env2	<---	Environment	0.924	0.044	20.879	***
env3	<---	Environment	0.953	0.047	20.327	***
fe1	<---	Frequency	1.000			
fe2	<---	Frequency	1.012	0.022	46.1	***
fe3	<---	Frequency	1.011	0.023	44.374	***
fe4	<---	Frequency	0.999	0.022	45.119	***
fe5	<---	Frequency	1.048	0.022	47.635	***
fe6	<---	Frequency	0.992	0.022	44.997	***
fe7	<---	Frequency	1.006	0.024	42.552	***
fe8	<---	Frequency	1.003	0.025	39.815	***
fe9	<---	Frequency	0.973	0.023	41.933	***
fe10	<---	Frequency	1.005	0.024	42.735	***
tec1	<---	Competence	1.000			
tec2	<---	Competence	1.008	0.025	39.818	***
tec3	<---	Competence	0.98	0.027	36.242	***
tec4	<---	Competence	0.892	0.029	30.812	***
tec5	<---	Competence	0.865	0.032	26.634	***
tec6	<---	Competence	0.89	0.037	24.143	***
tru1	<---	Trust	1.000			
tru2	<---	Trust	0.969	0.031	31.278	***

Table 7.4 (continued)

			Estimate	S.E.	C.R.	P
tru3	<---	Trust	0.999	0.031	32.044	***
tru4	<---	Trust	1.047	0.033	31.393	***
ou1	<---	Outsourcing	1.000			
ou2	<---	Outsourcing	0.947	0.02	46.817	***
ou3	<---	Outsourcing	0.982	0.02	48.456	***
ou4	<---	Outsourcing	0.96	0.023	41.386	***
ou5	<---	Outsourcing	1.003	0.023	42.897	***
ou6	<---	Outsourcing	0.961	0.026	36.943	***
ou7	<---	Outsourcing	0.947	0.023	40.939	***
ou8	<---	Outsourcing	0.963	0.021	44.884	***
ou9	<---	Outsourcing	0.982	0.019	50.818	***
P1	<---	performance	1.000			
P2	<---	performance	0.964	0.011	89.959	***
P3	<---	performance	1.005	0.012	86.138	***
P4	<---	performance	0.91	0.017	53.603	***
P5	<---	performance	0.775	0.023	33.712	***
P6	<---	performance	0.762	0.023	33.616	***
P7	<---	performance	0.77	0.023	33.679	***

To sum up, since the values of all parameters' estimates are all significant and positive, this shows that all items have significant associations with their respective latent variables as proposed in this study. Moreover the achievement of satisfactory model fit as discussed earlier, the existence of unidimensionality in this model is also supported by the items' positive and significant path directions.

7.3.4 Construct Validity

This study tested convergent validity and discriminant validity by following measurement validation procedures suggested by Straub (1989). Therefore, before structural model testing, the construct validity and reliability were tested by verifying the convergent validity, discriminant validity, and composite reliability of the data (Straub, 1989). As a

consequence, the whole process of scale validation is outlined in the following sub-sections.

7.3.4.1 Convergent Validity

Kline (2005) indicated that the measurement model denotes how the observed indicators relate to unobserved variables. Since the goodness-of-fit indices are statistically acceptable, the next step was to test convergent validity of the data. The loading of each observed indicators on their fundamental latent variable assessed the convergent validity (Anderson and Gerbing, 1988). Table 7.5 presents the CFA results which include standardised factor loadings and item reliability for each indicator (Observed Variables). Firstly, the factor loadings (e.g., the standardised regression weight linking variable to indicator) were investigated to identify potential problem with the CFA model. According to Hair et al. (2006), the standardised factor loading must be significantly associated with the latent variable and have at least loading estimate of 0.5. Therefore, any insignificant loadings with low loading estimate point out a potential measurement problem. The CFA results (see Table 7.5) pointed out that each factor loadings of the reflective indicators were statistically significant at 0.001 level. Additionally, the factor loadings ranged from 0.691 (co5) to 0.979 (p1), and no loading was less than 0.50 suggested by Hair et al. (2006).

Next, the item reliability or squared multiple correlations in the CFA model was examined. Item reliability or squared multiple correlations relates to the value that shows the extent to which an observed indicator's variance is explained by the underlying construct or variable (Hair et al., 2006). The majority of the squared multiple correlations of indicators (with the exception for co5) in the measurement model were higher than the acceptable level of 0.50

(Bollen, 1990). This indicated that most of the latent variables in this research accounted for more than half of the explained variance in each indicator.

Table 7.5: Standardised Regression Weights, Item Reliability, Composite Reliability and Average Variance Extracted (AVE) (Revised Measurement Model)

Items	Standardised Factor Loading (Standardised Regression Weights)	Item Reliability (Squared Multiple Correlations)	Composite Reliability	AVE
Asset specificity			**0.951**	**0.907**
as1	0.958	0.918		
as2	0.960	0.922		
as3	0.957	0.916		
as4	0.932	0.869		
as5	0.954	0.910		
Environment uncertainty			**0.797**	**0.662**
env1	0.843	0.711		
env2	0.813	0.661		
env3	0.784	0.615		
Behavioural uncertainty			**0.880**	**0.758**
be1	0.859	0.738		
be2	0.931	0.867		
be3	0.860	0.740		
be4	0.920	0.846		
be5	0.900	0.810		
be6	0.863	0.745		
be7	0.886	0.785		
be8	0.879	0.773		
be9	0.873	0.762		

Table 7.5 (continued)

Items	Standardised Factor Loading (Standardised Regression Weights)	Item Reliability (Squared Multiple Correlations)	Composite Reliability	AVE
Frequency			**0.921**	**0.853**
fe1	0.929	0.863		
fe2	0.936	0.876		
fe3	0.926	0.857		
fe4	0.930	0.865		
fe5	0.944	0.891		
fe6	0.930	0.865		
fe7	0.915	0.837		
fe8	0.897	0.805		
fe9	0.910	0.828		
fe10	0.917	0.841		
Trust in accountant			**0.872**	**0.774**
tru1	0.882	0.778		
tru2	0.873	0.762		
tru3	0.886	0.785		
tru4	0.877	0.769		
Technical Competence			**0.843**	**0.729**
tec1	0.901	0.812		
tec2	0.934	0.872		
tec3	0.904	0.817		
tec4	0.844	0.712		
tec5	0.784	0.615		
tec6	0.738	0.545		
Degree of Competition			**0.711**	**0.551**
co1	0.710	0.504		
co2	0.730	0.533		
co3	0.825	0.681		
co4	0.749	0.561		
co5	0.691	0.477		

Table 7.5 (continued)

Items	Standardised Factor Loading (Standardised Regression Weights)	Item Reliability (Squared Multiple Correlations)	Composite Reliability	AVE
Outsourcing intensity			**0.901**	**0.820**
ou1	0.946	0.895		
ou2	0.910	0.828		
ou3	0.913	0.834		
ou4	0.890	0.792		
ou5	0.899	0.808		
ou6	0.858	0.736		
ou7	0.887	0.787		
ou8	0.912	0.832		
ou9	0.933	0.870		
Performance			**0.893**	**0.807**
P1	0.978	0.956		
P2	0.975	0.951		
P3	0.971	0.943		
P4	0.919	0.845		
P5	0.808	0.653		
P6	0.807	0.651		
P7	0.808	0.653		

7.3.4.2 Construct Reliability and Variance Extracted Measures

If the composite reliability value (for standardised estimates) is 0.6 or higher the scale will have a reasonable internal consistency(Lawson-Body and Limayem, 2004; Aubert et al., 1996) According to the results reported in Table 7.5, all indicators found good composite reliability values which range from 0.71 (degree of competition) to 0.95 (asset specificity). Consequently, the results confirm that the variables in this study are extremely reliable as they are very consistent in explaining the variances constituted in them.

The average of variances extracted (AVE) for each individual construct is another important aspect of construct reliability. Average variance extracted (AVE) is an estimate that determines the average amount of variances in indicators that are accounted for by the underlying factor (Taylor and Hunter, 2003). When its AVE achieves 0.5 or greater the variable should be reliable (Fornell and Larcker, 1981).

Table 7.5 shows that none of the variables have an AVE value below 50%. The lowest AVE is generated by the degree of competition variable, with a percentage of 55 and the highest AVE is scored by asset specificity variable with a percentage of 91. Therefore, it is acceptable to conclude that the variables in the model are reliable because this cut-off value confirms that at least 50% or more of the variances in the observed variables are explained by the set of indicators.

7.3.4.3 Discriminant Validity

Two common methods of assessing discriminant validity are performed in this section. First, a more conservative method for establishing discriminant validity was utilised (Hair et al. 2006). Discriminant validity is identified by the variance extracted value, specifically whether or not it exceeds the squared inter-construct correlations associated with that construct (Fornell and Larcker, 1981). As it can be seen in Table 7.6, the variance extracted of each variable is all above its squared correlation with other variables. Consistent with Fornell and Larcker's (1981) guidelines, it evidenced that these results explain adequate evidence for discriminant validity of the measurement model.

Table 7.6: Results of Average Variance Extracted and Squared Correlations of Each Variable

	AS	EN	BE	FE	TR	TEC	CO	OU	P
AS	**0.907**								
EN	0.007	**0.662**							
BE	0.000	0.005	**0.758**						
FE	0.051	0.000	0.000	**0.853**					
TR	0.145	0.000	0.002	0.076	**0.774**				
TEC	0.208	0.006	0.002	0.090	0.241	**0.729**			
CO	0.266	0.002	0.000	0.086	0.244	0.324	**0.551**		
OU	0.330	0.000	0.000	0.192	0.385	0.358	0.417	**0.820**	
P	0.219	0.002	0.001	0.119	0.239	0.250	0.274	0.632	**0.807**

Note: AS= asset specificity, EN=environmental uncertainty, BE= behavioral uncertainty, FE= frequency, TR= trust, TEC= technical competency, CO= degree of competition, OU= outsourcing, and P= performance

A second method to test the discriminant validity of measurement is also adopted in order to create a more convincing discriminant validity results. According to Bagozzi and Phillips (1982), the second method for evaluating discriminant validity is to compare the chi-square difference between two models, namely, the unconstrained model and the constrained model. In the unconstrained model, the covariance between particular two variables was freely correlated (Bagozzi and Phillips, 1982). Nevertheless, in the constrained model, the covariance of a certain two variables was fixed to 1.0. These chi-square difference for these two model fit was then compared (Bagozzi and Phillips, 1982). If the χ^2 difference between the two models is significant, two variables (constructs) are claimed as having good discriminant validity (Hair et al., 2006). A series of chi-square difference tests were performed and the results are shown in Table 7.7.

Table 7.7: Measurement Model Fit: Discriminant Validity

Links	Fixed correlation		Freely estimated correlation			Chi square difference
	d.f.	Chi square	Correlation	d.f.	Chi square	
AS-ENV	20	105.189	0.08	19	71.379	33.81
AS-BE	70	592.651	0.02	69	531.466	61.185
AS-FE	87	429.234	0.64	86	420.939	8.295
AS-TRU	27	328.397	-0.38	26	74.470	253.927
AS-TEC	43	488.196	-0.46	42	132.271	355.925
AS-COM	35	533.009	-0.52	34	120.727	412.282
AS-OU	77	652.438	-0.58	76	171.913	480.525
AS-P	51	345.599	-0.47	50	162.579	183.02
ENV-BE	47	448.411	0.07	46	415.568	32.843
ENV-FE	62	363.908	-0.01	61	312.321	51.587
ENV-TRU	14	61.299	-0.02	13	14.263	47.036
ENV-TEC	26	118.300	0.08	25	80.951	37.349
ENV-OU	54	161.569	-0.01	53	126.240	35.329
ENV-P	32	107.607	-0.05	31	103.092	4.515
BE-FE	142	856.972	-0.01	141	801.741	55.231
BE-TRU	58	488.775	-0.05	57	426.072	62.703
BE-TEC	82	595.999	0.05	81	545.953	50.046
BE-OU	128	629.083	-0.03	127	562.741	66.342
BE-P	94	546.528	-0.02	93	540.652	5.876
FE-TRU	74	487.428	-0.28	73	320.935	166.493
FE-TEC	100	642.504	-0.30	99	431.747	210.757
FE-COM	90	736.385	-0.29	89	521.038	215.347
FE-OU	149	819.033	-0.44	148	506.491	312.542
FE-P	113	557.426	-0.34	112	458.769	98.657
TRU-TEC	35	168.230	0.49	34	158.192	10.038
TRU-COM	27	72.828	0.49	26	68.511	4.317
TRU-OU	65	183.053	0.52	64	124.005	59.048
TRU-P	41	233.885	0.49	40	96.292	137.593
TEC-COM	43	156.774	0.57	42	135.506	21.268
TEC-OU	89	235.727	0.60	88	212.255	23.472
TEC-P	61	339.038	0.50	60	195.480	143.558
COM-OU	77	190.209	0.65	76	174.584	15.625
COM-P	51	299.203	0.52	50	160.861	138.342
OU-P	96	937.111	0.80	95	384.453	552.658

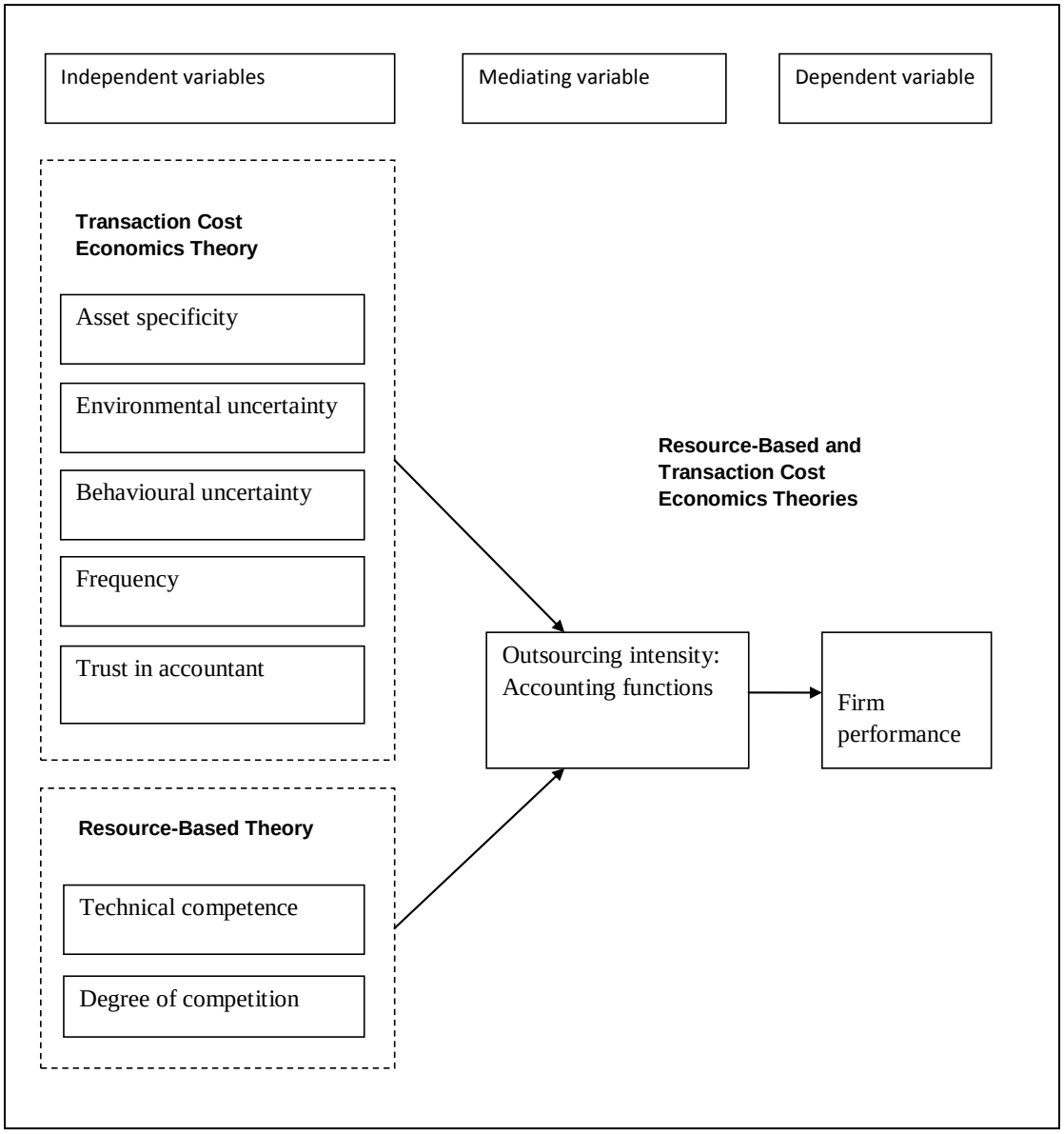
Consequently, the chi-square value for unconstrained measurement model (freely estimated correlation) was significantly lower than any constrained models (fixed

correlation) with the possible pair of constructs. The results showed that the differences in chi-square between the fixed and free solutions were statistically significant. In other words, the findings revealed good discriminant validity for all variables. On the whole, the required reliability and validity assessment demonstrated strong support for satisfactory convergent validity and discriminant validity. Hence, the subsequent process of identifying the structural model that best fits the data were conducted to examine the research hypotheses.

7.4 STRUCTURAL MODEL

The model can now be tested utilising SEM for hypotheses testing purposes when the proposed model has been validated by the CFA. Having satisfied the measurement model fit and necessary reliability and validity tests, this second part of the chapter focuses on the hypothesised relations among the nine variables. Hence, this study utilised SEM technique as the main statistical tool to test the hypotheses. Figure 7.3 shows the structural model to be tested using SEM technique.

Figure 7.3: The Proposed Structural Model



The overall model fit for structural model was examined. The same set of fit indices utilised to assess measurement model to test the full structural model. Several modifications were made to the hypothesised model based on the modification index (Byrne, 2001). The overall fit of the revised structural model shown in Table 7.8.

Table 7.8: The Overall Fit of the Proposed Structural Model

Model	χ^2	χ^2/df	P	GFI	TLI	CFI	RMSEA
Structural Model	3875.157	2.475	0.000	0.892	0.952	0.955	0.047

The revised model demonstrated was used as the final model for hypothesis testing (χ^2 = 3875.157, χ^2/df = 1566, GFI = 0.892, TLI = 0.952, CFI = .955, RMSEA = 0.042).

The chi-square was significant as expected, and the TLI and CFI index were substantially above the preferred 0.90 threshold. The absolute fit measure of RMSEA was also well below the recommended cut-off of 0.08 to be indicative of good model fit (Hu and Bentler, 1999). Although the GFI index did not meet the recommended cut-off, the value close to the 0.90 threshold is acceptable (Byrne, 2000; Hu and Bentler, 1999). These overall fit indices indicated acceptable fit of the model to the observed data (Hu and Bentler, 1999). The analysis of SEM on the proposed model has generated results which are illustrated in Figure7.4 and Table 7.9 on page 223.

7.5 HYPOTHESES TESTING

7.5.1 Direct Effects

In Table 7.9, outsourcing intensity was used as the dependent variable and independent variables included asset specificity, environmental uncertainty, behavioural uncertainty, frequency, trust in accountant, technical competence and degree of competition. Accordingly, the results of structural coefficients exhibited in Figure 7.4 and Table 7.9 are

now used to examine hypotheses H1, H2, H3, H4, H5, H6 and H7 as follows. A summary of hypothesis testing is presented in Table 7.9.

Table 7.9: Hypotheses Testing: The Effects of Independent Variables on Outsourcing Intensity

Path	Hypothesised Direction	.β	SE	Critical Ratio	Supported
H1	-	-0.295	0.032	-7.987	Yes
H2	-	-0.008	0.027	-0.251	No
H3	-	-0.022	0.024	-0.728	No
H4	-	-0.240	0.026	-7.336	Yes
H5	+	0.354	0.029	9.252	Yes
H6	+	0.199	0.039	4.696	Yes
H7	+	0.292	0.049	6.403	Yes

7.5.1.1 The Association between Asset Specificity and Accounting Function Outsourcing Intensity

The asset specificity is expected to have a negative relationship with accounting function outsourcing intensity. Therefore, the research hyppothesis is presented as follows:

> **H1:** The higher the level of the asset specificity of accounting functions, the lower the accounting function outsourcing intensity

The path that connects asset specificity to outsourcing yields a significant coefficient value of -0.295 (SE=0.032; C.R=-7.987). Hence, a significant negative coefficient for asset specificity, suggesting that asset specificity is negatively associated with accounting function outsourcing intensity, as predicted, thereby confirming H1. In other words, the results support H1.

7.5.1.2 The Relationship between Environmental Uncertainty and Accounting Function Outsourcing Intensity

It was noted earlier that environmental uncertainty is negatively associtated with outsourcing of accounting functions. Therefore, the research hypothesis is presented as follows:

> **H2:** The higher the environmental uncertainty in accounting functions, the lower the accounting function outsourcing intensity

The link between environment uncertainty and accounting function outsourcing intensity as shown in Figure 7.4 (see Table 7.9) generated a coefficient value of -0.008 and this is not significant at 0.001 (SE=0.027; C.R=-0.251; p=0.802). As a result, hypothesis 2, which stated that environmental uncertainty is negatively related to outsourcing intensity of accounting functions, was not supported. In other words, this means that environment uncertainty is not related with accounting function outsourcing.

7.5.1.3 The Association between Behavioural Uncertainty and Accounting Function Outsourcing Intensity

The behavioural uncertainty is predicted to have a negative relationship with accounting function outsourcing intensity. Therefore, the research hypothesis is stated as follows:

> **H3:** The higher the level of the behavioral uncertainty in accounting functions, the lower the accounting function outsourcing intensity

As shown in Figure 7.4 and Table 7.9, the association between behavioural uncertainty and accounting function outsourcing intensity is -0.022 and this is not significant at 0.001

(SE=0.024; C.R=-0.728; p=0.466). This means that behavioural uncertainty is not associated with accounting function outsourcing. Hence, H3 is not supported in this study.

7.5.1.4 The Association between Frequency and Accounting Function Outsourcing Intensity

The hypothesis below is examined in order to understand the relationship between frequency and outsourcing intensity of accounting functions.

> **H4:** The higher the frequency of accounting functions, the lower the accounting function outsourcing intensity

The coefficient value for the route from frequency to accounting function outsourcing intensity is -0.240 (SE=0.026; C.R=-7.336). Hence, support was found for hypothesis 4, which stated that frequency is negatively associated with outsourcing intensity of accounting functions. This finding is also consistent with TCE theory which indicates frequent or recurrent accounting services are more likely to be produced internally.

7.5.1.5 The Relationship between Trust and Accounting Function Outsourcing Intensity

Below is the hypothesis to analyse the relationship between trust in the accountant and outsourcing intensity of accounting functions.

> **H5:** The higher the level of trust of the SME owner/manager in the professional accountant, the higher the accounting function outsourcing intensity

With a coefficient value of 0.354, the association between trust and accounting function outsourcing intensity is deemed to be significant (SE=0.029; C.R=9.252). Therefore, a significant positive coefficient for trust of the SME owner/manager in the external accountant, suggesting that the outsourcing of accounting functions is significantly positively associated with the trust of the SME owner/manager in the professional accountant, thereby confirming Hypothesis 5.

7.5.1.6 The Relationship between Technical Competence and Accounting Function Outsourcing Intensity

Hypothesis below is stated in order to analyse the association between technical competence and outsourcing intensity of accounting functions.

> **H6:** The stronger the perception that external accountants are more technically competent than the in-house accountants, the higher the accounting function outsourcing intensity

As shown in Figure 7.4, the coefficient value that is produced between technical competence and accounting function outsourcing intensity is 0.199. This is a significant results (SE=0.039; C.R=4.696). In effect, this path is also considered that technical competence is significantly positively associated with the degree of outsourcing of accounting functions at a significance level of 0.001, which provides support for Hypothesis 6.

7.5.1.7 The Relationship between Degree of Competition and Accounting Function Outsourcing Intensity

Below is the hypothesis to analyze the relationship between degree of competition and outsourcing intensity of accounting functions.

> **H7:** The stronger the competitive pressures faced by the firm, the higher the accounting function outsourcing intensity

The link between competition and outsourcing as shown in Figure 7.4 generated a coefficient value of 0.292 and this is significant at 0.001 (SE=0.049; C.R=6.403). This means that degree of competition has a significant relationship with accounting function outsourcing intensity. Hence, H7 is supported in this study.

To sum up, except for environment uncertainty (H2) and behavioural uncertainty (H3), all the paths to outsourcing are significant, indicating support to all the respective hypotheses (H1, H4, H5, H6 and H7). Among these significant paths, the highest coefficient values is scored by trust link (β=-0.354) and the lowest one is shown by technical competence link (β=0.199). This result implies that among the variables, the strongest predictor of outsourcing is trust in the professional accountants while the weakest is technical competence.

7.5.1.8 The Association between Outsourcing Intensity and Firm Performance

Hypothesis below is proposed to examine the impact of accounting function outsourcing intensity on SME performance.

> **H8:** Accounting function outsourcing intensity is positively associated with firm performance

Figure 7.4 shows the coefficient value for the route from accounting function outsourcing intensity to firm performance is 0.732. Thus, H8 is supported, indicating a significant positive relationship between accounting function outsourcing intensity and firm performance. A summary of the results is presented in Table 7.10.

Table 7.10 Hypotheses Testing: The Effects of Outsourcing on Firm Performance

Path	Hypothesised Direction	.β	SE	Critical ratio	Supported
H8	+	0.732	0.245	25.268	Yes

7.5.2 Mediation Effect

Hypotheses 9, 10, 11, 12, 13, 14 and 15 are predictions that are concerned with outsourcing as the mediating variable. Path modeling via AMOS is utilised to run the analysis on the mediation effect of this study variables. For testing mediation effect in SEM, full mediation model should be compared to a partial mediation model in which direct paths from the independent variables are added to the dependent variable (Bagozzi and Dholakia, 2006). For this purpose, the full mediation model is suggested to be taken as baseline parameter (James, Mulaik and Brett, 2006). With this view, a partial mediation model is considerd as an alternative model. When the chi-square difference between the full mediation and partial mediation (alternative) model is not significant, a full mediation will be confirmed (James et al., 2006; Wang, Law, Hackett, Wang and Chen, 2005). From the non-significant change difference can conclude the change which is made on the full

mediation does not significantly add to the improvement of the model's overall fit (Wang et al., 2005).

First, for testing the mediation effect, the χ^2 goodness-of-fit (GOF) measures of the proposed full mediation model should be examined. Second, the χ^2 goodness-of-fit (GOF) measures for partial mediation model should be conducted. After that, for comparison purposes, direct lines that link the independent variables (asset specificity, environmental uncertainty, behavioural uncertainty, frequency, trust, technical competence, and competition) to the dependent variable (firm performance) are added in the existing model. The new overall fit generated by the partial mediation model is subsequently compared with the overall fit yielded earlier by the proposed model (full mediation model). The results of this mediation test are presented in Table 7.11.

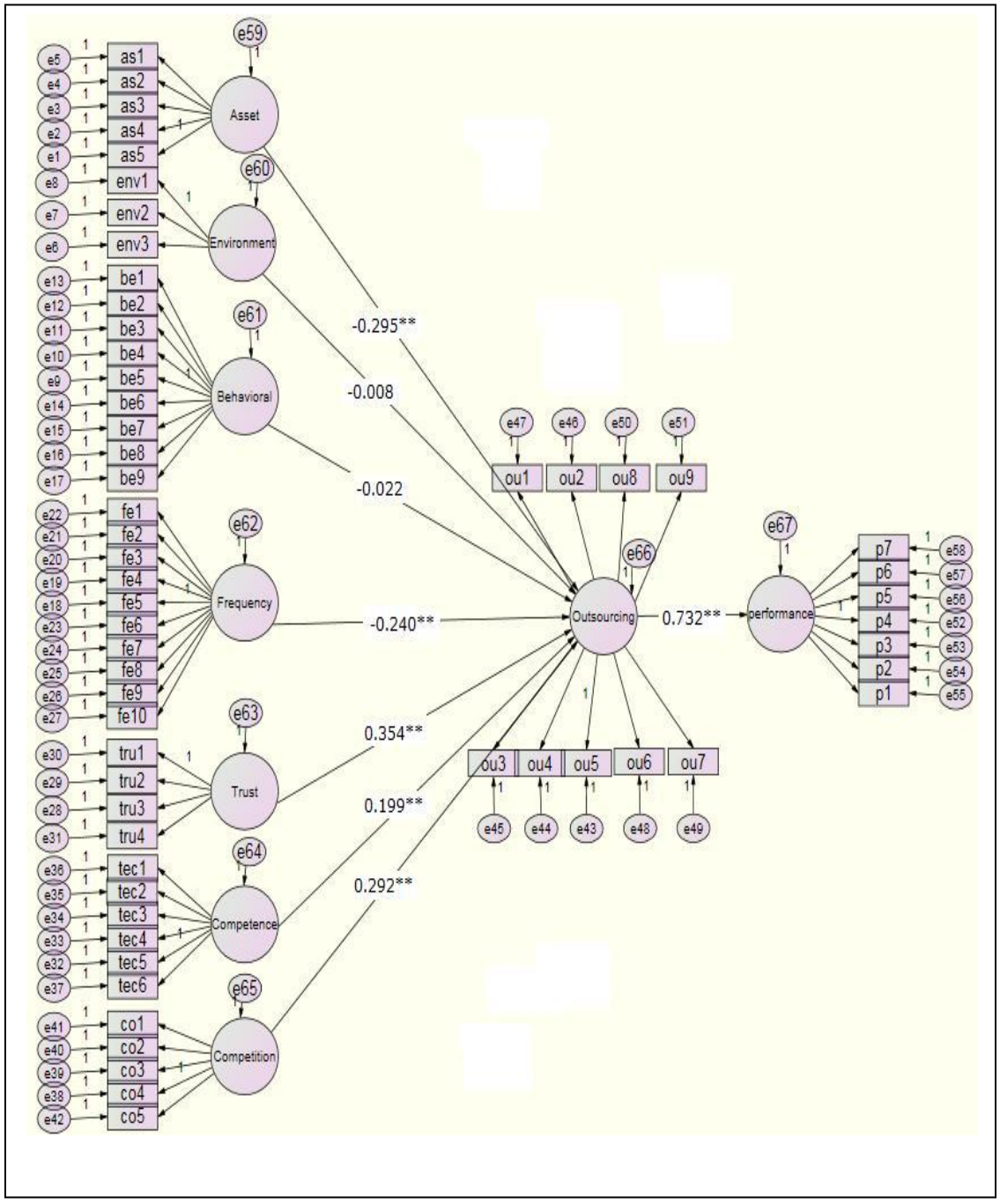
Table 7.11: The Overall Fit of the Full Mediation and Partial Mediation Model

	χ^2	df	P<0.001	χ^2/df	CFI	RMSEA	SRMR
Complete Mediation	3875.157	1566	0.000	2.475	0.955	0.047	0.051
Partial Mediation	3870.195	1559	0.000	2.482	0.955	0.048	0.051
Difference (Δ) between complete and partial mediation models	4.962	7	0.000	0.007	0.000	0.001	0.00

The difference in chi-square between both models is investigated to see if the change is significant. For a chi square difference of 4.962, with 7 degrees of freedom, the associated p-value is not significant (p=0.667). For example, difference between the fit of the partial mediation model and the fit of the full mediation model is very little. Thus, the additional paths generated in the full mediation model do not cause any significant change to the overall fit of the original model. Hence, for parsimonious reason, the partial mediation

model is rejected and the full mediation model is accepted in this research (James et al., 2006). Finally, Figure 7.4 shows the parameter estimates of the related paths (the full mediation model) for hypotheses testing purposes.

Figure 7.4: Parameter Estimates of the Related Paths



Hypothesised mediating role of outsourcing is investigated in the following part. Based on the parameters estimated in figure 7.4, direct, indirect and total effects are presented in Table 7.12.

Table 7.12: Direct, Indirect, and Total Effects of Hypothesised Model

Independent Variables	Endogenous variables						Findings-mediation effects
	Outsourcing (R^2 =0.46)			Firm Performance (R^2 =0.54)			
	Direct effects	Indirect effects	Total effects	Direct effects	Indirect effects	Total effects	
Asset specificity	-0.295	.000	-0.295	.000	-0.216	-0.216	Yes
Environmental uncertainty	-0.008	.000	-0.008	.000	-0.006	-0.006	No
Behavioral uncertainty	-0.022	.000	-0.022	.000	-0.016	-0.016	No
Frequency	-0.240	.000	-0.240	.000	-0.176	-0.176	Yes
Trust	0.354	.000	0.354	.000	0.259	0.259	Yes
Competence	0.199	.000	0.199	.000	0.146	0.146	Yes
Competition	0.292	.000	0.292	.000	0.214	0.214	Yes
Outsourcing	.000	.000	.000	0.732	.000	0.732	-

H9: Accounting function outsourcing intensity mediates the relationship between asset specificity and firm performance

As shown in Figure 7.4, both direct effects of asset specificity on outsourcing intensity (β=-0.302) and outsourcing intensity on firm performance (β=0.732) are significant. Referring to the results of indirect effects presented in the Appendix 6, it is indicated that the indirect path which links asset specificity to firm performance through outsourcing

intensity is -0.216. Hence, with a significant extent of indirect coefficient value, outsourcing intensity plays a significant medaiting role on the relationship between asset specificity and firm performance, indicating a support to H9.

H10: Accounting function outsourcing intensity mediates the relationship between environmental uncertainty and firm performance

For a variable to be recognised as a mediator, one of the conditions is that independent variable should affect mediator variable (Baron and Kenny, 1986). In this study, the results show that the environmental uncertainty is not associated with outsourcing intensity (β=-0.008, SE=0.027; C.R=-0.251; p=0.802) while the path from outsourcing intensity to firm performance is significant (β=0.732, SE=0.245; C.R=25.268, p<0.001). According to condition suggested by Baron and Kenny (1986), since the path from environmental uncertainty (independent variable) to outsourcing (mediator variable) is not significant, therefore, outsourcing intensity as a mediator is not supported in this relationship.

H11: Accounting function outsourcing intensity mediates the relationship between behavioural uncertainty and firm performance

According to condition suggested by Baron and Kenny (1986), independent variable should be associated with mediator variable, it can be seen that the path from behavioural uncertainty to outsourcing is not statistically significant (β=-0.022, SE=0.024; C.R=-0.728; p=0.802). Although the relationship between outsourcing intensity and firm performance is significant but outsourcing intensity as a mediator between behavioural uncertainty and firm performance is not supported.

H12: Accounting function outsourcing intensity mediates the relationship between frequency and firm performance

As indicated in Figure 7.4 earlier, the paths between frequency and outsourcing intensity (β=-0.240) and between outsourcing intensity and firm performance (β=0.732) are both significant. The product of those direct effects resulted in a significant indirect effect of -0.176. Therefore, these findings confirm that outsourcing intensity plays a significant mediating role on the the relationship between frequency and firm performance. Thus, H12 is supported.

H13: Accounting function outsourcing intensity mediates the relationship between trust in professional accountant and firm performance

With a significant coefficient value of 0.372 that is seen by the relationship between trust and outsourcing intensity and 0.731 between outsourcing intensity and firm performance, it is concluded that outsourcing intensity plays a mediating role in the relationship between trust and firm performance. The route from trust to firm performance via outsourcing intensity is represented by a significant coefficient value of 0.354. As such, it is claimed that outsourcing intensity is a significant mediator in the relationship between trust and firm performance. This means that H13 is supported with a significant value of indirect effect.

H14: Accounting function outsourcing intensity mediates the relationship between technical competence and firm performance

As illustrated in Figure 7.4, the direction from technical competence to outsourcing intensity (β=-0.199) and between outsourcing intensity and firm performance (β=0.732) are both significant. The route from technical competence to firm performance via outsourcing intensity is represented by a significant coefficient value of 0.146. Hence, these findings confirm the significant role of outsourcing intensity in mediating the relationship between technical competence and firm performance. Thus, H14 is supported.

H15: Accounting function outsourcing intensity mediates the relationship between degree of competition and firm performance

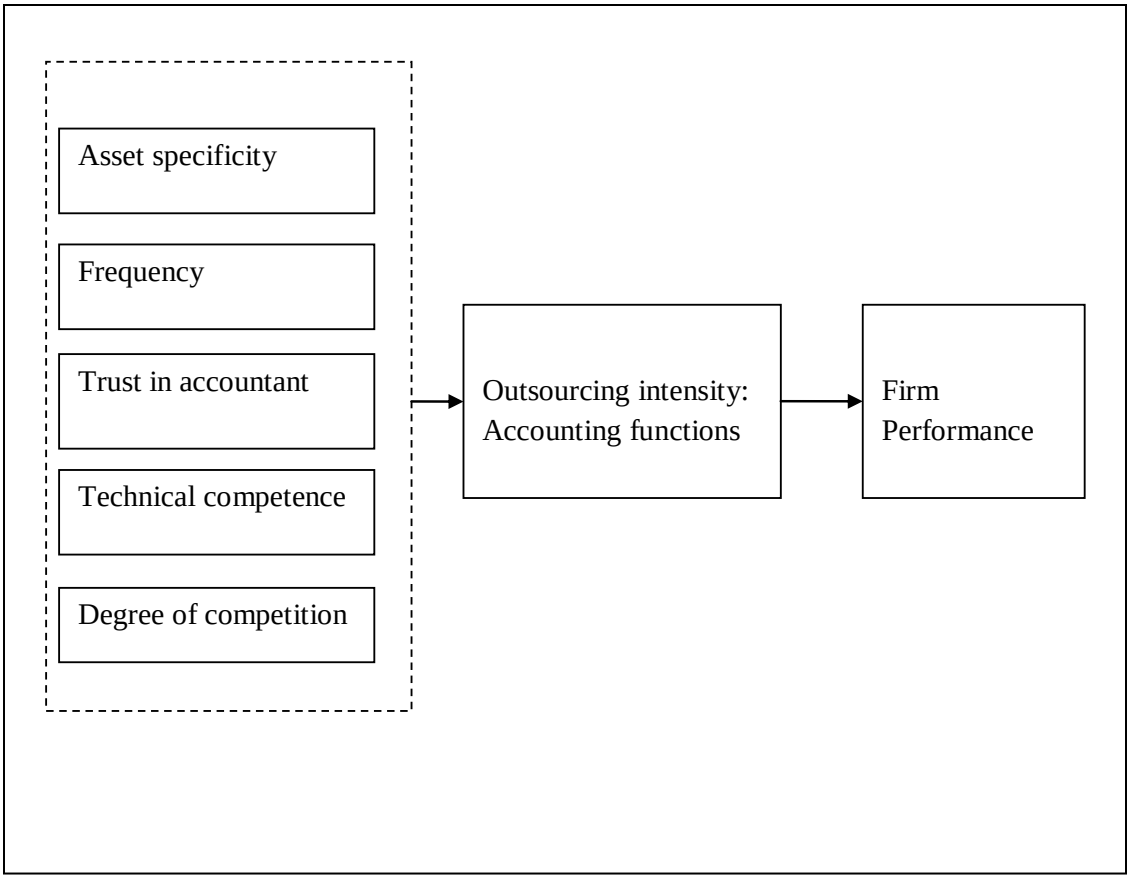
Finally, since both links that tie the degree of competition to outsourcing intensity (β=0.292) and outsourcing intensity to firm performance (β=0.732) are significant, outsourcing intensity is again found to have a mediating role here. The significant indirect effect of degree of competition on firm performance through outsourcing intensity is 0.214. All these results conclude that accounting function outsourcing intensity is a significant mediator in the relationship between degree of competition and firm performance. Otherwise stated, H15 is supported with a significant magnitude of indirect effect.

7.6 EVALUATING THE FINAL HYPOTHESISED STRUCTURAL MODEL

The proportion of variance explained by the revised model was examined upon completing hypotheses testing. While the non-significant path has no considerable meaningful interpretation provided for the parameter estimates, several insignificant paths were

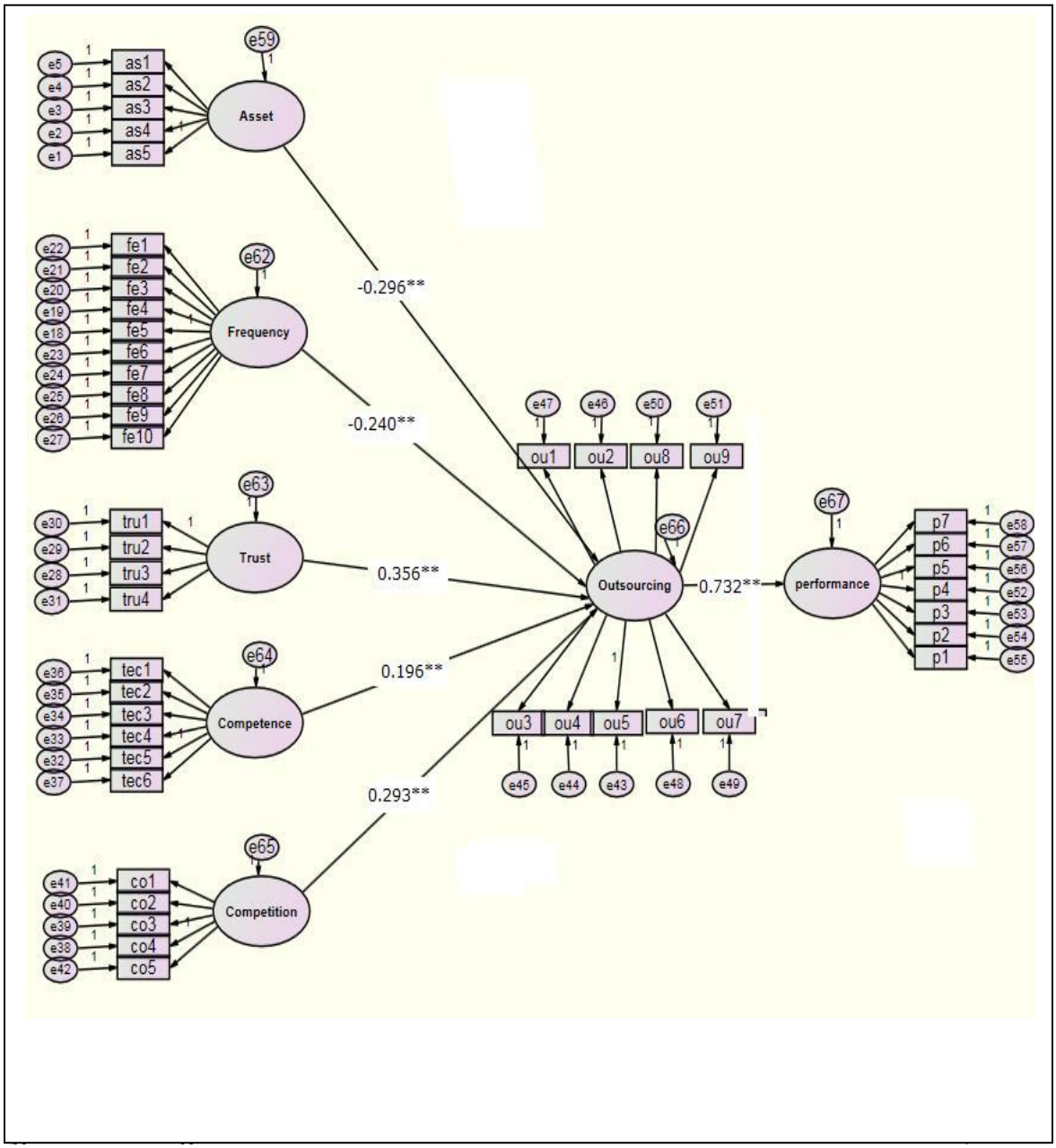
eliminated from the structure model. Consequently, the proposed model has been modified and the final model of this study is introduced in Figure 7.5.

Figure 7.5: Revised Model



This resulted in several of the path estimates from the previous mediation model changed slightly, as would be expected. The final revised model is presented in Figure 7.6.

Figure 7.6: Parameter Estimates of the Revised Model



Finally, the squared multiple correlations (R^2) were investigated to ascertain the proportion of variance that was described by the exogenous variables in the theoretical model. Particularly, the total variance in outsourcing intensity explained by the remaining five

factors was 46% in the final model. The overall fit of the final revised structural model shown in Table 7.13.

Table 7.13: The Overall Fit of the Revised Model

Chi-square	**Ratio**	**GFI**	**TLI**	**CFI**	**RMSEA**
2712.252. df=971 (p=.000)	2.7939	0.902	0.955	0.958	0.052
Squared Multiple Correlations : outsourcing= 0.46 ; firm Performance=0.54					

** Significant at p < .001

The proposed model explained a significant amount of variance in firm performance in that all direct and indirect effects contribute to 54% of the total variance, which was considerably high given that numerous factors may affect firm performance. Selected AMOS outputs for the final structural model are presented in Appendix 7.

7.7 SUMMARY OF FINDINGS

Out of the fifteen (15) hypotheses that have been tested in this study, eleven (11) hypotheses were supported. This section summarises the results of the hypotheses testing (see Table 7.10). Hypotheses 1,2,3,4 expected negative effects on outsourcing intensity. The findings indicated that only asset specificity and frequency negatively and significantly correlated with outsourcing intensity of accounting functions while the hypothesised path between environmental uncertainty and behavioural uncertainty (Hypotheses 2 and 3) and outsourcing intensity were not supported.

Table 7.14: Summary of the Tested Hypotheses

Hypotheses	**Supported**
H1: The higher the level of the asset specificity of accounting functions, the lower the accounting function outsourcing intensity	Yes
H2: The higher the environmental uncertainty in accounting functions, the lower the accounting function outsourcing intensity	No
H3: The higher the level of the behavioral uncertainty in accounting functions, the lower the accounting function outsourcing intensity	No
H4: The higher the frequency of accounting functions, the lower the accounting function outsourcing intensity	Yes
H5: The higher the level of trust of the SME owner/manager in the professional accountant, the higher the accounting function outsourcing intensity	Yes
H6: The stronger the perception that external (professional) accountants are more technically competent than the in-house accountants, the higher the accounting function outsourcing intensity	Yes
H7: The stronger the competitive pressures faced by the firm, the higher the accounting function outsourcing intensity	Yes
H8: Accounting function outsourcing intensity is positively associated with firm performance	Yes
H9: Accounting function outsourcing intensity mediates the relationship between asset specificity and firm performance	Yes
H10: Accounting function outsourcing intensity mediates the relationship between environmental uncertainty and firm performance	No
H11: Accounting function outsourcing intensity mediates the relationship between behavioural uncertainty and firm performance	No
H12: Accounting function outsourcing intensity mediates the relationship between frequency and firm performance	Yes
H13: Accounting function outsourcing intensity mediates the relationship between trust in professional accountant and firm performance	Yes
H14: Accounting function outsourcing intensity mediates the relationship between technical competence and firm performance	Yes
H15: Accounting function outsourcing intensity mediates the relationship between degree of competition and firm performance	Yes

Hypotheses 5, 6 and 7 predict that trust, technical competence, and degree of competition are positively and significantly correlated with outsourcing intensity. These three factors were received support. In other words, all the three factors were positively and significantly correlated with outsourcing intensity.

Hypotheses 8 examined the direct effects of outsourcing on firm performance. Therefore, it was found that outsourcing intensity had a significant positive effect on firm performance. In other words, outsourcing intensity was positively associated with firm performance.

Hypotheses 9, 10, 11, 12, 13, 14 and 15 proposed that outsourcing plays a mediating role on the relationships between factors such as asset specificity, environmental uncertainty, behavioural uncertainty, frequency, trust, technical competence, degree of competition, and firm performance. According to suggestions by Baron and Kenny (1986), one of the conditions for mediation effect is that the independent variable should have effect on the mediating variable. In this case, this outsourcing has mediating role on the associations between asset specificity, frequency, trust, technical competence, degree of competition, and firm performance while the hypothesised path was not supported for mediating role of outsourcing on the relationship between environmental uncertainty, behavioral uncertainty, and firm performance.

7.8 CHAPTER SUMMARY

This chapter examined TCE and RBV factors on outsourcing. The profile of the SMEs and the accounting outsourcing practices in Iran were forwarded. Moreover, hypotheses were tested and results discussed in this chapter. Structural equation modeling was employed to test the mediating effect of accounting functions outsourcing intensity on the relationships

between the selected factors and firm performance as well as the direct effect of TCE and RBV factors on outsourcing intensity. Hence, this chapter concluded that the full mediated model is appropriate to examine the overall relationship of the proposed model.

CHAPTER 8

DISCUSSION AND CONCLUSION

8.1 INTRODUCTION

This chapter provides a discussion of the study's main findings. It also outlines the study's limitations and indicates potential avenues for further research. The study's broad objective was to further our understanding of factors affecting outsourcing in the SME sector and outsourcing effect on SME performance. As no theory is all-inclusive or comprehensive, the study adopted a quantitative approach (questionnaire survey) to test more than one theory. The main theory used was transaction cost economics (TCE), and the other theory drawn upon was the resource-based view (RBV). This chapter discusses the findings from the theoretical model of accounting function outsourcing intensity. Explanations on the findings are presented followed by the contributions and managerial implications of the study. Finally, the chapter concludes with limitations of the study and suggestions for future research.

8.2 DISCUSSION: OVERVIEW OF THE FINDINGS

To ease the discussion and interpretation, the explanations on the findings are based on the research objectives and the study hypotheses. This is argued as follows.

8.2.1 Research Objective 1: To Identify the Types of Accounting Functions that SMEs Outsource to a Professional Accountant

This study focused on outsourcing of accounting functions in Iranian SMEs. The first research objective is to identify which accounting functions are outsourced by SMEs. Based on interview with ten (10) professional accountants and eight (8) SME owner-managers (see Section 5.3.2 in chapter 5), this revealed that Iranian SMEs outsource twelve types of the accounting functions to professional accountants. However, only nine accounting functions were utilised in the final study because items such as tax returns, property accounting and firm secretarial services had low correlations with the respective factors in pilot test. Additionally, tax returns and firm secretarial services are mandatory and regulated and do not affect the sourcing decisions (Everaert et al., 2006). This finding is in line with prior studies (Everaert et al., 2006, 2007, 2010) which found many SMEs outsourced six types of their accounting tasks to external accountants.

8.2.2 Research Objective 2: To Examine the Extent to Which Iranian SMEs Outsource their Accounting Functions

A questionnaire survey was conducted to measure the extent to which nine accounting functions are outsourced by Iranian SMEs. To address second research objective, descriptive statistics for each item of the accounting outsourcing measures was performed to examine its frequency of use. Descriptive statistics reveal that out of the 658 SME respondents, the majority of Iranian SMEs outsourced their accounting functions to external accountants. For example, it shows the extent of accounting outsourcing among SME respondents range mostly from 4 (to some extent) to 7 (totally outsourcing or to a greater extent), demonstrating high usage of outsourcing of accounting practices in Iranian

SME environment. This finding is similar to Everaert et al. (2007) who evidenced that only thirty-five (35%) of the SMEs use total insourcing their accounting functions.

8.2.3 Research Objective 3: To Explore the Factors Affecting Accounting Function Outsourcing Intensity in Iranian SMEs

This study provides empirical evidence on accounting outsourcing decisions by combining transaction cost economics (TCE) and resource-based view (RBV) explanations. Main objectives of this study are to identify the factors influencing outsourcing of accounting functions and the impact of outsourcing intensity on SME performance. This study utilised TCE model by extending trust in external service provider as critical factor in outsourcing to TCE model. Furthermore, other critical factors such as technical competence and degree of competition were included to in the theoretical model, as suggested by resource-based theory. Accordingly, this section summarises the findings pertaining to the TCE and RBV model next.

8.2.3.1 Asset specificity and outsourcing intensity

This study found that asset specificity was statistically associated with outsourcing of accounting practices. This study provided support for the TCE premise, which indicates when the accounting activities involve high levels of asset specificity; SMEs are less likely to outsource their accounting practices. This finding also received support from the RBV which indicates the accounting functions involving specific assets should be processed inside the firm since the SMEs' governance choices will be directed by their attempts to safeguard idiosyncratic capabilities (Espino-Rodríguez et al., 2008; Leiblein and Miller, 2003). This result is in line with prior research (Everaert et al., 2010; Spekle´ et al. 2007; Widener and Selto 1999) which found that asset specificity was the most important

determinant of transaction cost and a significant driver for the outsourcing of internal audit and accounting activities. This finding is also consistent with preceding studies of other service functions (i.e., information technology) where asset specificity was involved as a critical driver in outsourcing decision (Nelson et al., 1996; Poppo and Zenger, 1998; Aubert et al., 2004; Barthelemy and Geyer, 2005; Alvarez-Suescun, 2010).

8.2.3.2 Environmental uncertainty and outsourcing intensity

Contrary to the TCE model, environmental uncertainty was not associated with accounting function outsourcing. In fact, the evidence on the impact of environmental uncertainty seems to contradict the insights of transaction cost economics theory. This result is similar to previous research (Widener and Selto 1999; Everaert et al., 2010) which found that environmental uncertainty was not associated with outsourcing of audit and accounting activities. This finding contradicts a few studies (Wang, 2002; Lamminmaki, 2007; Dibbern and Heinzl, 2006, 2009) which found a negative relationship between environmental uncertainty and outsourcing of service functions (e.g., Information System, food and beverage, general maintenance). However, those results may not be appropriate for accounting function outsourcing because if the accounting practices are not too specific to the SMEs, such functions might be processed (provided) by professional accountants, with insignificant difference between spot and negotiated prices (e.g., without considering the variation in the workload). If these accounting functions are too specific to the SMEs, such functions should be provided by internal staff, without considering of the fact that the context of the activity is uncertain or not (Lamminmaki, 2007). For example, "when knowledge regarding the specific context of the firm is important in making those judgments, it becomes costly to transfer them to an external accountant; hence, firms organise these accounting functions internally" (Everaert et al., 2010, p.108).

8.2.3.3 Behavioural uncertainty and outsourcing intensity

The results of the statistical analysis of survey data did not support the behavioural uncertainty variable of the TCE model. In other words, contrary to the TCE model, behavioral uncertainty appears not to play a crucial explanatory role in accounting outsourcing decision. Hence, this finding is consistent with prior studies (Widener and Selto 1999; Speklé et al., 2007; Everaert et al., 2006, 2010; Alvarez-Suescun, 2010) indicated that behavioural uncertainty is not associated with accounting function outsourcing intensity. Although Lamminmaki (2007), Wang (2002) and Dibbern and Heinzl (2009) found that behavioural uncertainty is a significant factor in the outsourcing intensity of other service functions (e.g., housekeeping and information systems), but it may not be applicable for accounting practices. The reasons could be stated: firstly, measurement problems can damage the performance of accounting sourcing modes, which makes the choice inappropriate (Alvarez-Suescun, 2010). Secondly, it is not difficult to evaluate whether the accounting practices were processed accurately by accountant because there are several software tools to check the accurateness (correctness) of accounting practices (i.e. input of data) (Everaert et al., 2006, 2010).

8.2.3.4 Frequency and outsourcing intensity

Regarding the frequency attribute, support for TCE has been provided with regard to the decision to outsource accounting functions. In other words, the survey data has provided support for TCE's frequency prediction, which indicates frequent (high frequency) accounting practices are more likely to be performed inside the firm. This implies that SMEs are able to produce economies of scale for the accounting practices that are recurrent and sizeable, in order that they are likely to provide such accounting functions inside the

firm. This result is similar to finding of previous research in accounting (Everaert et al., 2006; 2010) which found the outsourcing of routine and non-routine accounting tasks is significantly negatively related the frequency of accounting tasks. Furthermore, this result is similar to preceding studies on outsourcing of other service functions where frequency is involved, such as for internal audit (Widener and Selto 1999; Spekle´ et al. 2007) and different activities (e.g., housekeeping, food and beverage, etc) (Lamminmaki, 2007).

8.2.3.5 Trust and outsourcing intensity

The statistical analysis provided support for the trust dimension of the TCE model. In other words, trust in accountant turns out to be significantly associated with the accounting function outsourcing intensity. This finding is line with TCE presumption which argues trust is developed via relationship between parties to assist in minimising potential opportunism (Rousseau et al., 1998). This result provides empirical validation of previous research obtained a positive association between outsourcing and the trust of the SME executive in the external service provider (Everaert et al., 2010; Verwaal et al., 2008).

8.2.3.6 Technical competence and outsourcing intensity

This study found a statistically significant association between technical competence and outsourcing intensity in the light of the RBV model dimension. In other words, the result indicated that technical competence of the accountant is positively associated with outsourcing intensity. This finding is consistent with resource-based theory, which says demonstration of an accountant's competence is critical before SME owner-manager will rely on professional accountant as source of competitive advantage. This finding corroborates the previous research (Carey et al., 2006), which found the technical competence of a professional accountant was key factor influencing outsourcing of internal

auditing activities. In addition, this result also provides empirical validation of previous study obtained a positive association between accountant's competence and the utilisation of professional accountants' advisory services (Gooderham et al. 2004).

8.2.3.7 Degree of Competition and outsourcing intensity

Clearly support was obtained for resource-based arguments, which indicated degree of competition is positively associated with outsourcing accounting functions based on the study's survey phase. However, this result is contradictory with a prior study conducted in Australian hotels by Lamminmaki (2007), which failed to find a statistically significant association between degree of competition and outsourcing of some other service functions (e.g., housekeeping, food and beverage, etc). More importantly, this finding also contradicts with a prior research conducted in Norway (Gooderham et al., 2004), which indicated that the use of external accountants was not associated with the degree of competition. It is believed this could be threefold: Firstly, the preceding research was conducted in a more developed country, whereas present study was performed in lesser developing country, Iran, hence emphasising the importance of the RBV theorization and its applicability in an emerging economy context. For instance, resource- based theory argues that professional accountants can assist SMEs operating in a competitive environment, to integrate operational considerations within long-term plans to enhance their sustainability, and to achieve their business objectives (Ismail and King, 2005; Devi and Samujh, 2010; Blackburn et al., 2010). Secondly, the sample of this study included small and medium sized enterprises whereas previous study (Gooderham et al., 2004) focused on micro and small enterprises (20 employees), hence suggesting an impact of size on the need for outsourcing of accounting activities. Finally, this study examined accounting practices provided by professional accountant whereas preceding study tested

external accountants' advisory services, clearly, this indicates the importance of accounting practices for an emerging economy.

8.2.4 Research Objective 4: To examine whether there is an Association between Outsourcing Intensity and SME performance

The results of the statistical test have provided support for the firm performance of the proposed TCE and RBV model, which indicating outsourcing is as a strategic option will lead to greater resources becoming positional advantages, which in turn leads to improve firm performance. The results showed that outsourcing accounting functions was significantly positively associated with firm performance. This study's findings are in line with prior studies which revealed a positive the association between outsourcing of other service functions and firm performance (Kroes and Ghosh, 2010; Salimath etal., 2008; Berry et al., 2006; Gilley et al., 2004a; Espino Rodríguez and Padrón-Robaina, 2004; Görzig and Stephan, 2002; Bennett and Robson, 1999). However, this result is contradictory with the a few studies (Benson and littler, 2002; Gilley and Rasheed, 2000; Jiang et al., 2006) that evidenced that outsourcing was not associated with firm performance. Therefore, it suggests that this is caused by the context of large firms of developed economies where the firm entrepreneurs could be sufficiently literate on financial and management issues. For example, in an emerging economy, most SMEs face difficulty in attracting and retaining skilled employee or qualified accountants (Devi and Samujh, 2010; Jayabalan et al., 2009).

8.2.4 Research Objective 5: To Investigate the Mediating Role of Outsourcing on the Relationship between TCE and RBV variables, and Firm Performance

The mediation path for asset specificity -outsourcing-firm performance was significant. In other words, in the full structural analysis, outsourcing was found to mediate the relationship between asset specificity and firm performance. Regarding the relationship between asset specificity and firm performance, it is confirmed that asset specificity has a lower influence on the firm performance when an accounting function is outsourced than when it is provided in-house. In addition, result shows that outsourcing does not mediate the relationship between environmental uncertainty and firm performance. Furthermore, the statistical analysis of survey data collected has failed to provide support for mediation effect of outsourcing on the relationship between the behavioral uncertainty and firm performance. However, finding of this study are similar to previous study in other service function (Cho et al., 2008) which found that "the logistics outsourcing variable is not a mediating variable but an independent variable" (p.352). Besides, the results of the statistical test finds support for the mediating influence of outsourcing on the relationship between independent variables such as frequency, trust, technical competence, degree of competition, and firm performance. Although these findings address the lack of empirical research on the mediating role of outsourcing, but findings of this study are similar to other service functions (Abdul-Halim, 2009) which found human resource function outsourcing mediates the relationship between business strategy and firm performance.

8.3 CONTRIBUTION OF THE STUDY

The fact that transaction costs and resources are fundamental factors in the outsourcing decision highlights the significant role for accounting functions in facilitating decisions about whether to outsource or insource. This study on outsourcing accounting functions

has several important contributions for the accounting outsourcing literature from three aspects, theoretical, practical and methodological. These are discussed next.

8.3.1 Theoretical Contributions

This study utilised a combination of the transaction cost economics (TCE) and resource-based theories to explain outsourcing of accounting functions, hence, providing some empirical evidence on the applicability of such theories in outsourcing of accounting practices in an emerging economy context. In this regard, it has extended the accounting literature and reinforced their basic tenets.

Previous studies used transaction attributes such as asset specificity, environmental and behavioural uncertainty and frequency in describing outsourcing in TCE view (Lamminmaki, 2007; Dibbern and Heinzl, 2009; Wang, 2002; Widener and Selto 1999). However, this study extends the literature by incorporating "trust in the accountant" as a critical factor affecting transaction costs and outsourcing in TCE model. As a result, the application of trust in accountant as independent variable into the TCE model is expected to extend the extant accounting literature and suggests significant implications for the profession as discussed in 8.3.

This study also adds to a relatively new body of accounting outsourcing literature that explores variables such as technical competence and degree of competition as important factors influencing outsourcing of accounting functions based on the RBV model. Whilst prior research has investigated the association between those factors and outsourcing of other activities (i.e., internal audit and advisory services, housekeeping, etc) (Gooderham et al., 2004; Carey et al., 2006; Lamminmaki, 2007), evidence from this study contributes to extending the limited accounting outsourcing literature from emerging economies.

Further, this study evidences the positive association between outsourcing and SME performance. This is an impetus for academics to pursue further research in this accounting outsourcing research agenda and extend the limited extant Literature. More importantly this study is the first to evidence the mediating role of outsourcing on the relationship between the various factors identified and firm performance. Therefore, this study enriches the accounting literature evidencing the importance of accounting outsourcing.

Given that SMEs play a significant role in Iranian economy with influence over the economic policymaking of the country, the findings from this study will go a long way to encourage more scholarly interest in the role of the accounting profession in empowering SMEs and enhancing their performance.

8.3.2 Managerial Implications

It is argued that TCE and RBV theories predict outsourcing. Combining these two theories, it appears that what would really be useful from a managerial perspective is a theoretical model that assists the owner-managers of SME determine what the optimal degree of outsourcing of accounting functions is for their firms. The development of this theoretical model also produces a motivating challenge for the academic community.

This work is the first to examine outsourcing of accounting practices and its impact on SME performance in the context of emerging economy (Iran) and it also explicitly demonstrates the services currently provided by professional accountants to SME sector. Hence, by identifying the broader range of services currently provided by professional accountants to SMEs and the benefit attached to these services brings into focus the broader range of choices available to SME owner/managers.

SMEs in emerging economies are facing with internal resource gaps; they generally refer to professional accountants to fill up these gaps. Clearly, professional accountants are in a unique position to fulfill the needs of SMEs, but it is important that the services are provided by professional accountants to SMEs are fit for purposes (e.g., relevant and high quality).

Accounting outsourcing is a potentially strong instrument for SMEs attempting to fulfill their internal resource gaps. Outsourcing of accounting practices allows SME owner-managers to focus on strategic activities that add more value. Hence, it strengthens human resource's potential to make a practical contribution to business success.

This work is the first to examine outsourcing of accounting functions in Iran, an emerging economy, and enables SME executives to identify the current outsourcing tendency. The results may encourage the development of market niches for some accounting activities since the work analyses the SME managements' demand for outsourcing. The work produces knowledge and will help SME owner-managers in their sourcing decisions concerning the principal processes of the SME industry and specific assets.

Another important implication of this study for SME owner-managers is the need for a skillful knowledge of their operations and to determine the needs of each their operation so as to attain a better competitive advantage and choose suitable service providers in the case of accounting practices. It would also be necessary to support interorganisational relations and there should be suitable service provider able to provide quality services. SMEs will only be able to cover the gaps in their internal resources if they obtain external service providers that can provide quality services or if they can use internal accountant when outsourcing does not provide the expected results.

The managerial implication of this study related to the effect of accounting function outsourcing intensity on SME performance. While accounting outsourcing is broadly realised to be an attractive choice, its effect on SME performance and value that is outsourcing result have not yet been examined by previous studies. Thus, these findings provide suitable information to SME owner-managers in which a higher extent on accounting function outsourcing contributes positively to SME performance.

The findings of this research are also critical in making decision which accounting functions are frequently outsourced by Iranian manufacturing SMEs. Based on this information, SME executives should be considerate about potential accounting functions to be outsourced with the intention that a positive effect on SME performance is achieved.

This study also identified several advantages of outsourcing of accounting activities. Therefore, SME owner- managers are aware of the advantages of accounting outsourcing, which include: accessing experts, reducing costs, and focusing on core business to improve the quality in performing accounting functions and getting access to human capital for advanced operation. Consequently, this information may provide additional knowledge for SME owner-managers in deciding to outsource their accounting practices.

Another practical contribution is that published studies in English in the Iranian context are limited. Hence, this research also explicitly discusses development and regulation of accounting profession in Iran, and it links services currently provided by professional accountants to SMEs and examines the role that professional accountants play in Iranian context.

Understanding the notion of outsourcing can help SME executives in their assessment of the suitability of an activity for outsourcing. Based on this discussion of the ability to

outsource, SME executives could use these categories to understand their portfolio of activities and to rank these activities in terms of effectiveness in outsourcing. Nevertheless, this research suggests the analysis can improve managerial decision-making in two important respects in SME environment. First, SME owner-managers are often not aware of the fact there is a most favorable degree of outsourcing for their entire portfolio. As an alternative, they have a tendency to observe the good or wickedness of outsourcing. This study suggests a concurrent concentration on the portfolio as a whole will facilitate to make better outsourcing decisions. Second, SME owner-managers are in need of guidelines as to where the most favorable point lies for their firm at a particular time.

From a theoretical point of view, the transaction cost theory appropriately explains the outsourcing of accounting functions. This study draws on Coase's (1937) original work, and contributes to TCE perspective and reinforces the TCE premise that high transaction volumes are associated with accounting insourcing. Therefore, TCE supports that firms are less likely to outsource their accounting functions when they cannot determine whether the service provider will actually performs the activities according to the agreed contract. Therefore, when firms outsource accounting activities, they acknowledge the risk and try to reduce it. In these conditions, due to bounded rationality and opportunism, the SMEs cannot realise the potential risk until a problem arises, such as an external service provider treats them opportunistically or they are overcharged. In such cases, SMEs tend to respond quickly to lessen current and future risk. Nonetheless, by looking at possible outsourcing through the lens of TCE, these SMEs might be able to avoid risk by using the proper governance structure and anticipating risk and for the situation.

Taken as a whole, the proposed theoretical model in this research provides the SME owner- managers among a useful way of thinking on how SMEs use accounting function

outsourcing to strengthen their internal resources. These will help SME executives make efficient decisions in their future choices of accounting function outsourcing engagement.

8.3.3 Implications for the Accounting Profession in Iran

The findings of this study have two key implications for the accounting profession in Iran. Firstly, given that the outsourcing of accounting functions is associated positively with SME performance; professional accountants can play a significant role to empower SMEs in Iran. They should explore ways to encourage SMEs to outsource their accounting functions. In order to achieve this and make this a viable option for SMEs, they must ensure their competence and capabilities are sufficiently enhanced so as to perform their functions effectively and gain the confidence of their SME clients. Therefore, the accounting profession led by the Iranian Institute of CPAs should embark on awareness creation programmes to advise their members to expand their services to SMEs. This can be achieved by incorporating these elements in the appropriate Continuing Professional Education (CPE) programmes aimed at enhancing their multidisciplinary and technical expertise beyond traditional compliance work and move to become knowledge professionals. Whether or not professional accountants are able to achieve this shift is arguable but this is where efforts of the International Federation of Accountants (Blackburn and Jarvis, 2010) are evidently critical. Whilst the evidence is from Iranian SMEs, it may similarly apply to other emerging economies' professional accounting associations.

Secondly, it is found that trust is an important element in the outsourcing equation. In order to maintain and sustain the trust of their SME clients it is important that professional accountants always perform their functions with utmost integrity and professional

competence and it is the duty of the profession to ensure its members strictly comply with its code of ethics.

8.3.4 Methodological Contributions

The methodological contribution of this study is the development of measurement of the SME performance as the outcome of accounting outsourcing. Previous studies examined impact of outsourcing on several measures of financial (return on assets and return on sales) and non-financial (innovation performance stakeholder performance) performance (Gilley et al., 2004a; Gilley and Rasheed, 2000), but the evidence indicates the link between outsourcing and financial and non-financial performance is not clearly established (i.e., indicators of financial and non-financial performance were not specified) (Espino Rodríguez and Padrón-Robaina; 2004). In this regard, firm performance was measured by both financial (profitability, sales growth, return on assets, and cash flow) and non-financial (Lifestyle, independence, and job security) goals in this study. Therefore, it departs from past research, which examined the impact of outsourcing on firm performance by incorporating both financial and non financial measures.

Another important methodological contribution of this study involves the identification of the determinants of the outsourcing of accounting functions. Accounting is an extensive concept including areas of financial accounting, management accounting and finance. This study examined some critical factors on outsourcing of nine types of accounting functions including areas of financial accounting, management accounting and finance whereas prior study investigated only six types of financial accounting activities (Everaert et al., 2010). In that respect, this research contributes to the methodology in accounting research.

A comprehensive model of the relationships among important factors, outsourcing and firm performance was developed, justified and empirically tested simultaneously using SEM. The use of SEM increases the statistical efficiency of results of this study in several ways. Firstly, it allows the analyses of multiple structural relationships at the same time that result in more exact modelling than the utilisation of SPSS method (Hair et al. 2006). Secondly, the direct and indirect effects of all the independent variables on outsourcing and firm performance can be assessed easily at once. Finally, the SEM technique reduces the measurement error problem related to test of the mediating effects (Baron and Kenny, 1986). This is because SEM method provides explicit estimates of the measurement errors and consequently considered to be a more superior method (Byrne, 2001).

While variables such as asset specificity, environmental uncertainty, behavioural uncertainty, frequency, trust, technical competence, degree of competition, outsourcing and SME performance were tested in a few prior studies, but none of them examined confirmatory factor analysis (i.e., convergent validity and discriminant validity) for variables measurement (Everaert et al., 2006, 2010; Dyer and Ross, 2008; Lamminmaki, 2007; Carey et al., 2006; Sarapaivanich and Kotey, 2006). Consequently, satisfactory convergent validity and discriminant validity for all variables and measurement scale contributes to the methodology in accounting research.

8.4. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The study has a number of limitations that should be taken into account. These limitations together with the suggestions for future research are discussed next.

Generalisability of this study's findings may be limited to the size of the firms. This study only focused on small and medium enterprises (SMEs) and established SMEs that engaged with outsourcing of accounting practices. Accordingly, future research should attempt to collect data from the firms without consideration of the size of firms. As such, comparison between large, SMEs on practices of outsourcing accounting activities can be obtained whether or not deviations in outsourcing accounting activities exist with reference to large firms.

The respondents of this study are from the manufacturing SME sector, so generalisation to other sectors may be made with caution. For example, it is possible that the pattern of accounting function outsourcing will be different for SMEs in service sector than it is for SME in manufacturing sector, because SMEs in service sector are characterised by human resources (e.g., less tangible outputs and production). Therefore, it might be interesting to expand the research to SME in service sector to get obtain more generalisable findings. This study adopts a quantitative approach using a sample of respondents at one point of time (a single cross-sectional descriptive). Future study should be focused on longitudinal data, which can provide detailed explanations on accounting function outsourcing, which usually takes in a long time period to obtain the results. Furthermore, a qualitative approach could be adopted in future studies to obtain insights from SMEs as to why they outsource their accounting functions.

While there are many facets of accounting functions specified in the literature, this research merely concentrates on nine most important accounting functions namely bookkeeping work, preparation of financial statements, payroll accounting, budgeting / forecasting, customer profitability analysis, product costing, financial planning, financial management services, and design/review internal control systems. Consequently, it will be

interesting if future research examines the importance of other accounting service functions such as advisory services in the context of emerging economies.

For accounting practices, many SMEs use a combination of outsourcing and insourcing; it is still unclear as to whether transaction characteristics can exclusively explain outsourcing and insourcing of accounting practices. Another plausible explanation is that most SMEs are lacking knowledge and resources and they need to outsource their accounting practices to fulfill their internal gaps, so transaction costs only cannot be the main reason in outsourcing decision in the SME environment.

This study did not analyse the data for each accounting functions separately. For instance, the division of accounting functions into nine functions ignores the fact that accounting functions may be divided into sub-functions. For example, financial planning or financial management services have many sub-functions that this study could not examine separately, so future research can consider each sub-function separately.

Results of this research indicate that trust in service provider plays an important role in outsourcing of accounting practices based on TCE model whereas prior empirical studies on outsourcing largely ignored the independent role of the trust in outsourcing decision. In fact, the role of trust may be relatively unique for the accounting function outsourcing in SME environment. Before SMEs outsource accounting activities, they should be confident that the professional accountant is competent and trustworthy in view of the confidentiality of the accounting information. As a result, future research could examine whether trust in the accountant is a critical factor in outsourcing of accounting practices to confirm this finding in SME environment, where confidentiality is of importance.

There are many motivating and exciting areas of research opportunity in the accounting function outsourcing. This study provides an extensive viewpoint of outsourcing of accounting practices. Future research is needed to consider this phenomenon comprehensively. Outsourcing of accounting practices is a developing phenomenon, not a passing trend. The managements of SMEs need to be successful in their accounting function outsourcing efforts to gain expertise, reduce costs and protect the firm from risk. SME executives possess the capabilities and desire to learn and get experience in outsourcing practices. Moreover, academic scholars also have the opportunity to be at the fore-front of this emerging phenomenon and allowing their insights and experience to help shift SMEs as significant global players.

8. 5 CONCLUSIONS

This chapter has summarised the study's main findings, overviewed its main implications and limitations, and noted ways that subsequent research may usefully build on this work. The study set out with 5 key objectives and as discussed above, all the objectives have been met.

The findings reveal that Iranian SMEs outsource nine types of the accounting functions to professional accountants. Furthermore, it is found that most Iranian SMEs outsourced their accounting functions. More importantly, the combined TCE and RBV model provided a useful framework for guiding this investigation into accounting function outsourcing in SME context in the emerging econmomies. Environmental uncertainty and behavioral uncertainty appear not to play a crucial explanatory role either in outsourcing the accounting functions in an emerging economy, unlike the experience in developed

economies. The plausible reason maybe that SMEs may not have difficulties in verifying whether compliance with established agreements has occurred during or after the processing of accounting functions because SMEs have learned to reduce these measurement problems throughout past experiences. Experience in outsourcing agreements may have enhanced the managers' measurement skills (Alvarez-Suescun, 2010). Finally, the cross-cultural literature suggests that firm perceives and deal with environmental uncertainty differently across cultures. Given the dearth of research in emerging economies, it is unclear whether the environmental factors such as culture and status of profession may influence such uncertainty. However, the results indicate that these variables do not affect the outsourcing decision either directly and through the measurement difficulty or culture. From above discussion, it is suggested that being efficient in an activity requires not only accumulating knowledge from past experiences but rather developing a capability. Clearer support is provided for resource-based arguments.

Interestingly, results suggest the outsourcing intensity is significantly positively associated with SME performance. More importantly, whilst the fully mediated model shows outsourcing to be a non-mediator in the links between environmental uncertainty and behavioural uncertainty and firm performance, it is a strong mediator in the case of asset specificity, frequency, trust, technical competence and degree of competition and firm performance links.

As discussed the thesis provides several significant contributions in that, firstly, it has demonstrated the appropriateness of combining TCE and RBV perspectives when exploring outsourcing in the SMEs. Secondly, several extensions and contradictions to the TCE model have been explicated thus strengthening one's appreciation of the relative

strengths of the TCE. Thirdly, significant insights have been gained with respect to the nature of SMEs outsourcing, reasons for outsourcing, and the nature of accounting functions to support outsourcing decision making. Fourthly, it is found that in the context of emerging economy (Iran), SMEs' decision to outsource is associated with the technical competence and trust placed on the accountant by the SME owner/managers. The role of the professional accountant is mainly perceived by SME executives as helping them beyond compliance services because they have a broad base of technical competence, enabling them to contribute to the success of SMEs. Hence, this is more important for emerging economies and Iran because they have limited number of qualified accountants to work in-house. This also suggests the Iranian Association of Certified Public Accountants (IACPA) has a significant role to ensure its members maintain high standards in professional competence and integrity. Finally, most outsourcing studies have been conducted in the context of advanced industrial economies and it is debatable whether such evidence is applicable to emerging economies such as Iran due to differing institutional contexts and levels of state intervention in economic activities. The findings obtained support that in the context of outsourcing the accounting function, firms in emerging countries do behave similarly to those in developed countries. However, the element of trust emerges as a significant factor implying greater need for the profession to address issues of technical competency and ethical behaviour of its members. Further, efforts to raise the trust amongst the SME sector are seen as important initiatives going forward. This augurs well with recent calls by IFAC to its member bodies to focus of rebuilding confidence and trust in the profession.