Results and Findings

4.0   Introduction

The statistical analysis on data collected for the survey conducted was in line with the model discussed in previous chapter. The sampling was based on convenience sampling method. This research study combined data collection from two sources. With the permission from the Institute of Internal Auditors Malaysia, 120 hardcopy questionnaires were distributed to the participants at the IIA workshops conducted in March 2011 and April 2011 as well as IIA's social groups to complete. In addition, further efforts were made to source for respondents via researcher's network. In total, softcopy questionnaires were circulated via emails to over 100 email addresses. Reminders were sent to those who failed to reply after a week.

All attempts were made to improve the response rate to meet targeted sample size of 200. In order to ensure that the research analysis would produce valid conclusions and to enhance the confidence level of the results, the data collected was subject to a pre-data analysis exercise. At this stage, data were 'screened' for invalid or missing data and outliers. The records found to have missing or incomplete data would be either excluded or 'treated'.

In total, of those questionnaire circulated via IIA and through researcher's network via email, 145 questionnaires were returned i.e. 114 from IIA and 31 via email. The results represent an overall response rate of 72.5%. In the subsequent pre-data analysis, 5

respondents were 'disqualified' due to invalid or incomplete data. This exercise effectively reduced the useable sample size collected from 145 to 140, achieving 70% of targeted sample size.

4.1 Profile of Respondents

The personal particulars of the respondents including gender, age, highest education level, professional certification, work position and experience were tabulated. The respondents' personal profiles based on the groupings as per Section A of the questionnaire are presented below:

4.1.1 Respondent's Gender

Table 4.1.1 Gender Profile

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	63	45.0	45.0	45.0
	Female	77	55.0	55.0	100.0
	Total	140	100.0	100.0	

In the gender demography as shown in Table 4.1.1, the male and female respondents made up of 45% and 55% respectively of the total sample collected.

4.1.2   Respondent's Age

Table 4.1.2 Age Profile

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21-25	8	5.7	5.7	5.7
	26-30	40	28.6	28.6	34.3
	31-35	34	24.3	24.3	58.6
	36-40	27	19.3	19.3	77.9
	41-45	13	9.3	9.3	87.1
	46-50	12	8.6	8.6	95.7
	51-60	5	3.6	3.6	99.3
	>60	1	.7	.7	100.0
	Total	140	100.0	100.0	

Based on Table 4.1.2, 77.9% of them fall below 40 years old with the $26-30$ age bracket made up of the highest percentage at 28.6% followed by those within $31-35$ years old and $36-40$ years old at 24.3% and 19.3% respectively.

4.1.3   Highest Level of Education of Respondents

Table 4.1.3 Highest Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	1	.7	.7	.7
	Diploma	7	5.0	5.0	5.7
	Bachelor	86	61.4	61.4	67.1
	Professional	34	24.3	24.3	91.4
	Master	11	7.9	7.9	99.3
	Doctorate	1	.7	.7	100.0
	Total	140	100.0	100.0	

In terms of the highest education level attained, most of the respondents either have obtained a bachelor's degree (61.4%) or hold a professional qualification (24.3%). Both of these groups combined made up 85.7% of those responded to the survey.

4.1.4 Respondents' Position at Work

As shown in table 4.1.4, 55.7% of those responded are holding a managerial position in their respective organization with 27 respondents are either Chief Audit Executives (9) or Heads of the Internal Audit department (3) or Senior Managers (15). Internal Audit Executives made up the highest group amongst the respondents with 27.9%.

Table 4.1.4 Respondents' Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Audit Assistant	2	1.4	1.4	1.4
	Audit Executive	39	27.9	27.9	29.3
	Audit Senior/Supervisor	21	15.0	15.0	44.3
	Assist. Audit Manager	18	12.9	12.9	57.1
	Audit Manager	29	20.7	20.7	77.9
	Senior Manager	15	10.7	10.7	88.6
	CAE	9	6.4	6.4	95.0
	Other*	7	5.0	5.0	100.0
	Total	140	100.0	100.0	

Note: * = 3 of the respondents under 'other' are 'head of department'

4.1.5 Respondents' Work Experience

The statistics on work experience of the respondents as shown in Table 4.1.5 below are fairly consistent with the seniority of the respondents (Table 4.1.4 - Position) in their organization. Those with 2-5 years and 6-10 years accounted for over 50% of those responded to the survey.

Table 4.1.5 Respondents' Work Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 year	6	4.3	4.3	4.3
	2-5 years	40	28.6	28.6	32.9
	6-10 years	39	27.9	27.9	60.7
	11-15 years	21	15.0	15.0	75.7
	16-20 years	22	15.7	15.7	91.4
	>20 years	12	8.6	8.6	100.0
	Total	140	100.0	100.0	

4.2 Normality Test

As a pre-requisite for many inferential statistical techniques, a normal distribution is assumed. Before further statistical analysis is conducted on the data, the data (variables) used must be tested for normality in their distributions. The standard skewness and kurtosis for normal distributions should fall within the range of +2 and -2 (Ananda Kumar Palaniappan, 2007) and between +3 and -3 (Umma Sekaran, 2007) respectively. Normality tests are conducted on the variables identified in the study namely (i) Company Specific Factors; (ii) Extent of adoption of risk based approach to auditing at macro and micro levels and; (iii) Responsiveness of IA to ERM activities. The results of the normality tests are presented in Tables B1 in the Appendices B on normality test results. Based on the

results of the normality tests conducted, all variables to be examined in this study are within the skewness and kurtosis parameters stipulated for normal distribution as mentioned earlier therefore, fulfilled the underlying assumption of normal distribution for parametric statistically analysis.

4.3   Reliability Analysis

Reliability, in statistics, is the consistency of a set of measurements or measuring instrument, used to describe a test. Reliability analysis is required to be carried out to ensure that the individual scaled items and overall items are reliable, free from error and yield consistent results. In the context of the scales used in the study, their reliability as a measure of the extent of adoption of RBA to auditing at micro level and the responsiveness of internal auditors to risk management activities need to be ensured. Cronbach's alpha is used to establish the reliability of individual scaled items in this study. The closer the reliability coefficient, Cronbach's alpha gets to 1.0, the more 'reliable' these items will be. As a standard requirement, an alpha coefficient of less than 0.6 is considered poor (Cavana, Delahaye & Sekaran, 2001 pp324). Hence, for these scaled items to be considered reliable they must at least attain a Cronbach's alpha value of 0.6, though a value of 0.7 or greater is preferred. Below are the test results attained from the reliability tests carried out on all the scaled items related to the variables identified for this research.

Table 4.3.1 Reliability Test Results

Scaled Items	Reliability Test
	Cronbach's Alpha
Extent of Adoption of Risk Based Auditing	0.687
Extent of Responsiveness to ERM Activities	0.93

Based on the reliability tests carried out above, the Cronbach's alpha values attained on all the required scaled items exceed 0.6 with the scaled items relating to the extent of responsiveness to ERM activities by IA produced a strong Cronbach's alpha of 0.930 overall. The reliability coefficients attained on scaled items for 'Extent of Adoption of Risk Based Auditing' were moderate overall at 0.687 respectively. This implies that the respondents understand the questions posted on the extent of adoption of risk based auditing' and the responsiveness to ERM activities.

4.4 Validity Test

The results of any research can only be as good as the measures that tap into the concepts in the theoretical framework. Construct validity measures how well the results obtained from the use of the measure fit the theories around which the tests are designed (Cavana, Delahaye & Sekaran, 2001 pp 213) i.e. it examines how well a set of questions taps into the concept which the study seeks to measure. In this study, factor analysis is conducted on scaled items used to measure the extent of adoption of RBA for individual audit engagements and the responsiveness of IA to ERM activities to ensure that these items are appropriate for the dimensions (constructs) they seek to measure. The purpose is to determine whether the scaled items fall in the same construct. The results of the factor analysis are presented below. The extent of adoption of RBA for individual audit engagements are measured by 3 items in the survey. Factor analysis is run on these 3 items to determine if they represent the construct appropriately.

Table 4.4.1(a) Extent of Adoption of RBA (KMO and Bartlett's Test)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.597
Bartlett's Test of Sphericity	Approx. Chi-Square	92.939
	Df	3
	Sig.	.000

Table 4.4.1(b) Extent of Adoption of RBA (Total Variance Explained)

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.889	62.963	62.963	1.889	62.963	62.963
2	.755	25.167	88.130			
3	.356	11.870	100.000			

Extraction Method: Principal Component Analysis.

The results from the factor analysis conducted produced a KMO value of 0.597 which is acceptable. The results also show that the 3 items only represent one construct which has eigenvalue exceeding 1.0. This suggests that the 3 items are able to represent only one construct, that is, 'The Extent of RBA adoption by IA at Micro Level'. On the responsiveness of IA to ERM activities, 12 items consisting of statements have been developed to represent the construct. These items are then subject to factor analysis.

Table 4.4.2(a) Extent of Responsiveness to ERM Activities (KMO and Bartlett's Test)

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.921
Bartlett's Test of Sphericity	Approx. Chi-Square	1060.944
	Df	66
	Sig.	.000

Based on table 4.4.2(a), with Bartlett's Test of Sphericity shows a large value and the KMO measure of 0.921 is well above than the required 0.6. Hence, in this case factorability can be assumed.

Table 4.4.2 (b) Extent of Responsiveness to ERM Activities – Total Variance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.856	57.134	57.134	6.856	57.134	57.134
2	.985	8.208	65.342			
3	.694	5.782	71.124			
4	.665	5.545	76.668			
5	.567	4.722	81.390			
6	.546	4.554	85.944			
7	.414	3.449	89.393			
8	.351	2.928	92.321			
9	.276	2.299	94.620			
10	.247	2.059	96.679			
11	.235	1.956	98.635			
12	.164	1.365	100.000			

Extraction Method: Principal Component Analysis.

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Table 4.4.2(b) shows the existence of one construct or factor since there is only one eigenvalue greater than 1 and this construct explains 57.13% of the variance with only one predominant factor with eigenvalue of 6.856.

The anti image correlation matrix in Table 4.4.2(c) is used to assess if the sampling is adequate for each variable. The measures of sampling adequacy displayed on the diagonal of the anti image correlation matrix display values exceeding the acceptable level of 0.5. It is therefore suggested that no items required to be excluded from the analysis.

Based on the results from the factor analysis conducted, it can be concluded that the scaled items used to represent the variables for the study are representative and appropriate to be used to explain the construct this study seeks to measure. It is also noted from the results of the factor analysis conducted that these variables are statistically significant (sign = 0.00) on the Bartlett's test of sphericity. This confirms the use of the respective values of Principal Components Analysis (PCA) as a measure for variables 'Extent of RBA Adoption at Micro Level' and 'Responsiveness of IA to ERM Activities' for the purpose of statistical testing on the hypotheses.

Table 4.4.2(c) Extent of Responsiveness to ERM Activities (Anti Image Matrix)

Anti-image Matrices

		ERML1	ERML2	ERML3	ERML4	ERML5	ERML6	ERMI1	ERMI2	ERMI3	ERMI4	ERMI5	ERMI6
Anti-image Covariance	ERML1	.348	-.018	-.012	-.095	-.104	-.071	.016	.046	-.010	-.044	.060	-.070
	ERML2	-.018	.366	-.009	-.077	-.098	.025	.009	-.077	-.007	-.031	.070	-.062
	ERML3	-.012	-.009	.576	-.096	-.054	-.030	-.037	-.075	.052	.017	-.046	.029
	ERML4	-.095	-.077	-.096	.309	-.012	.000	-.022	.003	-.044	-.040	-.008	-.032
	ERML5	-.104	-.098	-.054	-.012	.312	-.010	-.042	-.002	.064	.013	-.169	.047
	ERML6	-.071	.025	-.030	.000	-.010	.593	.032	-.153	-.072	-.010	-.029	-.018
	ERMI1	.016	.009	-.037	-.022	-.042	.032	.454	-.061	-.032	-.069	.020	-.100
	ERMI2	.046	-.077	-.075	.003	-.002	-.153	-.061	.402	-.100	-.058	.015	-.043
	ERMI3	-.010	-.007	.052	-.044	.064	-.072	-.032	-.100	.762	.005	-.145	.056
	ERMI4	-.044	-.031	.017	-.040	.013	-.010	-.069	-.058	.005	.298	-.080	-.067
	ERMI5	.060	.070	-.046	-.008	-.169	-.029	.020	.015	-.145	-.080	.369	-.072
	ERMI6	-.070	-.062	.029	-.032	.047	-.018	-.100	-.043	.056	-.067	-.072	.289
Anti-image Correlation	ERML1	.917[a]	-.052	-.026	-.289	-.315	-.156	.041	.122	-.020	-.138	.168	-.221
	ERML2	-.052	.931[a]	-.020	-.229	-.290	.054	.022	-.201	-.013	-.095	.190	-.191
	ERML3	-.026	-.020	.951[a]	-.229	-.127	-.051	-.072	-.155	.079	.041	-.099	.072
	ERML4	-.289	-.229	-.229	.946[a]	-.039	.001	-.060	.009	-.090	-.131	-.024	-.108
	ERML5	-.315	-.290	-.127	-.039	.877[a]	-.023	-.111	-.005	.131	.043	-.498	.155
	ERML6	-.156	.054	-.051	.001	-.023	.937[a]	.062	-.314	-.107	-.024	-.062	-.044
	ERMI1	.041	.022	-.072	-.060	-.111	.062	.950[a]	-.143	-.054	-.189	.049	-.276
	ERMI2	.122	-.201	-.155	.009	-.005	-.314	-.143	.923[a]	-.180	-.167	.040	-.126
	ERMI3	-.020	-.013	.079	-.090	.131	-.107	-.054	-.180	.848[a]	.010	-.273	.120
	ERMI4	-.138	-.095	.041	-.131	.043	-.024	-.189	-.167	.010	.949[a]	-.242	-.228
	ERMI5	.168	.190	-.099	-.024	-.498	-.062	.049	.040	-.273	-.242	.858[a]	-.222
	ERMI6	-.221	-.191	.072	-.108	.155	-.044	-.276	-.126	.120	-.228	-.222	.923[a]

a. Measures of Sampling Adequacy(MSA)

4.5   Descriptive Analysis

Descriptive analysis is used to describe the main features of a collection of data in quantitative terms. This analysis is useful as it provides some general observations about the data collected. This analysis is used to present quantitative descriptions in a manageable form by simplifying or reducing large amounts of data into simpler forms and provide a 'powerful' summary enabling comparison to be made. Descriptive analysis was conducted on the variables by analyzing cases of variables to examining their distribution, central tendency and dispersion. The results of the descriptive analysis on the variables identified in this study are presented as follows:

4.5.1   Company Specific Factors

Table 4.5.1 Company Specific Factors (Descriptive)

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Listed in Stock Exchg	140	1	0	1	72	.51	.042
Private / Public	140	1	0	1	116	.83	.032
Annual Turnover	140	4	1	5	487	3.48	.124
No of Employees	140	5	1	6	470	3.36	.144
Industry	140	1	0	1	30	.21	.035
Internationalisation	140	1	0	1	54	.39	.041
Valid N (listwise)	140						

The statistics from the data collected on company specific factors reveal the following characteristics of the sample:

i)   51 % or 72 of the respondents' organizations are listed in the stock exchange.

ii) 83% or 116 of these organizations are in the private sector.

iii) 21% or 30 of these organizations are in the financial industry

iv) 39% or 54 of the respondent's organizations have presence overseas or part of an international group.

v) Company Size for the purpose of this study is measured by the organisation's annual turnover and number of employees (see Appendix C - Tables C1). The organisations with annual turnover exceeding RM500 million accounted for slightly over 50% with 54 or 38.6 %, have an annual turnover of over RM1billion. For the number of employees, 46.4% of the respondent's organisations have less that 1,000 employees. Those with between 100 and 999 employees account for 40% of the sample.

4.5.2 *Extent of Adoption of Risk Based Auditing (RBA) by IA*

Table 4.5.2.1 Extent of Adoption of Risk Based Auditing by IA (Descriptive)

Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Audit Schedule Planning (Macro)	140	2.00	1.00	3.00	328.00	2.3429	.05046
Audit Objective of Individual Assignment (Micro)	140	2.00	1.00	3.00	248.00	1.7714	.03839
Design of audit programme to test	140	1.00	1.00	2.00	255.00	1.8214	.03249
Auditing conduct is reported to Mgt in terms of	140	1.00	1.00	2.00	248.00	1.7714	.03562
Valid N (listwise)	140						

Table 4.5.2.2 Extent of RBA Adoption at Micro and Macro (Summary)

Extent of RBA Adoption Rating	Non Risk 1	Mixed 2	Risk 3	Total	Mean
Audit Schedule Planning (Macro)	6.40%	52.90%	40.70%	100.00%	2.3429
Audit Objective of Individual Assignment (Micro)	24.30%	74.30%	1.40%	100.00%	1.7714
Design of audit programme to test (Micro)	17.90%	82.10%	0%	100.00%	1.8214
Auditing conduct is reported to Mgt in terms of (Micro)	22.90%	77.10%	0%	100.00%	1.7714

Table 4.5.2.3 Risk Based Auditing – Reasons for Adoption

Main Reason for RBA Adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prioritise resources	40	28.6	28.6	28.6
	Achievement of goals	20	14.3	14.3	42.9
	Minimising risks	35	25.0	25.0	67.9
	Best practice	42	30.0	30.0	97.9
	Other	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Based on the respondents' replies to the questions on the extent of usage of risk based auditing at both macro (audit planning and scheduling) and micro (auditing planning, execution and reporting for individual audit assignment) levels as summarised in Tables 4.5.2.2, the following observations are noted:

i) There is an extensive usage of risk based auditing at audit schedule planning stage ie. 40.7% (macro level) by the respondents' organisations as compared to 6.4% for cyclic or other approaches with mixed of cyclic and risk based approach being highest at 52.9%. The mean value indicates adoption of RBA at macro by respondents' organisations skewed favourably towards risk based approach.

ii) On the focus of audit objectives in individual assignments (micro level), most respondents adopt a mixed risk based focus (74.3%) with those solely focusing on management of business risk account for a meagre, 1.4% whilst assessment of internal control and others made up 24.3% . The mean resulted also suggests that the practice by respondents' organisations tips towards a mixed risk based approach.

iii) For the design of audit program, none of the respondents adopt a complete risk auditing based approach. There was a strong tendency for most to adopt a mixed approach 82.1% whilst those who designed programs to test control activities and others accounted for 17.9%. The finding is consistent with the mean value obtained.

iv) The reporting of audit findings and recommendations in terms of internal control and non risk based accounted for 22.9% whilst those who report on a mixed of risk based and internal control accounted for the balance (77.1%). None of the respondents reporting solely on risk management aspects effectiveness. There is a tendency for respondents to opt for a mixed approach in reporting audit findings as the mean value inclines towards a mixed approach.

v) In establishing the main reason for adoption of RBA, a overwhelming percentage (97.6%) of the respondents acknowledge some forms of advantages in using the risk based approach with respondents regard risk based approach as the best practice (30%) as well as enable minimisation of organisational risks (25%) and prioritisation of resources (28.6%). Only 3 or 2.1% of the respondents refuted the effectiveness of the approach.

4.5.3   Company Specific Factors and Extent of Adoption of RBA by IA - Frequency

Organisation size is represented by annual revenue and total employees for the purpose of this research. The average of the sum of ratings given for both (ascending order) is used for the purpose of determining the size of the respondent's organisation. The range of the average values obtained is divided into 3 equal segments representing small, medium and large organisation size and the average values that fall into the same segment are grouped together. The extent of adoption of RBA by respondents' organisations are analysed by company specific factors and these analysis are presented in Appendix C1. The common observation found across all company specific factors examined is that the approach to planning the annual internal auditing scheduling (macro level) by organisations surveyed inclined more toward risk based whilst these organisations have a greater tendency to adopt the less risk based approach in planning, testing and reporting for individual audit engagements (micro level). The adopting RBA approach at micro levle is weak and in some factors non existence based on the responses from the survey.

Table 4.5.3 Company Specific Factors – Risk Management Practices under Different Conditions (infrastructure)

	Listing Status						Sector						Size							
Who Primarily Leads your Organisation's Risk Management Activities or Programmes?																				
	Non Listed	%	Listed	%	Total	%	Public	%	Private	%	Total	%	Small	%	Medium	%	Large	%	Total	%
Internal Audit.	21	30.9%	16	22.2%	37	26.4%	6	25.0%	31	26.7%	37	26.4%	15	26.8%	13	31.0%	9	21.4%	37	26.4%
Chief Risk Officer	33	48.5%	36	50.0%	69	49.3%	11	45.8%	58	50.0%	69	49.3%	25	44.6%	21	50.0%	23	54.8%	69	49.3%
Chief Finance Officer	3	4.4%	8	11.1%	11	7.9%		0.0%	11	9.5%	11	7.9%	5	8.9%	3	7.1%	3	7.1%	11	7.9%
Others	11	16.2%	12	16.7%	23	16.4%	7	29.2%	16	13.8%	23	16.4%	11	19.6%	5	11.9%	7	16.7%	23	16.4%
Grand Total	**68**	**100.0%**	**72**	**100.0%**	**140**	**100.0%**	**24**	**100.0%**	**116**	**100.0%**	**140**	**100.0%**	**56**	**100.0%**	**42**	**100.0%**	**42**	**100.0%**	**140**	**100.0%**
Internal Audit's Involvement and Roles in Risk Management Related Activities are Influenced by Demands from																				
	Non Listed	%	Listed	%	Total	%	Public	%	Private	%	Total	%	Small	%	Medium	%	Large	%	Total	%
Audit Committee	14	20.6%	20	27.8%	34	24.3%	2	8.3%	32	27.6%	34	24.3%	17	30.4%	8	19.0%	9	21.4%	34	24.3%
Senior Management	11	16.2%	6	8.3%	17	12.1%	3	12.5%	14	12.1%	17	12.1%	6	10.7%	8	19.0%	3	7.1%	17	12.1%
Mixed (above)	40	58.8%	39	54.2%	79	56.4%	18	75.0%	61	52.6%	79	56.4%	28	50.0%	23	54.8%	28	66.7%	79	56.4%
None	3	4.4%	4	5.6%	7	5.0%	1	4.2%	6	5.2%	7	5.0%	5	8.9%	2	4.8%		0.0%	7	5.0%
Others		0.0%	3	4.2%	3	2.1%		0.0%	3	2.6%	3	2.1%		0.0%	1	2.4%	2	4.8%	3	2.1%
Grand Total	**68**	**100.0%**	**72**	**100.0%**	**140**	**100.0%**	**24**	**100.0%**	**116**	**100.0%**	**140**	**100.0%**	**56**	**100.0%**	**42**	**100.0%**	**42**	**100.0%**	**140**	**100.0%**
Does your Organisation have a Formal Organisation Wide Risk Management Process?																				
	Non Listed	%	Listed	%	Total	%	Public	%	Private	%	Total	%	Small	%	Medium	%	Large	%	Total	%
Yes	47	69.1%	60	83.3%	107	76.4%	18	75.0%	89	76.7%	107	76.4%	38	67.9%	30	71.4%	39	92.9%	107	76.4%
No	21	30.9%	12	16.7%	33	23.6%	6	25.0%	27	23.3%	33	23.6%	18	32.1%	12	28.6%	3	7.1%	33	23.6%
Grand Total	**68**	**100.0%**	**72**	**100.0%**	**140**	**100.0%**	**24**	**100.0%**	**116**	**100.0%**	**140**	**100.0%**	**56**	**100.0%**	**42**	**100.0%**	**42**	**100.0%**	**140**	**100.0%**
Does your Organisation have a Risk Management Department Separate from Internal Audit Department?																				
	Non Listed	%	Listed	%	Total	%	Public	%	Private	%	Total	%	Small	%	Medium	%	Large	%	Total	%
Yes	39	57.4%	52	72.2%	91	65.0%	11	45.8%	80	69.0%	91	65.0%	29	51.8%	26	61.9%	36	85.7%	91	65.0%
No	29	42.6%	20	27.8%	49	35.0%	13	54.2%	36	31.0%	49	35.0%	27	48.2%	16	38.1%	6	14.3%	49	35.0%
Grand Total	**68**	**100.0%**	**72**	**100.0%**	**140**	**100.0%**	**24**	**100.0%**	**116**	**100.0%**	**140**	**100.0%**	**56**	**100.0%**	**42**	**100.0%**	**42**	**100.0%**	**140**	**100.0%**
What is the status of implementation of your Organisation's Enterprise Risk Management (ERM) Infrastructure?																				
	Non Listed	%	Listed	%	Total	%	Public	%	Private	%	Total	%	Small	%	Medium	%	Large	%	Total	%
ERM not Considered	11	16.2%	3	4.2%	14	10.0%	2	8.3%	12	10.3%	14	10.0%	7	12.5%	5	11.9%	2	4.8%	14	10.0%
ERM Infrastructure Mature	23	33.8%	33	45.8%	56	40.0%	6	25.0%	50	43.1%	56	40.0%	17	30.4%	17	40.5%	22	52.4%	56	40.0%
ERM Implementation in progress	23	33.8%	23	31.9%	46	32.9%	13	54.2%	33	28.4%	46	32.9%	20	35.7%	13	31.0%	13	31.0%	46	32.9%
Planning ERM Implementation	5	7.4%	5	6.9%	10	7.1%	1	4.2%	9	7.8%	10	7.1%	5	8.9%	4	9.5%	1	2.4%	10	7.1%
Considering Relevance of ERM	5	7.4%	6	8.3%	11	7.9%	1	4.2%	10	8.6%	11	7.9%	5	8.9%	2	4.8%	4	9.5%	11	7.9%
Rejected ERM Concept	1	1.5%		0.0%	1	0.7%	1	4.2%		0.0%	1	0.7%	1	1.8%		0.0%		0.0%	1	0.7%
Other		0.0%	2	2.8%	2	1.4%		0.0%	2	1.7%	2	1.4%	1	1.8%	1	2.4%		0.0%	2	1.4%

Table 4.5.3 Company Specific Factors - Risk Management Practices under Different Conditions ....cont'd

	Industry						Internalisation					
Who Primarily Leads your Organisation's Risk Management Activities or Programmes?												
	Non Fin	%	Fin	%	Total	%	Non-Int	%	Int Grp	%	Total	%
Internal Audit.	35	31.8%	2	6.7%	37	26.4%	23	26.7%	14	25.9%	37	26.4%
Chief Risk Officer	46	41.8%	23	76.7%	69	49.3%	43	50.0%	26	48.1%	69	49.3%
Chief Finance Officer	9	8.2%	2	6.7%	11	7.9%	6	7.0%	5	9.3%	11	7.9%
Others	20	18.2%	3	10.0%	23	16.4%	14	16.3%	9	16.7%	23	16.4%
Grand Total	**110**	**100.0%**	**30**	**100.0%**	**140**	**100.0%**	**86**	**100.0%**	**54**	**100.0%**	**140**	**100.0%**
Internal Audit's Involvement and Roles in Risk Management Related Activities are Influenced by Demands from												
	Non Fin	%	Fin	%	Total	%	Non-Int	%	Int Grp	%	Total	%
Audit Committee	28	25.5%	6	20.0%	34	24.3%	24	27.9%	10	18.5%	34	24.3%
Senior Management	11	10.0%	6	20.0%	17	12.1%	10	11.6%	7	13.0%	17	12.1%
Mixed (other above)	64	58.2%	15	50.0%	79	56.4%	45	52.3%	34	63.0%	79	56.4%
None	4	3.6%	3	10.0%	7	5.0%	6	7.0%	1	1.9%	7	5.0%
Others	3	2.7%		0.0%	3	2.1%	1	1.2%	2	3.7%	3	2.1%
Grand Total	**110**	**100.0%**	**30**	**100.0%**	**140**	**100.0%**	**86**	**100.0%**	**54**	**100.0%**	**140**	**100.0%**
Does your Organisation have a Formal Organisation Wide Risk Management Process?												
	Non Fin	%	Fin	%	Total	%	Non-Int	%	Int Grp	%	Total	%
Yes	84	76.4%	23	76.7%	107	76.4%	60	69.8%	47	87.0%	107	76.4%
No	26	23.6%	7	23.3%	33	23.6%	26	30.2%	7	13.0%	33	23.6%
Grand Total	**110**	**100.0%**	**30**	**100.0%**	**140**	**100.0%**	**86**	**100.0%**	**54**	**100.0%**	**140**	**100.0%**
Does your Organisation have a Risk Management Deaprtment Separate from Internal Audit Department?												
	Non Fin	%	Fin	%	Total	%	Non-Int	%	Int Grp	%	Total	%
Yes	70	63.6%	21	70.0%	91	65.0%	52	60.5%	39	72.2%	91	65.0%
No	40	36.4%	9	30.0%	49	35.0%	34	39.5%	15	27.8%	49	35.0%
Grand Total	**110**	**100.0%**	**30**	**100.0%**	**140**	**100.0%**	**86**	**100.0%**	**54**	**100.0%**	**140**	**100.0%**
What is the status of implementation of your Organisation's Enterprise Risk Management (ERM) Infrastructure?												
	Non Fin	%	Fin	%	Total	%	Non-Int	%	Int Grp	%	Total	%
ERM not Considered	11	10.0%	3	10.0%	14	10.0%	10	11.6%	4	7.4%	14	10.0%
ERM Infrastructure Mature	40	36.4%	16	53.3%	56	40.0%	29	33.7%	27	50.0%	56	40.0%
ERM Implementation in progress	38	34.5%	8	26.7%	46	32.9%	34	39.5%	12	22.2%	46	32.9%
Planning ERM Implementation	7	6.4%	3	10.0%	10	7.1%	7	8.1%	3	5.6%	10	7.1%
Considering Relevance of ERM	11	10.0%		0.0%	11	7.9%	5	5.8%	6	11.1%	11	7.9%
Rejected ERM Concept	1	0.9%		0.0%	1	0.7%		0.0%	1	1.9%	1	0.7%
Other	2	1.8%		0.0%	2	1.4%	1	1.2%	1	1.9%	2	1.4%
Grand Total	**110**	**100.0%**	**30**	**100.0%**	**140**	**100.0%**	**86**	**100.0%**	**54**	**100.0%**	**140**	**100.0%**

The risk management infrastructure of the respondents' organisations are summarised in Table 4.5.3 above. The following salient observations can be deduced from these statistics:

i) On the question 'Who Primarily Leads your Organisation's Risk Management Activities or Programmes?', nearly half (49.3%) of the companies surveyed are led by Chief Risk Officers whilst 26.4% of these companies are spearheaded by IA. There is a noticeable proportion of non listed (30.9%) and non finance (31.8%) companies where IA play a more active role in leading the ERM initiatives.

ii) The influence of both senior management and audit committee in determining the role and involvement of IA in risk management activities are prevalent with senior management (12.1%), audit committee (24.3%) and both jointly (56.4%).

iii) The presence of a formal ERM process is significant in the companies surveyed (76.4%). Most of the 'Listed' (83.3%), ' Large' (92.9.%) and 'Internationalised' companies (87.%) have a formal ERM in place.

iv) 65.0% of the respondents' companies surveyed have a separate risk management department to coordinate the ERM activities and initiatives of their organisation. It is noted that this arrangement is prevalent in 'Listed' (72.2%), 'Private' (69%), 'Large' (85.7%), 'Finance' (70.0%) and 'Internationalised' (72.2%) companies.

v) 87.9% of the companies surveyed are in the various stages of planning or implementation of ERM framework at their organisations. Comparatively, there are more 'Non listed' companies (16.2%) that fail to adopt ERM infrastructure as compared to listed companies (4.2%). Conversely, the implementation of ERM is

found to be at the advance or mature stage in Listed (45.8%), Private (43.1%), Large (52.4%), Finance (53.3%) and Internationalised (50.0%) companies. There is a sizeable % of public companies (54.2%) are in progress of ERM implementation.

4.5.4 Responsiveness of IA to ERM

The statistics tabulated based on the responses received on the statements seeking to measure the responsiveness of IA to ERM activities by virtue of their knowledge and experience in risk based auditing approach conditioned by their respective company's risk management infrastructure are presented as follows:

Table 4.5.4 Responsiveness to ERM Activities

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ERML1	140	1	7	3.92	1.775	-.271	.205	-.781	.407
ERML2	140	1	7	3.76	1.666	-.166	.205	-.609	.407
ERML3	140	1	7	4.38	1.616	-.531	.205	-.469	.407
ERML4	140	1	7	4.09	1.754	-.192	.205	-.855	.407
ERML5	140	1	7	4.23	1.715	-.431	.205	-.723	.407
ERML6	140	1	7	4.79	1.647	-.682	.205	-.309	.407
ERMI1	140	1	7	3.73	1.674	-.168	.205	-.908	.407
ERMI2	140	1	7	4.21	1.707	-.469	.205	-.543	.407
ERMI3	140	1	7	4.99	1.534	-.801	.205	.311	.407
ERMI4	140	1	7	3.27	1.952	.318	.205	-1.128	.407
ERMI5	140	1	7	4.14	1.686	-.356	.205	-.743	.407
ERMI6	140	1	7	3.93	1.818	-.162	.205	-.928	.407
Valid N (listwise)	140								

For the purpose of the study, the scaled items above are basically group into 2 distinct categories i.e. the Legitimate group (ERML1 – ERML6) and Inappropriate group (ERMI1 – ERMI6) in line with 'ERM Fan' recommended by IIA. Generally, the opinions of the respondents to the responsiveness to 'Legitimate' ERM activities measured using a 7 point scale were slightly inclined to agreeing with the statements. However, 'Legitimate' activities, ERML1 (on IA maintaining and developing ERM framework) and ERML2 (on IA to champion the establishment of ERM) which recorded overall means of 3.92 and 3.76 respectively i.e. below the 'neutral or 4' in the 7 point scale implies a general slight reluctance of IA to engage in such activities. On the other hand, internal auditors are generally slightly more receptive in the light of their knowledge and experience in risk based auditing, to involve in consolidating the reporting on risks (ERML3); coordinating ERM Activities (ERML4); assisting in the development of risk management strategy for their organization (ERML5); and, facilitating in the risk identification and evaluation (ERML6). Incidentally, facilitation in risk identification and evaluation (ERML6) which has the highest mean of 4.79 in this category is widely seen as the core task carried out in organizations that practice ERM especially where the IA department also assumes the risk management responsibilities. On the other hand, ERML2 recorded the lowest mean in this category is surprising. Perhaps, IA generally felt that an authoritative body or personality should be leading or championing ERM initiatives instead of Internal Auditing which may be seen as a 'watchdog' hence could arouses suspicions to many.

On the respondents' opinions of their involvement in 'Inappropriate' ERM activities by virtue of their expertise in risk based auditing, it is represented in Table 4.5.4 by items ERMI1 to ERMI6. The opinions of the respondents on receptiveness to the involvement in 'Inappropriate' ERM activities were rather divided based. ERMI1 (IA to decide on risk

response), ERMI4 (IA to be accountable for risk management of their organization) and ERMI6 (IA to implement risk responses on management's behalf) recorded means that were lower than 4 on the 7 point scale. The results usher the generally strong sentiments amongst the internal auditors to preserve their independence in the midst of their involvements in ERM related activities. On the other hand, the opinions of the respondents on items were slightly in agreement on ERMI2 (IA to impose risk management process), ERMI3 (IA to provide management assurance on risk) and ERMI5 (IA to set risk appetite) with their overall means of 4.21, 4.99 and 4.14 respectively. IA, based on their stature and role they assumed and expertise that they possess as well as their good understanding of the concept of risk and the operational risks that their organization is subject to, may see themselves as the appropriate party to impose risk management process, provide management assurance on risk on the management's behalf and to set risk appetite at least at the early stage of their organisation's ERM development or when there is a clear strategy and timeline for migrating of the responsibilities for these activities to the senior management team (Gramling and Myers, (2006).

4.6 Hypotheses Testing

Prior to conducting this analysis, all variables were ensured to have a normal distribution. The relevant statistical tests to ensure individual scaled items and overall items are reliable, free from error and yield consistent results (Reliability Tests) as well as those (Validity Tests) that examined how well a set of questions (items) taps into the concept (construct) which the study seeks to measure, all attained acceptable results. The relationships as proposed in the hypotheses shall be tested to establish if they are statistically supported.

4.6.1 To Test the Relationship between Organisation Size and the Extent of Adoption of RBA for Audit Schedule Planning (Macro Level) (H_{1a})

Discriminant analysis was conducted to examine the above relationship since the independent and dependent variables are numeric and categorical respectively. The Eigenvalues and Wilks' Lambda were extracted from the test. Large Eigenvalues or low Lambda Wilks' values signify existence of relationship between the variables. However, in the relationship under examination, the Eigenvalue was found to be low at 0.002 and this implies the absence of relationship between the size of organization and extent of adoption of RBA for planning at macro level. This result is also consistent to the Wilks' Lambda value of 0.998 obtained. Hence, it can be concluded that hypothesis H_{1a} is not supported. This finding is in line with the study conducted by Castanheira, Rodrigues & Craig (2009).

Table 4.6.1(a) Relationship between Organisation Size and RBA at Macro Level (Eigenvalues)

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.002[a]	100.0	100.0	.047

a. First 1 canonical discriminant functions were used in the analysis.

Table 4.6.1(b) Relationship between Organisation Size and RBA at Macro Level (Wilks' Lambda)

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
dimension 1	.998	.302	1	.583

4.6.2 To Test the Relationship between Company Specific Factors and Extent of Adoption of RBA for Audit Schedule Planning (Macro Level) (Hypotheses H$_{2a}$, H$_{3a}$, H$_{4a}$ and H$_{5a}$)

To examine the associations between company specific factors with extent of adoption of risk based auditing for planning at macro level, non parametric test, Chi Square is used since independent variables Industry, Private/Public, Internationalisation and Listing Status as well as the dependant variables, extent of adoption of risk based auditing at macro level are all nominal (categorical).

Table 4.6.2 Relationship between Company Specific Factors and RBA at Macro Level (Chi Square Test Summary)

Chi-Square Tests - Pearson Chi-Square

	Value	Df	Asymp. Sig. (2-sided)
Industry – Financial Sector	.010[a]	2	.995
Private / Public Sector	.246[a]	2	.884
Internationalisation	1.989[a]	2	.370
Listing Status	.231[a]	2	.891

The Pearson Chi Square values obtained from the non parametric tests conducted to establish the existence of relationships between financial sector, internationalisation and listing status with and the extent of adoption of RBA for audit schedule planning at macro level show that there are no significant relationships found between these 4 company specific factors with and the extent of adoption of RBA for audit schedule planning at macro level. In other words, company specific factors, industry, internationalisation, listing status and sector do not influence the extent of adoption of risk based auditing for audit planning at macro level

statisically. Based on the results from the statistical analysis, all the hypotheses i.e. H_{2a}, H_{3a}, H_{4a} and H_{5a} put forth are not supported.

4.6.3 To Test the Relationship between Company Specific Factors and the Extent of Adoption of RBA at Individual Audit Engagement Stage (Micro Level) (Hypotheses H_{1b}, H_{2b}, H_{3b}, H_{4b} and H_{5b})

Multiple regression analysis was used to establish the significance of the associations between company specific factors with extent of adoption of risk based auditing for individual audit engagement at micro level. For the purpose of this analysis, the values '0' and '1' were assigned to the non metric variables i.e. categorical variables ie. Industry (F2), Sector (F3), Internationalisation (F4) and Listing Status (F5) (apart from Size (F1) which is metric) as shown in Table 4.6.3.

The equation for the regression model is as follow:

RBA at Micro Level [RBAMicro] = $\beta + \beta_1*F1 + \beta_2*F2 + \beta_3*F3 + \beta_4*F4 + \beta_5*F5 + \varepsilon$

Where,

β = constant (intercept)

β_1, β_2, β_3, β_4, β_5 = coefficients

ε = error

Table 4.6.3 Company Specific Factors – Value assignment for Regression Analysis

Company Specific Factor	Value = 0	Value = 1
Industry (F2)	Non Finance	Finance
Sector (F3)	Public & Others	Private
Internationalisation (F4)	Non International Group	International Group
Listing Status (F5)	Non Listed	Listed

From the results of the regression analysis, the model's F value is found to be significant at 10% level i.e. $F(5,134) = 2.070$, $p<0.10$. However, the R^2 value, which measures the proportion of variation in extent of adoption of risk based auditing for individual audit engagement at micro level (dependent variable) that is explained by the company specific factors (independent variables), overall only explains 7.2% of the variation. The t values in Table 4.6.3(c) shows of the significance level of the respective variables (parameters) in the relationship hypothesized. Only company specific factors, Industry (F2) and Sector (F3) are found to be significant statistically at 95% and 90% confidence level, in influencing the extent of RBA adoption at micro level. Their respective beta coefficients both show a positive association between the dependent and independent variables. The other company specific factors namely Size (F1), Internationalisation (F4) and Listing Status (F5) as independent variables, do not contribute to the prediction of the extent of RBA adoption for individual audit engagement.

Though the 'model fit' is statistically weak in this respect, the results statistically support hypotheses H_{2b} and H_{3b}. On the other hand, the results from the multiple regression analysis were not statistically significant to support hypotheses H_{1b}, H_{4b} and H_{5b}.

Table 4.6.3(a) Relationship Between Company Specific Factors and RBA at Micro Level (Model Summary)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.268[a]	.072	.037	.98130036	.072	2.070	5	134	.073

a. Predictors: (Constant), Size(F1), Industry(F2) Sector(F3), IntGroup(F4), Listed(F5)

Table 4.6.3(b) Relationship Between Company Specific Factors and RBA at Micro Level (ANOVA)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.965	5	1.993	2.070	.073[a]
	Residual	129.035	134	.963		
	Total	139.000	139			

a. Predictors: (Constant), Size(F1), Industry(F2) Sector(F3), IntGroup(F4), Listed(F5)

b. Dependent Variable: RBAMicro

Table 4.6.3(c) Relationship Between Company Specific Factors and RBA at Micro Level (Coefficients)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.271	.274		-0.988	.325
	Size (F1)	-.070	.066	-.099	-1.062	.290
	Industry (F2)	.451	.221	.186	2.041	.043
	Sector (F3)	.433	.238	.164	1.819	.071
	IntGroup (F4)	.124	.183	.061	.678	.499
	Listed (F5)	.014	.185	.007	.077	.939

a. Dependent Variable: RBAMicro

4.6.4 To Test the Relationship between Extent of Adoption of RBA for Audit Schedule Planning (Macro) and the Responsiveness of IA to ERM Activities (H$_6$)

To test hypotheses H$_6$, ANOVA is used to examine the existence of a relationship between RBA at macro level and IA's responsivenss to ERM activities. The Levene test for homogeneity of variances is found to be consistent with the assumption that the scores in each group under analysis has homogeneous variances as its p value > 0.05. Based on the results from the ANOVA analysis conducted, it is found that the extent of adoption of RBA for audit schedule planning does influence the responsiveness of IA to ERM activities positively as F value is found to be statistically significant at 95% confidence level ie. F(2,137) = 4.018, p<0.05. Further examination of the means for each of the groups in the descriptive statistics section as shown in Table 4.6.4(c) indicates that extent of IA's responsiveness to ERM activities is significantly greater when they adopts RBA for audit planning at macro level as compare to mixed of RBA and cycled based approaches as well as other approaches. In this respect, null hypothesis H$_6$ is not statistically supported.

Table 4.6.4(a) Relationship between RBA at Macro Level and the Responsiveness to ERM Activities (Homogeneity Test)

Test of Homogeneity of Variances

ERMRespon

Levene Statistic	df1	df2	Sig.
.469	2	137	.626

Table 4.6.4(b) Relationship between RBA at Macro Level and the Responsiveness to ERM Activities (ANOVA)

ANOVA

ERMRespon

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.702	2	3.851	4.018	.020
Within Groups	131.298	137	.958		
Total	139.000	139			

Table 4.6.4(c) Relationship between RBA at Macro Level and the Responsiveness to ERM Activities (Descriptive)

Descriptives

ERMRespon

					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Cycle Based & Other Non Risk Approaches	9	.15671	0.8281	0.2760	-0.4798	0.7933	-1.5196	1.1462
Mixed Approach	74	-.2203	1.0061	0.1170	-0.4534	0.0128	-2.1446	1.8534
Risk Based Approach	57	.2612	0.9629	0.1275	0.0058	0.5167	-1.7886	2.0876
Total	140	.0000	1.0000	0.0845	-0.1671	0.1671	-2.1446	2.0876

4.6.5 To Test the Relationship between Extent of Adoption of RBA for Individual Audit Engagement at Micro Level and the Responsiveness of IA to ERM Activities (H_7)

In examining Hypotheses H_7, Bivariate Correlation Analysis was used to examine the strength of relationship between independent variable, RBAMicro and dependent variable, ERMRespon.

This linear relationship can be represented as follows:

$$[ERMRespon] = \delta + \delta_1[RBAMicro] + e$$

Where,

δ = constant (intercept)

δ_1 = coefficient

e = error

Hypothesis testing using Bivariate Correlation Analysis in this case indicates the absence of association between RBAMicro and ERMRespon. The R^2 and F values derived as shown in Table 4.6.5(a) and (b) respectively imply a weak model fit which is statistically not significant. Only a mere 2% of variation in ERMRespon is explained by the variation in ERMRespon. Its t value of $p > 0.05$ indicates independent variable RBAMicro is statistically not significant in influencing the relationship with ERMRespon. Hence, it can be concluded from the results of the analysis that null hypothesis H_7 is therefore supported.

Table 4.6.5(a) Relationship Between RBA at Micro Level and the Responsiveness to ERM Activities (Model Summary)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.043[a]	.002	-.005	1.00268568
a. Predictors: (Constant), RBAMicro				

Table 4.6.5(b) Relationship Between RBA at Micro Level and the Responsiveness to ERM Activities (ANOVA)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.258	1	.258	.256	.613[a]
	Residual	138.742	138	1.005		
	Total	139.000	139			

a. Predictors: (Constant), RBAMicro

b. Dependent Variable: ERMRespon

Table 4.6.5(c) Relationship Between RBA at Micro Level and the Responsiveness to ERM Activities (Coefficients)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.929	.085		.000	1.000
	RBAMicro	-.043	.085	-.043	-.506	.613

a. Dependent Variable: ERMRespon

4.6.6 To Test the Relationship between Company Specific Factors and the Responsiveness of IA to ERM Activities (Hypotheses H_8, H_9, H_{10}, H_{11} and H_{12})

Multiple regression was used to examine the relationships between the company specific factors and the responsiveness of IA to ERM activities.

The relationship is represented by the following equation:

IA's Responsiveness to ERM Activities [ERMRespon] = $\alpha + \alpha_1 *F1 + \alpha_2 *F2 + \alpha_3 *F3 + \alpha_4 *F4 + \alpha_5 *F5 + €$

Where,

α = constant (intercept)

$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ = coefficients

€ = error

Overall, the model as depicted in Figure 3.4 is supported by the multiple regression results. The model is found to be statistically significant as shown by its F value $F_{(5,134)}$ = 3.949, p<0.05. Though the model is statistically significant, as shown by the R^2 value, the company specific factors combined only explain 12.8% of the variation in the responsiveness of IA to ERM activities. Company specific factors, 'Listing Status', 'Industry' and 'Internationalisation' are found to be statistically significant at 95%, 99% and 95% confidence level respectively in influencing the responsiveness of IA to ERM activities. 'Internationalisation' and 'Listing Status' however, are found to be negatively associated with IA's responsiveness to ERM activities. These findings indicate that there are statistically significant association between both 'Non International' and 'Non Listed' companies with the responsiveness of IA to ERM activities. These results are inconsistent with the null hypotheses, H_{11} and H_{12} proposed in this study.

Similarly, company specific factor, 'Industry', is found to be statistically significant in influencing IA's responsiveness to ERM activities negatively. It therefore does not support the null hypothesis H_9 which proposes no association. This suggests that there is an association between the IA's responsiveness to ERM activities with non finance industry. The remaining company specific factors, 'Size' and 'Sector' are found to be statistically not significant in influencing IA's responsiveness to ERM activities. Hypothesis H_8 which

proposed a negative association with ERMRespon is therefore not supported statistically. Conversely, the null hypothesis, H_{10} proposed for company specific factor 'Sector' is therefore accepted.

Table 4.6.6(a) Relationship Between Company Specific Factors and the Responsiveness to ERM Activities (Model Summary)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.358[a]	.128	.096	.95083133	.128	3.949	5	134	.002

a. Predictors: (Constant), Size(F1), Industry(F2) Sector(F3), IntGroup(F4), Listed(F5)

Table 4.6.6(b) Relationship Between Company Specific Factors and the Responsiveness to ERM Activities (ANOVA)

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.853	5	3.571	3.949	.002[a]
	Residual	121.147	134	.904		
	Total	139.000	139			

a. Predictors: (Constant), Size(F1), Industry(F2) Sector(F3), IntGroup(F4), Listed(F5)

b. Dependent Variable: ERMRespon

Table 4.6.6(c) Relationship Between Company Specific Factors and the Responsiveness to ERM Activities (Coefficients)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.561	.266		2.111	.037
	Size(F1)	-.058	.064	-.082	-.915	.362
	Industry(F2)	-.635	.214	-.262	-2.970	.004
	Sector(F3)	.195	.231	.074	.845	.400
	IntGroup(F4)	-.438	.177	-.214	-2.472	.015
	Listed(F5)	-.423	.179	-.212	-2.358	.020

a. Dependent Variable: ERMRespon

4.7   Summary of Findings

The data collected for the survey was tested statistically for normality, validity and reliability before subjecting to hypothesis testings. Overall, the statistical tests on the data collected attained the acceptable results for normality, validity and reliability tests purposes.

The descriptive analysis from the responses gathered showed a strong tendency for the adoption of a more risk based approach amongst the respondents' organizations for their annual audit schedules. This finding is consistent across all groups in the analysis of all company specific factors. At the micro level however, signs of extensive or full adoption of RBA approach for planning, testing and reporting of individual engagements is negligible. A mixed approach that inclined to less risk based is favoured by the respondents' organizations at micro level amongst all groups analysed for all the company specific factors. The adoption of control based approach is notable at micro level. Further descriptive analysis conducted to

examine the company specific factors in relation to IA's responsiveness to ERM activities under the ERM infrastructure that their organizations subject to, reveals some salient findings. It is found that IA is more involved in leading the ERM activities in non listed and non finance companies. A formal ERM process and infrastructure is prevalent in listed, large and Internationalised companies. It is also noted that most listed, private, large, finance and Internationalised companies surveyed have separate risk management department to assist to coordinate risk management activities of their organisation.

In the hypothesis testings, the strength of the relationship between the independent and dependent variables are tested using regression and non parametric statistical methods. The results to the hypothesis tests conducted are summarized in Appendix C1. Overall, Hypotheses H_{2b}, H_{3b}, H_7 and H_{10} are supported statistically hence, accepted. However, hypotheses H_{1a}, H_{1b}, H_{2a}, H_{3a}, H_{4a}, H_{4b}, H_{5a}, H_{5b}, H_6, H_8, H_9, H_{11} and H_{12} are found not statistically significant , hence not supported.

It is found that company specific factors, Organisation Size (H_{1a}, H_{1b}), Internationalisation (H_{4a}, H_{4b}) and Listing Status (H_{5a}, H_{5b}) do not have influence on the extent of RBA adoption both at macro and micro levels statistically. More organizations in the financial industry are found to adopt RBA approach for internal auditing at individual audit engagement level (H_{2b}) (micro level) but not at macro level (H_{2a}) whilst companies in private sector are also found to be positively associated with the adoption of RBA at micro level (H_{3b}) but not at the macro level (H_{3a}). However, the model proposed in Figure 3.2 is found to be statistically weak in explaining the variances in the dependent variables of the model.

In assessing the relationships between the adoption of RBA at both macro and micro levels, and the responsiveness to ERM activities by IA, the statistical results not does support the assertion of null hypothesis H_6 as the adoption of RBA found to positively impacts the responsiveness of IA to ERM activities at macro level. However, no such association is found at micro level, hence null hypothesis H_7 is therefore supported.

The model that encapsulates the associations between company specific factors and the responsiveness of IA to ERM activities as depicted in Figure 3.4 is found to be statistically significant in explaining the variance in the responsiveness of IA to ERM activities. Company specific factor 'Industry' is found to be statistically significant in influencing negatively the responsiveness of IA to ERM activities which is in contradiction to 'no association' as proposed in null hypothesis H_9. The no association of private sector with IA's responsiveness to ERM activities as hypothesized is however statistically supported (H_{10}). Hypothesis H_8 which proposed a negative association between size and IA's responsiveness to ERM activities is also found to be not support statistically. Despite the fact that null hypotheses H_{11} and H_{12} are not supported statistically, 'Internationalization' and 'Listing status' are found to be statistically significant in negatively influence the responsiveness of IA to ERM activities. The justifications and implications of these findings shall be deliberated at length in the concluding chapter i.e. Chapter 5.