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REDEFINING INTERNAL AUDIT PERFORMANCE: IMPACT ON CORPORATE GOVERNANCE

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REDEFINING INTERNAL AUDIT PERFORMANCE: IMPACT ON CORPORATE GOVERNANCE

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ABSTRACT

One of the preventive measures to situations akin to world financial crises increasingly forwarded is effective internal audit function (IAF) (e.g., Imhoff, 2003; Mohamad & Muhamad Sori, 2011). Internal audit, a component of corporate governance, continues to evolve due to changes in business strategies and requirements placed on it by legislators. The roles of internal auditors and audit committees (ACs), the key personnel in IAFs, are changing to a more value-added approach as business strategies move towards corporate sustainability and organisational excellence. Suggestions forwarded to improve the performance or determining the quality of IAF include effective involvement of ACs in internal audit activities, the employment of competent internal auditors and determining the impact of internal audit on corporate governance (e.g., Mohamad & Muhamad Sori, 2011, Sarens, 2009, Turley & Zaman, 2007). Research on the quality of internal audit has focussed mainly on the relationships of internal audit with internal control and ACs (e.g., Fadzil, Haron, & Jantan, 2005; Mat Zain & Subramaniam, 2007; Turley & Zaman, 2007). However, none has linked the impact of internal audit performance to corporate governance.

This study provides an agency of value view, explaining the effectiveness of IAF and its impact on corporate governance. Using a convergent mixed methods approach, the main findings from survey data collected from corporate members of the Institute of Internal Auditors Malaysia are compared and integrated with perspectives from chief audit executives of selected public listed companies interviewed. The factors investigated are the structure of the IAF, activities of best practices in internal auditing, ACs' involvement as stated by the Malaysian public listing guidelines (Bursa Malaysia, 2000, 2009b) and the World Bank's corporate governance framework (World Bank, 1991). An exploration on the extent of collaborations and combined assurances in internal audit is also carried out.

The primary analysis on the probability of an effective IAF and profiling of the internal audit activities, level of AC involvement and areas of corporate governance is made using the Rasch model. Non-parametric tests are also used to determine the statistical significance of the relationships of the components investigated. In-depth interview data are analysed using template analysis.

The findings support the establishment of an in-house IAF with a definitive team size and professional expertise for an effective IAF. Other IAF components are member experience, combined audit activities and collaborations of audit activities. Although these other components are not significantly related to the effectiveness of IAF, the in-depth interviews provided more explanations on their importance in internal audit. An important structure of the IAF is the AC's oversight role. The findings also indicate that the level of ACs' involvement in the reviews of each stage of the internal audit process contributes to the overall effectiveness of IAF. Due to issues in staffing and the changing business environment, collaborations particularly in risk management, information technology audits and quality audits, are increasingly being used as a strategy in internal audit to provide value add services. Further, as suggested by Sarens (2009), the level of internal audit performance could now be identified to its impact on corporate governance, for example such as in areas of expenditure management, revenue management, analysis of data and conflict resolution.

The results have implications on the policy regarding internal control for public listed companies, favouring an in-house internal audit function as opposed to outsourcing the function, to address the recommendations on the effectiveness of ACs and its relationship with IAFs. The practice of internal audit in future should be more collaborative to harness the expertise and experience of other departmental personnel in producing effective internal audit, ultimately creating a greater impact on corporate governance.

Keywords: Internal audit, audit committee, corporate governance, performance, collaborations, combined assurance, Rasch model

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

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CHAPTER 1: INTRODUCTION

Redefining Internal Audit Performance: Impact on Governance

1.1. Introduction

This thesis examines the effectiveness of the internal audit function (IAF), the involvement of audit committee (AC) with the internal audit activities and the impact of internal audit on corporate governance in the Malaysian context. This chapter presents the background to the research, followed by the significance of the study, research questions and objectives and the research methods. The chapter concludes with the structure of the thesis and the chapter summary.

1.2. Background to the Study

The role of an internal auditor varies from providing independent assurance to acting as management advisor (Deloitte, 2010). In the early 1980s in the Asia Pacific, internal auditors were perceived to be doing traditional financial auditing work (Cooper, Leung, & Wong, 2006). By the 1990s, more than 50% of chief executive officers in Malaysia and Hong Kong perceived that the role of internal auditors was to provide independent evaluation on the effectiveness of management (Cooper, Leung, & Mathews, 1996). From 2000 onwards, the role is focused more towards monitoring compliance, internal controls and the performance of management programs (Zakaria, Selvaraj, & Zakaria, 2006). Another area gaining importance in the business community is the support given by internal auditors to ACs in the assessment of risk management and risk processes (Soh & Martinov-Bennie, 2011). Elsewhere, such as in the US, the evaluation has extended to environmental management systems (Tucker & Kasper, 1998). Based on the roles outlined above, internal auditing has had some impact on good governance, which is the particular interest of this study.

When Adam Smith (1776) raised the issue of conflicting interests of agents such as managers and general workers in managing firms, he was elucidating on the owners' motivation to realise the greatest possible value on capital employed. As a counter measure, and to instil confidence in agents, Jensen and Meckling (1976) reasoned that self-monitoring – internal audit – is undertaken. It is assumed that in self-monitoring,

the purposeful placement of internal audit in the corporate structure, which is mandatory for Malaysian public listed companies, contributes to the quality of good governance.

In the global economy of the twenty-first century, good governance has become a central issue. One of the most important events of the 1980s was the emergence of corporate failures, which later escalated to global financial crisis. The consequences of corporate failure were demonstrated in Australia by the collapse of the National Safety Council of Australia in the 1980s and the Pyramid Building Society in Victoria in 1990 (Somerville, 2006). These were followed by the fall of the HIH group, with a deficiency of AUD5.3 billion, in 2001 (George & Malane, 2003). In America, Enron Corporation filed for bankruptcy in 2001 after incurring losses of US$62 billion through manipulation of financial statements by the company executives, including the undertaking of risky business activities. Then in 2002, telecommunications company WorldCom collapsed, with losses of approximately US$11 billion (Somerville, 2006).

Malaysia is not an exception to corporate failures. The first highly publicised corporate scandal began with the Bumiputera Malaysia Finance case in Hong Kong, called the BMF scandal, in the 1980s. The irregular loans of almost RM2.5 billion to the Carrian Group were irrecoverable (Mohamad & Muhamad Sori, 2011; The Malaysian Bar, 2008). Later, several corporate turmoils, starting from 2004, dubbed as mini-Enrons, involving Media Holdings Bhd, Southern Bank Bhd. and Transmile Group Bhd. (Associated Press, 2007; T. H. Lee, Ali, & Kandasamy, 2008; Shah, 2007) were exposed. Prior to the shake-ups in Malaysia, the Asian financial crisis in 1997/98 started with the devaluation of the Thai currency immediately after the fall of Finance One, the biggest finance company in Thailand (Garay, 2003). These financial debacles created the impetus for better governance in Malaysia and the South East Asian region; this impetus continues to be a lively topic (Liew, 2007; Mohamad Ariff, Othman, & Ibrahim, 2007).

In the context of preventing corporate failure, questions have been raised about the performance of internal audit and other forms of auditing (Imhoff, 2003; Mohamad & Muhamad Sori, 2011). It is worldwide practice for the internal auditors to report to the AC, not to management (except for administrative interface), in order to maintain their independence (The Institute of Internal Auditors [IIA], 2012b; Verschoor, Barrier, & Rittenberg, 2002). The effective relationship between internal auditors and the AC is

crucial in ensuring good governance (MIA Professional Standards & Practices [MIA], 2012). There is, therefore, potential for better functioning of business in Malaysia to optimise the internal audit function and audit committee interaction. Presumably, an effective internal audit would depend on the understanding of the internal audit process and, importantly, of the impact of internal audit on corporate governance.

The complexities in internal audit relate to the objective and scope of the audit. There are various internal audits such as management audit, operational audit, systems audit, compliance audit, computer audit, probity audit, value-for-money audit, and quality audit (Pickett, 2003; Whittington & Pany, 2004). These various types of audits create pressure for management and employees, giving them the perception that they are constantly being audited. This poses the question of effectiveness of the audits and how such audits would aid the organisation in its corporate governance and risk assessment framework. Questions surrounding the effectiveness of internal audits need to be addressed in the light of reliance placed on the IAF as one of the mechanisms of corporate governance.

1.3. Rationale and Significance of this Study

1.3.1. Rationale

This study on internal audit is motivated by the increasing focus by the Malaysian government on the capital market initiatives, specifically on corporate governance, of public listed companies. One of the measures implemented was the revision of the listing requirements, making it mandatory for the companies to have an AC as an oversight function. Generally, the AC and the IAF assist the board of directors, among others, in ensuring the adequacy of internal controls, risk management and compliance to the relevant rules and regulations. The insight on the effectiveness of both AC and IAF within the corporate governance framework is expected to provide the basis for identifying other measures needed to support the capital market initiatives and the Malaysian Code of Corporate Governance.

1.3.2. Contribution to theory

The emphasis on good corporate governance in the prevention of corporate failures has highlighted the role of internal audit. The role of auditors has always been referred to as an independent agent. However, given the wide variety of internal audit activities undertaken, the effectiveness or quality of internal auditing is an empirical question that

is yet to receive sufficient research attention (Sarens, 2009). This study uses other theories such as institutional, organisational identity and identification theories besides agency theory to explain internal audit performance.

1.3.3. Contribution to researchers

In this study, first, the researcher extends the evaluation of internal audit practices by quantifying the level of involvement of audit committees in the internal audit activities and the level of indirect outcomes of internal audit in corporate governance of Malaysian public listed companies. Instead of the OECD principles of corporate governance (2004) which have been used in most corporate governance studies, the framework on governance by The World Bank (1991) instead is used, as the dimensions are more appropriate in assessing the decision-making and business process of an organisation.

Furthermore, recent advances have been made in the measurement of internal audit performance by evaluating the internal audit activities and the intended outcomes (Dittenhofer, 2001a; Fadzil, Haron, & Jantan, 2005). As concluded by Dittenhofer (2001a), internal audit is a complicated process ending with reports on audit findings and recommendations. Audit findings and recommendations for improvements may affect corporate governance. Second, this study provides new evidence on the areas of improvements made in organisations and the relationship with internal audit performance.

All the studies reviewed so far, have centred on various aspects of audit committees' and internal auditors' roles, internal controls and judgement of auditors (R. H. Ashton, 1974; Brown, 1983; Fadzil et al., 2005; Haron, Chambers, Ramsi, & Ismail, 2004; B. Lee, Naiker, & Sharma, 2009; O'Leary, Iselin, & Sharma, 2006; O'Leary & Stewart, 2007; Zakaria et al., 2006). However, combined assurance or collaboration, and how this activity will affect internal audit performance, have not been discussed or investigated. Third, the level of combined assurance and/or collaboration (quantitative analysis) and the perception by chief audit executives (CAEs) on these activities are now examined in the survey and in-depth interviews (qualitative analysis) in the present study.

Additionally, the study on internal audit performance has mostly been done quantitatively. There is a need to explain such results in more detail, especially in terms of the participants' perspectives because little is known about the collaborative mechanisms in internal audit activities and how internal audit impacts overall corporate governance of an organisation. Fourth, the mixed methods used, both qualitative and quantitative inquiries, provide greater insight on the internal audit function.

Fifth, the present study uses Rasch model to measure the effectiveness of the internal audit function. Rasch model measures the latent trait of generic skills and has been used to assess the quality and construct of measuring instruments such as tests and questionnaires (Baghaei, 2008; Sick, 2008a; Uekawa, 2007). The Rasch model has been used extensively in the field of education (e.g., Green, Bock, Humphreys, Linn, & Reckase, 1984; Griffin, 2007; Lindsay, Clogg, & Grego, 1991; Waugh & Chapman, 2005), health sciences and psychology (e.g., J. F. Pallant & Tennant, 2007; Steinmeyer & Möller, 1992; Tennant, McKenna, & Hagell, 2004). In finance, the Rasch model has been used to measure the financial capability of mutual fund investors (Pellinen, Törmäkangas, Uusitalo, & Raijas, 2011) and, the severity of gambling problems through the measurement of gambling symptoms (Strong & Kahler, 2007) whilst in management, it has been used to evaluate the types and involvement of employee participation in workplace decision-making (Drehmer, Belohlav, & Coye, 2000). An initial evaluation on internal audit performance using the Rasch model had found that the internal audit activities used in the questionnaire issued to internal auditors were appropriate for the creation of a performance index (Abdullah, A Rashid, & Masodi, 2008). This study now extends the measurement method to internal audit performance in evaluating the effectiveness of internal audit function by incorporating the involvement of audit committees and the dimensions of corporate governance.

1.3.4. Contribution to policy makers

Although internal audit findings are not publicised, Malaysian public listed companies report on their business strategies and corporate governance activities, which include risk management and audit committee. However, these annual reports are usually prepared to conform to the stock exchange requirements (Haron, Ibrahim, Jeyaraman, & Chye, 2010; Johl, Johl, Subramaniam, & Cooper, 2013; Mat Zain & Subramaniam, 2007) and do not allow the quality of corporate governance to be easily assessed. The recommendations of internal auditors usually indicate the implications the internal audit

findings would have on the internal control environment and other governance areas if corrective actions and improvements were not taken. The literature is silent on the areas of governance that have been impacted by internal audit. As transparency and accountability are usually the focus for the disclosure of information about an organisation, the additional disclosure on the areas of governance is relevant. Therefore, the findings from the exploration into this impact could be gleaned from the areas where audit findings have been made and the identification of weaknesses in the interactions of ACs and the IAF.

1.3.5. Contribution to practitioners

First, at the professional level, this study provides insights into the level of involvement of audit committees in internal audit activities and how this will affect internal audit performance. The information will facilitate the areas of interaction with Acs to enable better performance, such as, accessibility during internal audit to information and personnel.

Second, since the survey is made on all corporate members of the Institute of Internal Auditors Malaysia in charge of internal audits in public listed companies in Malaysia, this study has the potential to serve as a benchmark study of current practices. The practices would cover, among others, the structure of the IAF, type of IAF and the level of collaborations with other experts.

Generally, business strategies and corporate structure change in order to create sustainable competitive advantage. For example, international certifications for products and services necessitate that organisations establish a quality assurance department (Skrabec, 1999) alongside the ‘traditional’ internal audit department for self-reviews and continuous improvement. The complexities of business activities and evolving internal auditors’ roles to meet the demands of organisations may lead to higher collaborative audits or using external experts. Last, this study provides further information on the types of collaborative activities conducted and perhaps give an indication on the areas of training for the CAEs to pursue.

1.4. Objectives and Research Questions

This thesis sets out to explore the ways IAF in Malaysian public listed companies is practised together with the level of collaborations and/or combined assurances − in an

environment where organisational excellence is ostensibly espoused, as indicated in the annual reports − and to evaluate its quality or effectiveness. More specifically, the study addresses the following questions:

1. What are the factors determining internal audit performance?
2. How does the AC affect the performance of the IAF?
3. How has internal audit enhanced corporate governance?

The premise for this thesis is that internal audit is more than an agency relationship; its performance is affected by the motivation for organisational excellence. The proposition is that value-add internal audit function is likely to occur where organisational identity and institutional theories are predominant within the agency relationship. Additionally, the varied conduct of activities by the IAF – internal audit structure including combined assurance or collaboration and AC – are vital in internal audit performance. In this thesis, the researcher aims to demonstrate that the questions and answers on internal audit performance will lead to identifying specific impacts on corporate governance.

In addressing the questions, this study examines factors such as:

- internal audit structure, which include team size; composition, in terms of experience and expertise; and whether combined assurances or collaborations are conducted;
- involvement of AC in the IAF activities; in the reviews of audit planning, audit execution, and actions on recommendations of internal audit; and
- internal audit performance impacts on corporate governance in four key dimensions; legal framework/corporate policies, management improvements, accountability, and information and transparency.

The end result of an internal audit is the audit recommendations. The recommendations that are acted upon by management may help to further strengthen the various dimensions of corporate governance. Management decisions to act on these recommendations may provide an indication of the effectiveness of internal audit. The above factors are used as a framework to model an effective IAF by using Rasch measurement, as a proxy, of the state of corporate governance where internal audit operates.

1.5. Research Method

This mixed methods study to investigate the effectiveness of the IAF and its link with corporate governance has two strands;

1. Quantitative strand involves mailed survey to the corporate members of the Institute of Internal Auditors Malaysia (IIAM) on the perceptions of internal audit performance, the level of involvement of AC in internal audit, evidence of collaborations and combined assurances, and the nature of audit findings relating to the components of corporate governance, and
2. For the qualitative strand, in-depth interviews were conducted with the CAEs nominated by the Securities Commission Malaysia. They were questioned about their individual organisation's IAFs, involvement of ACs, type of audit activities and the perception of how internal audit performance affects corporate governance.

The quantitative data from the survey and the qualitative data from the in-depth interviews were analysed separately. The main findings were compared and integrated to provide evidence on the quality of the IAFs and the relevant theories. The results point to internal audit as being more than an agent and its performance is affected by the motivation for organisational excellence.

1.6. Thesis Structure

This thesis is subsequently organised as follows: Chapter 2 positions the IAF in corporate governance, related theories and the measures in evaluating internal audit performance. Chapter 3 presents the conceptual framework and the hypotheses development. Chapter 4 discusses the research design incorporating a formal survey and in-depth interviews. The measurement method using Rasch measurement analysis and the ordering of items based on item difficulty are explained. Chapter 5 elaborates and discusses the results of the quantitative strand. The elaboration covers the ability to perform effective internal audit, the association of IAF and the perception on AC's involvement, and the level of impact of the IAF's performance on corporate governance. Chapter 6 describes various IAFs through interviews with CAEs and links the outcomes with results of the quantitative strand. The motivations in conducting internal audit are discussed in relation to the agency theory and others; legitimacy, institutional and organisational identity. The final chapter, Chapter 7, presents the

summary of main findings, implications, limitations of the study and avenues for future research.

1.7. Summary

This chapter gives an introduction of the agency role of internal audit in providing support in the corporate governance structure of any organisation and the measurement of the IAF as examined in this thesis. Agency theory is further explained in the next chapter. Additionally, this chapter states the rationale and significance of the present study, the key areas of focus and the overview of the research methods. Chapter 2 provides the background on the IAF, Malaysian listing requirements on governance, the theoretical perspectives and the relationship of internal audit with corporate governance.

CHAPTER 2: REVIEW OF LITERATURE AND THEORY

Research into Internal Audit Function, Theoretical Perspectives and Corporate Governance

2.1. Introduction

The following review defines IAF, its structure, IAF's relationship with AC, presents a collective explanation of the different theories associated with internal audit and how these theories shape the IAF. A description of the dimensions of corporate governance that relates to internal audit is also given. Further, as this research examines internal audit of listed companies, an in depth explanation is made of the listing requirements pertaining to corporate governance in Malaysia. Finally, an overview is given on methods in measuring internal audit performance.

2.2. Internal Audit Function

2.2.1. Definition of internal audit

Internal audit is defined as an objective assurance with the aim 'to evaluate and improve the effectiveness of risk management, control and governance processes' (IIA, 2010b). 'Assurance' is also used by the international accounting body in tandem with auditing standards (IFAC, 2010). Although auditing standards are applicable for audits of financial information, the assurance standards are for other engagements. Internal audit has also been described as an independent appraisal of the effectiveness of internal control within an entity of its management process in achieving set objectives and goals (Gill & Cosserat, 1993; Haron et al., 2010).

Fadzil et al. (2005) looked at the internal auditing practices and its effect on the quality of internal control. They summarised the services performed by the IAF to cover four areas:

1. Review of adequacy and effectiveness of the control systems (accounting, financial, operational);
2. Ascertain the compliance to policies, rules and regulations which could impact significantly on the business operations;
3. Review the means of safeguarding the company's assets including efficiency and economy of resources employed; and

4. Review operations or programs to determine that the results are as established by management.

Upon the conclusion of an audit, the report presented should give a 'reasonable assurance' on the state of matter that was investigated. 'Reasonable assurance' is clarified as the degree of confidence the user of the audit report has that due professional care has been exercised in the audit (A. Chambers, 2006; ICAEW, 2011). Although the concept of reasonable assurance is linked to external audits, the basis for the opinions made on the outcomes of internal audits, should be traceable to the supporting documents or analyses made during the audits. Confirmation of factual content with the auditee is essential (Dittenhofer, 1997). The reliance on the reports or other opinions of internal auditors is very important as these reports will be referred to by management when they undertake continuous improvements. The work of internal auditors will also be assessed by external auditors who would determine whether reliance will be placed on such work in the conduct of financial audits or other engagements (e.g. AUASB, 2010). Upon the agreement of the process owners to take corrective actions or improvements, customarily the follow-up audit made by the internal auditors will also assess the effectiveness of such corrective actions in ensuring the root causes for the weaknesses have been addressed. The report on the initial audit findings and the results of the corrective actions would be indicative of the effectiveness of the internal audit.

2.2.2. IAF structure

IAF has been referred to as the department that performs internal audit (Johl et al., 2013; Mat Zain & Subramaniam, 2007; IIAM, 2009). Even though, the Malaysian listing requirements specify the presence of the IAF in the corporate governance structure, the IAF could be outsourced (Ahmad & Taylor, 2009; Haron et al., 2004; Johl et al., 2013). As such, in this study, IAF refers to the internal audit process and its reporting structure, notwithstanding whether the IAF is in-house or outsourced.

Dittenhofer (1997) stated that internal auditors evaluate the activities of management and people in their organisations. The internal audit process can be divided into four dimensions (see *Figure 2-1*): planning, execution or fieldwork, reporting, monitoring

and follow-up on findings (Beckmerhagen, Berg, Karapetrovic, & Willborn, 2004; Dittenhofer, 2001a, 2001b; Fadzil et al., 2005; Moeller, 2009; Thompson, 1996). In planning the audit, major items to be considered are: scope and objective of audit, rules and regulations, potential risks, independence and competencies of internal auditors, and audit programs. While executing the audit, internal auditors obtain reliable information including process performance data as audit evidence. They also ensure good documentation and easy retrieval of audit findings.

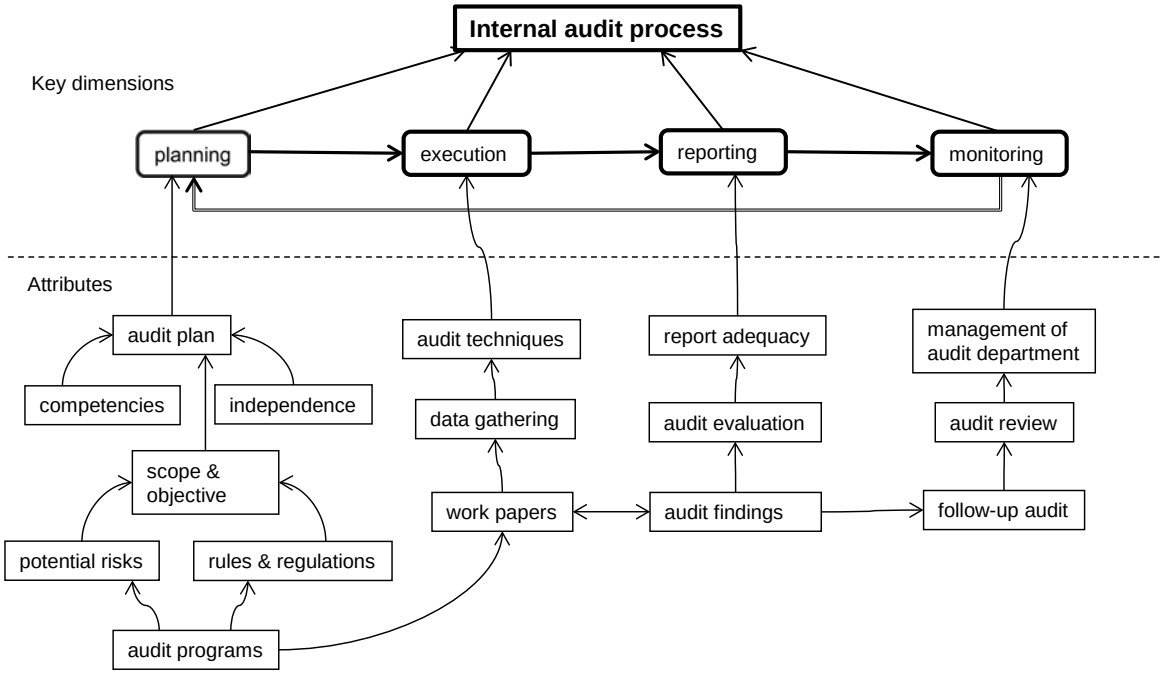

Figure 2-1. Key dimensions and attributes of internal audit process illustrating the relationships between attributes derived from literature review

Reporting of audit findings to the relevant management level is done for appropriate corrective actions to be taken by the auditee to eliminate root causes of weaknesses found. Monitoring of internal audit process through self-assessments and peer reviews of audit teams should be conducted for performance improvement, for example, to identify training needs for internal auditors in areas such as information technology or risk management. Following-up on audit findings is crucial to ensure that corrective actions by management are effective and changes to organisational processes are aligned to targeted improvements.

Internal auditors have taken specific strategies, including combined audits and collaborations, to perform their monitoring role for management. An initial step towards a combination of internal audit activities is a comprehensive audit. In a comprehensive audit, the activities encompass attesting financial statements, checking legal and administrative compliance, ensuring probity of decisions by management and conducting a performance audit (Gill & Cosserat, 1993). Another suggestion made to auditors performing value-for-money and comprehensive audits is to include the evaluation of the quality of strategic planning and how the services were provided (Khemakhe, 2001). Khemakhe called this type of audit integral auditing. The risk or impact assessments made are also important in ensuring accountability of policy or program undertaken by an organisation. By performing an integral audit, Khemakhe claims that auditors have gone beyond the role of controller to that of facilitator, thereby providing a better performance assessment on corporate governance.

Moreover, the Institute of Internal Auditors (IIA), the professional body for internal auditors based in USA, prescribes that internal audit be consultative in nature to add value and improve an organisation's operations (2010b). The call for integral audit by Khemakhe is in line with the IIA's prescription. The IIA has also identified combined assurance as a new area to be studied, but the institute has not yet defined combined assurance. However, the term combined audits has been used when two or more different management systems are audited simultaneously (International Register of Certificated Auditors, 2011). The adoption of the ISO standard for risk management by the IIA (2010a) suggests that combined assurance, such as incorporating audit criteria for quality audits into process audits, is the new direction for internal audit.

Specific references to combined audit activities for better performance have been made in quality system audits and audits of various work processes (Hala, 2008; Pun, Hui, & Lee, 2001). For example, the assurance activities in a corporation, Rio Tinto, are not limited to financial systems but encompass managing people by identifying key risks and business processes (Hala, 2008). The combined assurance framework focuses on internal audit, risk, Sarbanes-Oxley, legal, external audit, health and safety, compliance, treasury, communities and external commitments, human resources and sustainable development. Collaboration between audit and assurance teams in Rio Tinto is used to

identify audit overlaps and gaps in ensuring a higher assurance in key risk management and control systems of business processes. Collaborative work has also been found to be necessary when performing work that requires certain expertise (Akers & Klos, 1995; Pendlebury & Shriem, 1991; Tucker & Kasper, 1998).

Any strategy taken in performing internal audit requires adequate resources. To strengthen the IAF, the Malaysian Securities Commission and IIAM had issued guidelines on IAF's establishment (Bursa Malaysia, 2000). Further, the Malaysian Code of Corporate Governance also specifies disclosures about matters relating to the internal audit. Among the disclosures are the mandate on the internal audit activities, whether the function is performed in-house or outsourced, identity of the CAE and the AC members, and the duties of AC (Bursa Malaysia, 2000; Johl et al., 2013; Mat Zain & Subramaniam, 2007).

Previous studies had concluded that the outcome of an IAF depended on the type of IAF. For example, an outsourced function is to fill a skill gap or to serve a core purpose (K. Van Peursem & Jiang, 2008) and later, found to have less ability to monitor financial activities (Johl et al., 2013). In contrast, even though the in-house IAF is perceived to be less independent, it is more relied upon by external auditors due to the competency of worked performed such as follow-ups on deficiencies reported in prior audits (Haron et al., 2004). It is said that an in-house IAF is also more effective because of its intimate business knowledge (Coram, Ferguson, & Moroney, 2008; Soh & Martinov-Bennie, 2011). There has been an increase in the size of in-house IAF in recent years, from 2006 to 2008, in Malaysia (IIAM, 2009). However, the extent of the value added services of the IAF and the impact on corporate governance is still unclear.

The quality of work performed is dependent also on the audit team composition: size, expertise and experience. The decision to collaborate or outsourced certain audit activities will depend on the range of skills and experience of the CAE and the team members. The CAE should determine the requirements in terms of size and the capability of the team, depending on the type of business and the complexity of business operations (Powell, 1993). Hence, the question that needs to be asked is whether team structure affects the performance of an audit task.

Audit teams are reconfigured for each audit and audit size has not been considered central when teams could rely on their supervisors (Dirsmith, Fogarty, & Gupta, 2000). Dirsmith et al. found that audit size is related positively to the variability and difficulty of task complexity. The decision making in teams allowed for the pooling of information (Casey, Gettys, Pliske, & Mehle, 1984). Complex tasks involve search of alternatives and the provision of ingrained information from more than one person (Bamber & Bylinski, 1982). Earlier research noted by Shaw (1976) and Casey et al. (1984), had shown that group or team performance derived benefits such as generating new or improved ideas from the combination and sharing of knowledge, abilities and viewpoints.

A team exists when it is comprised of more than one person. Team size would not impact audit coverage if certain audit strategies are taken such as using audit surveys (Benson, 1995). Benson added that the survey comprises questionnaires and audit programs based on previous audit findings highlighting issues in controls and management that affect performance and accountability. In line with comprehensive audits, as mentioned by Khemakhe (2001), the streamlining of audit procedures to include the checklists related to other types of audits for example financial, compliance and operational audits, would create greater efficiency. However, Benson stressed the need to have follow-up audits to ensure the audits are effective.

Even though diversity is needed, the optimum team size is not mentioned in the internal auditing literature. Larger audit teams, for example team with seven members, do not operate well and the job satisfaction declines (Firth-Cozens, 1992). In the area of information security, a team of around three persons is suggested to avoid delays in the decision making process (SANS Institute, 2007). The majority of IAF in Malaysia (57.6%) have up to 5 employees (Fadzil et al., 2005), and as such, in most probability, the audits are conducted by small teams.

Powell (1993, p. 52) recommended that an internal auditor “has to be commercially aware, professionally qualified and a good communicator with all levels of staff and management”. Since the scope of internal auditing encompasses the review and

assessment of the business operations, being professionally qualified would also mean that internal auditors need to have a level of expertise in specific areas. Expertise in auditing requires extensive experience where the auditor had years of intensive practice and repetition in specific areas, spanning from three to five years (A. H. Ashton, 1991). Ashton's study on audit expertise used error frequency knowledge across industries. It was found that the level of experience is irrelevant in determining the accuracy of the relative frequency of financial errors due to the limited experience with actual errors. However, the auditors tend to know the financial areas affected by errors based on the type of industry. Ashton noted that expert auditors could not be identified easily as they perform both judgemental and non-judgemental tasks. An effective team welcomes diversity of skills and knowledge as the members recognise that the audit is exploring unchartered areas which require various new skills (Firth-Cozens, 1992).

Expertise is closely related to experience. Experience builds the auditor's error knowledge and is likely to be influenced by specific audit experiences, team discussions, the level of supervision, including the following of audit plans and audit guides or programs (Choo & Trotman, 1991; Tubbs, 1992). Choo & Trotman (1991) found that inferences by experienced auditors were significantly linked to their predictive judgments and the clustering of recalled atypical items on the going-concern problems of a company. Additionally, Tubbs (1992) stated that the recognition of atypical errors and the ability to detect causal explanation of internal control violations increase with experience.

A previous study by Libby & Frederick (1990) suggested that a more experienced auditor would generate greater number of errors found during the audit to explain the audit findings. They found experienced auditors' error frequency perceptions to be more accurate. Additionally, the way the auditors had responded to the error prompts implied that the auditors organise their knowledge based on the transaction cycle of the business process. With that knowledge, the conclusion for an audit objective may differ since "the knowledge of the cycle organisation may allow whole classes of explanations to be rejected based on the same additional data" (Libby & Frederick, 1990, p. 363). More experienced auditors had anticipated the acceptance of a more ethical stance in certain situations such as reporting on a material revenue recognition issue although being

pressured otherwise by the financial controller (O'Leary & Stewart, 2007). However, the same internal auditors in the study were unsure that their peers would behave ethically and report on the audit findings. So far, the team structure, particularly team size, expertise and experience has not been investigated in the Malaysian context to determine how this would affect the conduct of the internal audit activities.

The second part of the IAF investigated in this study is the reporting structure. A dual reporting relationship for IAF is recommended by IIA to prevent conflicts of interests and collusion (IIA, 2012a). The CAE usually reports to the chief executive officer for direction and areas of audit interest, including administrative support. Another line of reporting is to the most senior oversight group — normally the AC, a sub-committee of the board of directors — for reviews of internal audit activities and reinforcement on risk, business processes and control issues (Cohen, Krishnamoorthy, & Wright, 2004; DeZoort, Hermanson, Archambeault, & Reed, 2002; Haron, Jantan, & Pheng, 2005; Mat Zain & Subramaniam, 2007; Vanasco, 1994). Presumably, this reporting structure would create an effective audit function especially where the internal auditors need to maintain their independence with the required level of trust within the organisation. Trustworthiness is very subjective, more so, when internal auditors are included as agents in management's monitoring mechanism. Further links of the IAF to AC are detailed in the next section.

2.2.3. IAF relationship with AC

AC is responsible for the oversight of the IAF and as such, AC is IAF's primary customer (Haron et al., 2010). Interactions among AC, internal auditors, the board of directors and the management apart from the external auditors are essential to effective governance (Cohen et al., 2004). IAF is the most appropriate vehicle to report on the effectiveness of internal control (Powell, 1993). Without this oversight, a good IAF will have minimal effect on internal control as the internal auditors could be isolated and have difficulties to gain access and cooperation from the auditees (Haron et al., 2010; Soh & Martinov-Bennie, 2011). An effective AC should have complied completely with the regulations set by the listing authority (Haron et al., 2005). However, an effective AC together with high management integrity does not assist the internal auditors to act ethically when in a dilemma (O'Leary & Stewart, 2007). As such, an effective IAF will

enable the CAEs to report and interact with the ACs at regular intervals and facilitate the internal audit process.

Among the requirements on the composition of the AC are that there should be at least three members with the majority being independent directors and one of them financially literate (Bursa Malaysia, 2009b; Haron et al., 2005; Liew, 2007). Mohd. Nazim & Kalaithasan (cited in Haron et al., 2005, p. 190) claim that the disclosures in the annual report about AC and AC's activities are easily made and as such, should be authenticated. Haron et al. (2005) found that the disclosures in the AC reports of Malaysian listed companies were quite uniform and gave the impression that the disclosures were a formality and not informing the actual practices. As such, the reviews by AC on the IAF as reported in the annual report could also be in question.

The specific AC's reviews relating to the IAF in the legislations (Bursa Malaysia, 2000, 2009a, 2009b) included:

1. IAF reports directly to the AC;
2. Adequacy of the scope, functions, competency and resources of IAF, and authority to conduct the audit work;
3. Internal audit program, processes, the results of audits or investigations conducted, and the status of audit recommendations;
4. Appointment or termination of senior staff members of the IAF; and
5. Reports by CAE on effectiveness of risk management, internal control, and governance processes.

Due to the concerns regarding the effectiveness in the interactions of AC and IAF, this study examines the reviews made by the AC on the IAF outlined above, as part of the evaluation on the effective performance of IAF.

2.3. Theoretical Perspectives

The principal theory relating to auditing is still agency theory (Deegan, 2009). Other theories such as, legitimacy theory, institutional theory and, organisational identity and identification theory are also relevant to the changing roles of internal auditors. Rather than serving as mere watchdogs, internal auditors now expect to provide value added services, especially regarding assurances of business processes and risk. While other

researchers have used each of the theories named above in measuring internal audit performance, none have used them collectively to explain the performance of internal audit function and its impact on corporate governance. This study breaks new grounds by using a collection of theories to assess the internal audit function and its impact on corporate governance.

2.3.1. Agency theory

An agency relationship exists when managers and those employed perform a service on behalf of owners or shareholders with the delegation of some decision-making authority (ICAEW, 2005; Subramaniam, 2006). 'The qualitative state of excellence in decision-making' is good governance (Bridgman, 2007). However, the momentum of companies being publicly listed made the separation of owners from actively managing their companies more prominent, casting doubts on sound managerial capacities of directors and senior management. Conflicting self-interest of owners and agents, first highlighted by Adam Smith in 1776, in The Wealth of Nations and reiterated by Jensen and Meckling (1976), together with information asymmetries, caused agency problems (ICAEW, 2005; Subramaniam, 2006). In the case of listed companies, the distance between the owners and the agents – the management team – is great; owners who are shareholders are not involved in the management of their organisations. Jensen and Meckling (1976) argued that agents are inclined not to maximize the wealth of the owners and in mitigation, monitoring activities such as external audits, are imposed by the owners.

In Malaysia, three recently reported cases dealt with managerial problems. First, in Southern Bank Bhd., revenue and profits were falsified and creatively accounted for with overstatement of net assets by RM160 million in 2005 (Shah, 2007). Secondly, the revenues of Transmile Group Bhd. from years 2004 to 2006 were overstated by RM622 million (Associated Press, 2007). Finally, Megan Media Holdings Bhd. suffered losses of RM1.14 billion in 2007 due to accounting fraud at its subsidiary (T. H. Lee et al., 2008). These cases highlight the incongruence in expectations of good governance and, due professional care and diligence, of directors, managers, as well as auditors.

Jensen and Meckling (1976) specified two agency costs in the management of companies: monitoring costs and bonding costs. According to Godfrey, Hodgson, &

Holmes (2003) monitoring costs include costs of auditing, management compensation plans, budgets and operating rules. Fees to external auditors are considered as monitoring costs (Godfrey et al., 2003). Notwithstanding the weaknesses in the monitoring activities as indicated in the corporate scandals above, reliance by external auditors on the internal audit function generates cost savings in audit fees to the organisation (Brown, 1983; Haron et al., 2004). Internal audit has been identified as a bonding cost because the agents undertake to guarantee against any malfeasance by conducting the checks on their operational activities by appointing specified persons in their companies (Jensen & Meckling, 1976). Within the organisational structure, internal audit is charged with the oversight of good governance. Internal auditors look at the future by reviewing controls and processes in contrast with external auditors who attest on representations made by management on historical events namely, financial statements for statutory purposes (similarly Dittenhofer, 1997). By evaluating and relying on competent internal audit, the extent of work by external auditors is expected to be reduced.

The simplistic view in agency theory of untrustworthiness of agents negates inherent human nature and motivation. Central to human psychology are the self-actualization needs, first coined by Kurt Goldstein and later used by Maslow: the tendency to achieve one's potential and having the sense of truthfulness (Maslow, 1943). Dittenhofer (1997) clarified that "the need to be accepted and recognized" and the "desire to be a part of the organisation" changed the ways internal auditors operate. The view of internal auditors as watchdogs only, is changing. Audit, as it is currently practised, goes beyond the requirement under existing legislations. It also may provide answers to questions on bias in decision making, particularly in owner controlled companies (ICAEW, 2005). In stating their opinions on the financial statements of a company, the external auditors also form an opinion on the trustworthiness of the internal auditors' work and the system of internal control; reducing external audit work.

The requirement to give value added service to the organisation when performing internal audit acknowledges the role of internal auditors working in consultation with management (Bou-Raad, 2000; IIA, 2010b). Instead of auditing, 'assurance services' has been used for reviews made by internal auditors and to provide advice or

recommendations to management to assist in business strategies. Through their professional background and competency, internal auditors are involved in the development of internal control structures or management control processes and risk management. The involvement of internal auditors beyond the role of controllers or monitoring agents contributes to better internal control structure and quality of information for decision-making. Bou-Raad (2000) concluded that internal auditors are able to determine their independence and would not undermine their competency and integrity, and that organisations recognise internal auditors' services in business practices. The emerging recognition of the expanded role of internal auditors and the benefits of internal auditors' services in aiding organisations to meet their business objectives require more than agency theory can explain. The following sections discuss alternative theories.

2.3.2. Legitimacy theory

Besides agency theory, legitimacy theory is also related to monitoring activities in organisations. Under legitimacy theory, organisations constantly attempt to portray their activities as legitimate relative to ever changing societal norms (Deegan, 2009). The vital point in legitimacy is what society perceives about the organisation's actions. It is assumed that society will allow the organisation to operate as long as it complies with the social contract, taking into consideration the rights of investors and the general public. Public expectations are not just about quality goods and services and profit maximisation, but include concerns about environmental and safety issues with emphasis on better corporate governance. Failure to accede to social contract may incur societal sanctions, for example, consumer boycotts and legal restrictions on an organisation's business activities. Studies incorporating legitimacy theory, as noted by Deegan (2009), concentrate on social and environmental disclosures in annual reports.

Each organisation will perceive differently what society expects from it when they conduct their business activities. To ensure legitimacy, business strategies may include education of, and disclosure to, the public about the changes in the organisation's performance and activities (Taylor, Sulaiman, & Sheahan, 2001). For example, an organisation would undertake ISO14001 certification as a strategy with the intent to improve environmental performance or merely as environmental credentialism arising

from issues directed towards environmentally sensitive industries. The organisation would conduct environmental audits through the internal auditors to satisfy the certification requirements. Taylor, Sulaiman and Sheahan (2001) found that the credential of certification was the key to satisfy stakeholders on how the implicit social contract of managing the environmental effects of the organisations' activities was met. They also noted that the legitimization process of the environmental performance made the organisations adopt strategies that would change public perceptions without changing their organisations' environmental behaviour.

Both agency theory and legitimacy theory may explain why organisations perform internal audits for various reasons, including compliance with public listing rules and obtaining certifications as part of their business strategies. To remain competitive and be seen as a leader within an industry sector, organisations also adopt structures that are deemed the norm. These structures are now elaborated in the next section.

2.3.3. Institutional theory

Institutional theory explains why organisational structures are similar. DiMaggio and Powell (1983, pp. 148-149) state that various societal forces cause this similarity due to the presence of an organisational field from the activities of diverse organisations. The organisational field encompasses key suppliers, competitors, resource and product consumers, and regulatory agencies. Organisations adopt structures and business processes to achieve compatibility and homogeneity because decision-makers acquire appropriate responses to distract from criticism. This homogenisation process is called isomorphism (DiMaggio & Powell, 1983).

Voluntary corporate reporting or disclosure is considered an institutional practice. The processes which are adapted and continually changed to suit pressures exerted on the organisation by other organisations that they are dependent upon, and by society, are isomorphic processes. Organisational change includes changes in structure, organisational culture, and goals or objectives. The organisation would adapt its reporting practices by ensuring the internal audit function, the roles of internal auditors and the audit committees are in line with the expectations and demands of its stakeholders or regulatory authorities, which are considered the norm. The similarities

in reporting of internal control and corporate governance in relation to internal audit function can be gleaned from the annual reports of the Malaysian public listed companies (Haron et al., 2010). The evidence showed that 97% of the companies complied with the listing requirements with 70% having in-house internal audit function.

Another aspect of institutional theory is that of decoupling (Deegan, 2009). Decoupling means that even though managers might perceive a requirement to adopt certain institutional practices that are publicly sanctioned and implement the relevant formal processes, the actual organisational practices may differ. This differentiation is related to legitimisation of business strategies, for example, the pursuit of profitability and shareholder value by managers instead of the apparent image created by corporate disclosure on social and environmental reporting. Decoupling may also be present in the way internal audit is conducted in-house or outsourced and in the way various types of internal audits are combined to serve business needs. Institutional theory complements the legitimacy theory and organisational culture and identity theory, in explaining the motivations of organisation managers, and the involvement of audit committees and internal auditors in responding to social and institutional expectations of having good corporate governance.

2.3.4. Organisational identity and identification theory

'Organisational culture and identity' are vital in organisational identification (M. R. Mills & Bettis, 2006). Work is an essential human activity; psychologically, socially, physically, and economically (Vredenburgh & Shea-VanFossen, 2009). Organisational structure specifies the existence of various departments, job functions and, to a certain extent, the hierarchical status of a person by virtue of their position. Due to the differentiation in job functions and educational backgrounds, people define themselves, for example, through the place of employment or professional affiliations. By identifying with the organisation, people in the organisation achieve their psychological needs such as self-actualization and affiliation; on the other hand, the organisation gets motivated members to produce results as strategized by management (M. R. Mills & Bettis, 2006). One of the strategies in remaining competitive is seeking international recognition through certification and accreditation. ISO certifications and other quality

assurance certifications promote organisational excellence through performance measurement and customer satisfaction (A Rashid, Abdullah, Ghulman, & Masodi, 2008).

Many organisations are seeking public recognition worldwide through certification and accreditation to ensure their economic sustainability and competitiveness. The common ISO certifications sought are ISO 9001 quality management system, ISO 14001 environmental management system, ISO 22000 food safety management system, ISO 27001 information security management system and ISO 17025 competence of testing and calibration laboratories (ISO, 2004, 2011b, 2011c, 2011d, 2011f; The ISO 27000 Directory, 2009). In the education sector, accreditation is sought from accreditation agencies such as Australian Universities Quality Agency (2011), Malaysian Qualifications Agency (2010) and Accreditation Board for Engineering and Technology (ABET, 2010). Certification and accreditation are aimed at giving assurance that the services and products meet quality standards through continuous improvements.

The focus on corporate governance and organisational excellence by the public sector as well is demonstrated, among others, by the Malaysian government's introduction of the Malaysian Code of Corporate Governance and the formation of the Minority Shareholders Watchdog Group (Liew, 2007); the requirement for companies to be ISO certified for licensing purposes (Construction Industry Development Board Malaysia, 2009); and the issuance of a government circular on ISO certification of public services (Malaysian Government, 1996). Within this framework, the self-review on quality made through internal audits is crucial. With the increase in firm competitiveness in pursuing customer satisfaction and good corporate governance, effectiveness in internal audit is crucial.

For organisational excellence to happen, high-performing human systems or teams are needed (Vaill, 1982). The teams should perform excellently against certain external standards; their potential performance level; their acknowledged starting point; and their required use of significantly fewer resources. Teams are focused on their broad purpose and are task oriented. Their discovery of systems operations that require integrated actions can be seen in their behaviours and attitudes. The pervasive sense of purpose is

affected at least by organisational members' needs, expectations, values and capabilities together with incidence of reorganisation. Deming (1986) used continuous quality improvement in his approach to quality and excellence. He defined quality as meeting or exceeding customer satisfaction with the product or service. This definition is used by ISO in all certifications when organisations deal with customers; external, internal, process, and stakeholders (ISO, 2011e). Internal audit performance is crucial in the monitoring and continuous improvement process where quality management is practised with the aim of inculcating a quality (ISO, 2004; 2011a). As such, internal auditors must have a clear focus on what they are doing and how they benefit the organisation, namely stakeholders and customers.

Many organisations in Malaysia have two distinct internal audit departments or units; Quality Internal Audit Unit in the Quality Assurance Department and Internal Audit Department in the administrative or corporate division (similarly Skrabec, 1999). Usually, internal audit reports from the Quality Assurance Departments are tabled at management meetings or at Board of Directors meetings whilst the reports from the Internal Audit Departments are tabled to the Audit Committee. These differing organisational and reporting structures may have the potential to create barriers to organisational excellence and impede the effectiveness of corporate governance. One such barrier has been identified as dysfunctional organisational politics, which have evolved from self-interest and a focus, among others, on rewards and influence, and need attention for its dissolution (Vredenburgh & Shea-VanFossen, 2009). Self-interest and focus of the two separate audit teams should be resolved by management and the Board of Directors if the organisation is committed to pursue customer satisfaction and good corporate governance. Combined assurance in internal audit activities may also act to reduce the barriers towards good corporate governance. Even if, combined assurance and collaborations are not widely practiced, a certain degree of reliance by the Internal Audit Department on the review reports by departments such as the Quality Assurance Department would have been made.

Of particular interest in this study is how the interactions between the two internal audit departments may serve to define the degree of homogeneity in the teams such as equal status and intergroup cooperation. In strategic performance measurement, organisational

culture is important (Franco & Bourne, 2003). Accountability for the performance measures falls on the managers, who 'will furnish accurate and relevant information about the performance and stewardship' (Al Athmay, 2008). Most corporations use balanced scorecard (Kaplan & Norton, 1996; Niven, 2008), key performance indicators (Waal, 2007), and customer satisfaction (E. U. Bond, III & Fink, 2001; Feciková, 2004; Knouse, Carson, Carson, & Heady, 2009), apart from financial performance, as measures. In practice, these measures and the related processes that yield these measures are usually reviewed by the internal auditors as part of performance audit (Al Athmay, 2008; A. Chambers, 2006; Raaum & Morgan, 2001). Since overall organisational performance is said to rely on the sense of belonging to the organisation, the perception that internal auditors have given value add services would be perceived through the acceptance of other departments, as process owners, of their audit activities.

When conducting an internal audit, certain studies have evidenced that cooperation and teamwork are necessary: Pendlebury and Shriem (1991) found that managers felt that accounting-qualified internal auditors should be supported with personnel from other disciplines or service experts in doing performance audits; Akers and Klos (1995) in their study of environmental audits, however, found that 79% of organisations surveyed engaged only organisational staff outside of the internal audit department in environmental audits, whereas 4% indicated that they used a combination of internal audit staff and other staff members. Tucker and Kasper (1998) concluded that internal audits under ISO 14000 led to systems audits, as opposed to technical regulatory compliance, with collaborations of various experts, trained in risk management, quality management and internal controls. The various audit described above indicated that internal auditors need to have diversity in team members and skills to enable them to perform their roles in various capacity. This study investigates internal audit team size composition, in terms of experience and expertise. The collaborative approach as described by Tucker and Kasper corroborates the use of teams for organisational excellence and good corporate governance.

Due to the pressure for better corporate management practices and market competitiveness, business strategies are more focused on building trust on the quality of goods and services. Disclosures on organisational performance apart from financial

indicators, corporate governance and the credentials obtained including international certifications are now the norm. With such disclosure, self-assessments through internal audits will be conducted, taking into account how the organisations plan to combine the various assurance reviews and subsequently, execute the reviews. In this regard, the role of internal auditors providing services of value to their organisations and promoting good governance would be better explained through the agency theory, institutional theory and organisational culture and identity theory.

2.4. Corporate Governance and Auditing

The World Bank has defined governance as 'the manner in which power is exercised in the management of a country's economic and social resources for development' (1991, p. 1). At the micro level, corporate governance relates to how well an organisation is managed to ensure its sustainability as a going concern. Going concern is aptly captured by IIA's view of governance:

> Governance is the system by which organizations are directed and controlled. It includes the rules and procedures for making decisions on corporate affairs to ensure success while maintaining the right balance with the stakeholders' interest (IIA, n.d.).

Evidence for poor governance includes failure to establish a legal framework, a tendency for pursuing private gains and non-transparent decision-making (World Bank, 1991, pp. 5-6). The key dimensions in corporate governance identified by the World Bank are: legal framework; improvements in management; accountability; and, information and transparency (*Figure 2-2*).

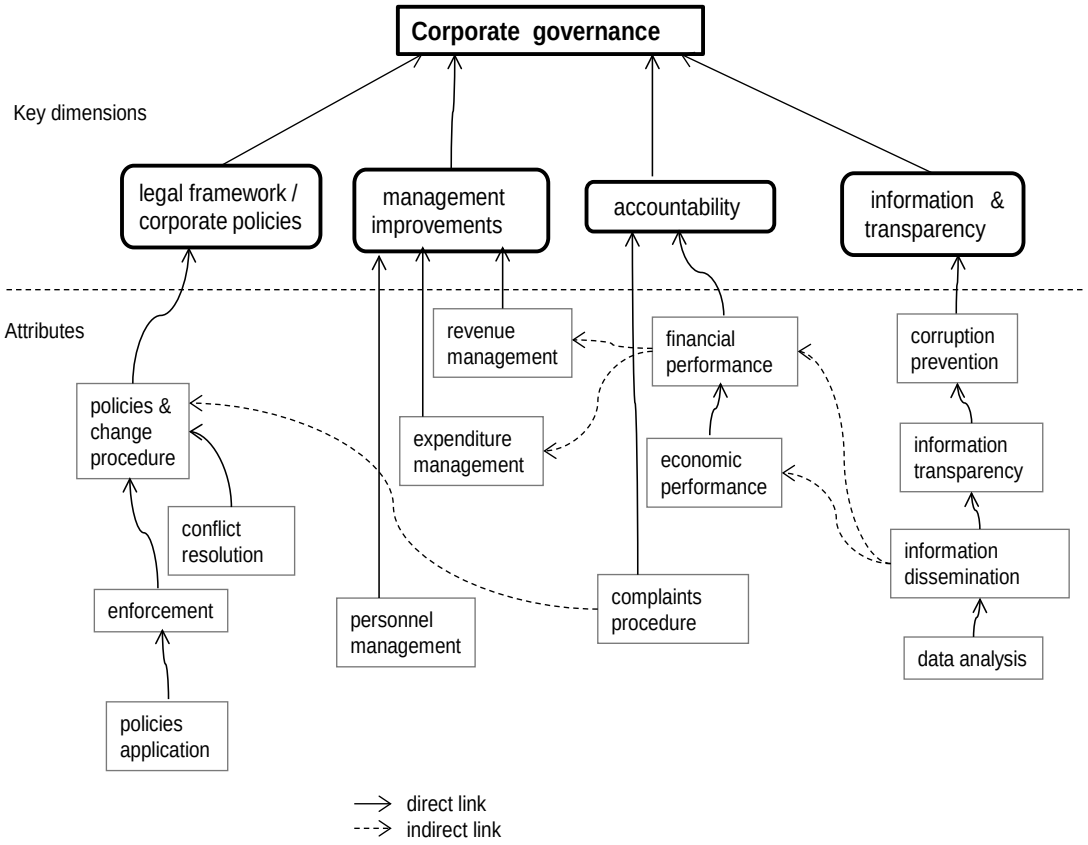

Figure 2-2. Key dimensions and attributes of corporate governance framework (adapted from World Bank, 1991)

Under the first dimension — legal framework or corporate policies — the World Bank states that there should be known rules or policies and the related change procedure, for rules application and enforcement, as well as conflict resolution. In applying this requirement to an organisation, these rules or policies may relate to the company policies on various business processes including human resource management, which could be evidenced through standard operating procedures. Further, to avoid abuse of rules and policies, review systems or monitoring mechanism are required. Where conflicts arise on enforceable agreements, the resolution must be binding and made by independent parties. By inference, the monitoring mechanism singled out in the legal framework is the internal audit function which is legally required for public listed companies in Malaysia. This position is crucial and needs to be understood within the organisational structure as there will be occasions where internal auditors are asked to perform certain task that may undermine the independent status of internal auditors. The reporting requirements for the internal audit function and the specific reference to the audit committee in certain legislation, specifically, the listing rules, emphasise the

important roles of internal auditors and audit committee members in the corporate governance framework. One of the areas that is to be reviewed by the internal audit function is risk management (Bursa Malaysia, 2009b). A brief account on the risk management policies is readily available in the annual reports of Malaysian public listed companies.

Next, improvement in management is viewed from the perspectives of management of revenue, expenditure and personnel. Revenue needs to be even, expenditure controlled and the placement of staff based on competencies and appropriate compensations. The World Bank's emphasis here is on capacity and efficiency.

The third dimension, accountability means holding a person responsible for his/her actions and is gauged from financial and economic performances, and voice mechanism. Financial accountability involves the use of accounting and auditing covenants. External audits act to reinforce expenditure control and assist in fraud prevention. Internally, the organisations would enforce the monitoring mechanism for all processes by internal audits in the legal framework. In economic performance, value-for-money reviews are made on expenditures. Voice mechanisms relate to disseminating information on services, getting feedback and dealing with complaints. For effective accountability assessments, the World Bank advocates focusing on the reviews of audit reports and the action taken to contend with identified corruption and waste (World Bank, 1991, p. 9).

The final dimension in the World Bank framework on corporate governance is information and transparency. Availability and access to adequate information together with transparency of decision-making, are critical to accountability and the legal framework. Transparent decision-making safeguards against corruption, wastage and abuse of authority. Corruption prevention through transparent expenditure management apart from reporting and monitoring systems should be in place. The organisation should analyse its data and its information system in the evaluation of its capabilities to disseminate information.

All the dimensions in the World Bank's governance framework could be linked to the sub-elements of internal control. Internal control is the management's control mechanism to achieve an organisation's operating objectives and to meet reporting obligations (Gill & Cosserat, 1993). There are three elements in internal control, namely, control environment, information system and control procedures (O'Leary et al., 2006). The control environment encompasses management's philosophy and operating style, organisational structure, human resource and levels of authority, internal audit, audit committee and the use of information technology. For control procedures, there should be segregation of duties, authorization procedure, safeguards for assets and documentation.

An alternative to the World Bank's framework is that proposed by the Organisation of Economic Co-operation and Development (OECD). The key principles of corporate governance by the OECD (2004) relates to mechanisms in ensuring the basis for an effective corporate governance framework; rights of shareholders and key ownership functions; equitable treatment of shareholders; stakeholders role in corporate governance; disclosure and transparency, and responsibilities of the board of directors. These principles can be grouped into four main areas: mechanism of business ethics, mechanism of decision-making, adequate disclosure and transparency, and lastly, mechanism of book keeping and final accounts (Abu-Tapanjeh, 2008).

The World Bank and OECD do not work independently. Both parties have collaborated in establishing the regional Corporate Governance Roundtables to identify areas of reform in corporate governance (Jesover & Kirkpatrick, 2005). Although there are four main areas that can be used to evaluate an organisation's corporate governance, the OECD principles are more focused on rights and duties of shareholders and board of directors. Further, the disclosure and transparency requirement is directed towards financial performance, composition of ownership and governance. The OECD corporate governance principles are used as part of the listing requirements by Bursa Malaysia (Bursa Malaysia, 2009b). The Malaysian listing requirements are discussed further in the next section. As internal audit deals with the processes in their organisation and the way these processes are managed such as compliance to procedures and good business practice; operational practices for economy, efficiency and effectiveness (Dittenhofer,

1997; Moeller, 2009; Ziegenfuss, 2000); a framework that looks at these activities is needed to gauge the performance of internal audit. As such, using the World Bank's framework would facilitate the investigation into areas of improvements on the business processes arising from internal audit recommendations.

Arguden (2010) argued that corporate governance is not just compliance and the purpose of measuring it, is for improvements. The notion on improvements augurs well with the second dimension in the World Bank's framework of management improvements in business processes. An ideal measure for corporate governance, however, is difficult to achieve. This situation is fairly recognised when discussing measures of corporate governance (Romano, Bhagat, & Bolton, 2008; Wan, 2010). There seems to be a consensus that measurement of corporate governance needs to correlate with performance, the premise for formulating governance scores or indices. A number of proxies have been used in the creation of indices. For example, the Governance Index used the strength of shareholder rights in the provisions for takeovers to measure the impact of governance on firm performance (Gompers, Ishii, & Metrick, 2003). The measures used are mainly on anti-takeover provisions and would not be appropriate for measuring on-going governance, which is of multi dimensions.

Another study to measure accountability in corporate governance was done using data envelopment analysis or DEA (Feroz, Goel, & Raab, 2008). The researchers argued that the board of directors in discharging their monitoring role, use market based measures such as return on equity (ROE) in business performance analysis, as an approach to review the quality of decision-making relative to their competitors. DEA decomposes ROE into measures of profitability, asset utilization and equity multiplier so that responsibility can be assigned to the relevant business unit. They argued that an income efficient organisation produces maximum total revenue while using the minimum of resources. A survey on corporate governance in Japan also uses ROE and return on assets (ROA) as part of corporate governance index, a measurement from the shareholders' perspective (JCGR, 2006). In Malaysia, the governance index for public listed companies also uses ROE in addition to the Malaysian Code of Corporate Governance, Malaysian listing requirements and disclosures in annual reports (MSWG, 2011; Mohamad Ariff et al., 2007).

Yet, another proxy is used to measure overall firm level or internal governance by referring to relationship of governance mechanism – board of directors – with information risk (Strydom, Navissi, Skully, & Veeraraghavan, 2009). The rationale given was that good internal governance is present when monitoring, disclosure and control mechanism as prescribed by best practices, are implemented. The proxy for information risk used is the quality of working capital accruals and cash flows from operations of US listed companies.

The use of indices provides one summary number of multiple dimensionality (Romano et al., 2008). Romano, et al. insisted that corporate performance could not be consistently related to the governance index and such indices should not be the main criteria for stock investments. The above indices are very much linked to reported financial performance. The quality of information for market purposes, including computation of ROE and ROA, is dependent on the disclosure of financial information via the audited accounts and annual reports. Availability of information and transparency could reduce uncertainty and transaction costs, which together with mechanisms to analyse and disseminate information, lead to better accountability (World Bank, 1991). The work of internal auditors in reviewing and ensuring reduced transaction errors and efficiency in business processes ultimately leads to improvements or better firm performance. Administrative controls need to minimise the opportunities for corruption, for example through transparent budgets and procurement procedures as well as performing environmental assessments (World Bank, 1991). Although the World Bank did not mention risk, this recommendation on administrative controls is in line with the steps in risk management – another review area of internal auditing.

In this study, rather than using the index as a measure of corporate governance as mentioned by Gompers, et al. (2003) or the Malaysian governance index, the impact on corporate governance of internal audit performance will be assessed by the recommendations made by internal audit on the dimensions in the World Bank's corporate governance framework. This measure is in agreement with the suggestion by the World Bank in using the reviews of audit reports as effective accountability assessments. Further, this measure also followed one of the measures of IAF's

effectiveness by using the acceptance and adoption of IAF recommendations (Soh & Martinov-Bennie, 2011; Ziegenfuss, 2000).

2.5. Malaysian Listing Requirements on Governance

The Malaysian law in relation to corporate governance is comparable to the recommendations by OECD in the areas of shareholder and creditor rights and their protection (Liew, 2007). The corporate governance principles are being used as listing requirements by Bursa Malaysia with specifications on directors, audit committee, auditors, corporate governance disclosure, and internal audit (Bursa Malaysia, 2009b). Specifications on directors, audit committee and internal audit are all related to the legal framework or corporate policies of the World Bank's corporate governance framework as shown in *Figure 2-2* in section 2.4. The Bursa's specification on external auditors and corporate governance disclosure in financial statements is related to the accountability dimension. The World Bank framework on corporate governance (World Bank, 1991) is more comprehensive for self-evaluation, for example, by internal auditors, as it covers management and monitoring mechanism for managing an organisation which aligns with organisational excellence, including using data for evaluation and capacity building.

The listing requirements in Malaysia also charge the audit committee with reviewing and reporting on the internal audit activities apart from reviewing the report of the external auditors on their assessment of the system of internal controls. Specifically, the board of directors is required, as part of corporate governance practice, to implement risk management and review the integrity of the management information systems including compliance with rules and regulations. The review by audit committees on internal audit need assessments to be made on the adequacy of the scope and functions of audit, competency and resources, audit programs, audit reports including actions taken by management as recommended by internal audit (Bursa Malaysia, 2009b). Audit committees can influence the quality of corporate governance by their assessments and reviews on various aspects of audit processes, risk and control environment as well as financial reporting (Yusoff, 2011). The perception about the quality of the internal audit process is as significant as the reality. Reliance on internal

audit reports will occur if the process can be trusted, hence, the question on internal audit performance.

2.6. Performance of Internal Auditors

With the introduction of performance indicators, IAF has pursued the use of common indicators, for example, percentage of planned audits completed, number of audits completed on time, auditee satisfaction survey, and number of recommendations implemented (Austin Chapter Research Committee, 2009; Gramling & Hermanson, 2009; Rickard, 1993; IIAM, 2009; Tilley, 1999; Ziegenfuss, 2000). Although these indicators may indicate a measure of the quality of internal audit activities, there are also concerns that reliance on these indicators may lead to negative behaviours like inflation of the number of audit findings with immaterial items or focusing on areas that add less value in the improvements of operations (Gramling & Hermanson, 2009). The indicators show the administrative activities performed but do not depict whether IAF has contributed value to the organisation (Rickard, 1993). Further measures of performance are needed to address the notion of internal audit as an agent of change and provide value added services.

Pertinent to quality assurance and improvement processes of internal auditing is the monitoring of the performance of the internal audit activity under IIA Standard 1311 (Audit Executive Center, 2010). The common method of measurement is using the provisions in the Standards for Professional Practice of Internal Auditors (SPPIA) (Dittenhofer, 2001a). Fadzil, et al. (2005) surveyed public listed companies in Malaysia on the internal auditing practices and its effect on internal control using five components of the SPPIA, namely, independence and objectivity; professional proficiency; scope of work; performance of audit work; and management of the internal audit department. They concluded that for the measure of internal audit activities, three more components need to be added to SPPIA namely, a) audit reviews, b) audit programs and c) audit reporting. All the components identified by Fadzil, et al. could be identified to the attributes in *Figure 2-1* in section 2.2.2. The attribute professional proficiency by SPPIA represents a trait resulting from education, training, experience and competency. As such, in this study, professional proficiency is included under competency of the plan dimension.

Another study using the internal auditing practices similar to the components used by Fadzil, et al. (2005) reported that the internal audit performance was relatively effective (Abdullah et al., 2008). The internal auditors perceived certain activities in various internal audit activities were difficult to achieve, which may affect the internal audit quality. For example, confirmation of information of internal processes and retrieval of information were among the difficult tasks (Abdullah et al., 2008). However, an insight on the outcome of the internal audit is necessary to provide an indication on the overall quality of IAF.

Dittenhofer (2001a) and Gramling and Hermanson (2009) pointed out that effectiveness or performance of internal auditing should be measured against the achievement of the audit objectives together with the reliability and usefulness of the reports. This approach would actually be ascertaining the types of audit findings as a result of the examination by internal auditors. Concurrently, this method also supports the suggestion by World Bank (1991) for the review of audit findings as an assessment method. Further, Sarens (2009) had commented that effective IAF should impact positively on the quality of corporate governance. Before any internal audit activities take place, the scope of the audit would influence the audit techniques and any collaboration or use of experts in the audit implementation. Hence, it is appropriate to measure governance in relation to internal audit by reviewing the findings made on the dimensions of corporate governance.

A part of the internal audit function is its reporting structure or the oversight role by AC on internal audit; dictated also by the CG regulations in Malaysia. Turley and Zaman (2007) contends that how AC operates is important in viewing the impact of AC on CG. Informal interactions significantly affect AC effectiveness (Turley & Zaman, 2007; Zaman & Sarens, 2013). However, the studies found that certain interactions such as questioning internal audit findings, review of audit agenda and work plan or audit program are limited.

A study on the audit committee compliance level with the Malaysian listing requirements was done by examining 2002 annual reports of 120 public listed

companies (Haron et al., 2005). Grid analysis was used to measure the extent of coverage of activities undertaken by audit committee and internal audit whilst the composition of audit committee, its terms of reference and the frequency of meetings were measured by the number of occurrence. The results indicated that the overall compliance level was 92%, and 87% of the companies that have a majority of independent directors on the audit committee. However, 58% of respondents complied with the meeting attendance requirements for independent directors. Eighty seven per cent of the companies also have reported on the internal audit activities. It was found that the disclosures of the activities were uniform and suggested that the action maybe for mere compliance. As such, the disclosures could not provide informative representation of the actual situation in the companies and the state of internal audit. Little is known on the factors that rank highly in the involvement of AC on the internal audit function.

Another study examined the interactions of audit committee and the internal audit function (IAF) through interviews with heads of internal audit function of 11 Malaysian public listed companies (Mat Zain & Subramaniam, 2007). The perceptions of the internal auditors were sought on the effects of the audit committee on the authority and influence of internal audit specifically the line of reporting and independence of auditors, the nature of audit processes and the quality of communication, and the characteristics of the audit committee that could improve the relationship between the two parties. The findings indicated that there were infrequent and limited communications between them and that clear reporting lines are needed. The consensus was that audit committees are highly regarded and essential in supporting the IAFs but the IAFs need to be well resourced for the audit committees to be effective. The study by Zain and Subramaniam (2007) and others (Stewart & Subramaniam, 2010; Zaman & Sarens, 2013) suggest that the relationship between audit committees and internal auditors needs exploration to improve the internal audit practice and better governance.

Generally, business strategies and corporate structure change in order to create sustainable competitive advantage. It is now widely recognised that one such business strategy for organisational excellence is to obtain international certifications for products and services. This move necessitates that organisations establish a quality

assurance department (Skrabec, 1999) alongside the 'traditional' internal audit department to undertake self-reviews as part of the monitoring and continuous improvement process. The complexities of business activities and evolving roles of internal audit to meet the demands of organisations may lead to undertaking collaborative audits and/or relying on having work performed by others in the organisation or using external experts.

Another audit strategy is to perform a combined audit, where more than one type of internal audit activities are conducted at the same time, for example, risk assessment with legal compliance. A combined internal audit was implemented for ISO 9001 and EMS 14001 to decrease overlapping assessment of processes and increase the efficiency of the internal audit process (Pun et al., 2001). With the added pressure for companies to address environmental issues, internal auditors are also expected to evaluate quality and environmental management systems. The potential exists for internal auditors to develop joint audits to permit sharing of views and knowledge even though they may lack technical expertise to perform environmental audits since internal auditors emphasis is on internal control (Tucker & Kasper, 1998).

In this study, an investigation will be made on whether the types of assurance activities described by Rio Tinto as combined audits (Hala, 2008) or as a mixture of systems audit (Pun et al., 2001) are being conducted in conjunction with internal audit in Malaysia. The level of combined assurance by the internal auditors could affect the internal audit performance and may lead to integration of all audit and risk assessment activities into a single audit program. This will probably ensure a more effective and efficient internal audit by gathering data across all business processes and reduce duplication in internal audit activities.

Other than combined assurance, in order to match the fit of internal auditors' experience with the activities they conduct; out-sourcing or co-sourcing were done. The main reasons have been due to the lack of knowledge and technical expertise of the in-house internal auditors (Barac & Motubatse, 2009; Selim & Yannakas, 2000; K. Van Peursem & Jiang, 2008). Even though 30% of the internal audit function in Malaysia were out-sourced (Haron et al., 2010) and there is evidence that the quality of IAF affects

financial reporting (Johl et al., 2013), little is known about whether this affects the performance of internal audit. Views from the CAEs or person's in-charge of the internal audit function about in-house and out-source internal audit is critical in evaluating internal audit performance. Since internal audit function is a major control environment for corporate governance, the quality of internal audit would impact an organisation's corporate governance.

2.7. Summary

The literature on internal audit, theories associated with internal audit, components in corporate governance and measures on internal audit is covered in this chapter. These will be the basis for the research framework and hypotheses development in the following chapter.

CHAPTER 3: CONCEPTUAL FRAMEWORK AND DEVELOPMENT OF HYPOTHESES

Propositions about Internal Audit Function and Corporate Governance

3.1. Introduction

The chapter presents the conceptual framework for the IAF, and explains why the involvement of an AC and the structure of the IAF are expected to affect performance and hence ultimately affect corporate governance. The dependent variables investigated are internal audit performance and corporate governance.

3.2. Conceptual Framework of Internal Audit Function

In practice, the board of directors is a vital structure in corporate governance where the implementation of the strategy and direction of an organisation for its on-going success is delegated to the management. The establishment of the AC at the board of directors' level, a legal requirement by the Kuala Lumpur Stock Exchange, creates the linkage between the IAF to the board of directors under the legal framework where companies are required to have an IAF (see *Figure 3-1*).

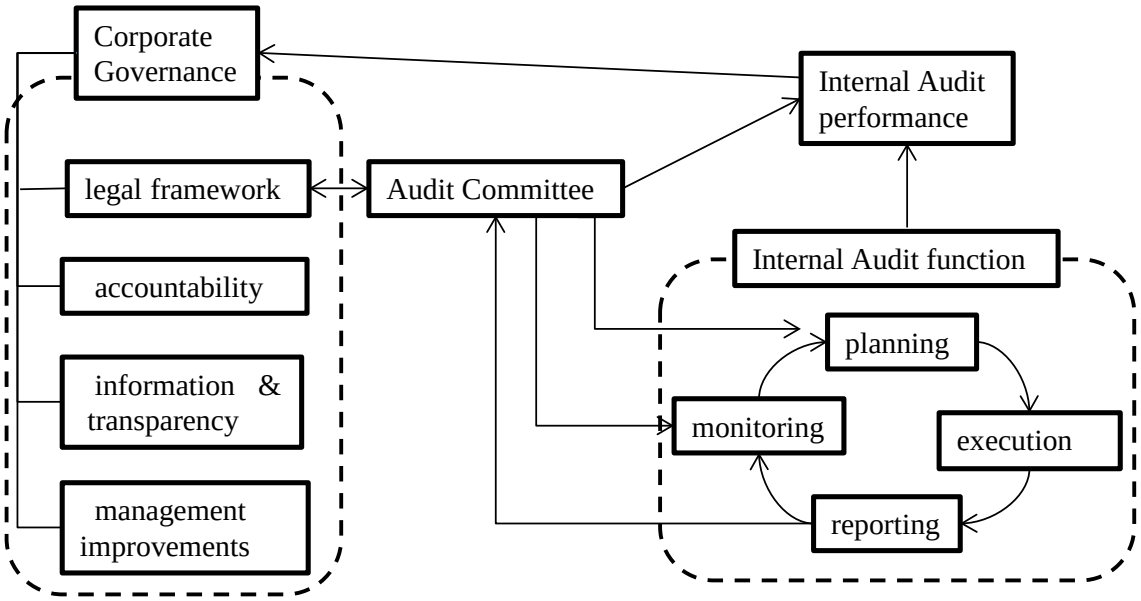

Figure 3-1. Relationship between corporate governance, audit committee and internal audit

The IAF reviews all business and decision-making processes and makes the necessary recommendations to management for improvements. A robust IAF is beneficial as it acts as an independent advisor for the Board of Directors and senior management including strengthening corporate performance (Swanson, 2010). It is reasonable to expect that corporate governance would be affected if recommendations by internal auditors, which are sanctioned by the AC through the line of reporting for internal audit activities, are not implemented by management. Due to the nature of their work, internal auditors' recommendations usually are for improvements in internal controls and risk assessment, thereby encompassing resources needed and used by the organisation, establishment and compliance of rules and policies, and disclosures made on financial and non-financial matters (see *Figure 2-2* on dimensions and attributes of corporate governance in Chapter 2 section 2.4).

IAFs in Malaysian listed companies share similar characteristics: internal audit process, internal audit structure, and the role of AC. The internal audit process (see *Figure 2-1* in Chapter 2 section 2.2.2) starts from the planning of the audit, audit execution, reporting of audit findings to monitoring of audit activities (Abdullah, Halim, Zaharim, A Rashid, & Masodi, 2007; Beckmerhagen et al., 2004; Dittenhofer, 2001a; Fadzil et al., 2005; Moeller, 2009). The role of ACs in the reporting structure (DeZoort et al., 2002; Mat Zain & Subramaniam, 2007) has been identified to strengthen internal audit performance. The AC involvement at various degrees that were highlighted include ensuring internal audit recommendations being acted upon on a timely basis, determination of the CAE position, and the scope of the audits relating to risk management. To make a difference towards corporate governance, it is reasonable to assume that the internal audit function needs to be effective and be seen as of value to the organisation.

3.3. Development of Hypotheses

As a member of the organisation, internal auditors hold a unique agency role. This role is clearly expected where there is an in-house internal audit function. They are required to provide independent reviews of the business processes and also must not be seen to be actively involved in the management of the organisation. The relationships between the internal auditors and the auditees may be of mutual assistance that could give rise to

a successful internal audit (Dittenhofer, 1997). Although on the administrative level, the internal auditors are accountable to the chief executive officer, the reports for all work done are directed to the AC (Swanson, 2010; IIA, 2012a; n.d.).

To understand how internal audit is perceived and its impact on corporate governance, in relation to the research questions in Chapter 1 section 1.4, it is proposed that a value-add internal audit function is likely to occur where organisational and institutional theories are predominant within the agency relationship where internal audit operates. The research hypotheses examine the internal audit structure and the involvement of ACs on internal audit practices on the internal audit performance and the impact of results of internal audit on corporate governance.

3.3.1 Internal audit structure

3.3.1.1. Internal audit team size

The IIA recommends that the skill composition and size of audit team be dictated by the services expected by the AC and management (IIA, 2012c). In assembling the team, The IIA advocates that the following be considered: risks assessment, critical systems and business processes, business objectives and growth strategies.

In general, audit assignments are carried out in teams. The teams are expected to do certain audit coverage whether the activities involve, for example, compliance to policies and regulations; efficiency in performance; or risk management. There is no specific requirement on the size of the audit department. Recent statistics on audit budget as a portion of revenue varies greatly depending on industry and annual revenue, showing 0.16% to 0.38% in banks; 0.04% to 0.09% in biotech/chemical; and 0.03% to 0.08% in companies with revenue up to $19.9b (Beale, 2012). Benson (1995) argued that team size has no impact on audit coverage. Furthermore, the value of audit could be maximised by applying specific audit strategies such as, use of audit survey, streamlining audit procedures; participating in system reviews and conducting follow-up audits. In the area of information security, an optimum team size of around three persons is suggested for reviewing policies to avoid delays in the decision making process (SANS Institute, 2007). Larger audit teams such as seven members do not work well compared to smaller teams but diversity is also needed (Firth-Cozens, 1992).

Therefore, it is expected that the size of internal audit teams are quite standardized to two to three persons with a limit to seven persons, and has no impact on internal audit performance; hypothesised as the follows:

H1. Number of audit team members will not be associated with overall internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H1a. Number of audit team members will not be associated with internal audit planning.

H1b. Number of audit team members will not be associated with internal audit execution.

H1c. Number of audit team members will not be associated with internal audit reporting.

H1d. Number of audit team members will not be associated with internal audit monitoring.

Teamwork is likely to facilitate collective task achievement and improve performance (Rousseau, Aubé, & Savoie, 2006). However, the team members should possess diverse backgrounds, experience and skills suited to the business's needs to adequately conduct the internal audit activities (Firth-Cozens, 1992; Powell, 1993). If such experience and skills are insufficient, a particular audit scope will not be undertaken. For example, internal auditors provide only limited assistance in environmental audits such as audit planning and reporting because of the technical orientation (Akers & Klos, 1995). The responsibility to ensure a competent team is present falls on the CAE at the planning stage.

The association between team roles and team performance is relevant to internal audit as internal auditors work in teams on any assignments. The role entrusted to the internal audit team as an assessor of the effectiveness of internal control would affect the status of corporate governance. Blenkinsop & Maddison (2007) found the tendency towards elective homogeneity of teams − with similar traits or backgrounds − in the effort to ensure improved performance. This situation shed further insights on earlier findings that showed qualifications of internal auditors were not used as a measure of

professional commitment towards job performance (Larkin & Schweikart, 1992). However, certain traits such as increased responsibility and opportunities to develop skills and abilities were associated highly with success in internal audits. These traits could be aligned with team dynamics such as team support (e.g., Firth-Cozens, 1992). Griffith (1999) suggested that to be of significance, the internal auditors need to be more business and operationally oriented so as to support management's requirements and responsibilities. If internal auditors are expected to provide value added services, these traits or backgrounds would also be identified by the CAEs as being important in team composition.

3.3.1.2. Internal audit member expertise

Expertise is expected from employees from diverse backgrounds to be applied for example, in evaluating new technologies, in detecting fraud and assessing policies' effectiveness (IIA, 2012b). Expertise is also crucial in intuitive decision-making (Salas, Rosen, & DiazGranados, 2010), as is required in the work of internal auditors that deals with diverse business activities and governance issues. For instance, expert performance is affected through intuition on specific areas developed through practice, specialised skills and experience (Chase & Simon, 1973; Salas et al., 2010). The internal auditors need to make value judgments based on their expertise on areas for improvements, reflected through the internal audit findings. The greater the expertise, the more likely internal audit is effective. As such, the following hypotheses are proposed:

H2 High levels of professional expertise of audit team members will be associated with high overall internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H2a. High levels of professional expertise of audit team members will be associated with high internal audit planning.

H2b. High levels of professional expertise of audit team members will be associated with high internal audit execution.

H2c. High levels of professional expertise of audit team members will be associated with high internal audit reporting.

H2d. High levels of professional expertise of audit team members will be associated with high internal audit monitoring.

3.3.1.3. Internal audit member experience

Other than expertise, skills and knowledge of team members are necessary (IIA, 2013; Firth-Cozens, 1992). Skills and knowledge are built through the years, creating experience. Higher experience team members have better developed teamwork knowledge and are more effective in their teamwork (Rentsch, Heffner, & Duffy, 1994). Additionally, Dyer (cited in Rentsch et al., 1994, p. 454) states that high-experienced teams performed better than less-experienced teams. Rentsch et al. (1994) assert that members in low experience teams are inflexible in the use of their knowledge. The more the experience, the greater the auditors' error knowledge and the related control objectives being violated, and the greater the ethical stance (O'Leary & Stewart, 2007; Tubbs, 1992). Experienced auditors provide a more complete picture on the explanations for the occurrence of audit findings (Libby & Frederick, 1990), resulting in a higher performance in auditing. The following hypothesis predicts similar results:

H3 High levels of experience of audit professionals will be associated with overall high internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H3a. High levels of experience of audit professionals will be associated with high internal audit planning.

H3b. High levels of experience of audit professionals will be associated with high internal audit execution.

H3c. High levels of experience of audit professionals will be associated with high internal audit reporting.

H3d. High levels of experience of audit professionals will be associated with high internal audit monitoring.

3.3.1.4. Combined audit activities

The assessment on the effectiveness of business processes by internal auditors will require them to gather information across departments in the organisation. Team members engaged in various activities may exchange appropriate information, known as boundary spanning, as part of their decision making process. Rudolph and Welker (1998) found that boundary spanning occurred with the aim to obtaining information as

well as to reduce uncertainties in audits, subsequently, improving auditors' judgment. Pendlebury and Shriem (1991) placed emphasis on the need for internal auditors to be supported with personnel from other disciplines or service experts, which was evidenced later by Akers and Klos (1995), albeit, by a small occurrence of 4% of the top 100 of the Fortune 500 Industrial Companies. Instances of combined audit activities giving rise to more effective internal audits were indicated in ISO internal audits (Pun et al., 2001) and the different internal audit activities by Rio Tinto (Hala, 2008). Similar to the audits mentioned by Gill & Cosserat (1993), Benson (1995) and Khemakhe (2001) recommended the use of combined audits of financial, operational, risk assessments and compliance audits in a comprehensive audit approach to streamline audit procedures. As such, it is suggested that by having combined audits, there will be greater efficiency in internal audits, as indicated by the following propositions:

H4 A combination of audit activities will be associated with overall high internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H4a. A combination of audit activities will be associated with high internal audit planning.

H4b. A combination of audit activities will be associated with high internal audit execution.

H4c. A combination of audit activities will be associated with high internal audit reporting.

H4d. A combination of audit activities will be associated with high internal audit monitoring.

3.3.1.5. Collaboration of audit activities

Ensuing from combined audits, collaborations with other departments or other experts would also enhanced performance as not every member in the audit team will have the necessary technical experience or expertise to audit all audit areas. Powell (1993) stated that it is usual to include specialists such as in IT, production and engineering, who are suited to the business needs. Collaboration, a form or alliance formation and partnering, is a key response to situations like cost pressures and illustrates the point in 'two heads are better than one' (Chua, 2011). Another similar strategy is joint audits, where two

firms simultaneously perform an audit and issue a common audit report. Joint audits have been found to affect positively the audit quality of audit firms (Deng, Lu, Simunic, & Ye, 2012; Zerni, Haapamäki, Järvinen, & Niemi, 2012). However, active collaboration is still a challenge (Chua, 2011). Since most companies adopt certification as part of their strategies in organisational excellence and having internal audits as a vital monitoring activity, overall organisational teamwork should make for better performance. Accordingly, the level of collaboration in internal audit activities with other departments would impact positively on internal audit performance. The following hypothesis is proposed:

H5 Number of collaborations of audit activities will be associated with high overall internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H5a. Number of collaborations of audit activities will be associated with high internal audit planning.

H5b. Number of collaborations of audit activities will be associated with high internal audit execution.

H5c. Number of collaborations of audit activities will be associated with high internal audit reporting.

H5d. Number of collaborations of audit activities will be associated with high internal audit monitoring.

3.3.2. Audit committee involvement

3.3.2.1. Audit committee composition

A major role for the AC is oversight of corporate governance (Verschoor et al., 2002). The formal channel of communication used by the internal auditors in general, is through the AC, a sub-committee of the Board of Directors. This organisation structure aids the independence of the internal auditors as a majority of the audit committee members are independent (Mat Zain & Subramaniam, 2007). ACs ought to be independent and be knowledgeable in financial matters (Verschoor et al., 2002). The corporate governance guidelines by the Securities Commission in Malaysia have specified the compliance requirements for the composition of the AC members that at least one of them should have financial professional qualification (Bursa Malaysia,

2009b; Haron et al., 2005). Organisations with strong corporate governance are likely to appoint an accounting financial expert on the AC (Krishnan & Lee, 2009). Cohen et al. (2004) suggested that a more knowledgeable AC has greater cooperation with the auditors. It is expected that the required minimum level of professional competency of AC members will be followed as this competency aids in the performance review of the IAF. However, expertise in more oversight areas such as auditing and law are preferable (DeZoort, 1997), for which AC reviews done would subsequently lead to a higher internal audit performance. Accordingly, the hypotheses below are proposed:

H6 High levels of professional competency of audit committee members will be associated with high overall internal audit performance.

The sub-hypotheses relating to the stages in internal audit are as follows:

H6b. High levels of professional competency of audit committee members will be associated with high internal audit planning.

H6c. High levels of professional competency of audit committee members will be associated with high internal audit execution.

H6d. High levels of professional competency of audit committee members will be associated with high internal audit reporting.

H6e. High levels of professional competency of audit committee members will be associated with high internal audit monitoring.

3.3.2.2. Review of internal audit activities

The Securities Commission in Malaysia also outlines the duties of ACs with regards to the internal audit function (Bursa Malaysia, 2009b). The reviews that are entrusted to the AC relates to various internal audit stages. An effective relationship between internal auditors and the AC is critical to the internal audit performance (Deloitte, 2012; MIA, 2012). Various review questions needed to be considered, for example, whether audit plans are aligned to key business risks, whether peer review or self-assessments on internal audit performance are conducted, is there appropriate staffing and mix of professionals, and whether there is tracking of management actions on audit findings (Bailey, 2007; Deloitte, 2012; DeZoort, 1997). Although annual or periodical assessments on IAF by the AC should be carried out, a comprehensive review covering the stages in the internal audit activities was not duly done (Bailey, 2007; Deloitte,

2012; DeZoort, 1997; Schneider, 2010). It is expected that frequent interaction of the AC with the IAF will create an effective relationship through the reviews done on the different stages of internal audit practices. Thus, the following hypotheses are proposed:

H7 High levels of review of the internal audit plan by audit committee members will be associated with high overall internal audit performance.

H7a. High levels of review of internal audit plan by audit committee members will be associated with high internal audit planning.

H8. High levels of review of the conduct of internal audit by audit committee members will be associated with high overall internal audit activities.

H8a. High levels of review of the conduct of internal audit by audit committee members will be associated with high internal audit execution.

H9. High levels of review by the audit committee members of actions taken on internal audit recommendations will be associated with high overall internal audit activities.

H9a. High levels of review by the audit committee members of actions taken on internal audit recommendations will be associated with high internal audit reporting and monitoring.

3.3.3. Internal audit performance

Since internal audit is a review of the business processes, the impact of internal audit on corporate governance could be gauged by identifying whether internal audits have made any recommendations on the dimensions of the corporate governance framework. Arguden (2010) maintained that the objective of corporate governance measurement is for compliance and improvements. Similarly, Benson (1995) argued that the assessment made by auditors in follow-up audits will determine whether there are improvements in performance and accountability, including the responsiveness of management towards audit recommendations. Additionally, follow-up audits could determine the effectiveness of audits in introducing needed improvements in organisations.

It is expected that the CAE would be able to identify where benefits have accrued to the organisation as a result of the internal audit activities. About fifty one percent of internal auditors surveyed in 2006 have used audit findings and recommendations as a measure of the value-add services of internal auditors (Burnaby & Haas, 2009). It is assumed that the more areas in corporate governance identified where audit findings are raised (refer to the four dimensions of corporate governance in *Figure 3-1* in section 3.2) − either positive or negative findings − the greater the impact on corporate governance. Accordingly, the following is proposed:

H10. High levels of internal audit performance will be associated with a greater number of recommendations for improvements of elements in the corporate governance framework.

In summary, the examination of internal audit and its impact on corporate governance is depicted in the conceptual framework in *Figure 3-2.*

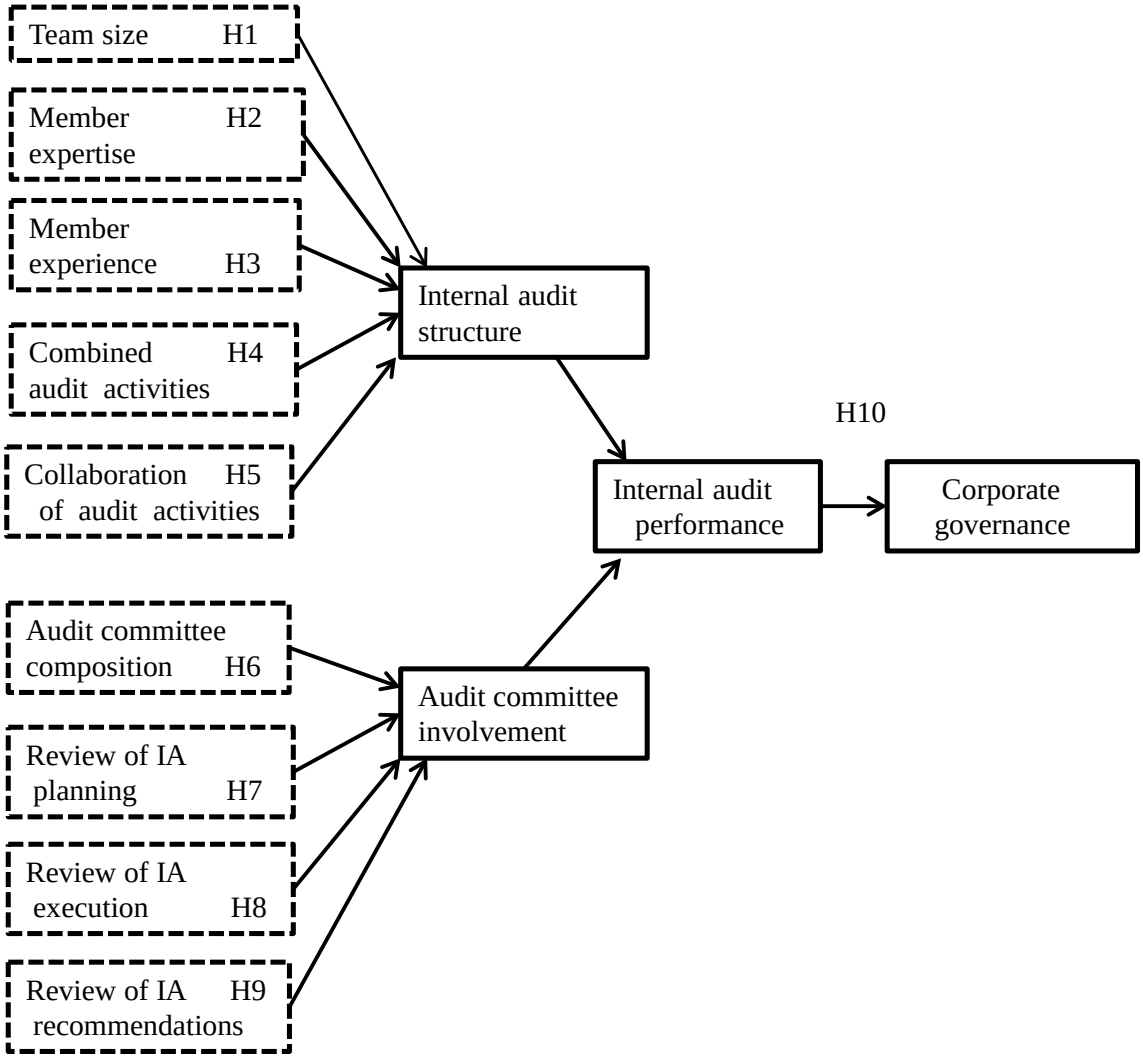

Figure 3-2: Conceptual framework for testing hypotheses

3.4. Summary

This chapter sets out the conceptual framework of internal audit and how it functions in the corporate governance structure of organisations that led to the development of the hypotheses.

The next chapter discusses the methodology of this study.

CHAPTER 4: METHODOLOGY

Researching Internal Audit Function Using Mixed Methods

4.1. Introduction

The conduct of a study varies with the viewpoint or general perspective of an inquiry. As such, certain beliefs or assumptions referred to as a paradigm, dictate the researcher's actions (Guba & Lincoln, 2005). This study's objective is to uncover the effectiveness of the IAF of Malaysian public listed companies and its impact on corporate governance. To give an understanding of the motivation for choosing the particular research method, first, the research paradigm is discussed.

Secondly, this chapter describes the research design and methodology used. In explaining the various research activities, the data collection and analysis are discussed in the various phases as shown in *Figure 4-1* in section 4.3. Thirdly, in conjunction with the modeling of the IAF, the theoretical construct and design of the survey instrument are described in detail. These are followed by an explanation as to why the Rasch measurement is used in addition to the true score measurement theory for examining the data.

4.2. Paradigm

A paradigm is a philosophy deeply entrenched in one's personal experiences, culture and history (Creswell & Plano Clark, 2011, pp. 21-23). It comprises a certain set of assumptions about reality (ontology) that is translated into hypotheses, knowledge about that reality (epistemology) and the specific way of knowing about that reality (methodology) (Guba, 1990).

Both ontology and epistemology affect the choice of research methods (Bisman, 2010; Creswell & Plano Clark, 2011). Two polar paradigms often cited are interpretive and positivist. An interpretive or idealistic stance is characterized by an exploratory study with the purpose of interviewing stakeholders in understanding the truths or realities of the researched subject (Burrell & Morgan, 1979), for example, investigating the informal processes of ACs (Turley & Zaman, 2007). As the research method is qualitative, data gathered are descriptive and explanatory with context given to words

used in the interview data. Whereas in a positivist stance, the researcher will predict and explain the changes observed, for example, determining whether compliance to internal auditing practices affects the internal control system of a company (Fadzil et al., 2005). The research method then, is quantitative and measurable from questionnaire data.

This study takes a functionalist and interpretive approach (Dunn, 2010; Modell, 2009; Schultz & Hatch, 1996). The functionalist paradigm focuses on providing rational explanations of social affairs in a pragmatic way, approaching positivism (Burrell & Morgan, 1979; Dunn, 2010). Based on the functionalist approach, the organisational structure of the IAF and the processes in the internal audit activities are those that are acceptable to the norms of the society, comprising the business community, the accounting and auditing profession and the legislators in commerce. However, a pure functionalist approach could not explain situations outside the norms (Dunn, 2010). As such, the interpretive approach is also used. The research done is to identify and verify essential generative mechanisms and structures that produce actions and events pertaining to effective internal audit and its impact on corporate governance, wherein both quantitative and qualitative methodologies are used (Bisman, 2010; Carlsson, 2005). The suggestion by Sarens (2009) to investigate the impact of IAF quality on the quality of corporate governance was followed, as discussed below.

As internal audit is part of the mechanism in the decision-making process within corporate governance, the examination of the impact of internal audit on corporate governance requires the understanding of the internal audit activities and the interaction of internal auditors with ACs. This examination requires an interpretive approach, in addition to the functionalist approach. Acquiring this knowledge involves the consideration of how individuals namely, CAEs, perceive their present and future realities, and how their relationships and the perception of their internal audit activities impact the corporate governance of their organisations.

As detailed in Chapter 2 in the literature review of internal audit performance and the regulatory framework in Malaysia, the research paradigm in this study is as follows:

1. IAF is assumed to be present in all public listed companies,
2. The relative impact of internal audit on corporate governance could be explored, and

3. The assertion of collaboration or combined assurance in internal audit activities needs to be exposed.

The aims and research questions in this study together with the above paradigm called for the use of a quantitative method to produce conclusions useful for shaping or improving internal audit practices through the hypotheses and the design of the survey instrument. Additionally, the unique manner that IAF operates in individual organisations and the perceptions of the CAEs are explored qualitatively through in-depth interviews.

4.3. Research Process

This research explores how internal audits enhance corporate governance particularly, the effects of internal audit performance on corporate governance and the level of collaborations or combined assurances in internal audit of Malaysian listed companies. Existing research on internal audits has offered little insight into the above. Neither quantitative nor qualitative methods by themselves are sufficient to provide the answers sought (Ivankova & Stick, 2007). Using both quantitative and qualitative methods or mixed method research will provide a better understanding of the research questions and give stronger inferences on the gathered data (Creswell, 2005; Creswell & Plano Clark, 2011; Molina-Azorin, 2012; Morgan, 1998). In addition, Bisman (2010) argued that taking either an idealistic or interpretive stance that focuses on a particular context may be incapable of supporting generalisations, which are needed in improving practice and policy. For this reason, Bisman forwarded that an examination of human behaviours in the accounting field by mixed research methods is beneficial.

Evidences of certain aspects of internal audit such as performance of internal audit activities and ACs interactions have predominantly been done quantitatively through questionnaires (Fadzil et al., 2005; Mat Zain & Subramaniam, 2007; Stewart & Subramaniam, 2010). Case studies and qualitative method using interviews in internal audit were conducted, for instance, to give in-depth understanding of the communication process between internal auditors and ACs (Mat Zain & Subramaniam, 2007; Turley & Zaman, 2007) and adding richness in understanding the roles of internal auditors (Eisenhardt, 1989; Nagy & Cenker, 2002; K. A. Van Peursem, 2005).

A case study approach is identified as a research strategy and not a method (Hartley, 1994). In the initial stage of this research on the internal audit and its impact on corporate governance, the research strategy was to do case studies to seek useful information and explanations on the various processes relating to the interaction between internal auditors and ACs. As pointed by Merriam (1998) and Hartley (1994) a case study is an exploration or detailed investigation of a bounded system and valuable if the research interest is about understanding the processes of events in relation to its context. The bounded system could be as in this study, the present IAF of public listed companies in Malaysia.

Case studies are useful in answering questions on how and why particular activities are undertaken (Yin, 2009). The questions could be related to how an IAF is managed, how collaborations and combined assurances are done, and why these activities are done in achieving good corporate governance as perceived by the CAEs. A case study can be single or multiple (Creswell, 1998, 2005; Yin, 2009). Multiple case studies are also called a collective case study (Stake, 1995). Data are collected usually over a period of time and may include in-depth interviews with a variety of people, questionnaires, archives and observations. Due to the extensive data-gathering in the examination of processes in great depth for case studies and both the functionalist and interpretive approaches outlined earlier for this research on internal audit, a case study analysis was not undertaken in favour of mixed methods.

The motivation for undertaking mixed method research in this study is also to corroborate the results on the quantitative aspect of how internal audits enhance corporate governance by using a qualitative method. With the conscious strategies undertaken by management for organisational excellence, namely ISO certifications and other accreditations, some companies have undertaken internal audit activities in varying ways. These variances may point to evidence of collaborations in internal audits with other parties outside the internal audit department. Consequently, there is a need to explore these important issues to discover the internal auditors' perspective on the performance of the IAF.

The internal auditors' or the CAEs' perspective has also been reviewed in other studies such as in the practices of decision-making and interaction mechanism in IAFs and the

performance of internal audit (Abdullah et al., 2008; Fadzil et al., 2005; O'Leary & Stewart, 2007; Turley & Zaman, 2007; Zaman & Sarens, 2013). This study is identified as a convergent mixed methods design (Creswell, 2005, 2014; Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 1998) where quantitative and qualitative data are collected in parallel. The responses are analysed separately and then merged as shown in *Figure 4-1*.

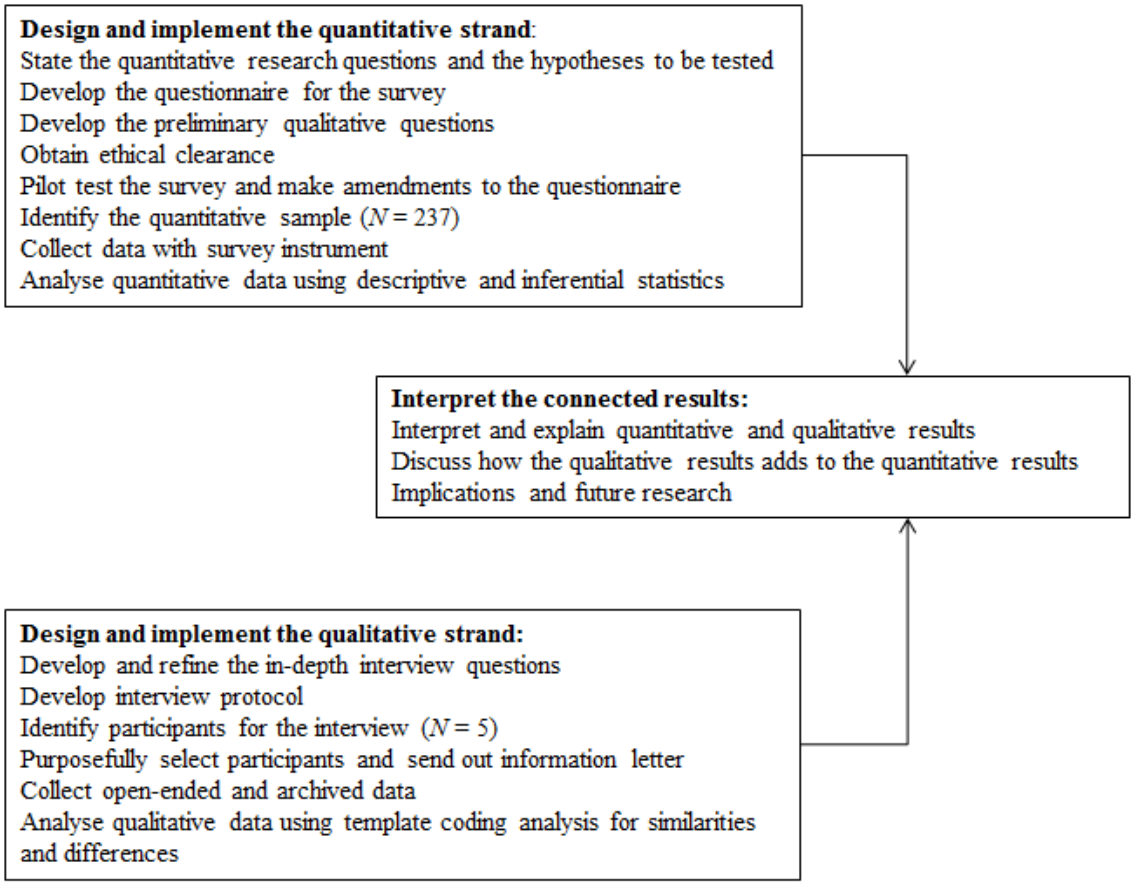

Figure 4-1. Research process map for the convergent mixed method design (adapted from Creswell, 2014; Creswell & Plano Clark, 2011)

The first quantitative phase gives a general understanding of the research question and tests of hypotheses by studying the effects of internal audit structures and the involvement of ACs on IAF performance, and the subsequent impact on corporate governance. A survey instrument is developed and the construct for the questionnaire items are discussed in relation to the model of IAD (see section 4.4). A pilot test of the survey instrument is done before the quantitative data are collected (see section 4.6 and section 4.8.1 about reliability of the survey instrument). At the same time, in the

qualitative phase, data are gathered from in-depth interviews and archived data and are then analysed. The in-depth interviews explore practices of internal audit including composition of the audit team, evidence of collaborations and combined assurance in internal audits, and the level of involvement of ACs. The qualitative phase compares and corroborates the results on the quantitative phase to give better insight into the performance of the IAF and the agency theory than would be obtained through using either method separately.

Before any data were collected for this study, ethical clearance was given by the Edith Cowan University Human Research Ethics Committee. The ethical guidelines provide for the protection of confidentiality and anonymity of research participants. The following paragraphs discuss the model and measurement of the IAF, followed by the details on the survey and research interview.

4.4. The Model of Internal Audit Function within Corporate Governance

In answering the question on how internal audit has enhanced corporate governance, a workable model of the performance of IAF needs to be develop by considering the main aspects of internal audits. Literature on practices of internal audits suggests two distinct components (see *Figure 3-1* in Chapter 3 section 3.2): internal audit process – planning, execution, reporting, and monitoring – and, the reporting structure to the AC. The attributes of an internal audit process are derived from the types of activities carried out as good practice in each of the audit stages (Beckmerhagen et al., 2004; Buttery & Simpson, 1989; Fadzil et al., 2005; ISO, 2008; ISO, 2011; Moeller, 2009; Swanson, 2010; Thompson, 1996), which are summarised below:

Audit planning

1. Internal audits should be planned incorporating the scope and objective of audit work, relevant rules and regulations relating to the process or area to be audited, and timing of the audit.
2. An audit plan should consider the status and importance of the process and areas to be audited, potential risks, identified weaknesses and the results of previous audits.
3. An annual audit plan is generally approved by the AC.

4. Audit criteria, which include key controls and performance measures in the audit programs or checklist, are used as references in implementing the audit.
5. Audit plans are also communicated to the auditee except for special or investigative audits.
6. Internal audit assignments are carried out by audit teams. Audit team leaders are appointed based on suitability (qualification and competence) for the assignment.

Audit execution

1. The audit team members were chosen based on their qualification and competencies to undertake the audit.
2. Informing the auditee of the objective and scope of the audit before commencement.
3. Audit execution considers the process, the manner of implementation, competencies of personnel operating in the audit area and the presence of weaknesses.
4. Internal auditors are required to obtain reliable information as audit evidence through various means, for e.g., use of statistical sampling if appropriate, checking of systems, vouching to supporting documents, making observation and performing analytical tests.
5. Reviews and adequate supervision are done on the audit progress. New team members who may lack the appropriate experience are usually placed together with those having more experience.
6. Audit criteria, audit tests, evidences and audit findings are usually documented for easy retrievable. Audit documentation helps in the clarification of the judgments made by internal auditors and in the follow-ups of audit findings.
7. Audit findings are reported clearly and presented to management for them to take appropriate corrective actions to eliminate the root causes of such weaknesses.

Audit reporting

1. The results and outcomes of internal audits are evaluated against the audit objective.
2. The conclusions on the internal audits are usually reported to the audit committee and are monitored.

3. Audit reports will also show the status of previous audit findings through audit follow-ups.
4. Other matters brought to the AC will also include any resource needs for the internal audit department.

Audit monitoring

1. Where audit findings have been made and management has agreed to take corrective actions, follow-ups are made by internal auditors to ensure the taken by management are effective.
2. Where corrective actions are found to be ineffective, these will also be communicated to the management and AC. Management is expected to initiate other measures for improvements.
3. Once management and internal auditors are satisfied that the improvement is in place, it is expected that efforts be made to standardize the improvement. Usually the change in process will be noted by the internal auditors for changes in audit procedures in the following audit.
4. As part of the prescribed practice by the profession, self-assessments and peer reviews are usually done on the conduct of the internal audit for performance improvement.

To determine the performance of internal audit, Dittenhofer (2001a) suggested that a review is made on whether the tasks required to be performed were accomplished as described by the audit objective. Also, an overall evaluation would need to consider the internal audit system, collective auditing processes and the degree of achievement of the audit objectives (Beckmerhagen et al., 2004; Dittenhofer, 2001a). The degree of achievement would suggest that there are degrees of difficulties in performing specific tasks.

A study using the concept of audit task complexity looked at task difficulties to judge the extent to which audits were coordinated including through audit programs and formal policies (Dirsmith et al., 2000). The auditors in that study were asked among others, how often they encountered difficult problems, the time to complete audit tasks, and how easily the assignments were completed.

Another study on internal audit practices found that certain activities were difficult and others were easy to undertake (Abdullah et al., 2008; Abdullah & Masodi, 2012). The researchers used the Rasch model to measure task difficulties. Among the difficult items are; assessment based on industry standards, retrieval of information, use of statistics in audit procedures and ensuring observation of rules. Items that were found to be easy include confidentiality of information, reporting on closures of audit findings and assessing business processes. The above attributes in the internal audit process in each of the audit stage were used as the basis of the conceptual model of this study, as explained below.

An approach to constructing measures is to consider the presence of a single underlying characteristic or unidimensionality in the instrument design (Wilson, 2013; Wright & Stone, 1999). The exploration into determining the impact of an internal audit on corporate governance is multidimensional. Wilson (2013) suggested that the approach to measure multidimensionality is to consider each construct separately. A number of items could be used to measure a construct in a reasonable way instead of relying only on one true task or item. Andrich (1988, p. 14) stated that when an observation is made, 'the actual properties are not observed – only the manifestations are observed. The properties are abstractions based on the patterns of observations'.

This study assumes that the properties termed as constructs or latent variables of the IAF being measured, incorporating the internal audit practices and the reporting function, have a specific continuous form – from easy to difficult – to be accomplished. All items for the IAF are assumed as a unidimensional latent variable to assess the ability to perform an effective internal audit. Rasch measurement model is suited for all ability or achievement evaluation, provided the items used are appropriate to the research area (Pellinen et al., 2011). The structure or construct map of the types of internal audit activities relating to *Figure 3-1* in Chapter 3 section 3.2, for the performance of an IAF in the internal audit survey (IAS), the complexity of the activities and the Rasch measurement model is shown in Table 4-1. The Rasch measurement model is able to distinguish the degree of difficulties of items based on a person's perception of the achievements or frequency of undertaking the specified tasks. Further explanation on measurement and the choice of using the Rasch model is provided in the next section in this chapter.

Table 4-1
Proposed construct map for the 'performance of internal audit function' construct in the 'internal audit activities' part of the IAS. Adapted from (Abdullah et al., 2008; Abdullah & Masodi, 2012) and literature review.

Activities in audit process	**Difficulty of tasks**
Audit planning	
unrestricted access to information	easy
set key performance metrics for audit assignments	
confirm key control areas of business process	
communicate audit plan to BOD and operations	
evaluate policy implementation effectiveness	
set performance objectives as reference in audit program	
appoint auditors with necessary skills	
verify communication of management policies	
identify processes of concern to management	
monitor auditors' competency for training purposes	difficult
Audit execution	
list audit findings based on significance and impact	easy
determine information availability on consistency of transactions	
inform management of follow-up audits	
clarify root causes of audit findings	
auditee available as scheduled	
determine from auditee changes in processes or controls	
verify understanding of use of information or transaction handled	
determine overrides to processes or controls	
check with auditee on how to detect errors	
identify issues of potential waste in resources	
use statistics to review systems performance	difficult
Audit reporting	
report contains status of previous audit recommendations	easy
reports accepted without further queries	
reports specify clearly implications/potential of problems	
discuss reasonableness of audit findings with management	
corrective actions seen as an avenue for improvements	
team leaders discuss issues with management on conduct of audit	
report gives information on inefficiencies in resource management	difficult

Activities in audit process	**Difficulty of tasks**
Audit monitoring	
review samples from recent records in follow-up audit	easy
receive reviews outside of internal audit on checklists	
review feedback on audit activities with management	
management monitors improvement activities	
statistical data analyses in promoting preventive measures	
receive reviews on audit reports from reporting authority	
continuous updates of audit procedures	difficult

Another component to the IAF as mentioned earlier (see *Figure 3-1* in Chapter 3 section 3.2) is the reporting structure to AC. Reporting flows mainly from three internal audit activities: planning, reporting and monitoring. Communication of audit recommendations with stakeholders and an auditee was done without much difficulty with ratings of 79.6 – 83.3% (Cooper et al., 1996). The role of receiving and responding to audit reports are the most significant in most cases, deemed easily undertaken by AC members (Mat Zain & Subramaniam, 2007; Turley & Zaman, 2007). Since the presence of an AC is mandatory for corporate governance of listed companies in Malaysia, the roles of the AC regarding oversight of internal audit are stated in the listing requirements and disclosed in the annual reports (Haron et al., 2010).

In practice, ACs generally are not actively involved in reviewing audit programs and internal audit processes. ACs involvement is concentrated on ensuring the audit plan is met and there is easy acceptance of audit reports with limited review of audit work plan or program and questioning the basis of audit findings (Turley & Zaman, 2007). CAEs had argued that AC members needed aid to assess audit programs and are comfortable enough to approve the programs as tabled (Mat Zain & Subramaniam, 2007). These two activities, review of internal audit processes and programs, are expected to be viewed comparatively as difficult to be achieved by the AC. For Malaysian listed companies, the requirements for AC involvements in the activities of internal audit have been specified but as yet not determined as to the level of achievement by ACs. Accordingly, these requirements are used in the IAS (Bursa Malaysia, 2000; Securities Commission Malaysia, 2007) and structured according to the level of difficulties as shown in Table 4-2.

Table 4-2
Proposed construct map for the 'involvement of audit committee' construct in the 'internal audit activities' part of the IAS based on literature review.

AC involvement in reviews of	**Difficulty of tasks**
results of the internal audit	easy
management actions on recommendation	
scope of the internal audit activity	
functions of the internal audit department	
resources of the internal audit function	
competency of the internal audit function	
internal audit processes	
internal audit program	difficult

Similarly, the items for determining the impact of internal audit on corporate governance by reference to the areas of audit findings is considered another construct, with items identified from easy to difficult. Instead of using the OECD principles of corporate governance (2004) as a measure of corporate governance, a new measure based on the components of corporate governance by the World Bank (1991), as shown in *Figure 2-2* in Chapter 2 section 2.4 and *Figure 3-1* in Chapter 3 section 3.2, is used. As mentioned in Chapter 2 section 2.4, these dimensions or components are better suited in reviewing the impact of an internal audit on aspects of governance, which focus more on the processes within an organisation instead of the aspects of stakeholders' interest.

Grambling and Hermanson (2009) identified that a determinant of the quality of internal audit were the value of the audit reports and resulting implementations of audit recommendations. Customarily, auditing focused on finance and compliance with procedural rules specifically review of internal control; now, it has shifted towards performance measurement or operational efficiency, and review of business activities and potential risks (Al Athmay, 2008; Cooper et al., 1996).

The most frequent audit findings being reported are related to internal control, compliance and risk assessment (Leung, Cooper, & Robertson, 2004). Frequently cited areas in financial or earnings management are financial disclosures, asset valuation, capital write-offs, confidentiality and conflicts of interest. Leung et al. also found that

the AC is also more involved in disclosures in financial reporting and issues of conflicts. Because 87% of the respondents reported regularly on internal control, it is presumed that findings would relate to areas of compliance to rules and policies. Further, the majority of internal audits have focused on operational areas (Cooper et al., 1996). As such, it is deemed that revenue management and areas dealing with business processes such as expenditure, finance, personnel and the related rules and policies, would not pose a difficult task to the internal auditors.

With the broader role of internal audit in corporate governance, the internal auditors are expected to go beyond the financial areas and be capable of giving assurances and consultations on integrity of the information system, risk management and the effectiveness of management (Cooper et al., 1996; Leung et al., 2004; Powell, 1993). Two challenges where organisations have instituted a strategic performance system such as a balance scorecard are making meaningful interpretations of performance data by those with evaluation skills and ensuring the IT system is providing data that can be used by the organisation in its business processes (Franco & Bourne, 2003). With the expanded role, internal auditors are expected to have adequate skills to evaluate the management information system. The abilities, which can be linked to the IT system, and making meaningful interpretations include retrieving related data on productivity, assessing the performance against industry standards and identifying wasteful activities or inefficiencies (Abdullah et al., 2008).

Other studies have found that an audit on the information system is difficult due to a lack of expertise and financial resources (Cooper, Leung, & Mathews, 1994; Cooper et al., 1996). Chambers (2014) commented that IT auditing competency is an area not seriously handled by CAEs. The CAES are said to take defensive stands such as ignoring IT risks and outsourcing. As such, audit findings in areas related to the IT system and the analysis of data are expected to be rarely reported and presumably difficult to be achieved.

The construct map for the impact on corporate governance based on issues raised in internal audit findings is shown in Table 4-3. The format of the item can be either a fixed-response such as the Likert-style scale, for example, *Strongly Disagree* to *Strongly Agree*, or an open-ended item (Wilson, 2013). The fixed-response format with

an attitude scale of *Never* to *Always* is used for the internal audit activities (similar to Abdullah et al., 2008) and audit committee involvement to gauge the perception of the CAEs on the occurrence of such instances. For audit findings and collaborations or combined assurance, an open-ended response format is used as these activities are being explored for the first time in this area of research.

Table 4-3
Proposed construct map for the 'areas in which issues or audit findings raised' part of the IAS based on literature review.

Internal audit findings in areas of	**Difficulty of tasks**
revenue management	easy
expenditure management	
financial performance	
personnel management	
compliance to rules	
rules enforcement	
rules and policies change procedure	
economic performance	
complaints procedure	
conflict resolution	
corruption prevention	
information transparency	
analysis of data	
dissemination of information	difficult

4.5. Measurement

Measurement is the assignment of numbers on a linear continuum to a particular concept, showing its' magnitudes from low to high or in a 'more and less' judgment with equal distances between the numbers (Andrich, 1988; Thurstone, 1928; Wright & Stone, 1999). Measures are based on discrete observations that are transformed using mathematical models (Andrich, 1988). The purpose of measurement is stated clearly by Wilson (2013, p. 4) as 'to provide a reasonable and consistent way to summarize the responses that people make to express their achievements, attitudes, or personal points of view through instruments such as attitude scales, achievement tests, questionnaires, surveys, and psychological scales'. Two main theories on measurement are considered in researching internal audit function and its impact on corporate governance in Malaysia: true score theory and latent trait theory.

4.5.1. True score theory

The true score theory or classical test theory (CTT) is based on the assumption that the total scores or raw scores of correctly answered items measures a person's ability or knowledge. All items contribute equally to the total score and that equal differences in the scores demarcate equal ranges of ability (Sick, 2008a). The prime indicator of test quality is reliability or Spearman correlation coefficient. In CTT, reliability is measured by KR-20 index and Cronbach's coefficient alpha computed from raw scores (Andrich, 1982; Christensen, Kreiner, & Mesbah, 2013; Sick, 2008a; Wright & Stone, 1999).

When ordinal scales are used, such as rating of items on a Likert scale, it is assumed that each item contributes equally to the raw score, when in actuality the interval is unknown (Merbitz, Morris, & Grip, 1989). This presumption may lead to misinference because a useful measure needs to be linear; a value of 2 is twice as large as 1. Raw score only describes the raw data and considered as ranking of items on an ordinal scale (T. G. Bond & Fox, 2007, p. 2; Sick, 2008b; Wright & Stone, 1999, p. 31). The use of raw score fractions or percentages has the tendency to clump responses around the middle scores (T. G. Bond & Fox, 2007, p. 24). Further, the non-linearity bias of raw scores becomes significant with extreme scores (Smith Jr., Wakely, De Kruif, & Swatz, 2003; Wright, 1999). Because the data originated from ordinal observations and being non-linear, raw scores also lacks other characteristics of measurement: unidimensionality; items not ordered to levels of difficulty; person and items measure of differing scales; and measures of different test with the same topic cannot be validly linked to a single scale (Reckase, Ackerman, & Carlson, 1988; Waugh & Chapman, 2005; Wright & Stone, 1999). An alternative to the true score theory is latent trait theory.

4.5.2. Latent trait theory

Latent trait theory is also referred to as the item response theory or item characteristic curve theory which is traceable to the work of Lawley and Lazarfield in 1943 and 1950, respectively (cited in Hambleton, Swaminathan, Cook, Eignor, & Gifford, 1978). The theory states that a person's performance can be predicted through the scores obtained on defined characteristics or traits that are used in a test instrument. Traits are not directly measurable, thus, are referred to as latent traits or abilities. Latent trait theory

stipulates that there is a relationship between observed test performance and unobservable traits or abilities assumed in the test construct (Hambleton et al., 1978; Wright & Stone, 1999). The limitations in CTT, as listed above, were addressed in latent trait theory. The most applied probabilistic measurement model for latent trait theory is the Rasch model (Andrich, 1988; T. G. Bond & Fox, 2007; Waugh & Chapman, 2005; Wright & Mok, 2004).

4.5.3. Rasch model

The Rasch model is a mathematical model in the form of a simple logistic model (SLM) to compare data. There are a few differences and similarities between the CTT and SLM even though in general, the items used for testing are neither too easy or too difficult (Andrich, 1988, pp. 83-85). First, the total unweighted score or raw score (the statistic) characterizes the person in both SLM and CTT. However, in SLM, the statistic resulted from a model specified at the item level. Second, the statistic estimates the person's unknown location parameter (termed as true score in CTT).

CTT assumed the linearity of raw score to the true score with a normally distributed random error, but in SLM, this regression is nonlinear. Moreover, in SLM the scale values of the items are defined relative to each item and independent of the person's locations distribution. This definition of scale values in SLM allows tests on person's locations and items difficulties; focusing on the person's ability or probability of success of 0.5 in answering or performing a task. Because of the differences outlined, it is possible to model the latent traits in investigating the internal audit function through transformation of the data collected from the survey using the Rasch model even if the data are not normally distributed.

The greatest advantage of this model is the possibility of testing the fit of data to the model, implying that correct measurement is accomplished for the constructed instrument. In contrast with CTT which uses raw scores, reliability in Rasch which is known as Separation Index, is computed from the estimated person measures (locations) and their standard errors (Andrich, 1982, 1988; Wright & Stone, 1999). Separation index overcomes the shortcomings in the characteristics of KR-20 and the generalized Cronbach alpha for internal consistency which are as follows:

1. Item response variance is based on the 'average' person sampled. If the distribution is not normal, then the error variance of the 'average' person differs from the average of an individual person's error variances.
2. Since the variance of raw scores of sampled persons is greater than zero, KR-20 will always overestimate the score error variances of persons with extremely low or high scores.
3. The anticipated reliability of a proposed application with a previously given KR-20 is unlikely unless the proposed sample is known to have the same score distribution.
4. The use of raw scores for calculating sample variance is misleading as raw scores are not linear representations of a variable (Wright & Stone, 1999).

Bond and Fox stated,

> The model is based on the idea that useful measurement involves examination of only one human attribute at a time (unidimensionality) on a hierarchical "more than/less than" line of inquiry. This line of inquiry is a theoretical idealization against which we can compare patterns of responses that do not coincide with this ideal (2007, p. 41).

Responses in a test instrument to measure ability, attitude or perception differ depending on time and circumstances. Wright and Mok (2004) suggested that experience is continuous but at the moment or time we notice experience or make an observation, it becomes discrete: counting begins and has a function of time, with the intention of replication. There are situations where indications of more or less of a dimension defining the experience can be introduced as categories within each observation resulting in raw data such as:

Yes/No for $x = 0, 1$

Never/Sometimes/Usually/Always for $x = 1, 2, 3, 4$

The item raw score is used to estimate a person's ability to perform the task or define their experience and is the basis for estimating the level of difficulty (Sick, 2008c). The transformation of an ordinal data to an interval scale of natural logarithm is achieved by the Rasch model by converting the raw score percentages into success-to-failure ratios or odds (Andrich, 1988; T. G. Bond & Fox, 2007, p. 24). The standard unit in Rasch is called logit or log odds. The Rasch model is an applied item response model that is used to model ordinal observed variables which are assumed to be unidimensional or

reflecting a common latent variable and locally independent (Adams, Wu, & Wilson, 2012; Andrich, 1988; Sick, 2008d). Unidimensionality requires that 'items in a test measure the same composite of abilities, rather than only a single ability' (Reckase et al., 1988). As such, unidimensionality could be applied to a process or function such as the internal audit function.

Wright (1977) stated that the Rasch model has the fewest ingredients in person measurement, person ability β_v and item difficulty $\delta_{i.}$ in determining the probability of a person succeeding on an item. The more the person's ability exceeds the item difficulty, the greater is the positive difference and the higher the probability of success. The Rasch model in a dichotomous case is expressed as follows:

$$\Pr(x_i = 1) = \frac{e^{\beta v - \delta i}}{1 + e^{\beta v - \delta i}} \qquad (1)$$

where Pr (x_i=0,1), is the probability of the turn of event upon interaction between the relevant person and assessment item;

e = Euler's number, 2.71828

β_v = the ability of person *v*

δ_i = the difficulty of assessment item *i*

simplified as:

$$\text{Logit } (P/1-P) = \beta v - \delta i \qquad (2)$$

The simplest interpretation of the Rasch is that 'the probability of a positive response increases as the parameters increase towards infinity' (Christensen et al., 2013, p. 6). In measuring the internal audit function, the person parameter is represented by the level of internal audit performance whereas the item parameter is represented by the experience in the involvement of audit committee and internal audit activities. The measurement model for internal audit function is based on the probability of a successful internal audit using items in best practices and IIA standards (Abdullah et al., 2008) as follows:

Figure 4-2. Internal audit success model using items on best practices in internal auditing

In this study, the components for the internal audit function are expanded to include the involvement of audit committee and the impact on corporate governance as shown in *Figure 4-3*. The measurement instrument, IAS, is based on the domains or components presented in *Figure 3-1* in Chapter 3 section 3.2.

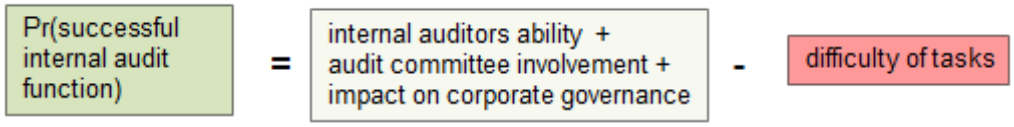

Figure 4-3. Model of successful internal audit function incorporating items of best practices in internal auditing, involvement of AC on reviews of the internal audit function and areas of audit findings in corporate governance

4.6. Validity and Reliability

Validity is associated with 'the meaning of inferences from test scores' (Wright & Stone, 1999, p. 167). Validity in a mixed method research refers to 'the ability to draw meaningful and accurate conclusions from all the data' (Creswell & Plano Clark, 2011, p. 146).

The quantitative strand – the survey – involved constructing the questionnaire and validating it for measuring the internal audit function and its impact on corporate governance. The focus in this phase is the reliability of the survey instrument and the rigour of the statistical analysis rather than validity. This focus is important as validity presumes reliability; if the measure is not reliable, then the measure is not valid (Bryman, 2012).

Before the survey questionnaire is pilot tested, two measures of validity are considered; face validity and construct validity. Face or content validity is the extent the items in the instrument represent all possible questions about the research or address the intended

latent variable (Baghaei, 2008; Creswell, 2005). For content validity, four experts were asked to judge whether the items used were suitable to represent the construct; whether the items address the intended latent variable as to relevance, clarity and completeness. The variables (as discussed earlier about the internal audit model) are based on dimensions of internal audit process, incorporating the types of audit activities, interactions of audit committees with internal audit, and the impact of internal audit on corporate governance.

The other validity issue which is critical is construct validity and is assessed by statistical and practical procedures (Baghaei, 2008; Creswell, 2005). For construct validity, or assessing whether the scale or test measure what they are supposed to measure, theoretically from a 'less to more' difficult items in the construct for internal audit activities, AC involvement and areas of corporate governance, the survey data need to fit the statistical model – the Rasch model. The construct validity 'focuses on the idea that the recorded performances are reflections of a single underlying construct: the theoretical construct as made explicit by the investigator's attempt to represent it in items or observations, and by the human ability inferred to be responsible for those performances' (T. G. Bond & Fox, 2007, pp. 34-35).

The fit statistics is derived by analyzing the item calibrations and persons measures on the variable map, also known as the person item map (Baghaei, 2008; T. G. Bond & Fox, 2007), based on the relative locations in terms of logits. The acceptable value on a standardized *t* scale is between -2.0 and +2.0 with sample sizes between 30 and 300 (T. G. Bond & Fox, 2007, p. 43).

The other concern in measurement is reliability. Reliability in quantitative research method refers to the consistency of a measure or the degree of test or measure scores being error-free (Bryman, 2012; Neuman, 2006; Wright & Stone, 1999). The pilot test for the questionnaire has helped to reduce the occurrence of unreliable data by ensuring the questions are unambiguous and clear.

In this study, internal reliability is considered. Internal reliability is the consistent determination of the indicators or scores used in the measure based upon a single test conducted assumed to contain homogeneous items (Creswell, 2005; Wright & Stone,

1999). The traditional primary reliability statistic is the Cronbach's coefficient alpha or Kuder-Richardson's KR-20 with an acceptable reliability value of 0.70 (DeVellis, 2003; Sick, 2008a).

In this study, the person and item measurement reliability in the Rasch measurement as an alternative to Cronbach's alpha is also used in the analysis. An instrument with good reliability would show a person and item measurement reliability of at least 0.81 (see Table 4-4). The initial construct for the internal audit activities portion of the internal audit survey, adapted from a previous study on the probability of a successful internal audit, has been confirmed by Rasch measurement, which showed item and person reliability of 0.94 and 0.91 respectively (Abdullah & Masodi, 2012). With greater focus by IAF on risk management (Audit Executive Center, 2010; Protoviti, n.d.; IIAM, 2009; Thomson Reuters, 2012), the survey items are adapted by replacing very easy items with items related to risk management.

Table 4-4
Rating scale instrument quality criteria for person and item to determine the reliability index in Rasch measurement (Fisher, 2007)

Rating Scale Instrument Quality Criteria					
Criterion	**Poor**	**Fair**	**Good**	**Very Good**	**Excellent**
Targeting *	> 2 errors	1-2 errors	< 1 error	< .5 error	< .25 error
Item Model Fit Mean-Square Range Extremes	< .33 - >3.0	.34 - 2.9	.5 - 2.0	.71 - 1.4	.77 - 1.3
Person and Item Measurement Reliability	<.67	.67-.80	.81-.90	.91-.94	>.94
Person and Item Strata Separated	2 or less	2-3	3-4	4-5	>5
Ceiling effect: % maximum extreme scores	>5%	2-5%	1-2%	.5-1%	<.5%
Floor effect: % minimum extreme scores	>5%	2-5%	1-2%	.5-1%	<.5%
Variance in data explained by measures	<50%	50-60%	60-70%	70-80%	>80%
Unexplained variance in contrasts 1-5 of PCA of residuals	>15%	10-15%	5-10%	3-5%	<3%

Linacre (1994) identified that a sample size of 50 which are well-targeted on items being measured is conservative in producing statistically stable estimates of 99% confidence interval with item calibration within ±1 logit, the unit used in Rasch analysis (see Table 4-5).

> The requirements are symmetric for the Rasch model so you need as many items for a stable person measure as you need persons for a stable item measure. Consequently, 30 items administered to 30 persons (with reasonable targeting and fit) should produce statistically stable measures (Linacre, 1994).

For a 95% confidence interval, the minimum reasonable sample size is 30 (Linacre, 1994, 2005). As the scales used are from 1 to 4, the samples are termed as polytomies. There are 57 items in the survey questionnaire (as detailed in the next section); 35 internal audit activities items, 8 audit committee involvement items, 14 areas of corporate governance items. With the response from 68 CAEs in the survey (see Chapter 5 section 5.2), it is expected that the data will produce stable estimates.

Table 4-5
Crucial statistics for determining minimum sample size for targeting persons and items (Linacre, 1994)

Item Calibrations stable within	Confidence	Minimum sample size range (best to poor targeting)	Size for most purposes
± 1 logit	95%	16 – 36	30 (minimum for dichotomies)
± 1 logit	99%	27 – 61	50 (minimum for polytomies)
± ½ logit	95%	64 – 144	100
± ½ logit	99%	108 – 243	150
Definitive or High Stakes	99%+ (Items)	250 – 20*test length	250
Adverse Circumstances	Robust	450 upwards	500

For the qualitative strand, the question on external validity or generalizability needed to be addressed as in a case study (Bryman, 2012). The findings of an IAF in a particular public-listed company could not be representative of all other IAFs of companies on the Malaysian stock exchange. As pointed out by Yin (2009), the case study sites are not chosen as representatives of certain criteria in a population since theoretical generalisation is more important than statistical generalization. Similarly, the choice of interviewees from various industries is not meant for statistical generalization. Other than the interview, published data in the form of annual report are also collected to corroborate the information given during the interview. It is assumed that the qualitative analysis of the interviews will show the extent existing agency theory provides a good

explanation of the current state of internal audit activities. As such, the exploration in the ways IAF in Malaysian public listed is practised together with the level of collaborations and the perception about IAF in giving value-add services are addressed.

4.7. Normality of Data

In inferential statistics, the pre-requisite assumption is normality which can be explored in various ways: graphically by histogram, boxplot, and statistically by Kolgorov-Smirnov and Shapiro-Wilk tests with Lilliefors significance level, and the Skewness and Kurtosis (Allen & Bennett, 2010; Howell, 2013). Kolgorov-Smirnov is not recommended because most small sample are non-normal and would pass the test and for large sample, it will reject the normality hypothesis even if there were minor deviations and would not affect further data analyses (Howell, 2013). Most data in studies on IAFs across organisations are usually small sample (see Stewart & Subramaniam, 2010).

Data screening for missing data is useful to ensure data have been entered correctly and are normally distributed. If data deviates dramatically, the validity of the results may be affected. Hence, transforming the data to satisfy the normality assumption is necessary if the researcher uses parametric statistics (Field, 2009). However, other authors do not recommend transforming the data as the transformed data are difficult to interpret and suggest that non-parametric tests be carried out (Allen & Bennett, 2010; J. Pallant, 2010; Tabachnick & Fidell, 2007). Pallant (2010) concluded that non-parametric techniques be used when the data is ordinal, very small sample and not normally distributed. For the statistical analyses, the results should be within the limits (Allen & Bennett, 2010; J. Pallant, 2010) as in Table 4-6.

Table 4-6
Crucial statistics for determining normality

	Small sample	Big sample
Skewness & Kurtosis - z scores	< ±1.96 for p=0.05	< ±2.58 for p=0.01 < ±3.29 for p=0.001
Shapiro-Wilk	Sig. >0.05	Sig. >0.05
Boxplot -outliers -extreme scores	Above/below 1.5 and 3 box lengths >3 box lengths	

A post hoc test is used to make all pairwise comparisons where the hypothesis testing using Kruskal-Wallis shows significant results. This is done to eliminate a Type 1 error due to the unusual difference between the groups, such as the groupings for internal audit team sizes and team expertise area (Howell, 2013).

4.8. Data Collection

As mentioned earlier in the research process, this study involves two strands: a quantitative strand using a survey questionnaire and a qualitative strand using research interviews.

4.8.1. Survey

A survey serves to collect primary or secondary data from a sample with the purpose of analysing them statistically before making generalisations (Collis & Hussey, 2009, p. 76). A written questionnaire is used to gather information on people's characteristics, opinions and behaviours (Neuman, 2006, p. 273). The population, from which the sample is derived, is 'a precisely defined body of people or objects under consideration for statistical purposes' (Collis & Hussey, 2009, p. 77). Instead of using all listed companies on the KLSE as the population, as in a study on ACs where a review of the annual reports were made (Haron et al., 2005), the population in this study is the internal auditors in public listed companies in Malaysia who are corporate members of the Institute of Internal Auditors Malaysia (IIAM). The internal auditors are chosen because not all companies have an in-house IAF.

A good sampling frame, being a list of cases in a population that closely reflects elements in the population, is crucial to avoid invalid sampling (Neuman, 2006, p. 225). The types of IIAM memberships serve as the sampling frame in this study. As at 31 May 2011, as provided by IIAM, there are 2,344 individual members and 237 corporate members. Professional members are those with at least 3 years professional experience in internal auditing with tertiary education. An associate is one who is engaged in internal auditing but does not qualify for professional membership. Corporate membership is open to companies who nominate employees who are internal auditors as their representative, including companies that hold themselves as a group.

From the sampling frame above, the minimum sample size is then determined. Generally, two methods are used: random sampling and rule of thumb (Neuman, 2006, pp. 241-242). In random sampling, an acceptable confidence level and the degree of variation in the population are assumed. In contrast, the rule of thumb approach leads the researcher to use an acceptable sample size that is based on previous experience and meets the requirements in statistical methods. Even in random sampling, the size tends to be fixed at 278 for a population of 1,000 and around 380 cases for large populations of 20,000 and above (Collis & Hussey, 2009, pp. 210-211). The sample size based on the rule of thumb in a related study on ACs of public listed companies in Malaysia is 120 (Haron et al., 2005). As the study is targeting the CAEs of listed companies, all 237 IIAM corporate members are taken to be the most appropriate sample. Further, this group of internal auditors is in charge of the internal audit activities of their companies and have the necessary professional background to enable them to respond to the questionnaire.

Good survey questions should be meaningful, and able to avoid confusion in respondents whilst collecting data that would give valid and reliable measures (Neuman, 2006). Further, the questions should also adequately capture all information to answer the research questions. The research instrument is constructed after a thorough review of the available literature, consultations with accounting and auditing professionals including the researcher's knowledge and professional experience. Additionally, the questionnaire is also adapted and extended from an existing instrument measuring the performance of internal audit activities in order to ensure the reliability and validity of the measures or the questionnaire items which are related to the different stages of internal audit (Abdullah et al., 2008).

The questionnaire is divided into six sections: individual characteristics, company characteristics, collaborations and combined assurances, AC involvement, corporate governance areas where findings were made, and internal audit practices. The questionnaire based on dimensions of internal audit process, incorporating the types of audit activities, interactions of ACs with internal audit, and the impact of internal audit on corporate governance, is first reviewed by audit experts, comprising technical advisors from IIAM and the Malaysian Institute of Accountants, to determine its

relevance, clarity and completeness. Where internal audit is fully outsourced, it would be reflected in the answer to the type of internal audit department.

In this study, the opinions of internal auditors, showing their attitude or perception, are sought and use as the method of measurement on various tasks undertaken in internal audit activities. Thurstone (1928) stated that attitudes can be measured. This was confirmed by Gawronski (2007) when he reviewed various studies relating to attitudes including implicit attitudes. Attitude data can be collected using Likert scales and a statement of attitude (Linacre, 2001). Skills and know-how, for example, financial management, are reflected in practices and daily habits or attitudes towards any activities (Firth-Cozens, 1992).

A pilot study of the survey questionnaire is done with 11 CAEs selected from various industry sectors on the Kuala Lumpur Stock Exchange. Pilot studies have been conducted for various reasons such as to determine the feasibility of a Responsive Business Scorecard using two industry sectors (Woerd & Brink, 2004); the citation behaviour of 19 faculty members from a university who had published periodical articles (Prabha, 1983); and the service quality and staff training of five members in two focus groups (Monk & Ryding, 2007).

A pilot study will allow for modification of the survey instrument arising from unforeseen events, such as data collection methods (Baird, 2000; Lanphear, 2001). Lanphear (2001) added that the pilot study will also allow validation of the statistical approach and the questionnaires before full administration. However, no validation of the statistical approach is made in this study as the instrument has been adapted from an instrument used in determining the success of an internal audit measured using the Rasch model (Abdullah et al., 2008). Additionally, in this study, a comparative analysis of the results for the internal audit activities is made on the level of difficulties of the items used. During the pilot study in the quantitative phase, the respondents found that the items in the instrument are not ambiguous and need not be amended. This pilot study has helped to ensure the quality of data collected by preventing the existence of unclear and ambiguous questions.

4.8.2. Survey data collection

The questionnaires are issued through cooperation with the IIAM membership division to ensure a good response rate − a pre-paid envelope is included with the questionnaire. Cover letters accompanied the mailed questionnaire stating the purpose of the survey, confidentiality of information gathered and seeking cooperation from the respondents (see Appendices 1, 2 and 3).

An on-line survey of the instrument is also made available to facilitate data collection. In addition to the mail out survey, two further calls for responses are made through the on-line survey.

4.8.3. Research interview

A research interview is commonly used in qualitative method studies as it is very flexible and 'capable of generating data of great depth' (King, 1994, p. 14). 'A research interview seeks through questioning to obtain knowledge of the subject's world' (Kvale, 1996, p. 21). The main objective in doing the research interview is to obtain the interviewee's perspective about the research topic through direct conversation and to understand the motivations for specific actions undertaken by the interviewees (King, 1994; Schultze & Avital, 2011). The in-depth interview is also done to gather information about the reality −'concrete, specific desires and interests'− and to illustrate the meanings in the quantitative study that are related to a particular context, in this case, the IAF (King, 1994; J. Miller & Glassner, 1997, p. 103).

As at 31 December 2011, there are 822 companies listed on the main market and 119 companies on the Ace market (Bursa Malaysia, 2012). All listed companies are required to have an IAF and an AC (Bursa Malaysia, 2009b). The IAF for these companies may be conducted under a group function at the holding company level. The roles of internal auditors and ACs at various stages of internal audit identified through the literature review are used to develop the semi-structured interview questions. It is believed that a mix of close-ended and open-ended questions is the most appropriate way to collect data. In addition, open-ended responses allow for an exploration of reasons for close-ended responses (Creswell, 2005).

In the research interview, the identity of the interest group − the researcher and the interviewee − is important to generate rich data when the interviewee imparts his or her 'intimate knowledge' of the subject matter (Charmaz, 2006; Schultze & Avital, 2011, p. 3). Determining the intentions and the impact of any activities such as the internal audit in an organisation may be difficult if the interest group is not identified and share some commonality. How the researcher, as the interviewer, present herself could influence the ability to solicit from interviewees a willingness to share their life stories (Charmaz, 2006; King, 1994; J. Miller & Glassner, 1997). With the researcher's expertise in the area of internal audit and corporate governance, there would be rapport and trust so that the interviewee's reality could then be 'interpreted and constructed' (Schultze & Avital, 2011). To facilitate interpretive inquiry, the intensive or active interviewing undertaken with the CAEs used semi-structured questions which allowed the researcher to show the researcher's interest and wanting to know more about the IAF of their organisations (see Charmaz, 2006; Holstein & Gubrium, 1997). In this way, the researcher is allowing the CAEs to be the experts of their own field since they are professionals, to choose what and how to tell the actions taken and share their significant experiences.

Based on the study design, purposive sampling is used. Purposive sampling is where the respondent is intentionally selected in order to gain an understanding of the key characteristics pertinent to the research question (Bryman, 2012; Creswell, 2005). Further, Patton (2002, p. 230) emphasised that 'the logic and power of purposeful sampling lie in selecting information-rich cases for study in depth'.

Another sampling approach is systematic sampling. For example, in an explanatory mixed method, the approach is to use the results of the quantitative statistical results to direct the follow-up sampling for the interview. However, the identifying information for this study, in complying with ethical requirements, cannot be collected and this necessitates public-listed companies to volunteer their participation. Further, this sampling method may lead to a weaker connection between the quantitative and qualitative phases (Creswell & Plano Clark, 2011).

Accordingly, the cases or the respondents purposefully chosen are those where the internal audit issues could be examined extensively. Two criteria are established on an a

priori basis. They needed to be a public-listed company in Malaysia and have an IAF. Additionally, approval for the quantitative strand in this study − survey − required full anonymity of the respondents and this places a constraint on following-up on specific findings in the survey data, if an explanatory approach instead of a convergent mixed method is used.

'Qualitative inquiry typically focuses in depth on relatively small samples, even single cases (N = 1), selected purposefully' (Patton, 2002, p. 230). In determining the number of participants for the interview, the selection method as in a case study research is used as guidance. A single case study allows for understanding the reality and the dynamics existing within a particular setting from within-case analysis (Eisenhardt, 1989). Eisenhardt (1989, p. 540) argues that within-case analysis allows for familiarity and the emergence of unique patterns of a case. This analysis is said to promote the existence of generalized patterns in multiple cases when selected categories or dimensions are found to be similar. As such, this study adapted the multiple or collective case study approach to exemplify certain characteristics in the IAF.

The suggestion by Eisenhardt (1989) in selecting cases by a particular field led to selecting companies listed on the stock exchange in Malaysia, mainly due to the mandatory requirement of an IAF. A multiple case study on internal audit has ranged from five to eleven companies (Mat Zain & Subramaniam, 2007; Stewart & Subramaniam, 2010). The studies referred to by some researchers have indicated that in a multiple case study, a minimum of four cases is acceptable (Creswell, 2005; Eisenhardt, 1989; Merriam, 1998). Consequently, the number of interviews was limited to five companies and these interviews were made with CAEs. As in the case study by Turley and Zaman (2007), the direct engagement with the CAEs could provide complementary qualitative evidence on the interaction of the internal auditors with ACs and the impact of the IAF on corporate governance. In this context, the in-depth interviews sought to provide evidence on the manner internal audits are conducted, specifically collaborations and combined assurances, and to extend the research on internal audit performance.

Gaining access to and obtaining the cooperation of public-listed companies to consent for interviews are difficult. The general view as pointed to by an officer in IIAM is that

internal auditors view information about internal audit activities as confidential in nature except those that are disclosed publicly such as in the annual reports. This view on confidentiality resonates with the reason for non-response to the survey questionnaire in the initial quantitative strand of this study. Other researchers have indicated that some connection is required in enabling access to sensitive information as is the case for internal audit activities (Bachkaniwala, Wright, & Ram, 2001). Due to the perceived sensitivity of information, the Audit Oversight Board of the Malaysian Securities Commission and the Malaysian Institute of Accountants are approached in the identification of CAEs of public listed companies to be interviewed.

Contact with the listed companies is established through the Executive Chairman of the Audit Oversight Board, Securities Commission Malaysia. An initial expression of interest in studying the IAF of companies listed on Bursa Malaysia is made. This action leads to introductions to the Chairman of Audit Committees and the CAEs of six listed companies. Every interview is approached by a preliminary phone call about the context and the purpose of the meeting. Prior to the in-depth interviews, research presentation letters assuring them of confidentiality (King, 1994, p. 21) together with consent forms as suggested by Smith (2011, p. 99) are sent to the CAE or head of internal audit of the public listed companies informing them of the study. The letter informs them of the motive of the study, gaining permission for participation, granting the right to withdraw at any time including ensuring safe storage of research data (see Appendices 4 and 5). On the appointed date, one of the companies declines the interview. Four of the five interviews are tape-recorded. The recorded interview helps to reduce extensive note-taking and ‘interrupting the free flow of the conversation’ (Kvale, 2007, p. 94).

The semi-structured interviews with the CAE or a representative are conducted to examine how the companies conduct their internal audit processes and why the various assurance activities, for example risk management, environmental audit and quality audit, are incorporated in the financial and performance audits. Questions also include whether collaborations are present between accounting-qualified and non-accounting-qualified internal auditors or other personnel, such as with those from other departments in their organisations (see Appendix 6).

An interview guide or interview protocol was used to provide clear steps for the interviews (Creswell, 2005, pp. 221-222; King, 1994, p. 19; W. L. Miller & Crabtree, 1999b, p. 96). This guide helped in providing reliable and comparable qualitative data and is less standardized compared with a structured interview. Concurring with King's (1994) and Jacob and Furgerson's (2012) suggestions the topic in the interview guide draws from the literature and my personal knowledge and experience in internal audit. The topics were divided into three sections, covering the 'internal audit structure', 'internal audit activities' and 'involvement of audit committee'. These topics capture in essence the 20 questions that should be posed by the board of directors about internal audit (Swanson, 2010, pp. 56-57). Topical trajectories in the conversation where appropriate are allowed to ensure higher validity in the data and to gain rapport with the interviewees.

In conjunction with the research questions and the survey questionnaire, queries were made on the reporting structure for audit findings to determine the level of involvement of ACs or other alternative committees in the performance of internal audit. Of interest, questions include whether the presence of internal audit had any impact on the corporate governance of the organisation and how this presence affects any of the corporate governance dimensions by measuring the impact of internal audit recommendations acted upon by management in incorporating changes in the organisation. As such, the five interviews provided information on how an internal audit is judged to be effective and the extent to which their recommendations are implemented.

Attention is given to indications that suggest combined assurance activities or collaborations are conducted and why they are conducted, are recorded. Specific questions are asked as to whether the auditors and the ACs perceive any benefits arising from such events. As the annual reports of these companies are publicly available, certain information regarding the internal audit activities and the type of audit report given by the external auditors are also reviewed.

An extract of the questions in the first and second sections of the interview guide: 'internal audit structure' and 'internal audit activities' are shown below:

1.1. **Q** Has there been any instance where an internal audit is carried out with

other departments or other departmental staff members?
Prompt – e.g. collaboration for IT audit, risk assessment, health and safety
Probe - Describe the situation and why?
When was it done? Frequency, departments involved, types of audits, etc.
Why was collaboration done?

2.1. **Q** Do you feel that internal audit has any impact in the corporate governance of this company?
Probe – What are the situations that you feel that the company has benefitted from internal audit?
Why do you think that the situation create an impact?
How do other department feel about or view your work?

The analysis of qualitative data is aimed at understanding or interpreting the phenomenon by the meanings the people brought to the phenomenon (Denzin & Lincoln, 2000). Additionally, the focus is 'to show how what is being said relates to the experiences' (Holstein & Gubrium, 1997, p. 127) and in this study, on meanings ascribed by internal auditors to the IAF. Invariably, themes or codes are used. Coding is a way to classify data and to tag the text to the codes for easy retrieval (Miles & Huberman, 1994). The codes can be derived from the data and from prior theoretical understanding of the researched subject (Ryan & Bernard, 2003).

Three methods of analyses are considered: content analysis, template and editing (Charmaz, 2006; Crabtree & Miller, 1999; King, 1994, 2004b; Krippendorff, 2004). Content analysis is an approach that seeks 'to quantify content in terms of predetermined categories and in a systematic and replicable manner' (Bryman, 2012, p. 290). Content analysis is usually used to examine textual data and documents (Bryman, 2012; Silverman, 2011). Although in the interviews, annual reports of the companies are reviewed in relation to the internal audit function, the quantification of specific words that are categorized as the codes in the analysis is not sufficient to provide a meaningful interpretation of actions clarified by the CAEs. Bryman (2012) suggests that 'when the process of coding is thematic, a more interpretative approach needs to be taken'.

The next alternative, template analysis, makes use of an initial predetermined themes or codes but with two added features: the codes are revised through the themes being

exposed by the data, and, interpretation is done qualitatively on the resultant pattern of themes (Crabtree & Miller, 1999; King, 1994, 2004a, 2004b; King & Ross, 2004). As Crabtree and Miller (1999) observe, the use of a template is time efficient as it is more focused on certain aspects of the text, and connects related pieces of text earlier in the analysis.

The final method of analysis using coding is editing. Miller and Crabtree (1999a, p. 21 & 23) described it as the action where 'the interpreter enters the text much like an editor searching for meaningful segments, cutting, pasting and rearranging until the reduced summary reveals a helpful interpretation'. Usually, this is use in grounded theory with the method advocated by Glaser and Strauss of constant comparison (Bryman, 2012; Charmaz, 2006). The process begins by directly looking at the text, making observations on the text, organizing the text as a category or code, and finally re-reading to make an interpretation based on the patterns of the codes. Among the criticisms to this approach highlighted by Bryman (2012, pp. 574-575) is the extensive time to constantly interplay data collection and conceptualization. Further, the code given to the fragmented data creates a sense of loss to the context and flow of the interview data.

As this qualitative phase is to gain further explanations that could not be obtained in the quantitative phase, a template analysis is used. This allowed for cross analysis of interviews where interpretation could be made on the CAEs motivations in relation to their IAF. However, extensive investigation of themes such as the editing analysis in grounded theory which is usually done if the study is solely done qualitatively, is not made.

First, the recordings of interviews are transcribed to allow for a more thorough examination of what the interviewees said. Transcribing the oral data is the initial data analysis. Further, the transcripts also help to identify the values of the interviewees. The transcripts are given a brief reading to gain an overall view of the interviewees' responses. Next, the paragraphs are attached to labels to reflect the codes as in the initial coding template.

The initial coding template is constructed *a priori* with three high level themes from specific theories such as agency and institutional theory, and practical issues of research

regarding IAF. As a guide, the questions raised by Liamputtong (2004) and Charmaz (2007) for coding are also used, which include type of actions, intentions and accomplishments relating to the conceptual framework in Chapter 3 section 3.2. The initial codes in Table 4-7 have themes that are related hierarchically − with the top level codes as broad themes, and the lower levels as more specific focused themes (Ferguson & Heidemann, 2009; King, 2004b; King & Ross, 2004).

Table 4-7
Initial coding template for analysing interviews on internal audit function and its impact on corporate governance

1. Establishment
    - 1.1. In-house
        - 1.1a Academic background
        - 1.1b Years of experience
        - 1.1c Reporting function
        - 1.1d Critical audit activities
        - 1.1e Value adding services
    - 1.2. Out-sourcing
        - 1.2a Liaisons
        - 1.2b Consultant
        - 1.2c Audit areas
        - 1.2d Impact on financial audit
    - 1.3. Collaborations
        - 1.3a Collaborative activities
        - 1.3b Limitations due to work load
    - 1.4. Combined assurance
        - 1.4a Mix of combination
        - 1.4b Motivations

2. Audit Committee
    - 2.1 Composition
    - 2.2 Experience and background
    - 2.3 Review of internal audit activities
        - 2.3a Audit planning
        - 2.3b Audit execution
        - 2.3c Audit reporting and monitoring

3. Corporate governance
    - 3.1 Business operations
    - 3.2 Risk management
    - 3.3 Human resource management
    - 3.4 Fraud and conflict

The labelled paragraphs are then sorted into themes based on similarities of responses towards particular activities or functions undertaken in the internal audit and frequency of responses. This initial template is then modified in response to detailed readings of the transcripts and text of the annual reports until a final template is developed. Finally, these coded texts are reviewed to determine the fit to institutional, and organisational identity and identification theories; particularly on the value add service of internal audit, the collaboration or combined assurance process in internal audit, and the impact of IAF on corporate governance.

Two criteria are used (Patton, 1980): 1. Do the responses given confirm the theories? and 2. Are there any new insights into and interpretations of collaboration or combined assurances? The questions on why the collaboration or combined assurances are undertaken are examined and how these activities would fulfil the organisations' objective towards organisational excellence and improved corporate governance. The interviews are taken as exemplars of the IAF in public-listed companies, providing an appropriate context for answering the research question and allowing for the examination of key areas in the internal audit.

4.8.4. Statistics and software

Quantative data

Rasch analyses are done with the rating scale model default, using WINSTEPS (Linacre, 2008). Further analyses are performed using IBM SPSS Statistics 21.

Qualitative data

Coding and theme analyses are undertaken using NVivo 10 (QSR, 2012).

4.9. Summary

This study used both quantitative and qualitative methods to collect data on the value added service of the IAF and its impact on corporate governance. The first part of the study involved a survey of the perceptions of CAEs based on aspects of internal audit activities, audit committee involvement, collaborations or combined assurances, and areas of internal audit findings. The questionnaire and the Rasch measurement are justified in detail.

The second part involved research interviews with five CAEs from various industries using purposeful sampling. Data are collected through semi-structured interviews and by perusing statements in the annual reports. The main objective in this phase is to gather further information on the CAEs opinions about their activities, interactions with the ACs and the perception of their value added service to the organisation. The results of the analysis and discussion of the internal audit survey using both CTT and the Rasch measurement are set out in Chapter 5.

CHAPTER 5 : QUANTITATIVE DATA ANALYSIS AND HYPOTHESES TESTING

The Performance of an Internal Audit Function and its Impact on Corporate Governance

5.1. Introduction

The chapter presents the results from the quantitative study involving survey questionnaires. The first section reports on the response rate and the profile of the respondents. The next section presents the initial analysis, specifically on missing values, outliers and normality. The subsequent section discusses the construct validity and the fit of the data to the Rasch model. This is followed with details about the construct of the questionnaire items based on the level of difficulty and the performance index of the probability model for the effectiveness of the IAF. Having confirmed the construct of the instrument, the results of various hypotheses testing are then presented. Finally, the chapter concludes with the summary of the results and discussion from the hypotheses testing.

5.2. Response Rate

A total of 237 survey forms were distributed to all corporate members of IIAM. One hundred and three responses were received altogether after the third distribution of the survey with 68 usable responses, representing a 28.7% response rate.

The response rate is considered acceptable as previous studies registered the response rate for mail surveys ranging from 7.1% in Hong Kong to 42.1% in Denmark (Harzing, 1997, 2000). Other internal audit studies received responses from 35 internal auditors to a total of 250 internal auditors and audit committee members (Cooper et al., 1994; DeZoort & Salterio, 2001; Fadzil et al., 2005; Goodwin, 2003; O'Leary & Stewart, 2007; K. Van Peursem & Jiang, 2008). Two organisations did not participate in this study because their corporate policies disallowed them from participating; a reason similarly raised by Harzing (1997).

Paxson (1995) stated that low response rates for surveys are generally accepted as inevitable but may be subject to non-response bias. However, Leslie (1972) found that

surveys in the social sciences are unaffected by non-response bias due to homogeneous group membership. As the internal auditors (CAEs) surveyed belong to the same professional membership, minimal non-response bias is expected. Table 5-1 showed the profile of respondents for the first set and last set of 20 responses each. For both groups, there were six females and fourteen males. For both groups, the CAEs were mainly 30 – 39 years old and older, in the middle and senior management level with more than seven years of experience.

Table 5-1
Profile of the first 20 and final 20 respondents based on gender, managerial level, age and number of years of experience

First 20 respondents

Gender		Managerial level		Age		Experience	
Male	14	Support	0	20 -29 yrs	0	less than 3 years	1
Female	6	Executive	5	30-39 yrs	6	3-7 years	1
		Middle	5	40-49 yrs	11	more than 7 years	18
		Senior	10	50-59 yrs	3		
Total	20		20		20		20

Last 20 respondents

Gender		Managerial level		Age		Experience	
Male	14	Support	0	20 -29 yrs	2	less than 3 years	0
Female	6	Executive	5	30-39 yrs	11	3-7 years	3
		Middle	11	40-49 yrs	3	more than 7 years	17
		Senior	4	50-59 yrs	4		
Total	20		20		20		20

The summated ratings scale (Hair, Babin, Money, & Samouel, 2003, p. 158) for all internal audit activities and AC involvement items is used to determine the homogeneity of the early and late response groups. An independent samples *t* test is used to compare the means of the summated ratings reported by the early response group (n = 20) to those in the late response group (n = 20). Levene's test and the *t* tests are not statistically significant indicating that the assumption of homogeneity of variance is not violated (see Table 5-2).

Table 5-2
Results of independent samples t-test for the first 20 and final 20 respondents

				Levene's test		t-test				
									95% CI	
	Response	*M*	*SD*	*F*	*p*	*t*(38)	*p*(2-tailed)	Mean Difference	Lower	Upper
Audit planning	Early	33.10	4.97	3.199	0.082	0.142	0.888	0.20	-2.65	3.05
	Late	32.90	3.85							
Audit execution	Early	36.05	3.79	1.456	0.235	0.729	0.471	1.00	-1.78	3.78
	Late	35.05	4.83							
Audit reporting	Early	24.20	3.12	0.663	0.421	1.33	0.192	1.35	-0.71	3.41
	Late	22.85	3.30							
Audit monitoring	Early	22.60	2.23	3.547	0.067	0.657	0.515	0.60	-1.25	2.45
	Late	22.00	3.42							
AC involvement	Early	25.05	4.75	2.406	0.129	0.919	0.364	1.20	-1.44	3.84
	Late	23.85	3.39							

5.3. Profile of Respondents

The descriptive statistics in Table 5-3 indicate that the majority of heads of internal audit or chief audit executives are male (60.3%) with age groups 30-39 years old (48.5%) and 40-49 years old (35.3%). Most of them are in the middle and senior management levels (39.7% and 41.2% respectively), have more than 7 years' experience (89.7%) and have earned a bachelor's degree (57.4%) specialising in accounting (70.6%). The accounting specialisation was still the preferred major (e.g., Larkin & Schweikart, 1992).

The greatest representation is from the trading and service industry (51.5%) in small to medium sized organisations with up to 5,000 employees (75%) and revenues of below RM0.5 billion (41.2%) and RM0.5 – 9.9 billion (35.3%). Almost 56% of the organisations do not have any certification for their business processes while 38.2 % have only one certification. The most common certification is ISO 9001 (32.4%).

Table 5-3
Profile of respondents (N = 68) based on gender, age, managerial level, experience, education, specialization and background of their organisations

Characteristics of sample internal audit departments		Frequency	%
Gender	Male	41	60.3
	Female	27	39.7
Age	20 -29 years	2	2.9
	30-39 years	33	48.5
	40-49 years	24	35.3
	50-59 years	9	13.3
Managerial level	Supporting staff	0	0
	Executive	13	19.1
	Middle management	27	39.7
	Senior management	28	41.2
Years of experience	less than 3 years	1	1.5
	3 - 7 years	6	8.8
	more than 7 years	61	89.7
Education	Diploma	2	2.9
	Bachelor	39	57.4
	Postgraduate	27	39.7

Characteristics of sample internal audit departments		Frequency	%
Area of specialization	Accounting	48	70.6
	Finance and auditing	11	16.1
	Information technology	4	5.9
	Others(Economics, Engineering, History)	5	7.4
Industry type	Property	7	10.3
	Trading/Services	35	51.5
	Finance	9	13.2
	Technology	11	16.2
	Others(Manufacturing , Unspecified)	6	8.8
Revenue	below RM0.5 b	28	41.2
	RM0.5 – 9.9 b	24	35.3
	RM10 – 19.9 b	6	8.8
	above RM20 b	7	10.3
	Unspecified	3	4.4
Number of employees	Below 1,000	26	38.2
	1,001 - 5,000	25	36.8
	5,001 - 10,000	6	8.8
	Above 10,000	11	16.2
Certification/ Accreditation	No certification	38	55.9
	1 certification	26	38.2
	2 certifications	1	1.5
	3 and more certifications	3	4.4
Types of certification	ISO 9001	22	32.4
	ISO 27001, PCI DSS	1	1.5
	SAS 70	1	1.5
	ISO 9001, ISO 27001, ISO 20000	1	1.5
	ISO 9001, MQA, SEMS	2	2.9
	Safety and Environmental Health (SHE)	2	2.9
	ISO 9001, ISO 14001, SHE	1	1.5

Note:
PCI DSS – Payment Card Industry Data Security Standard
MQA – Malaysia Qualifications Agency
SEMS – Safety and Environmental Management Systems

5.4. Initial Analysis

For the initial analysis, three steps were taken to ensure data quality using SPSS: checking and imputing missing data, determining normality and doing the test for outliers. The analysis on missing value showed 5 missing values in 4 variables, varying from 1.5 – 2.9%. To determine whether a missing value occurred randomly, Little's missing completely at random (MCAR) test was used. MCAR showed that the missing values occurred randomly (Chi-Square = 181.210, DF = 168, Sig. = 0.230, not significant). This outcome then allowed the imputation technique for replacing the missing values to get a total dataset by expectation maximisation (EM) as EM predicts the best likelihood value (Hair, Black, Babin, Anderson, & Tatham, 2006).

The test on outliers or observations with unique characteristics typically of extremely high or low value was done to ensure that these observations would not distort the statistical analysis in a normal distribution (Hair et al., 2006). The univariate outliers were detected visually by boxplots. G value of 2.2 as suggested by Hoaglin & Iglewiez (1987) was used to label the outliers. No outliers were found except for variable item 7 (AC07) and item 21 (E03) that needed consideration to constrain the cases to a maximum (or minimum) value by the winsorizing technique. AC07 and E03 had extreme scores (> 3 box length in the boxplot). Winsorizing these items would result in all data for AC07 and E03 to be scaled at the maximum value of 4. Hair et al. (2006, p. 76) suggested the retention of the data unless 'demonstrable proof indicates they are truly aberrant and not representative of any observations in the population'. Hence, the observations were not changed.

The data in this study are ordinal. Theoretically, ordinal data are nonparametric. Ordinal data can have scales having a 'greater than' or 'less than' relationships, indicating relative positions in an ordered series (Hair et al., 2006), categories such as 'never, sometimes, usually, and always' used in this study. A statistical explanation based on parametric test is preferable in data analysis, even though the data are ordinal, if there are no severe violations of normality (Allen & Bennett, 2010). The assumption of normality was assessed visually and through descriptive statistics.

The z scores for skewness and kurtosis of the data for audit committee involvement and internal audit activities showed a majority of the variables were likely drawn from a non-normally distributed population. For normality assumption, z scores for skewness and kurtosis in a small sample should be $< \pm 1.96$ (which has a two-tailed probability of 0.05) (Allen & Bennett, 2010) and values for skewness and kurtosis need to be between ±1 (Hair et al., 2006). Further, the Shapiro-Wilk test of normality requires the significant value to be higher than 0.05 (Allen & Bennett, 2010; Hair et al., 2006). The Shapiro-Wilk statistics (W) for this study range from 0.481 to 0.868 at $p = 0.00$ (see Appendix 7). As such, nonparametric statistics were used for hypotheses testing and discussed subsequent to the next section on Rasch measurement analysis.

5.5. Rasch Measurement Analysis

The Rasch model is a prescriptive model applied where investigation is made on whether the data fit the model, in contrast to how the model fits the data, as in classical statistical testing (T. G. Bond & Fox, 2007). In this study, the intention is to determine the construct validity of the survey instrument before further hypotheses testing. The initial construct validity about the internal audit activities is already established (Abdullah et al., 2008; Abdullah & Masodi, 2012).

The current questionnaire is designed to measure the performance of the IAF based on the level of involvement of the ACs and internal audit activities; as an extension of the studies mentioned above. The current study also measures the impact of internal audit activities on corporate governance. The data are analysed using the Rasch model computer program, WINSTEPS (Linacre, 2008).

WINSTEPS uses joint maximum likelihood estimation and can estimate parameters even when some cell frequencies are low or zero. The mathematics reparameterises the thresholds (where there are data) in principal components such as linear, quadratic and cubic using the structure of the components. The cell frequencies are not used directly, rather estimation equations or functions of the cell frequencies are used as the sufficient statistics for the parameters.

For good measurement, the process should account for the estimation of one ability at a time and each item contributes meaningfully to the construct being investigated (T. G.

Bond & Fox, 2007). The construct validity in Rasch hinges on data that reflect the single underlying construct (Baghaei, 2008; Wright, 1977). The analyses relating to the construct comprise summary item and person fit statistics to the Rasch model, reliability, targeting and dimensionality. As mentioned in Chapter 4 section 4.6, the data from the 68 responses are expected to produce stable estimates. The results of the analyses show the items, as conceptually ordered, by difficulty (Andrich, 1988; T. G. Bond & Fox, 2007; Waugh, 2009, 2010).

Total items for the model is 57 comprising 14 areas of internal audit findings and 43 IAF items; 8 items on AC's involvement and 35 items on internal audit activities. Responses from the survey are entered into an Excel file as per the response categories. The suggestion by Andrich (1988, p. 63) to delete the items simply on statistical criteria to a minimum is followed to avoid the risk of capitalizing on sampling errors, which would lead to reduced general application of the test instrument.

5.5.1. Fit statistics

As mentioned in Chapter 4 section 4.5.3, the unit of measurement is logit or log odds. The results yielded a Chi-Square value of 6919.33 with 3750 degree of freedom. The Cronbach alpha (KR-20) computed by WINSTEPS is 0.93. Rasch model error or residual is the difference between the expected Rasch item/person score against the observed score. The fit statistics reported by the program is two chi-square ratios: infit and outfit mean square statistics. The infit statistic is used as an indicator of misfit as it 'gives relatively more weight to the performances of persons closer to the item value' (T. G. Bond & Fox, 2007, p. 57).

The items' mean is constrained to zero by the measurement model (see Table 5-4). Item location is between -2.60 logit to 3.82 logit with a standard deviation of 1.67. Item reliability for the difficulty estimates is very high (0.98 on a scale of 0 to 1) with excellent item separation index of 8.08. The item reliability index of 0.98 indicates high confidence that the order of items placement from easy to difficult along the logit continuum is replicable across other samples.

Table 5-4
Summary of items estimates (*N* = 68) *showing spread of items and reliability of the estimate*

	TOTAL SCORE	COUNT	**MEASURE**	**MODEL ERROR**	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	191.8	68.0	.00	.19	1.00	.0	.99	.0
S.D.	52.1	.0	1.67	.03	.24	1.4	.25	1.3
MAX.	258.0	68.0	3.82	.29	2.09	5.4	2.12	5.5
MIN.	84.0	68.0	-2.60	.16	.61	-2.6	.58	-2.4
REAL RMSE	.20	TRUE SD	1.65	**SEPARATION**	**8.08**	**Item**	**RELIABILITY**	**.98**
MODEL RMSE	.20	TRUE SD	1.66	SEPARATION	8.42	Item	RELIABILITY	.99
S.E. OF Item MEAN = .22								

The person ability estimate mean of +0.64 logit (see Table 5-5) relative to item mean of 0 indicated that the test or survey questionnaire is well-matched or well-targeted. Person location is between -0.90 logit to 2.51 logit. The standard deviation of 0.78 shows a smaller variation in person measures than with item measures. The mean of the infit mean squares at 1.02 and the outfit mean squares at 0.99 are very close to the Rasch-modelled expectation of 1. The spread in modelled fit scores for the CAEs (infit *t SD* = 1.9 and outfit *t SD* = 1.6) suggests that the person ability estimates would have error estimates within the conventional acceptable range of -2 to +2. Person reliability for the ability estimates is very high at 0.91 with good person separation index of 3.28.

Table 5-5
Summary of person estimates (*items* = 57) *showing spread of person and reliability of the estimate*

	TOTAL SCORE	COUNT	**MEASURE**	**MODEL ERROR**	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	160.8	57.0	+0.64	.21	1.02	-.1	.99	-.2
S.D.	18.2	.0	.78	.02	.44	1.9	.39	1.6
MAX.	198.0	57.0	2.51	.26	3.17	5.8	2.64	3.5
MIN.	122.0	57.0	-.90	.19	.54	-3.1	.46	-2.9
REAL RMSE	.23	TRUE SD	.75	**SEPARATION**	**3.28**	**Person**	**RELIABILITY**	**.91**
MODEL RMSE	.21	TRUE SD	.75	SEPARATION	3.60	Person	RELIABILITY	.93
S.E. OF Person MEAN = .10								

Reliability depends on the construct of the test instrument and the distribution of the respondents (Fisher, 1992). Cronbach's alpha is generally used as a measure of reliability and can be affected by missing data (Fisher, Elbaum, & Coulter, 2010; Wright, 1996). As with the item reliability, person reliability is the proportion of

observed persons' measures considered true, indicating the spread of person ability across the continuum. It shows the replicability of person ordering that is expected if these respondents were given a parallel set of items measuring the same construct (Wright & Masters, 1982). Both person reliability and KR-20 above 0.9 in this study indicate that the measure or instrument had excellent reliability; see Table 4-4 in Chapter 4 section 4.6 (Fisher, 2007). Coupled with the fit statistics that the data fitted the model, it could be deduced that the construct for the IAF model is valid and able to provide meaningful interpretations.

5.5.2. Unidimensionality

Unidimensionality in the Rasch model assumes that variables used reflect a common latent variable or a composite of the abilities for successful internal audit function: internal auditors' ability, audit committee involvement and impact on corporate governance. The principal component analysis of the residuals showed that the raw variance explained by measures of 62.6% closely matched the expected target of 62.9% (see Table 5-6). The unexplained variance in the first factor of 4.3%, rates the instrument as very good (Fisher, 2007). As such, it is deemed that the items used have a common latent variable and that unidimensionality has not been violated.

Table 5-6
Principal component analysis of standardized residual variance (in Eigenvalue units)

		-- Empirical --			Modeled
Total raw variance in observations	=	152.2	100.0%		100.0%
Raw variance explained by measures	=	95.2	62.6%		62.9%
Raw variance explained by persons	=	17.9	11.8%		11.8%
Raw Variance explained by items	=	77.3	50.8%		51.0%
Raw unexplained variance (total)	**=**	**57.0**	**37.4%**	**100.0%**	**37.1%**
Unexplained variance in 1st contrast	**=**	**6.6**	**4.3%**	**11.5%**	

5.5.3. Individual item fit

The fit statistics for the 57 questionnaire items that fitted the Rasch model (see Appendix 8) show the easiest item (item 7 – AC07 review results of internal audit) is located at -2.60 logit and the most difficult item (item 53 – F10R conflict resolution) at 3.82 logit. Only one item (item 5 – AC05 review internal audit program) shows infit mean squares > 2.0 showing off-variable noise that could degrade the measurement, being an item with the potential of deletion. Bond and Fox (2007) suggested that fit

statistics be used to detect problem items and person performance instead of the main aim of deleting items. Based on this suggestion and that of Andrich's (1988), no item was deleted.

5.5.4. Rating scale design

The way a rating scale is constructed could influence the quality of the data. As a check, category use statistics and item thresholds are reviewed (T. G. Bond & Fox, 2007; Linacre, 1999).

Category frequencies indicate the distribution of responses across all categories. Categories with low frequencies (recommended minimum of 10 responses per category) would not provide sufficient observations for an estimation of stable threshold values implying redundancy (T. G. Bond & Fox, 2007, p. 223). Table 5-7 shows the average ability estimate for persons who chose a particular category. For example, for the CAE who answered 2 on any item, the average agreeability or endorsability estimate is -0.31 logit which is higher than that for category 1 of -2.22 logit. The average measures functioned as expected, increasing monotonically across the scale from -2.22 logit (1-Never) to 2.07 logit (4 – Always). This indicates that persons or CAEs with lower ability, i.e., as gathered from the responses on the internal audit activities and ACs' involvements, endorse the lower categories (for e.g., scale of 1 or 2), and those with higher ability endorse the higher categories.

Table 5-7
Category frequencies and average measures for the four category rating scale

CATEGORY LABEL	SCORE	OBSERVED COUNT	%	OBSVD AVRGE	SAMPLE EXPECT	INFIT MNSQ	OUTFIT MNSQ	STRUCTURE CALIBRATN	CATEGORY MEASURE	
1	1	572	15	-2.22	-2.21	1.00	1.02	NONE	(-2.90)	1 NEVER
2	2	832	21	-.31	-.32	1.00	1.00	-1.70	-.86	2
3	3	1190	31	1.15	1.15	.86	.80	.15	.92	3
4	4	1282	33	2.07	2.07	1.10	1.10	1.54	(2.80)	4 ALWAYS

Additionally, step calibrations or item thresholds should increase monotonically (T. G. Bond & Fox, 2007; Christensen et al., 2013). Items thresholds are points on the scale between adjacent response categories where the odds or chances are 1:1 of respondents answering the adjacent categories or probability of positive response equals 0.5. A lower category should correspond to a lower level, and a higher category corresponds to

a higher level. The guideline for the magnitude between each threshold distance should be between 1.4 logit to 5 logit (T. G. Bond & Fox, 2007, p. 224).

There are 3 thresholds as the items have 4 response categories (1 – Never, 2 – Sometimes, 3 – Usually, and 4 – Always). *Figure 5-1* shows that the response categories have distinct peaks in the probability curve graph and are logically ordered. Even though the third threshold has a distance of 1.39 logit (from 0.15 logit to 1.54 logit for structure calibration in Table 5-7) and by strict implication the scale needs to be collapsed to 3 categories, this is not necessary as the difference in the magnitude requirement is very small, the curves are well-functioning and there are enough observations in each of the response categories (see Table 5-7). As such, the rating scale used in the survey was not revised to increase the reliability and validity of the instrument.

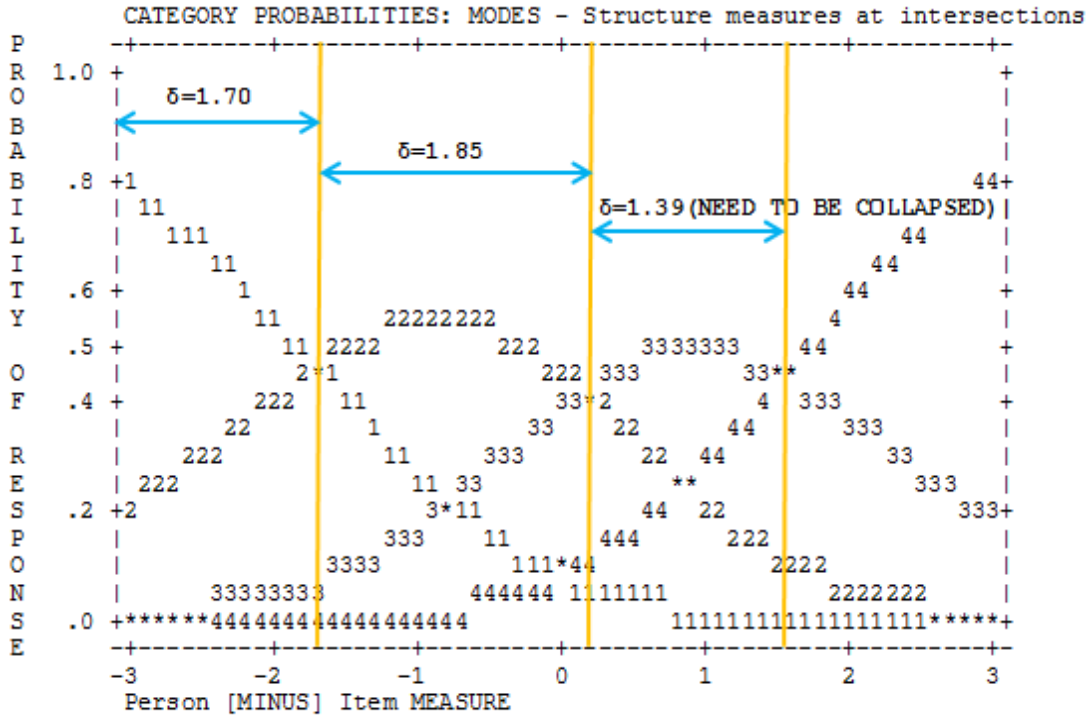

Figure 5-1. Probability curves for the four-category rating scale illustrating the ordered thresholds for categories 1, 2, 3, 4.

5.5.5. Targeting

Measures or instruments used in assessing the performance of the IAF needs to be appropriately targeted to the population being assessed. The fit statistics for persons and items are depicted as a variable or person-item map. Persons and items are symmetrical – both are measured on the same scale with the items calibrated at 0 logit. *Figure 5-2* shows the distribution of CAEs and items measures. The means for CAEs and items measures differ by +0.64 logit with persons' measures spread of 3.41 logit against 6.42 logit for items measures.

Comparatively, a majority of the internal audit activities are easy to accomplish. Two items under the AC's involvement in reviews of internal audit are also relatively easy. These easy items (40.35%) contributed to the mean measure of CAEs ability of +0.64 logit.

On the other hand, the identification of the impact on corporate governance through the reported audit findings is found to be relatively difficult, items ranging from 1.21 logit to 3.82 logit. 50% of the corporate governance items are difficult items, surpassing the CAEs maximum ability of +2.51 logit. The easiest item for the impact factor on corporate governance, F02R – expenditure management, is much more difficult than the most difficult item for AC involvement, AC05 – review of internal audit program, at +0.79 logit, and internal audit monitoring, M06 – receive reviews outside of internal audit on checklist, at +0.25 logit. The relative distance in the positions of each component in the IAF structure and the identification of impacts on corporate governance shows that the overall internal audit activity could impact significantly corporate governance. The order of difficulty (as shown in *Figure 5-2*) for the internal audit activities from least to most difficult are internal audit planning, reporting, execution and monitoring. These items are discussed further in the scale of item difficulties.

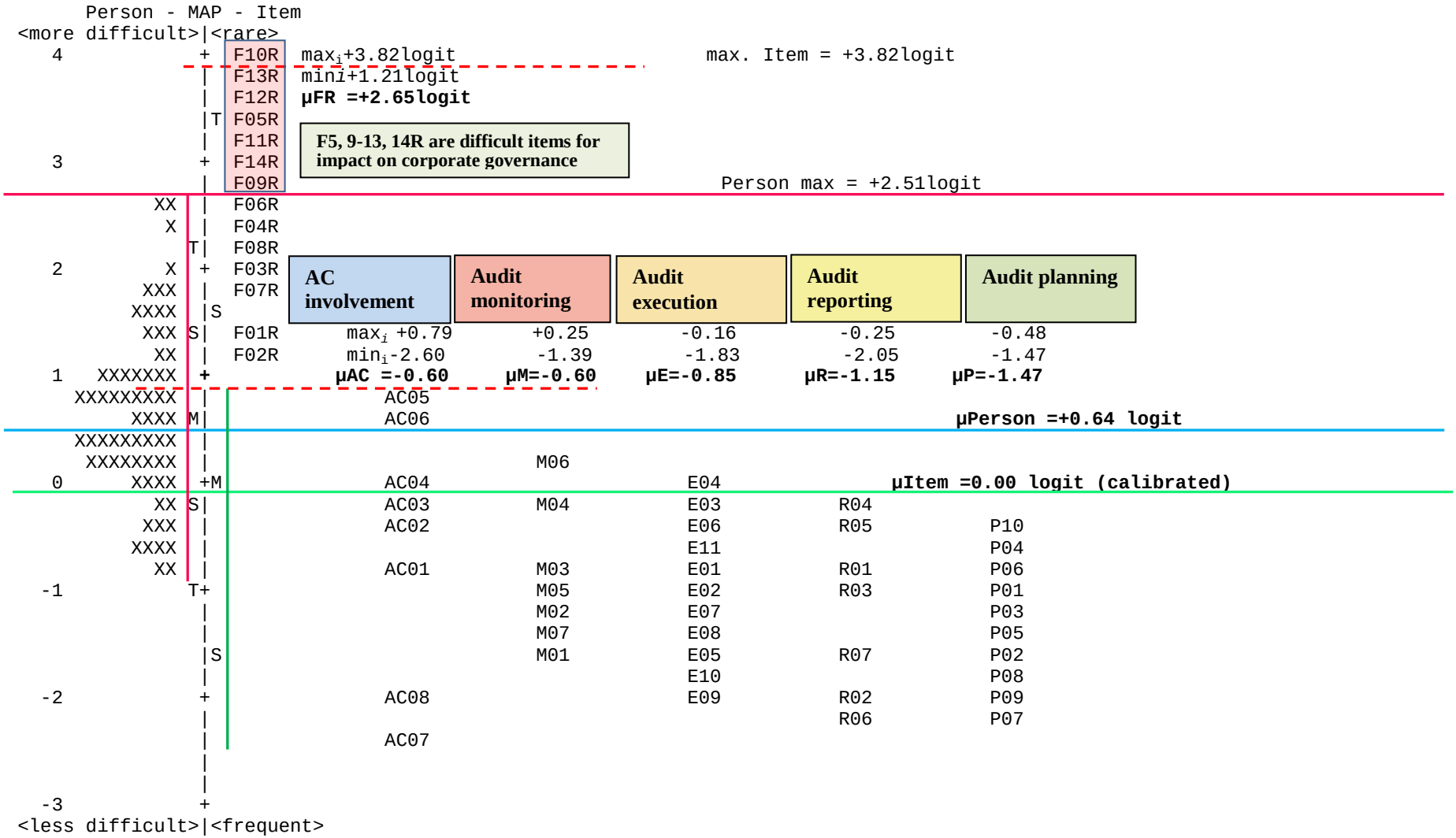

Figure 5-2. Overall person-item distribution for the internal audit function analysis

5.5.6. Scale of item difficulties

Table 5-8 shows item descriptions on the involvement of AC, internal audit activities and impact on corporate governance, which are ordered by item difficulty.

Table 5-8

Ordered difficulty of items by internal audit function dimensions on a linear scale

Item	Location (Logit)	Item descriptions
	Easy	
		Audit committee involvement in reviews of:
AC07	-2.60	results of the internal audit
AC08	-2.11	management actions on recommendation
AC01	-0.72	scope of the internal audit activity
AC02	-0.39	functions of the internal audit department
AC03	-0.27	competency of the internal audit function
AC04	-0.05	resources of the internal audit function
AC06	0.52	internal audit processes
AC05	0.79	internal audit program
		Audit planning:
P07	-1.47	evaluate policy implementation effectiveness
P09	-1.27	communicate audit plan to BOD and operations
P08	-1.09	identify processes of concern to management
P02	-1.09	set key performance metrics for audit assignments
P05	-0.95	verify communication of management policies
P03	-0.95	appoint auditors with necessary skills
P01	-0.78	set performance objectives as reference in audit program
P06	-0.72	confirm key control areas of business processes
P04	-0.57	monitor auditors' competency for training purposes
P10	-0.48	unrestricted access to information
		Audit execution:
E09	-1.83	list audit findings based on significance and impact
E10	-1.64	inform management of follow-up audits
E05	-1.39	determine from auditee changes in processes or controls
E08	-1.05	clarify root causes of audit findings
E07	-0.95	determine information availability on consistency of transactions
E02	-0.82	determine overrides to processes or controls
E01	-0.57	verify understanding of use of information or transaction handled
E11	-0.36	auditee available as scheduled
E06	-0.36	identify issues of potential waste in resources
E03	-0.25	check with auditee on how to detect errors
E04	-0.16	use statistics to review systems performance
	Difficult	

Item	Location (Logit)	Item descriptions
	Easy	
		Audit reporting:
R06	-2.05	discuss reasonableness of audit findings with management
R02	-1.94	reports specify clearly implications/potential of problems
R07	-1.55	team leaders discuss issues with management on conduct of audit
R03	-1.02	report contains status of previous audit recommendations
R01	-0.91	corrective actions seen as an avenue for improvements
R05	-0.33	report gives information on inefficiencies in resource management
R04	-0.25	reports accepted without further queries
		Audit monitoring:
M01	-1.39	review samples from recent records in follow-up audit
M07	-1.16	continuous update of audit procedures
M02	-1.12	review feedback on audit activities with management
M05	-1.09	receive reviews on audit reports from reporting authority
M03	-0.78	management monitors improvement activities
M04	-0.19	statistical data analyses in promoting preventive measures
M06	0.25	receive reviews outside of internal audit on checklists
		Areas of internal audit findings:
F02R	1.21	expenditure management
F01R	1.35	revenue management
F07R	1.75	rules and policies change procedure
F03R	2.26	personnel management
F08R	2.49	compliance to rules
F04R	2.57	financial performance
F06R	2.83	complaints procedure
F09R	3.02	rules enforcement
F14R	3.07	dissemination of information
F11R	3.07	information transparency
F05R	3.07	economic performance
F12R	3.18	corruption prevention
F13R	3.41	analysis of data
F10R	3.82	conflict resolution
	Difficult	

5.5.6.1. Audit committee involvement

The easiest item is the review of results of the internal audit by the AC (item AC07 difficulty of -2.60 logit), which is expected as this forms the major activity conducted by the AC. The most difficult item for AC involvement is AC05 – review of internal audit program, difficulty of 0.79 logit.

Specific responsibilities forwarded by the Cadbury Committee in 1992 are for ACs to review significant findings of internal investigations and internal audit program (Vanasco, 1994). This study provides some support towards the findings that only 65% of ACs reviewed the coordination of audit work (DeZoort, 1997). The relative ease in reviewing the internal audit results confirms the focus of AC on audit reports (see Turley & Zaman, 2007). This study indicates that the review of the internal audit program is perceived as not the standard process in ACs' activities even though this action is regulated by the KLSE listing requirements (Bursa Malaysia, 2009b; Securities Commission Malaysia, 2007). This extremely difficult task for the ACs may affect the internal audit planning and monitoring stages – which are investigated in hypotheses testing.

The order of difficulty for the other items is almost similar to the proposed construct (Table 4-2 in Chapter 4 section 4.4); the exception being the results shows review of internal audit resources as more difficult (item AC04 difficulty of -0.05 logit) than the review of the competency of the IAF (item AC03 difficulty of -0.27 logit).

In 1994, less than 40% of ACs in the US were involved in the appointment and dismissal decisions of CAEs and of that, 14% of the CAEs had unrestricted access to the ACs (McHugh & Raghunandan, 1994). Subsequently, DeZoort (1997) found that 67% of the ACs surveyed confirmed that they had monitored the resources allocated to the internal audit. Unrestricted access was highlighted by the Treadway Commission and IIA, to enhance the effectiveness of the IAF. The increase in the review of internal audit resources in now evidenced in Malaysia even though it is not a common practice, as indicated by the relative difficulty compared with reviews of internal audit processes and internal audit program as shown in Table 5-8 in section 5.5.6.

5.5.6.2. Internal audit activities

The most difficult item for internal audit activities is the internal auditors receiving reviews outside the internal audit on audit checklists (M06 difficulty of 0.25 logit). The easiest item is discussing the reasonableness of audit findings with management (R06 difficulty of -2.05 logit). The following paragraphs discuss the findings in each of the internal audit stages: planning, execution, reporting, and monitoring.

a) Audit planning

Unrestricted access to information (P10) is expected to be the easiest due to the presence of the internal audit charter and the involvement of AC as part of the guidelines on internal control (Bursa Malaysia, 2009b). A survey on internal audit practice in Malaysia noted that 96% of the respondents confirmed the existence of the charter which would specify that the internal auditors had access to records and personnel as necessary without any interference (IIA, n.d.; IIAM, 2009; Vanasco, 1994). The charter describes the structure and operational issues of the internal audit function, such as audit planning, staffing and reporting matters (Bailey, 2007; IIAM, 2009). However, this item (P10) is found to be extremely difficult, at -0.48 logit in this study.

The second most difficult item is P04, monitoring auditors' competency for training purposes, which was expected to be the most difficult. Similar to item P10, the other expected easier item was confirming with an auditee the key control areas of business processes (P06). P06 ranks third most difficult, at -0.72 logit. The difficulty of P06 is unexpected as this item forms part of the review of internal control, the predominant duty entrusted to internal auditors.

Fadzil et al. (2005) found that the proficiency of internal auditors who, for example, are affiliated to professional associations and have adequate knowledge in computerized systems, leads to lower monitoring of the internal control system. Fadzil et al. argued that the implied competency to perform the work translates to the internal auditors full understanding of the quality of the internal control system, and hence, less monitoring. This study seems to corroborate Fadzil et al.'s suggestion– due to the perceived difficulty in ensuring internal auditors have the necessary knowledge, it is also difficult to confirm key control areas of business processes within the organisation's control

environment. Furthermore, if the AC is actively involved in the review of audit programs (AC05), then the restrictions placed on internal auditors' work would not arise. Greater emphasis would also be placed by AC on the competency of internal auditors or providing the needed resources to ensure a more effective internal audit.

b) Audit execution

The easiest item as expected is listing audit findings based on significance and impact (E09) at -1.83 logit. The second expected easiest item, determining availability of information on the consistency of transactions (E07) is located midway in the continuum. The three most difficult items are as expected, using statistics to review systems performance (E04 at -0.16 logit), checking with the auditee on how to detect errors (E03 at -0.25 logit) and identifying issues of potential waste in resources in the organisation (E06 at -0.36 logit).

The difficulty to perform items E04 and E06 is consistent with earlier findings on the difficulty of information retrieval and determining the organisation's productivity (Abdullah et al., 2008; Abdullah & Masodi, 2012). The difficulties in internal audit execution could also be related to the difficulty in gaining unrestricted access (P10). Singam (2003, p. 335) considered auditing as a sensitive matter which is not widely accepted in South East Asia including Malaysia. Singam added that the uneasiness might stem from Backman's (1999) assertion that Asian management of corporations perceive themselves as infallible of wrong doing, and tend to uphold secrecy and are averse to transparency.

The difficulty for checking on error detection (E03) appears to be related to the difficulty of confirming key control areas of business processes (P06) in the planning stage. Another explanation for the difficulty is the lack of expertise in information systems alluded to in other studies (Cooper et al., 1994; Cooper et al., 1996).

c) Audit reporting

The expected easiest item is that the internal audit report shows the status of previous audit recommendations (R03), but this is perceived as slightly difficult or not always done (difficulty of -1.02 logit). The expected second easiest item is that the internal audit reports would be accepted without further queries. However, this item is perceived as the most difficult (R04 difficulty of -0.25 logit). Further, the results support the

measurement construct that the following two items are difficult: the internal audit report gives information on inefficiencies in resource management (R05 difficulty of -0.33 logit) and the identified corrective actions are seen as an avenue for improvements (R01 difficulty of -0.91 logit).

The difficulty in the acceptance of internal audit report would have an impact on improvements made on corporate governance pertaining to business processes specifically. This report acceptance difficulty would imply that management finds the audit report could not be related to the business matrix, usually used by business units to support their performances, such as efficiencies in operations. Moreover, the conventional auditing practice used by external auditors of reviewing previous audit work is also used to judge the work of the internal audit (Brown, 1983). The difficulty in providing the status of previous audit findings implies the lack of clarity and reliability of the internal audit work, especially relating to how the previous audit findings are used to determine the audit procedures in the internal audit program for the ensuing audit. What is reported would also help to clarify the changes made to the control environment and identify the areas of corporate governance is affected due to those changes.

d) Audit monitoring

One of the expected easiest items is receiving reviews from outside the internal audit department on the internal audit checklists (M06 difficulty 0.25 logit). Instead, M06 is considered extremely difficult and is linked to the most difficult task in AC involvement, AC05 − review of the internal audit program. Two other related reviews on internal audit, which are fairly easily achieved, are receiving feedback from management (M02 difficulty -1.12 logit) and receiving feedback on the report from the reporting authority (M05 difficulty -1.09 logit).

5.5.6.3. Corporate governance

The easiest two items reported in audit findings, as expected, are expenditure management (1.21 logit) and revenue management (1.35 logit). The third easiest item is reporting on rules and policies' change procedure (1.75 logit). However, findings on financial performance show some difficulty (2.57 logit). The main perception about audit has been about financial truthfulness in disclosures, which has been the primary

aim in financial statutory audits. This aim is also emphasized in internal audits. The focus on financial performance is supported in this study (Al Athmay, 2008). Due to the requirements in internal control and ensuring security in the control environment, the next easy item is F07R− ensuring that change procedure is maintained.

The most difficult item is findings on conflict resolution (3.82 logit) followed by analysis of data (3.41 logit) and corruption prevention (3.18 logit). The most probable reasons are audit infrequency or investigative audits on an ad hoc basis. Perhaps these are areas where the expertise of auditors is lacking especially with technological advancement in business processes and the technological challenges in information systems. This reason is further supported by the 2008 survey of internal audit practice in Malaysia where 20% of the respondents reported that none of their internal auditors had been trained for fraud prevention (IIAM, 2009). The findings also support the comments made on the difficulty in performing information system audit (Chambers, 2014; Cooper et al., 1994, 1996) which has the potential to detect irregularities or risks in business processes.

The overall impact on corporate governance is difficult to achieve due to the apparent emphasis on internal control, management and operational audits; similar to the results of the recent study on the role of internal audit (Leung et al., 2004).

5.5.7. Internal auditors' profile

Another aspect of Rasch measures is examining the abilities of internal auditors. *Figure 5-3* shows different profiles of the respondents, categorized from leaders to laggards. These profiles are based on the Guttman scalogram of the CAEs responses. The profiles by Rogers (2003) in the diffusion of innovation theory could be used to explain the different characteristics shown by the CAEs and their frequency in undertaking specific tasks in internal audit.

The 'leaders' are able to perform far better than others and rate highly on the items in the survey. The majority of the low responses are on areas of audit findings. The top three respondents are in senior management with more than 7 years of experience. Unexpected low responses from a CAE are found (see Appendix 9). Items perceived as never done by the AC are the reviews on the functions of the internal audit department

(AC02) and the internal audit resources (AC04). Two internal audit activities are also rated low; setting performance objectives as reference in the audit program (P01) is done sometimes, and reviewing feedback on audit activities with management (M02) is never undertaken.

The second group, leaders with reservation, is also in senior management and very experienced. These CAEs respond highly for the most difficult items in each stage of internal audit activities and the ACs' involvement in the IAF. However, a few tasks are not usually performed. These tasks are informing management of follow-up audits (E10), reports being accepted without further queries (R04) and using statistical analyses in promoting preventive measures (M04).

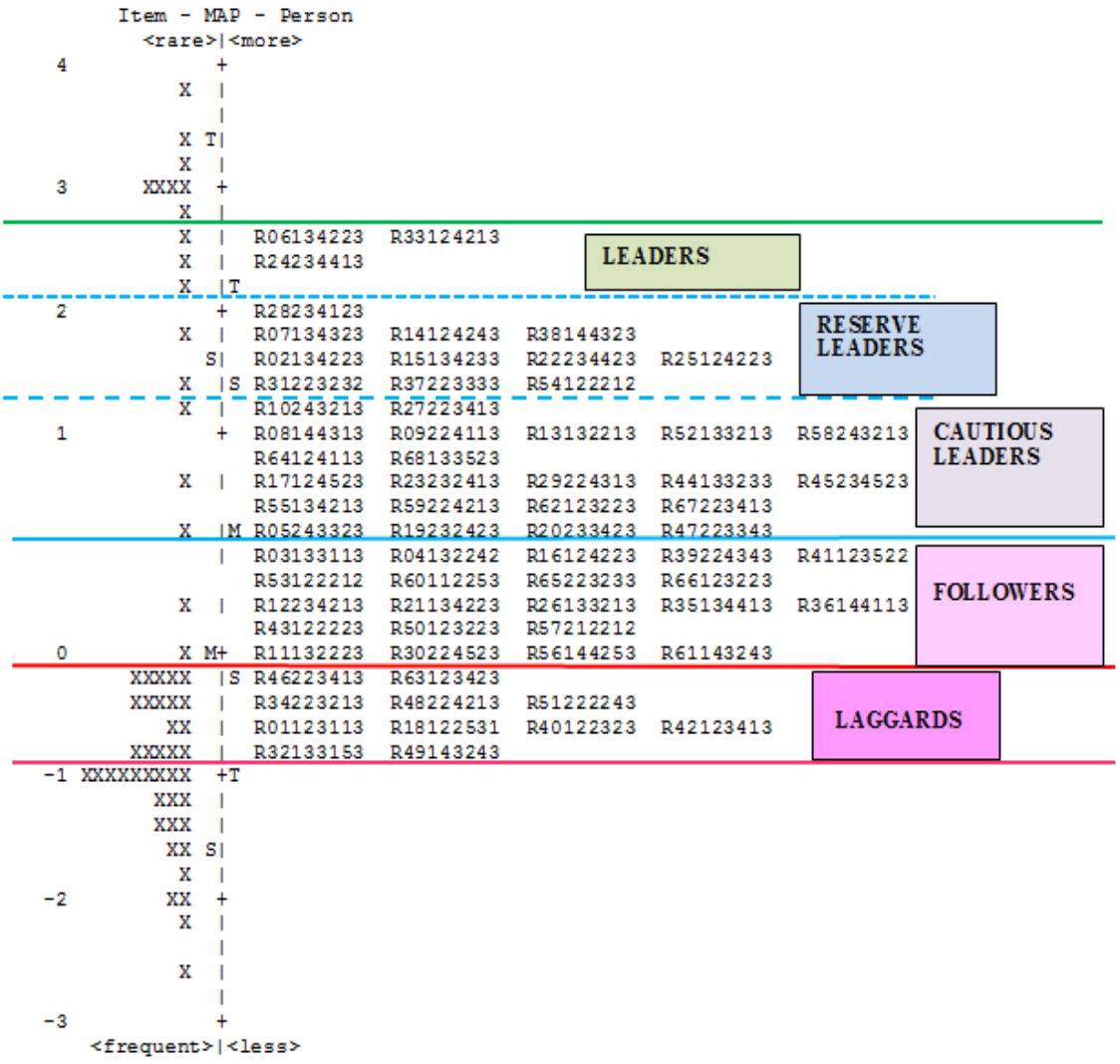

Figure 5-3. Overall person-item distribution based on Guttman scalogram for internal audit survey showing categories for internal auditor's profile

The third group, cautious leaders, comprise executives to senior managers with the majority of them having more than 7 years' experience. Most CAEs responded that they "usually" undertook tasks identified as slightly difficult. As such, their performances are above the mean (0.64 logit) as shown in *Figure 5-2* in section 5.5.5.

The fourth group, the followers, comprise mainly executives and middle managers. The most and second most difficult of each stage of internal audit activities are "sometimes" or "never" conducted. These CAEs' abilities are located from 0 to 0.64 logit.

The last group, laggards, perform below the mean of all CAEs. This group only at most "usually" or "sometimes" perform the activities when doing the internal audit activities and the AC are perceived to be not actively involved.

Following the global financial crisis, another assurance from parties not involved in management, namely the internal auditors, is readily recognized which would necessitate the advancement of internal auditors in their profession (A. D. Chambers, 2014). The items for internal audit activities are identified from earlier studies as best practices in internal audit and the AC's involvement are stated by legislation as requirements in corporate governance. The infrequent observance of these items in the IAF could affect the quality of the assurance function and subsequently, corporate governance. As such, the idea mooted about 'a cadre of super auditors' (A. D. Chambers, 2014) would not be easily achieved.

5.6. Internal Audit Function Model

The construct validity of the survey instrument was earlier established and thus, the Rasch measures generated could be used to predict outcomes of the activities measured. The raw scores for both persons and items are the sufficient statistics for the Rasch measures (Wright & Douglas, 1996), which are used in WINSTEPS. The success of the IAF and having an impact on corporate governance is identified as:

$$\Pr(\text{successful internal audit}) = \mu\text{Person} - \mu\text{Item}$$
$$= +0.64 - 0$$

With the Euler's number (see Chapter 4 section 4.5.3), the above model, expressed as a probable outcome, yields a value of:

$$\Pr(x_i = 1) = \frac{e^{\beta v - \delta i}}{1 + e^{\beta v - \delta i}}$$

$$= 65.48\%$$

The CAEs' responses imply that the current state of internal audit activities and the level of involvement by the ACs in the reviews done on the IAF have achieved an impact of 65.48% on corporate governance. This rating could be used with other rating scales for other interpretations on performance, for example, the Auditor-General's star rating for accountability index in financial management skills in the Malaysian public sector; from not satisfactory to excellent (Auditor General of Malaysia, 2008, p. 13). The accountability index comprises various aspects in financial management, systems and procedures and internal audit. Based on this star rating, the performance of internal audit in this study is considered satisfactory.

To ensure a more effective IAF, the tasks identified as most unexpected, as shown in Appendix 9, in the profiles of the CAEs need to be addressed. Fairly easy items that are never undertaken when performing internal audit include P02 - setting key performance metrics for audit assignments, E10 – informing management of follow-up audits, E05 – determining from the auditee changes in processes or controls, R06 – discussing reasonableness of audit findings with management and R02 – reports specifying clearly implications/potential of problems. Actions may involve increasing the skills of the internal auditors in these identified areas or promoting and ensuring the regular use of these items which have already been identified as part of best practices in the internal audit (Beckmerhagen et al., 2004; Buttery & Simpson, 1989; Fadzil et al., 2005; Moeller, 2009; Swanson, 2010).

Another vital aspect for hypotheses testing is the assumption on the use of the data. The statistical tests for hypotheses are based on *a priori* assumptions about the data such as normality and independence of cases (Sick, 2008d). Ordinal raw scores cannot be used in a regression model because of non-linearity. The Rasch model statistics linearised the raw score (T. G. Bond & Fox, 2007). "Rasch analysis is a procedure for assessing the quality of raw data and if the data meet certain criteria, for constructing interval-level

measures from them" (Sick, 2008d, p. 23). Since there is fit of the data to the Rasch model as assessed by unidimensionality and the fit statistics, this implies there is justification to use the raw score as a meaningful and sufficient statistic for hypotheses testing.

5.7. Hypotheses Testing

5.7.1. Assessing goodness-of-fit under classical test theory

In contrast to the Rasch model that uses the person separation index for testing the goodness-of-fit of the instrument, the goodness-of-fit in classical test theory is measured by the internal consistency reliability, which is commonly done by checking the Cronbach's alpha with a range of 0 to 1. An appropriate minimum level is 0.7 (Hair et al., 2003; Hair et al., 2006). The analysis (see Table 5-9) shows that the individual variables have high reliability ranging from 0.73 to 0.91. The internal consistency reliability of the construct for the overall audit committee involvement and the internal audit activities showed Cronbach's alpha of 0.914. The strength of association ranges from good to excellent (Hair et al., 2003), indicating that the items can be combined to measure the internal audit function in a consistent manner.

Table 5-9
Internal consistency reliability of the construct for audit committee involvement and the internal audit activities

Variables	Cronbach's Alpha	N
Audit committee involvement	0.808	8
Audit planning	0.847	10
Audit execution	0.793	11
Audit reporting	0.803	7
Audit monitoring	0.730	7
Overall internal audit activities	0.909	35
Internal audit function (overall)	0.914	43

5.7.2. Characteristics of internal audit functions

The importance of internal audits has been repeatedly raised whenever financial crises or corporate failures occur. Effective management of the IAF should lead to information that provides a measure of the impact that such internal audit has on the corporate governance of an organisation. Quality performance can only be achieved when all parties involved in the IAF have performed in concert to ensure the survival and

sustainability of the organisation. These parties are the AC (the representative of the board of directors in charge of the IAF), the internal auditors (independent personnel who conduct the internal audit on business and administrative processes), and the auditees (process owners in the organisation).

The characteristics of the IAF surveyed are shown in Table 5-10. Most internal audit departments performed financial and operational audits (70.6% in total) and the rest considered their department doing a combination of financial, quality and IT audits. The majority of the internal audit department had personnel up to 5 persons (44.1%) and above 10 persons (41.1%). The internal audit team had two major groups: members with experience up to 7 years (10.3%) and members with experience inclusive of more than 7 years (89.7%).

Overall, the internal auditors are considered to be managed by experienced personnel as there are no staffs with experience below 3 years in any internal audit department. The majority of the internal audit department staff has one expertise area (38.2%) whilst the same percentage has expertise in three and more areas. Consistent with the financial and operational audits performed, 91.1% of the internal audit department have members with finance and accounting background. These characteristics are used in the hypotheses tests, as detailed in the following paragraphs.

Table 5-10
Characteristics of the internal audit function by audit type, size, team experience and expertise, and team size

Characteristics of sample internal audit departments		Frequency	%
Audit type	Financial	19	27.9
	Financial and quality	8	11.8
	Performance / operational	14	20.6
	Financial and operational	15	22.1
	Financial, quality, operational and IT	12	17.6
Size of department	1-2 persons	11	16.2
	3-5 persons	19	27.9
	6-10 persons	10	14.8
	11-20 persons	16	23.5
	more than 20 persons	12	17.6

Characteristics of sample internal audit departments		Frequency	%
Team experience	3-7 years	3	4.4
	more than 7 years	9	13.2
	less than 3 years and 3-7 years	4	5.9
	less than 3 years and more than 7 years	5	7.4
	3-7 years and more than 7 years	17	25
	all three categories	30	44.1
Team experience Composition	experience up to 7 years	7	10.3
	experience inclusive of more than 7 years	61	89.7
Team expertise areas	Finance	6	8.8
	Accounting	14	20.6
	Finance, Accounting, Information Technology (IT) and Engineering	2	2.9
	Others (Operations, Administration, Business, Legal, Investigation, Quality, Network, Marketing)	6	8.8
	Finance and Accounting	8	11.8
	Finance, Accounting and IT	7	10.3
	Accounting and IT	2	2.9
	Accounting and Engineering	1	1.5
	Finance, Accounting and Engineering	1	1.5
	Accounting and Others	5	7.3
	Finance, Accounting, IT and Others	7	10.3
	Finance, Accounting, IT, Engineering and Others	2	2.9
	Finance, IT and Others	2	2.9
	Finance, Accounting, Engineering and Others	1	1.5
	Accounting, IT, Engineering and Others	1	1.5
	Accounting, IT and Others	1	1.5
	Finance, Engineering and Others	1	1.5
	Finance, Accounting and Others	1	1.5
Team expertise composition	1 expertise area	26	38.2
	2 expertise areas	16	23.6
	3 expertise areas	14	20.6
	more than 3 expertise areas	12	17.6
Team size	1 person	3	4.4
	2 persons	15	22.1
	3 persons	23	33.8
	4 persons	7	10.3
	5 persons	7	10.3
	2-3 persons	8	11.7
	2-5 persons	1	1.5

Characteristics of sample internal audit departments	Frequency	%
3-4 persons	1	1.5
3-5 persons	2	2.9
4-5 persons	1	1.5

5.7.3. Audit team members

Since a team needs to have at least 2 persons (Firth-Cozens, 1992), and other literature have indicated sizes can be 3 or 5 persons (Fadzil et al., 2005; SANS Institute, 2007), the team member composition was re-categorised into four groups based on the profile of the internal audit function in Table 5-10 in section 5.7.2: maximum of 2, 3, 4 and 5 persons. Hypotheses 1, 1a, 1b, 1c and 1d predict that the number of audit team members will not be associated with internal audit performance.

The Kruskal-Wallis ANOVA indicates that there are no statistically significant difference between the overall internal audit performance assigned to the audit team sizes of maximum 2 persons (*Mean Rank* = 33.47), 3 persons (*Mean Rank* = 40.10), 4 persons (*Mean Rank* = 25.88), and 5 persons (*Mean Rank* = 26.68), *H* (corrected for ties) = 5.782, *df* = 3, *N* = 68, *p* =0.123, as illustrated in *Figure 5-4*.

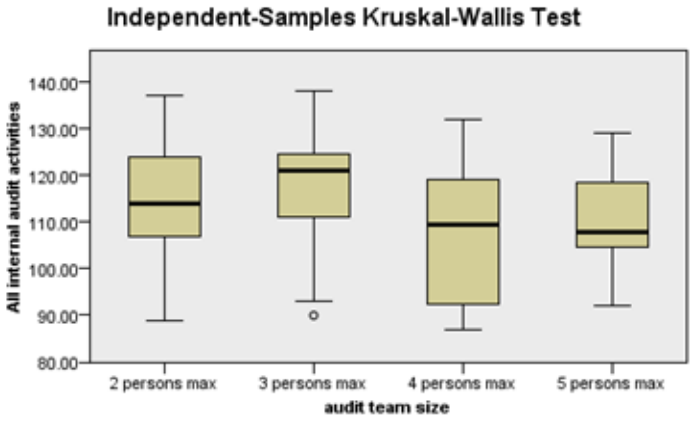

Figure 5-4. The distributions of internal audit groups with various audit team member sizes for all internal audit activities

Subsequent Kruskal-Wallis ANOVAs (see Table 5-11) indicate that there are no statistically significant differences between internal audit performance for the various internal audit activities among the different audit team sizes except for internal audit monitoring: audit team sizes of maximum 2 persons (*Mean Rank* = 31.44), 3 persons (*Mean Rank* = 41.63), 4 persons (*Mean Rank* = 25.56), and 5 persons (*Mean Rank* =

25.91), *H* (corrected for ties) = 8.259, *df* = 3, *N* = 68, *p* =0.041, Cohen's *f* = 0.37. The effect size for ANOVA is large (Allen & Bennett, 2010).

Table 5-11
Summary of Kruskal-Wallis ANOVA (N = 68) of scores on various internal audit activities assigned to the different internal audit team sizes

	Groups	Mean Rank	*H*	*df*	*p*
Audit planning	2 persons max.	36.72	2.619	3	0.454
	3 persons max.	37.02			
	4 persons max.	28.19			
	5 persons max.	28.36			
Audit execution	2 persons max.	34.00	4.18	3	0.243
	3 persons max.	39.08			
	4 persons max.	29.12			
	5 persons max.	26.32			
Audit reporting	2 persons max.	29.33	5.722	3	0.126
	3 persons max.	39.95			
	4 persons max.	24.44			
	5 persons max.	34.91			
Audit monitoring	2 persons max.	31.44	8.259	3	0.041*
	3 persons max.	41.63			
	4 persons max.	25.56			
	5 persons max.	25.91			

The significance level is 0.05 (two-tailed).

For the overall audit performance and all the internal audit stages, team size with a maximum of 3 persons records the highest mean rank score. The results suggest that the size of the audit team positively influences only internal audit monitoring activities. Thus, H1 to H1c, that the number of audit team members will not be associated with internal audit performance for overall internal audit, internal audit planning, internal audit execution and internal audit reporting, are accepted while H1d, internal audit monitoring, is not supported.

The pairwise comparisons using the Kruskal-Wallis in the post-hoc tests on internal audit monitoring is made to determine which groups are different from one another in their performance. The results show the actual difference in mean rank scores between the groups. The effect size of the significant differences is large (Allen & Bennett, p.

259), calculated using eta squared value, which is 0.11 for team maximum sizes of 3 persons & 4 persons and 0.12 for team maximum sizes of 3 persons & 5 persons (see Table 5-12).

Table 5-12
Summary of pairwise comparisons with Kruskal-Wallis on internal audit monitoring assigned to the different internal audit team sizes

Comparison	Chi-square	N	*p*	η^2	*Effect size*
Audit monitoring					
2 persons & 3 persons max.	3.037	49	0.081	0.06	medium
3 persons & 4 persons max.	4.341	39	0.037*	0.11	large
4 persons & 5 persons max.	0.007	19	0.934	-	-
2 persons & 4 persons max.	0.378	26	0.538	0.02	small
2 persons & 5 persons max.	0.627	29	0.429	0.02	small
3 persons & 5 persons max.	5.041	42	0.025*	0.12	large

The significance level is 0.05

Specifically, teams with a maximum of 3 persons are more likely to perform better than teams smaller in size. The results suggest that the minimum size for an in-house IAF that will produce effective internal audit monitoring is 3 persons. This supports the suggestion that the optimum size should be around 3 persons to facilitate a review process (SANS Institute, 2007). Smaller IAF team size may have insufficient manpower to achieve effective internal audit. Although the overall internal audit and other stages of internal audit are not significantly affected by team size, the results showed that the smallest group perform much better than teams with maximum numbers of 4 or 5 persons; as shown by the higher mean ranks for the smallest team size in audit planning and audit execution. Further, this finding lends support to the claim that larger groups do not operate as well as smaller groups (Firth-Cozens, 1992). This greater performance by the smaller team sizes (maximum member of 2 or 3 persons) may also be due to the strategies taken such as those suggested by Benson (1995) for example, surveying the nature and scope of operations and systems and the associated related risks.

5.7.4. Audit team expertise

There are 4 groups of audit team members' professional expertise. Hypotheses 2, 2a, 2b, 2c and 2d predict that high levels of professional expertise of audit team members will be associated with high internal audit performance and in each of the internal audit activities of planning, internal audit execution, reporting and monitoring. The Kruskal-Wallis ANOVA indicate that there is no statistically significant difference between the overall internal audit performance assigned to the audit team that has 1 expertise area (*Mean Rank* = 31.38), 2 expert areas (*Mean Rank* = 33.50), 3 expert areas (*Mean Rank* = 30.54), and the team having more than 3 expert areas (*Mean Rank* = 47.21), *H* (corrected for ties) = 6.215, *df* = 3, *N* = 68, *p* =0.102.

The results in Table 5-13 indicate that there are no statistically significant differences between internal audit performance in various internal audit activities among different professional expertise except for internal audit planning; the audit team with 1 expert area (*Mean Rank* = 30.25), 2 expert areas (*Mean Rank* = 31.28), 3 expert areas (*Mean Rank* = 33.29), and the team having more than 3 expert areas (*Mean Rank* = 49.92), *H* (corrected for ties) = 8.555, *df* = 3, *N* = 68, *p* =0.036, Cohen's *f* = 0.38. The effect size for ANOVA is large (Allen & Bennett, 2010).

Table 5-13
Summary of Kruskal-Wallis ANOVA (N = 68) of scores on various internal audit activities assigned to internal audit team with different professional expertise

	Groups	Mean Rank	*H*	*Df*	*p*
Audit planning	1 expertise area	30.25	8.555	3	0.036*
	2 expertise areas	31.28			
	3 expertise areas	33.29			
	>3 expertise areas	49.92			
Audit execution	1 expertise area	32.65	4.894	3	0.180
	2 expertise areas	34.44			
	3 expertise areas	28.86			
	>3 expertise areas	45.17			
Audit reporting	1 expertise area	29.40	5.686	3	0.128
	2 expertise areas	40.31			
	3 expertise areas	30.50			
	>3 expertise areas	42.46			

Audit monitoring	1 expertise area	36.04	0.887	3	0.829
	2 expertise areas	31.00			
	3 expertise areas	33.54			
	>3 expertise areas	36.96			

The significance level is 0.05 (two-tailed).

The results suggest that the level of the audit team member expertise positively influenced the internal audit planning activities. Thus, H2, H2b, H2c and H2d are rejected while H2a is supported.

The pairwise comparisons using the Kruskal-Wallis in the post-hoc tests on internal audit planning is made to determine which groups are different from one another in their performance. The effect size of the significant differences is large (Allen & Bennett, p. 259), which ranges from 0.17 to 0.21 when internal audit team with >3 expertise areas is compared to other groups (see Table 5-14). Specifically, teams with >3 expertise areas is more likely to perform higher than other teams.

Table 5-14
Summary of pairwise comparisons with Kruskal-Wallis on internal audit planning assigned to internal audit team with different professional expertise

Comparison	Chi-square	N	*p*	η^2	*Effect size*
Audit planning					
1 & 2 expertise areas	0.002	42	0.969	-	-
2 & 3 expertise areas	0.028	30	0.867	-	-
3 & >3 expertise areas	5.173	26	0.023*	0.21	large
1 & 3 expertise areas	0.429	40	0.512	0.01	small
1 & >3 expertise areas	7.870	38	0.005*	0.21	large
2 & >3 expertise areas	4.622	28	0.032*	0.17	large

The significance level is 0.05

The results suggest that audit teams with >3 expertise areas positively influence internal audit planning activities. For the overall audit performance and all the internal audit stages, audit teams with >3 expertise areas record the highest mean rank score. This implies that in-house IAF teams that will produce effective overall internal audit require a minimum of 4 expertise areas. Less than 4 expertise areas in teams are not sufficient to bridge the skills gap in the manpower to achieve effective internal audit especially at

the planning stage. Since planning is the first stage in the audit process, the effect of ineffective performance may roll-over into the immediate next two stages; execution and reporting, thereby affecting the overall internal audit.

The importance of internal auditors with various expertise supports the study on the element of competency of internal auditors. In evaluating competency of internal auditors, external auditors consider ongoing training to be important and the training should cover thoroughly the company's operations, policies and procedures (Haron et al., 2004). An IAF of a company with diverse business activities that spans across industries will require its team members to have various expertise. Both monitoring the competency for training (P04) and appointing internal auditors with the necessary skills (P03) would also help the internal auditors to better identify processes of concern to management (P08), making internal audit planning more effective in assessing business processes for improvements through informed judgments. Although competency monitoring is infrequent or difficult to achieve (see Table 5-8 section 5.5.6.), the connection to whether external auditors are able to rely on the work of internal auditors based on their competency provides significance to this aspect of the IAF structure. Section 5.7.5 provides further discussion about how team expertise relates to audit team experience.

5.7.5. Audit Team Experience

Hypotheses 3, 3a, 3b, 3c and 3d examine the impact of audit team experience on the overall internal audit performance and on each of the internal audit activities of planning, internal audit execution, reporting and monitoring. Similar to previous analyses on auditors' experience (Brown, 1983; O'Leary & Stewart, 2007; Shelton, 1999), the variable was collapsed into two categories. Team experience composition with experience up to 7 years was categorized as less experienced and those with experience inclusive of > 7 years was categorized as more experienced (see Table 5-10 in section 5.7.2.). The Mann-Whitney *U* test on various internal audit activities indicates that the level of internal audit performance with the more experienced audit team is not significantly higher than those with less experienced team as shown in Table 5-15.

Table 5-15
Summary of Mann-Whitney U test (N = 68) of whether various internal audit activities are related to internal audit team with different professional experience

	Less experienced		More experienced				
	Mean Rank	*n*	Mean Rank	*n*	*U*	*z*	*p*
Overall internal audit	32.07	7	34.78	61	230.50	0.343	0.731
Audit planning	29.93	7	35.02	61	245.50	0.648	0.517
Audit execution	30.50	7	34.96	61	241.50	0.567	0.571
Audit reporting	33.21	7	34.65	61	222.50	0.183	0.855
Audit monitoring	38.93	7	33.99	61	182.50	-0.629	0.529

The significance level is 0.05 (two-tailed).

The results suggest that the team members' level of experience do not influence the overall internal audit activities and the various stages of internal audit. Therefore, H3 to H3d are not supported.

Experience in only one skill area over a number of years may not contribute to other skills which are required when the internal auditors are faced with different situations such as those arising from new business ventures. Almost 90% of the respondents in this study have teams with experience > 7 years. In contrast, an earlier study on auditors' experience has surveyed almost equal numbers of auditors (Brown, 1983) and found that there was no significant difference in the judgements made by the two groups. The results in this study are consistent with Brown's (1983).

A significant part of the internal audit process, is the internal audit team composition. In this study, the number of team members, with a maximum of 3 members, influences internal audit monitoring. Since experience does not affect internal audit performance, the results suggest that expertise is more important than the number of years of experience. Team expertise affects the effectiveness of internal audit planning. Years of experience had pointed to better error detection due to knowledge retrieval (Tubbs, 1992) during the audit execution. However, the auditors had difficulty detecting the specific violated internal control objective (Tubbs, 1992). The probability that the difficulty in this detection of violations is still present could be attributed to the difficulty in confirming key control areas of business processes and checking with the auditee on how to detect errors (items P06 and E03 in Table 5-8 in section 5.5.6.),

which is part of risk management. Additionally, reviewing systems performance (item E04) is also infrequently done, suggesting a lack of expertise.

5.7.6. Combined audits

Hypotheses 4, 4a, 4b, 4c and 4d examine the impact of combination of audits undertaken by CAEs on the overall internal audit performance and on each of the internal audit activities of planning, internal audit execution, reporting and monitoring. The Mann-Whitney *U* test indicates that the level of internal audit performance where combined audit is present is not significantly higher than those where combined audit is not practiced, as shown in Table 5-16.

Table 5-16
Summary of Mann-Whitney U *tests (N = 68) based on internal audit activities where combined audit is present (n = 18) and no combined audit (n = 50)*

	No combined audits		Combined audits				
	Mean Rank	*n*	Mean Rank	*n*	*U*	*Z*	*p*
Overall internal audit	33.79	50	36.47	18	485.50	0.494	0.621
Audit planning	35.52	50	31.67	18	399.0	-0.711	0.477
Audit execution	33.35	50	37.69	18	507.5	0.802	0.422
Audit reporting	32.33	50	40.53	18	558.5	1.516	0.129
Audit monitoring	34.02	50	35.83	18	474.0	0.335	0.737

The significance level is 0.05.

The results suggest that combined audits do not influence the overall internal audit activities and the various stages of internal audit. Therefore, H4 to H4d are not supported.

50 respondents (73.5%) stated that they did not do combined audits (see Table 5-16). Even though combined audit is not significant, this study provides new evidence on the use of combined audits in internal audit as a strategy, perhaps to increase the effectiveness of internal audits through streamlining of procedures, such as by specifying the essential elements in environmental and quality management systems in the operational audits (Benson 1995; Pun et al., 2001). Moreover, combined audits have not been defined by IIAM except they have been used in the private sector (Hala, 2008), although this audit strategy was alluded to in audits in the public sector (Benson, 1995; Khemakhe, 2001). The situations described by the respondents are combinations of

legal compliance, risk assessments, performance audits, health and safety audits, information system, and human resource audits.

5.7.7. Audit collaborations

Out of 68 respondents, 20 (29%) indicate that there are no collaborations with other departments in the internal audits performed (see Table 5-17). The internal audit departments collaborated mainly on activities inclusive of risk assessment (38.4%) and legal compliance (32.7%). Collaborations which include information technology totalled 39.9%.

Table 5-17
Profile of respondents (N = 68) based on collaborations in internal audit activities

Characteristics of sample internal audit departments		Frequency	%
Collaboration with other departments	No collaboration	20	29.4
	Risk assessment	3	4.4
	Legal compliance	1	1.5
	IT security	4	5.8
	Process audit	1	1.5
	Investigative audit	2	2.9
	IT and investigative	1	1.5
	Risk and H&S	2	2.9
	Risk and process	1	1.5
	Risk and legal	2	2.9
	Risk and IT	2	2.9
	H&S and IT	1	1.5
	H&S and process	1	1.5
	IT and process	2	2.9
	Legal and H&S	1	1.5
	Process and environmental	1	1.5
	Legal, process and performance	1	1.5
	Legal, IT and process	1	1.5
	IT, process and HR	1	1.5
	Risk, legal and IT	2	2.9
	Risk, legal and process	1	1.5
	Risk, legal and H&S	1	1.5
	Risk, legal and performance	1	1.5
	Risk, IT, process and HR	1	1.5
	IT, process, performance and HR	1	1.5
	Legal, process, performance and HR	1	1.5
	Risk, H&S, process, performance and HR	1	1.5
	Risk, legal, IT, performance and HR	1	1.5

Characteristics of sample internal audit departments		Frequency	%
	Risk, legal, H&S, IT and process	1	1.5
	Legal, H&S, IT, process and HR	1	1.5
	Risk, legal, IT, process, HR, investigative	1	1.5
	Risk, legal, H&S, IT, process and HR	1	1.5
	Risk, H&S, IT, process, performance and HR	1	1.5
	Legal, H&S, IT, process, performance, HR and investigative	1	1.5
	Risk, Legal, H&S, IT, process, performance and environmental	1	1.5
	Risk, legal, H&S, IT, process, performance, HR and investigative	1	1.5
	Risk, legal, H&S, IT, process, performance, HR and environmental	2	2.9
Collaborative groups	None	20	29.4
	1 collaboration	11	16.2
	2 collaborations	14	20.6
	3 and more collaborations	23	33.8

Hypotheses 5, 5a, 5b, 5c and 5d examine the effect of collaborations in internal audit on the overall internal audit performance and on each of the internal audit activities of planning, internal audit execution, reporting and monitoring. The Kruskal-Wallis ANOVA indicates that there is no statistically significant difference between the overall internal audit performance and performances in various internal audit activities by the audit team with different levels of collaborations as shown in Table 5-18.

Table 5-18
Summary of Kruskal-Wallis ANOVA (N = 68) based on internal audit activities where different levels of collaborations in internal audit is present

	Groups	Mean Rank	*H*	*df*	*p*
Overall internal audit	None	35.20	1.712	3	0.634
	1 collaboration	40.18			
	2 collaboration	29.89			
	3 & more collaboration	33.98			
Audit planning	None	37.25	0.643	3	0.887
	1 collaboration	34.27			
	2 collaboration	34.11			
	3 & more collaboration	32.46			

	Groups	Mean Rank	*H*	*df*	*p*
Audit execution	None	32.68	1.634	3	0.652
	1 collaboration	37.59			
	2 collaboration	30.04			
	3 & more collaboration	37.33			
Audit reporting	None	33.85	2.381	3	0.497
	1 collaboration	42.00			
	2 collaboration	29.93			
	3 & more collaboration	34.26			
Audit monitoring	None	35.22	4.59	3	0.204
	1 collaboration	43.55			
	2 collaboration	26.64			
	3 & more collaboration	34.33			

The significance level is 0.05.

The results suggest that the levels of collaborations in the performance of internal audits do not influence the overall internal audit activities and the various stages of internal audit. Therefore, H5 to H5d are not supported.

In cases where expertise is not present, collaboration with others through use of experts may be necessary. Among the necessary skills identified by both CAEs and top management namely, chief executive officers, for internal auditors are information technology and risk analysis (Cooper et al., 1994). Knowledge about information systems' design and how certain deficiencies in business processes would impact on the whole organisation are vital. The professional standards on internal auditing enjoin quality auditing that may provide dependable and appropriate information to support business processes (Dittenhofer, 2001c). The standards suggest that information gathered during audits should be analysed using advanced techniques, which may make the use of experts in internal audit more important when evaluating business processes.

With the perceived difficulty to unrestricted access to information and availability of auditees during the audits (items P10 and E11 in Table 5-8 in section 5.5.6.), the provision of appropriate information would have been hindered. To overcome this limitation and possible inadequacy in the checks or assessments made, collaborations may be necessary. At least one collaboration, with another department or experts, would have increased the internal audit performance, as shown by the highest mean ranks in

Table 15-18. However, with the number of collaborations noted in three specific areas, namely, information technology, risk management and legal compliance, the quality of information from internal audit activities should benefit the organisations.

Although risk management is given greater focus (38.4% of responses for collaborative activities), as shown in Table 5-17, and considered a required competency (IIAM, 2009), this audit area remained problematic. Items related to risk management such as confirming key control areas of business processes and checking with the auditee on how to detect errors (items P06 and E03 in Table 5-8 in section 5.5.6.) are not usually practised.

5.7.8. Competency of audit committee

Ninety one per cent of respondents indicate that the CAEs report to the ACs, 6% to the heads of department/management meetings and 3% to the CEOs. A majority of the organisations have 3 members in the AC (70.6%) and the others have 4 members (10.3%), 5 members (16.2%) and 7 to 8 members (2.9%). The number of AC members is similar to that in the study by Haron et al. (2010) and complied with the minimum requisite number (Haron et al., 2005).

Hypotheses 6, 6a, 6b, 6c and 6d examine the effect of the professional competency of AC members on the overall internal audit performance and on each of the internal audit activities of planning, internal audit execution, reporting and monitoring.

The Kruskal-Wallis ANOVA indicates that there is no statistically significant difference between the overall internal audit performance and the internal audit performance at various internal audit activities assigned to the AC with different professional competencies as shown in Table 5-19. The results suggest that the levels of professional competency of the AC do not influence the overall internal audit activities and the various stages of internal audit. Therefore, H6 to H6d are not supported.

Table 5-19
Summary of Kruskal-Wallis ANOVA (N = 68) based on internal audit activities where different professional competencies of audit committees is present

	Groups	Mean Rank	*H*	*df*	*p*
Overall internal audit	1 professional	35.15	0.593	3	0.744
	2 professionals	30.96			
	3 and more professionals	36.18			
Audit planning	1 professional	33.72	1.344	2	0.511
	2 professionals	31.54			
	3 and more professionals	39.68			
Audit execution	1 professional	34.75	0.712	2	0.700
	2 professionals	31.04			
	3 and more professionals	37.25			
Audit reporting	1 professional	34.68	0.091	2	0.956
	2 professionals	33.18			
	3 and more professionals	35.32			
Audit monitoring	1 professional	35.90	0.492	2	0.782
	2 professionals	32.46			
	3 and more professionals	32.54			

The significance level is 0.05.

Goodwin (2003) found that the greater number of AC members with accounting expertise, the more involved they are in the review of the work of internal audit. The results in this study are inconsistent with Goodwin's findings since the majority of the respondents have only three members, with one of them having accounting expertise. The establishment and role of the AC with the minimum number and professional background of the members are stated clearly in the listing requirements in Malaysia. All listed companies who participated in this study have complied with the composition and financial background requirements. Earlier concerns were made on the level of interaction of ACs with internal auditors and the performance of internal auditors, even though on the surface, the compliance was established based on disclosures in financial reports (DeZoort, 1997; Haron et al., 2005).

The Treadway Commission and IIA asserted that regular interactions between ACs and CAEs would assure the independence and effectiveness of the IAF (Bailey, 2007;

Vanasco, 1994). These interactions are tested in three areas under the reviews by ACs: internal audit planning, internal audit execution and reporting of audit recommendations.

5.7.9. Review of internal audit plan by audit committee

Hypotheses 7 and 7a examine the effect of the reviews of internal audit plan by the AC on the overall internal audit performance and the internal audit planning activities. The Mann-Whitney *U* test indicates that the level of overall internal audit performance where ACs with high involvement in the review of audit plan (*Mean Rank* = 39.77, *n* = 42) are significantly higher than those of the ACs with low involvement (*Mean Rank* = 25.98, *n* = 26), *U* = 767.50, *z* = 2.797, *p* = 0.005, two-tailed, Cohen's *r* = 0.339. The level of internal audit planning where ACs have high involvement in the review of audit plan (*Mean Rank* = 39.70, *n* = 42) is also significantly higher than those of the audit committees with low involvement (*Mean Rank* = 26.10, *n* = 26), *U* = 764.50, *z* = 2.765, *p* = 0.006, two-tailed, Cohen's *r* = 0.335. This effect-size (Cohen, 1988) can be described as 'medium' for both the overall internal audit internal performance and the audit planning activities. The results suggest that the levels of review of the internal audit plan by the AC do influence the overall internal audit performance and the internal audit planning. Therefore, H7 and H7a are supported.

Goodwin (2003) noted that meetings with CAEs or reviews of internal audit work occurred more frequently when the ACs' have more accounting experience. The ACs' reviews comprised, among others, items related to the audit programs/plans, budgets, difficulties or restrictions on internal audit scope, results of internal auditing and management responses to the findings. Except for the last two items, the reviews in Goodwin's study were focused on internal audit planning. Although the accounting or professional background is not significant to the performance of IAF (see section 5.7.8), the results on ACs' reviews in the planning stage in this study, specifically the scope and function of internal audit together with IAF's competency, supports the importance of ACs' reviews in areas identified in previous studies (Goodwin, 2003; Mat Zain & Subramaniam, 2007). Section 5.7.11 provides further discussion about how AC's reviews relates to overall internal audit performance and the difficulties experienced by internal auditors in their audit work.

5.7.10. Review of internal audit execution by audit committee

Hypotheses 8 and 8a examine the effect of the reviews of the conduct of internal audit by the AC on the overall internal audit performance and the execution of internal audit activities. The Mann-Whitney *U* test indicates that the level of overall performance of internal audit where ACs showed high involvement in the review of the conduct of internal audit (*Mean Rank* = 43.59, *n* = 23) is significantly higher than those of the ACs with low involvement (*Mean Rank* = 29.86, *n* = 45), *U* = 765.50, *z* = 2.711, *p* = 0.007, two-tailed, Cohen's *r* = 0.329 (medium effect-size). The level of internal audit execution where ACs show high involvement in the review of the conduct of internal audit (*Mean Rank* = 40.83, *n* = 23) is almost significantly higher than those of the ACs with low involvement (*Mean Rank* = 31.27, *n* = 45), *U* = 663.00, *z* = 1.893, *p* = 0.058, two-tailed. The results suggest that the levels of review of the conduct of internal audit by the AC do influence the overall internal audit performance and the internal audit execution. Therefore, H8 and H8a are supported.

The findings indicate that reviews made on resources of IAF, internal audit program and internal audit processes are important criteria for high performance of internal audit. The importance of these items is consistent with other studies (Goodwin, 2003; Mat Zain & Subramaniam, 2007). Additionally, the low reviews by ACs on internal audit programs and processes (see Table 5-8 section 5.5.6.) support the views expressed by CAEs that AC members have less knowledge to provide feedback in these areas without the assistance of the CAEs (Mat Zain & Subramaniam, 2007). Greater reviews by ACs are likely to assist the internal auditors in performing their work especially when access to information and personnel may hinder the achievement of the internal audit objective. Additionally, these reviews would be one way to improve the overall exchange of reliable information about governance issues in the organisations and aid the ACs in their oversight of IAF.

Section 5.7.11 provides further discussion about how the reviews on audit execution relates to overall internal audit performance and the difficulties experienced by internal auditors in their audit work.

5.7.11. Review of actions on internal audit recommendations by audit committee

The report on internal audit recommendations generally includes audit findings for the current audit as well as the status of previous audit findings. The status of previous audit findings necessitate the internal auditors to take follow-up actions which will involve, among others, reviewing samples of data from recent transactions, receiving reviews from reporting authority, and reporting on the assessment of risk management. As such, the test for the review of AC members of actions taken on internal audit recommendations include both reporting and monitoring of the internal audit activities.

Hypotheses 9 and 9a examine the effect of the reviews of the actions taken on internal audit recommendations by the AC on the overall internal audit performance and the reporting and monitoring of internal audit activities. The Mann-Whitney *U* test indicate that the level of overall internal audit performance where ACs show high involvement in the review of actions taken on internal audit recommendations (*Mean Rank* = 37.20, *n* = 58) are significantly higher than those of the audit committees with low involvement (*Mean Rank* = 18.85, *n* = 10), *U* = 446.50, *z* = 2.712, *p* = 0.007, two-tailed, Cohen's *r* = 0.329 (medium effect-size). The level of internal audit reporting and monitoring where ACs with high involvement in the review of actions taken on internal audit recommendations (*Mean Rank* = 36.41, *n* = 58) is almost significantly higher than those of the audit committees with low involvement (*Mean Rank* = 23.45, *n* = 10), *U* = 400.50, *z* = 1.920, *p* = 0.055, two-tailed. The results suggest that the levels of review of the actions taken on internal audit recommendations by the AC influence the overall internal audit performance and the internal audit reporting and monitoring activities. Therefore, H9 and H9a are supported.

All areas are influenced positively by reviews by ACs: internal audit planning, internal audit execution and reporting of audit recommendations. Although greater levels of professional competency do not affect the reviews made by ACs, better interaction with the CAEs would be beneficial in improving the effectiveness of the IAF. ACs should be involved in determining their qualifications and continuing education (Schneider, 2010). This study suggests that the active support from the AC influences internal audit performance, more so when the success of the IAF relies on the personnel's expertise level (H2 and H2a) and the size of the internal audit team (H1d) especially in the planning and monitoring stage of internal audit. The internal audit team is expected to

provide valued feedbacks about the organisations' state of corporate governance, specifically the internal control and the performance of business processes (IIA, 2010b; Gill & Cosserat, 1993; Haron et al., 2010). Similar to the successful implementation of any performance system (Waal, 2003), a performing internal audit team is one that executes the internal audit stages properly. The items identified during the monitoring stage or follow-up audits will determine the scoping and the areas to be audited in the next audit.

The resultant possibilities of inadequate scoping of internal auditing or insufficient interactions of ACs in internal audit activities are fraudulent acts and lack of integrity in financial reporting (Vanasco, 1994). Pertinent areas that may be affected are risk management and prevention of fraud. The insufficient participation of ACs in three particular instances (see Table 5-8 in section 5.5.6. and section 5.5.6.1.) — reviews on the internal audit resources, processes and programs — suggests difficulties in various internal audit activities such as:

Audit planning

- Unrestricted access to information
- Confirming key control areas of business processes

Audit execution

- Checking with auditees on error detection
- Monitoring auditors' competency for training purposes
- Reviewing systems performance

Audit reporting

- Internal audit reports accepted without further queries
- Reporting on inefficiencies

Audit monitoring

- Statistical analyses in promoting preventive measures
- Receiving reviews on audit checklist

5.7.12. Impact on corporate governance

Hypothesis 10 examines the impact of internal audit performance on corporate governance. It is proposed that high levels of internal audit performance will be associated with a greater number of recommendations for improvements of elements in the corporate governance framework. The Mann-Whitney *U* test indicate that the level

of recommendations for improvements of elements in corporate governance for groups with high internal audit performance (*Mean Rank* = 37.95, *n* = 51) is significantly higher than for those with low internal audit performance (*Mean Rank* = 24.15, *n* = 17), *U* = 609.50, *z* = 2.503, *p* = 0.012, two-tailed, Cohen's *r* = 0.304 (medium effect-size). The results suggest that the level of internal audit performance has impacted on corporate governance. Therefore, H10 is supported.

The internal auditing standards have highlighted that audit reports should bear significant findings and what actions had been made by senior management (Vanasco, 1994). The suggestions by Gramling and Hermanson (2009) and Sarens (2009) of the usefulness of the internal audit reports and the frequency of actions based on the audit recommendations on corporate governance are pertinent. This study perceive that high performance in internal audit or the increase observance of the tasks identified as best practices influences the number of audit recommendations to aid management in making improvements to business processes. Areas where issues are raised, whether positive or negative findings, have largely been in financial management that relates to disclosure items in the financial statements, i.e., expenditure and revenue managements (refer to Table 5-8 in section 5.5.6. and section 5.5.6.3.). The increase in responsibility and perceived high success (77%) in fraud detection (IIAM, 2009) did not emerge in this study; rather, corruption prevention and conflict resolution are found as very infrequently reported. This could mean that if fraud investigations are increasingly conducted as claimed in the IIAM's survey, there were no issues to be raised since no recommendations on improvements need to be made. Consequently, the respondents have reported very few findings in the areas of corruption and conflict resolution.

5.8. Summary

This chapter presents the results from the analysis of data on the internal audit functions in public listed companies in Malaysia. All items to measure the performance of the IAF and its impact on corporate governance produced a measure that in Rasch measurement is linear and unidimensional. The fit statistics showed that there is construct validity with an excellent agreement between item-person as measured by person separation index of 3.28 with person reliability of 0.91. The overall Cronbach's alpha for the IAF is 0.91. As such, the instrument can be used as a good measure in evaluating the effectiveness of the IAF.

The research questions on the effectiveness of the IAF and its impact on corporate governance are addressed by ten main hypotheses. The summary of the results of the hypotheses testing is shown in Table 5-20.

Table 5-20
Summary of hypotheses testing

	Hypotheses	***p***	**Sig. / Not Sig. (NS)**
H1	Number of audit team members will not be associated with overall internal audit performance	0.123	NS
H1a	Number of audit team members will not be associated with internal audit planning	0.454	NS
H1b	Number of audit team members will not be associated with internal audit execution	0.243	NS
H1c	Number of audit team members will not be associated with internal audit reporting	0.126	NS
H1d	Number of audit team members will not be associated with internal audit monitoring	0.041	Sig.
H2	High levels of professional expertise of audit team members will be associated with high overall internal audit activities	0.102	NS
H2a	High levels of professional expertise of audit team members will be associated with high internal audit planning	0.036	Sig.
H2b	High levels of professional expertise of audit team members will be associated with high internal audit execution	0.180	NS
H2c	High levels of professional expertise of audit team members will be associated with high internal audit reporting	0.128	NS
H2d	High levels of professional expertise of audit team members will be associated with high internal audit monitoring	0.829	NS
H3	High levels of experience of audit professionals will be associated with high overall internal audit activities	0.731	NS
H3a	High levels of experience of audit professionals will be associated with high internal audit planning	0.517	NS

	Hypotheses	*p*	Sig. / Not Sig. (NS)
H3b	High levels of experience of audit professionals will be associated with high internal audit execution	0.571	NS
H3c	High levels of experience of audit professionals will be associated with high internal audit reporting	0.855	NS
H3d	High levels of experience of audit professionals will be associated with high internal audit monitoring	0.529	NS
H4	A combination of audit activities will be associated with high overall internal audit activities	0.621	NS
H4a	A combination of audit activities will be associated with high internal audit planning	0.477	NS
H4b	A combination of audit activities will be associated with high internal audit execution	0.422	NS
H4c	A combination of audit activities will be associated with high internal audit reporting	0.129	NS
H4d	A combination of audit activities will be associated with high internal audit monitoring	0.737	NS
H5	Number of collaborations of audit activities will be associated with high overall internal audit activities	0.634	NS
H5a	Number of collaborations of audit activities will be associated with high internal audit planning	0.887	NS
H5b	Number of collaborations of audit activities will be associated with high internal audit execution	0.652	NS
H5c	Number of collaborations of audit activities will be associated with high internal audit reporting	0.497	NS
H5d	Number of collaborations of audit activities will be associated with high internal audit monitoring	0.204	NS
H6	High levels of professional competency of audit committee members will be associated with high overall internal audit activities	0.744	NS
H6a	High levels of professional competency of audit committee members will be associated with high internal audit planning	0.511	NS

	Hypotheses	*p*	Sig. / Not Sig. (NS)
H6b	High levels of professional competency of audit committee members will be associated with high internal audit execution	0.700	NS
H6c	High levels of professional competency of audit committee members will be associated with high internal audit reporting	0.956	NS
H6d	High levels of professional competency of audit committee members will be associated with high internal audit monitoring	0.782	NS
H7	High levels of review of internal audit plan by audit committee members will be associated with high overall internal audit activities	0.005	Sig.
H7a	High levels of review of internal audit plan by audit committee members will be associated with high internal audit planning	0.006	Sig.
H8	High levels of review of the conduct of internal audit by audit committee members will be associated with high overall internal audit activities	0.058	Sig.
H8a	High levels of review of the conduct of internal audit by audit committee members will be associated with high internal audit execution	0.007	Sig.
H9	High levels of review by the audit committee members of actions taken on internal audit recommendations will be associated with high overall internal audit activities	0.007	Sig.
H9a	High levels of review by the audit committee members of actions taken on internal audit recommendations will be associated with high internal audit reporting and monitoring	0.055	Sig.
H10	High levels of internal audit performance will be associated with a greater number of recommendations for improvements of elements in the corporate governance framework	0.012	Sig.

Of the ten major hypotheses, hypotheses relating to the ACs' interactions with internal audit activities and the impact of internal audit activities on corporate governance are supported. The hypotheses about the structure of IAF on the internal audit activities about the number of team members and the level of expertise are also supported.

The following chapter presents the qualitative results and discussion relating to interviews made with the CAEs on their internal audit functions. The perception on the value-add service of internal audit is examined in relation to institutional and identification theories.

CHAPTER 6: QUALITATIVE DATA

In-Depth Interviews with Chief Audit Executives

6.1. Introduction

Six companies were approached for the interviews. As mentioned in Chapter 4 Methodology, the companies were suggested by the Chairman of the Audit Oversight Board, Malaysian Securities Commission and are listed on various industry sectors. One of them declined the interview on the day of the interview. This chapter presents the results of five in-depth interviews with the CAEs or the representatives for the IAF about the manner internal audit is conducted and the involvement of the AC.

Discussions are related to the results in the quantitative phase in Chapter 5. The theoretical framework in Chapter 2 regarding theories of agency, legitimacy, institutional and organisational identity is also included.

6.2. Respondents' Profiles and Views on Internal Audit

6.2.1. Company A

Company A produces and trades in consumer products with total employees numbering below 1000. Revenue for the year 2011 totalled RM0.2billion. The IAF was established in 2002 and is fully outsourced to external consultants, with the Head of Finance (CFO) as the liaison officer. The reason given for outsourcing is: "We feel that this is more cost effective."

The board of directors' report mentioned that the outsourcing will continue but a detailed review is expected on the functional capabilities and effectiveness of the service provider. Included in the 2011 annual report was a highlight on the financial irregularities which had created severe doubts on the credibility of the company's financial position. The CFO is professionally qualified with over 7 years of working experience. The audit team size from the service provider consists of 2 – 3 persons and the auditors perform operational audits.

Reports from the service provider were presented to the audit committee. There are 2 independent non-executive directors and 1 non-independent non-executive director.

Two directors have professional financial qualifications (chartered accountants) and the other has a legal qualification. The AC composition complies with the Bursa Securities Listing Requirements. The CFO will liaise with all heads of department on the status of actions taken by management on recommendations made on the audit findings. The status of audit findings is then reported to the AC. The CFO has said that the AC is very involved in the audit activities.

6.2.2. Company B

Company B provides information communication and technology services specifically software and systems developer as well as a public mobile data network operator. Total employees are below 1000. Group revenue for the year 2011 totalled RM0.06billion. The IAF was established in 1999 and was outsourced until 2009. The work of the internal audit provider was perceived as having no impact on the organisation:

> […] that report is very simple. For example, they will highlight that the leave application is not updated. […] That is not the real issue. There should be something material like why it is not updated.

> The auditors should not just take the argument that the document is private and confidential and cannot be seen by internal audit. By right, he or she has to inform or report to the Board […] Because of that, they cannot detect any collusion to defraud the company.

There are 2 internal auditors. The CAE is a chartered accountant with a financial audit background, a member of the Institute of Internal Auditors and has over 7 years of experience. The staff internal auditor has 3 - 4 years of experience. They perform operational, compliance and ad-hoc audits. The CAE indicated that collaborations of internal audit activities with other departments are in the area of legal compliance, health and safety, information security, human resource, process and performance audits. The report from a previous ISO audit on the information technology system was forwarded to the CAE. Further, combined audit assignments with the Procurement Department are done for investigative audits.

Internal audit plans and reports together with the status of internal audit findings were presented and reviewed by the AC. AC membership comprise 2 independent non-executive directors and 2 non-independent non-executive directors. One director has a

professional financial qualification (chartered accountant) and 2 others have a legal and administration background. The AC composition did not comply with the Bursa Securities Listing Requirements on the majority of AC members to be independent directors upon the resignation of one its members. The 2011 annual report stated that the vacancy will be filled. The AC is involved in the audit activities for example,

> Sometimes I have been asked to look at new company projects. […] I have been interviewed by AC before my appointment. For reporting, one week before AC meeting, report is given and they will have a meeting with the general managers. AC is quarterly, same day as with Board meetings.

The CAE believes that their work in internal audit is value-adding to the organisation with the following emphasis:

> […] in the open conference, we told them the function of internal audit and express what we do is not to find mistakes. […] We are looking for ways to improve. So far, they are very supportive of our recommendations.

> They can use my report as a medium as many situations may have not been brought to the attention of the Board. In the management responses, these are the weaknesses that they need to improve and they can tell their story and fine-tune how to solve that problem with the help of my report.

The CAE also supports the presence of an effective internal audit;

> To my mind, Bursa requires the internal audit function to protect the shareholders' interests, as a check and balance on how management use the money, regardless whether it is in-house or outsourced, as long as you have an internal audit function. So by right, a proper internal audit department is very important.

6.2.3. Company C

Company C provides an integrated brown field services for the upstream oil and gas industry including project management, procurement and logistics. It is certified with ISO 9001. Total employees are above 2,000. Group revenue for the year 2011 totalled RM0.6billion. The IAF was established in 2007 at the Group level and is outsourced until 2009 to a service provider. With the change in board of directors in late 2010, the AC decided to outsource the service to an audit firm and the firm is still auditing in specific areas: inventory, procurement and accounts payable. The internal audit

department was set up in July 2011 and the first internal audit plan was presented to the AC in November 2011. The in-house IAF is important due to:

> […] the Board stipulated that we should have an in-house IA function. […] when we outsource the service, there will be limited service […] they can't be doing any ad-hoc task.
>
> Secondly, their work is part of their business and the work involved will be calculated based on the fees. Nothing more, nothing less.
>
> […] the Board sees the function of the internal audit is vital to the company. So from time-to time, I have been requested to do or verify certain things. If you outsource this, then you cannot do that unless you pay for it.
>
> Previously, the holding company did not have a permanent team in this company. The holding company has their own issues and may station 1 or 2 very junior audit staff mainly to do compliance.

The department has 1 internal auditor with 3-7 years' experience and 4 with experience of above 7 years. Their backgrounds are in information technology, finance, accounting, marketing and engineering. They perform financial, compliance and ad-hoc audits. Due to staffing and scale of economies, the audit is done by 2 teams: permanent and temporary. The CAE further added:

> The permanent team is the one […] very familiar with the audit work. […] The temporary team will be on and off assignments; whenever we need them.

As such, there are collaborations of internal audit activities with other departments in the area of legal compliance, health and safety, information security, human resource and process audits. There is another department, Quality Assurance Department, reporting to the Chief Executive Officer, that conducts internal audit for ISO matters.

The CAE reports to the AC. AC members comprise 2 independent non-executive directors and 1 non-independent non-executive director. One director has professional financial qualifications (chartered accountant) and 2 others have legal, contract procurement and maritime backgrounds. The AC composition complies with the Bursa Securities Listing Requirements. The AC is perceived as being very active in the internal audit activities, for example,

> We have also established the whistle blower policy. […] The Board or the AC asks me to report on the complaints status I receive i.e., how many complains, what are the

> issues, which are valid etc. […] When we report to AC, AC asks us to put that as part of our audit scope.
>
> AC measures our performance. […] For me, I will discuss the performance with AC Chairman and CEO.

The CAE also believes that internal audit is of value. The following reasons were given:

> But we also work hand in hand with management. They will ask us how to comply with governance, internal control or have they done it the right way.
>
> Earlier this year, we have a change in the CEO. To him, IA is a value added service because now, he knows that everything is conducted according to the policies, procedures and within reasonable control environment.

6.2.4. Company D

Company D provides business process outsourcing services worldwide and is a top 100 Global Offshoring Company. It has SAS 70 certification and in the process of ISO certification for its data centre and building maintenance. Total employees are 1,500. Group revenue for the year 2011 totalled RM0.2billion. The IAF was established in 2003 and was outsourced until 2006 to an audit firm. The internal audit department was set up in July 2011. The views on outsourcing are:

> If you outsource then the continuity of business knowledge is not there because we can expect turnover in the team. […] it is much more expensive. It cost less if you only get them to do audit only 1 or 2 times a year.
>
> They cover only a broad area for example, accounts receivable and accounts payable.
>
> I'm looking at co-sourcing from IT department since we have only 1 IT specialist.

The department has 5 internal auditors with the CAE having more than 7 years of experience with accounting background. The others have 3-7 years' experience in information technology, finance and accounting. They perform performance, financial, information technology, operations and customer satisfaction audits. Internal audit team size is 2 persons. Work done by the quality assurance audit is not considered as internal audit, as follows:

> We call business unit report as QA/QC report because the reports are very operational. […] They will zoom in on the persons who have not complied.

> The QA report is very specific to the type of checks being made. Only internal audit issue audit report.
>
> The ISO audit findings are presented only at the ISO management meeting and do not go to the audit committee.

Collaboration of internal audit is done only on risk assessment with all business units because of the nature of the company's business. The CAE explained:

> Our group is very diversified − many businesses − and each business is unique.
> We need to understand the business and have to know what the key processes are.
> From the key processes, then I will look into what are the controls in place.

The IAF reports administratively to the chief executive officer and functionally to the AC. All 3 AC members are independent non-executive directors. One director has professional financial qualifications (chartered accountant and taxation) and 2 others have banking and administration backgrounds. The AC composition complies with the Bursa Securities Listing Requirements. The CAE stated:

> Audit committee looks at the function and scope of internal audit, competency of IA and staffing matters. … I have no restricted access to them.

The CAE sees the contribution of internal audit in the efficiency of business processes in the following areas:

> […] our group structure came about through mergers and acquisitions of various companies. […] we acquire also the set of culture and the set of people. So that is where internal audit comes in and we suggest streamlining the benefits, job structure, job grades, and procedures. They have done this in stages.
>
> For cheque processing, we have never pass the compliance audit by the banks with flying colours […] After our audit, for the first time the business unit pass the clients' audit without exceptions.
>
> We did the IT audit and give input to the process on migrating to a new system. Our views are taken into account in the requirements for the new system.

6.2.5. Company E

Company E is an integrated solutions provider and one of the leading communications company in Asia. The workforce is over 26,500 employees. Group revenue for the year 2011 totalled RM9.1billion. The in-house IAF was established for more than 10 years.

The department has 40 internal auditors. The CAE is a chartered accountant, a member of the Institute of Internal Auditors and CPA Australia with over 7 years of experience in the accounting and banking industry. Internal auditors have 3-7 years' experience in information technology, accounting, finance, engineering and network. The CAE added:

> Audit team is from 3-5 people. Normally there will be a team leader, member and account manager [...] who has the business skill.

The internal audit department also serves as a training ground:

> The desire is to bring people in and out as a training area for people to move on to a higher level, so that they have an overall view or helicopter view of the organisation and also developing skills for staff to be absorbed into the management team.

They perform financial, operational and investigative audits. Other departments conduct assurance activities on regulatory compliance, revenue assurance and telecommunication frauds. Collaboration of internal audit is done only on risk assessment and, health and safety audits, for example,

> […] we do control self-assessments whereby we assist a business unit, for example, if it has a bad internal control and risk management system, we have a session with them, following certain process and procedure to get them to identify what are their risks and what controls that are supposed to be in place.

> [...] risk management unit was set up in 2006 […] we are concern about risk and they do not have enough people to do it, so we help out as part of the value adding services.

The IAF reports to the AC. All four AC members are independent non-executive directors. One director has professional financial qualifications (chartered accountant and taxation) and the others have public administration, business and economics backgrounds. The AC composition complies with the Bursa Securities Listing Requirements. AC's involvement is mainly in the following areas:

> The AC approves our audit plan (scope plus areas), manpower, and function of the audit department.
> AC looks at results of internal audit. […] The responsibility on the actions is on the management.

The active presence of the internal audit department in corporate governance is reflected as:

> I see there are lots of issues on organisation structure in the sense that as usual as the company becomes big, they become silos […] compartmentalised into their line of business […] be very protective of their own area. This is something I'm trying to break the mindset; that at the end of the day, when they complete their job, they don't just pass it to someone else and don't care about it.

> I would actually rate on the whole performance of the audit; from the issues, how satisfied or how happy are the audit client because sometimes you might step on their toes, and efficiency of the audit. Most importantly, the coverage of the major areas […] There is no point of just going in and looks at compliance and non-compliance unless the objective is just to do compliance.

6.3. Data Analysis

The initial review of the interview data and the information in the annual reports was for 100 frequently used words including stemmed words. The results show the most frequently quoted words are those related to the audits and the major players in the organisations; board of directors and its' committees, managers and the management (*Figure 6-1*). Report is frequently cited with review, independent, execution, business, control and financial.

The transcribed interviews and text from the annual reports regarding internal audit activities were analysed using three sub-processes in thematic analysis: data reduction; data display and conclusion drawing/verification (Bryman, 2012; King, 2004b; Miles & Huberman, 1994). A detailed reading of the transcripts and archived information from the annual reports on corporate governance, specifically, the statement of internal control, AC and external audit report led to the identification of key themes or codes. An initial coding template (see Table 4-7 in Chapter 4 section 4.8.3) was used to organize the codes in a meaningful way.

Figure 6-1. Words frequently used in the interviews with CAEs and the annual reports of their organisations relating to internal audit

The focus during coding is on aspects that would answer the research questions and capture at a general level what are involved in the IAF. The unit of analysis is the sentences in the transcripts and the annual report. In line with the functional approach in understanding the practices of the IAF and the interaction with AC, the central focus in analysing the interviews is highlighting both the commonalities and the differences within and between these five interviews.

Common themes that emerged were grouped under the following high-order codes: i) establishment, ii) audit committee, and iii) corporate governance. The next section describes the differences in the profiles of the IAFs as described by their CAEs.

6.4. Key Differences in Profiles

All five participating companies have many similar important characteristics that may affect the perception on the manner the internal audit function is managed (see Table 6-1). In line with the suggestion by Bryman (2012), the interviews exemplify the IAF in public-listed companies, providing an appropriate context for answering the research question and allowing for the examination of key areas in IAFs.

Only one company has a fully out-sourced IAF. The audit report for the year 2011 of this company was qualified. The Head of Finance acts as the liaison officer with the provider of internal audit services and the AC.

The similarities in the companies' characteristics include that all companies report on the internal audit activities to the AC, and comply with the requirements of a minimum of three non-executive directors as members, AC chairman being independent, and at least a director be a member of MIA or association of accountants. Only one company did not comply with the requirement for the majority of AC member to be independent, which was disclosed in the annual report.

All CAEs have more than 7 years of working experience and are members of professional accounting and auditing associations. All four companies with in-house internal audit function indicated that collaborations were made in certain activities such as process audits, legal compliance, health and safety audits, information security audits and risk assessments. There is no combined audit undertaken.

Table 6-1
Overview of the characteristics of the five interviews

Characteristics	Company A	Company B	Company C	Company D	Company E
Industry sector	Consumer product	Technology	Trading/Services	Trading/Services	Trading/Services
Number of employees	Below 1000	Below 1000	1001 - 5000	1001 - 5000	Above 10000
Financial information (revenue range in 2011)	Below RM0.5b	Below RM0.5b	RM0.50 – 9.9b	Below RM0.5b	RM0.50 – 9.9b
External audit report	Qualified	Unqualified	Unqualified	Unqualified	Unqualified
Type of internal audit function	Established in 2002. Out-sourced. Officer-in-charge: Head of Finance	Established in 1999. Out-sourced until 2009	Established in 2007. Audits done by group internal audit and out-sourced. In-house 2011	Established 2003. Out-sourced until 2006	In-house >10years
AC composition: Independent Non-Executive Non-Independent Non-Executive Background: Finance Legal Administration and others	 2 1 2 – CA(M), FCA 1 - LLB -	 2 2 1 - FCCA, MIA member 1 – ICSA, ACI Arb. 1 – Public Administration	 2 1 1 –FCCA, MICPA, CA(M) 1 - FCI Arb. 1 – Master Mariner	 3 - 2 – CA(M), MICPA, ICAEW - 1 – Public policies and Administration	 4 - 1 – MIA member, FCCA, MICPA, CIMA - 3 – Public Administration, Economics, Business and Marketing
CAE/representative gender Age group Professional qualification Working experience	Female 30-39 ACCA >7 years	Female 40-49 CA(M), AIIA >7 years	Male 40-49 CA(M) >7 years	Female 30-39 CIA >7 years	Male 40-49 CA(M), CPA, AIIA >7 years
Number of internal auditors	0	2	4	5	40
Collaboration of internal audit activities with other departments	None	Process audits, legal compliance, health and safety audits, information security and human resource audits.	Process audits, legal compliance, health and safety audits, information security and human resource audits.	Risk assessment	Health and safety audits, risk assessment

6.5. Establishment of IAF

6.5.1. Outsourced IAF

The respondents have at some stage been involved in the outsourcing of the IAF. The services were provided by an independent internal audit firm, external consultants or the holding company. The following areas were assessed or addressed as stated in the annual reports and the interviews:

- detailed review of prevailing internal controls;
- adequacy, efficiency and effectiveness of the Group's internal control systems; and
- accounts receivable and accounts payable.

There are two rationales given for outsourcing:

- more cost effective; and
- the complexities of the business involved technology and required special or technical skills to be audited.

The reasons against outsourcing the IAF are:

- much more expensive − "It cost less if you only get them to do audit only 1 or 2 times a year, which equals to 1 or 2 audit reports" (Company D);
- the services were limited − "… their work is part of their business and the work involved will be calculated based on the fees" (Company C);
- ad-hoc tasks requested by board of directors could not be performed;
- no continuity of business knowledge because of turnover in the audit team;
- the auditors were unsure of areas with high potential for risk to be incorporated in the audit plan;
- reports were very general;
- report was very simple;
- report did not mention the real issue − "There should be something material like why it is not updated" (Company B);
- outsourced function was not making any impact;
- audit coverage was broad, for example, accounts receivable, accounts payable, inventory and procurement;
- the auditors cannot detect any collusion to defraud the company;

- no assurance of the qualification of the actual staff that was put to do the audit even though the person in charge seemed to have high qualification; and
- "…the holding company have their own issues and may station 1 or 2 very junior audit staff mainly to do compliance" (Company C).

Almost 33% of listed companies in Malaysia have outsourced IAF (Ahmad & Taylor, 2009). One of the audit areas in outsourcing noted above is the review of internal controls. Assiri and Sherer (cited in Turley & Zaman, 2004, p. 317) submitted that the internal auditors believed that ACs would have difficulties to assess the effectiveness of the organisation's internal control if the IAF was outsourced. This notion is supported as well, in this study by the ACs who noted the following about the outsourced function in their organisation that:

> due to the financial irregularities that have come to the Board's attention after the end of the financial year under review, the Board believes that there would be a need to review the effectiveness of the internal audit function to ensure that appropriate action is taken to enhance and strengthen the internal control environment. (Company A)

The reasons against outsourcing far outweigh those in favour. In summary, in-house internal auditors understand the companies' activities better than out-sourced auditors, reported on real issues that would affect business processes and are available to do ad-hoc audits. Most of the views reflect those who considered internal audit as a "core" function in organisations (e.g., K. Van Peursem & Jiang, 2008). The above findings also support the findings that companies with outsourced IAF are less able to detect management biasness and opportunistic behaviours (Johl et al., 2013).

The professional body, IIA, is not in favour of total outsourcing of the IAF particularly due to the adverse impact on the organisation's control environment (Vanasco, 1996). The major contentions forwarded against outsourcing, for example, to accounting or audit firms, are related to the independence of the providers. Internal auditing is viewed as a key management function which would be in conflict with the provider's responsibilities being independent of management. A fully outsourced service is also seen as an indirect advocate of management's claims on the status of the internal control.

The views of the CAEs imply the lack of effectiveness in the services provided when the IAF is outsourced. Moreover, this view was previously supported not just by the CAEs but by the AC chairmen in concluding that an in-house IAF was more effective than that which was outsourced (Soh & Martinov-Bennie, 2011).

6.5.2. In-house IAF

6.5.2.1. Auditors' competency and collaborations

CAEs are the leaders for the internal audit team. Since they are in senior management and expected to make a difference to business improvements and areas of corporate governance, the CAEs need to be leaders with high achievements, who show high abilities to perform internal audit practices. As leaders, the CAEs should be occupying the positions of leaders; perhaps the three classifications of leaders (see *Figure 5-3* in Chapter 5 section 5.5.7.) on the depiction of CAE's profiles based on Guttman's scalogram). A significant result which would impact greatly on business performance is the willingness of one of the CAEs to ensure quality services within the organisation. The CAE clarifies:

> I do not want to be the stumbling block, to prevent people from taking the initiative, provided they understand the necessary controls needed; whereas in this company, everyone wants me to certify things. So, this is a cultural change […] that I want to make. As the company becomes big, they become silos […] compartmentalised into their line of business […] very protective of their own area. This is something I'm trying to break the mindset; that at the end of the day, when they complete their job, they don't just pass it to someone else and don't care about it. (Company E)

To adequately fill the supporting role for management and making a difference or an impact on the business performance, the internal audit needs to be effective. Performing teams would have members who are clear on their goals and able to ensure their team members have the required knowledge (Rentsch et al., 1994; Rousseau et al., 2006). Moreover, internal auditors have been known to meet the expectations of ACs and senior management, even to the degree that the expectation is to compensate senior managements' loss of control through business complexity (Sarens & De Beelde, 2006).

Smaller internal audit team sizes, specifically teams with a maximum of 3 members, are found to perform better than bigger groups (see Chapter 5 section 5.7.3). Audit strategies that support those that are mentioned to improve audit coverage as suggested

by Benson (1995) such as the review of the operations and systems together with the associated risks are clarified as follows:

> Internal audit needs to look at which areas to audit and that is why I review at the macro level on my appointment. They do not have a risk profile. My approach was to go for general audit because previously it was outsourced. (Company B)

Although, the CAEs perceive that an in-house IAF is more beneficial to the organisation, they did not discount the need to have other skills within the internal audit team. Business processes are diverse according to the nature of business each organisation is engaged in. The diversity in the audit team to include non-financial experts is now becoming an audit strategy through various ways including collaborative audits with other departments. This can be seen clearly in the types of collaborative activities as shown in Table 5-17 in Chapter 5 section 5.7.7. Similarly, Sarens and Lamboglia (2014) concluded that outsourcing or co-sourcing was done to fill the gap in skills in personnel in the organisation in managing the IAF. Even though the internal audit performance is not positively influenced by the level of collaborations (H5), collaboration is still important to ensure the team's effective performance. This point is supported by the following comments:

> […] we have 2 teams approved by the AC; one is the permanent team and the other, temporary. The permanent team will the one who will know how to do the work […] very familiar with the audit work. The temporary team will be on and off assignments; whenever we need them. […] the HSE team are the ones who do the HSE inspections. They are very familiar with the work and secondly, HSE will have 1 staff to assist us during our visit. They will come together with us and visit the areas. (Company C)

> To get IT auditors is difficult and very limited. I'm looking at co-sourcing from IT department since we have only one IT specialist. I have highlighted to [the] audit committee that we might be doing co-sourcing. (Company D)

6.5.2.2. Critical audit activities

The supportive role of internal auditors for management specifically senior management are always asserted in areas such as identifying business improvements, risk management and matters of fraud and corruption (Goodwin-Stewart & Kent, 2006; IIAM, 2009; Thomson Reuters, 2012). Having the support of the senior management especially the chief executive officers is important as well, such as for unrestricted

access to staff, information and documentation (Sarens & De Beelde, 2006). The interviewed CAEs confirm this support; that they report administratively to the chief executive officers.

All CAEs say that planning is critical or most critical. “Internal audit needs to look at which area to audit and that is why I review at the macro level on my appointment.” (Company B). The following are said regarding planning:

- The audit plan is related to the business strategy;
- We identify the scope, the objective and the area that is going to be audited;
- If we do the scoping wrongly, we might not be able to cover the important areas or risky areas since we can’t audit the whole company;
- go for general audit because previously it was outsourced;
- audit plan is discussed among the chief financial officer, chief operating officer and heads of department;
- get feedback whether there are any issues that management want to raise or are of concern;
- give priority to the areas with significant risk or related to issues highlighted by management during the year;
- audit plan will look at previous audit findings and current company projects;
- communicate through e-mail and phone […] explain this is what I am going to do; and
- met with the heads of department to look at the checklist to inform them and to a certain extent agree on the areas of audit.

Many of the comments above could be related to the business processes and the interactions with the process owners. Expertise is required to ensure this planning activity is well conducted. The internal audit survey in this study has found that audit teams with high professional expertise, specifically teams with more than 3 expertise areas, have affected audit planning (H2a).

In the second stage of the internal audit, risk assessment is mentioned several times. The importance of risk management is highlighted by a CAE, as follows:

> They do not have a risk profile. […] The main weakness is that there is no risk management person to highlight the risk, and properly plan the project. (Company B)

This focus on risk and business processes are in line with recent developments in internal audit worldwide (e.g., Soh & Martinov-Bennie, 2011; IIAM, 2009; Thomson Reuters, 2012). Consistent with the analysis on questionnaire items difficulties (Chapter 5 section 5.5.6.2. b) Audit execution), two difficult items related to risk management in the quantitative stage − confirming key control areas (P06) and error detection with auditees (E03) − are reiterated in the following comments, indicating their importance in the internal audit process:

> People are doing things without understanding why they do it […] it is to determine the pulse or the consciousness of that manager. So when we ask him, he knows almost everything about the process. […] to get them be exposed to the methodology of how to assess their risks and react to those risks. (Company E)

For the next stage, adequacy of the internal audit report has frequently been referred to in the discussions of the effectiveness of the IAF. The CAEs (Company C and E) clarified that the internal audit reports presented to the ACs would give the board of directors the assurance that management reports are credible and management have complied with regulatory requirements. Further details about reporting to the AC are made in section 6.6.

In the final stage of the internal audit, monitoring of team members' activities and follow-up activities are also taken up seriously:

> They have not really identified the root cause. For example, the person did not sign, but I want to know why. It could have been that the manager could not care less. Now, this is where my staff has not got the exposure [...] when they go and audit, they don't dare to speak to the higher level and just speak to their counterpart and just look at the activities. So from now on I insist on knowing certain things. (Company E)

6.6. IAF Relationship with Audit Committee

The CAE's independent work within the organisations was described as being "the ears and eyes of the Board" (Company C). ACs' expectation of internal audit activities has greatly been on performance and compliance:

> At the end, what will make the AC happy are two things. First, when we […] can certify that this department is well controlled; management knows how to manage all their issues and they have delivered their results. Second, for areas that checks are only on compliance; who are they that have not done their work. (Company E)

From the description on the profiles of the companies interviewed, all respondents consider their ACs is very involved with the IAF. The resources including competency of the IAF are considered important and the review formed part of the duties of the ACs (Bursa Malaysia, 2009b). All CAEs were interviewed and their appointment decided by the AC. The review by ACs on audit plans included approving the annual budget, suggestions on audit areas and the competency of the IAF. The review on audit reports also included "format and depth, rating and opinion, nature of content or what is to be presented" (Company E). When question about the review of internal audit process, the CAE clarify:

> […] as far as I'm concern the AC do not give direction per se. But I'm being paid; supposed to be the expert in the processes. (Company E)

This comment serve to describe the perceived difficulty noted about the reviews by ACs on the internal audit process (AC06) and audit program (AC05). However, an unexpected involvement of the AC in the internal audit process is highlighted by other CAEs:

> They were very supportive and if we have any issues or challenges in performing the audit, I have no restricted access to them. I can talk to them to get their directions on what to do next. They will inform management what may affect internal audit. (Company D)

> The Board sees the function of the internal audit is vital to the company. So from time-to time, I have been requested to do or verify certain things. (Company C)

Generally, the results of the interviews indicate that the CAEs are well supported by the ACs and further explain why the involvements by ACs in the various internal audit activities: review of internal audit plan (H7 and H7a), review of the conduct of internal audit (H8 and H8a), and review of actions taken on internal audit recommendations (H9 and H9a); are significantly associated with the performance of internal audit. The comments above from the CAEs provide further insights to earlier studies on the level of involvement by ACs and the reporting lines of the IAF (Leung et al., 2004; Mat Zain & Subramaniam, 2007; Soh & Martinov-Bennie, 2011).

6.7. Corporate Governance

The final component investigated in this study is the impact of IAF on corporate governance measured by the number of recommendations for improvements. IAF should add value and contribute to business performance in areas of improvements (Soh & Martinov-Bennie, 2011). H10 proposes that high internal audit performance will be associated with increased recommendations for improvements of elements in the corporate governance framework. This hypothesis is supported (see Chapter 5 section 5.7.12). The expectation in providing an impact from the internal audit process and the importance of the reported audit findings is clarified by a CAE:

> The next critical [stage] is the exit meeting where you table your findings [...] The audit findings and the basis of the findings; those are very important to determine whether we have made any impact on the company." (Company B)

Specific areas identified to be reported (Bursa Malaysia, 2000; Fadzil et al., 2005; IIAM, 2009; Liew, 2007) include the following:

- assurance on internal control which encompass key controls and procedures;
- assurance on risk management; and
- business improvements, specifically in providing advice on identifying opportunities for revenue enhancement and cost savings.

The empirical evidence shows that internal audit performance is associated with the components of corporate governance (H10). The areas being focused by the CAEs interviewed are:

- financial audit;
- cost savings;
- procurement and asset maintenance;
- revenue management or assurance (contract performance, revenue leakage, billing system, customer satisfaction);
- project performance (completion, not following budget, costing before project kick-off, or not as scheduled or situations that could drag the projects)
- compliance to policies and procedures (internal and external, including regulatory bodies);
- risk management (risk register and prioritization, risk controller, risk assessment capability, disaster recovery and business continuity plan);

- control measures and efficiency of processes (sufficiency of controls, over control, improving predetermined controls, compensating controls);
- information technology (computerized systems, migrations);
- complaints and whistle blowing;
- fraud investigations;
- human resource management (approving authority, job structure and salary scheme, competency, general claims, disputes);
- retesting areas assessed in quality audits or business reports for assurance; and
- assessment of quality assurance program (management representative and document controller have taken appropriate actions on their audit findings and to ensure that for the next quality audit, actions such as updating the standard operating procedures and job descriptions are done).

Overall, these audit areas could be easily grouped with the components of corporate governance as mentioned in the research framework based on those of the World Bank (see *Figure 2-2* in Chapter 2 section 2.4.). The corporate failures mentioned earlier in the beginning of this study (see Section 1.1 in Chapter 1), had raised the issues of irregularities in business transactions and other financial misconduct. The areas given focus by the CAEs as noted above adequately cover the reviews or assessments on these concerns on irregularities and misconduct. As noted by Backman (1999, p. 24) the legal system in Malaysia "is relatively open, free of corruption, and fair." Further, Backman had alluded that the stock market in Malaysia is well-regulated. The initial findings regarding infrequent reports on fraud and corruption prevention (see section 5.5.6.3. in Chapter 5) lend support to Backman's statements. The overall index on IAF performance of 65.48% (see Chapter 5 section 5.6) has given an assurance that the CAEs has performed satisfactorily in creating an impact on corporate governance, based on the scale used by the Malaysian Government in performance measurement (Auditor General of Malaysia, 2008).

However, more research on this topic needs to be undertaken to provide further information how the findings in these areas of corporate governance effect the business processes and their performances.

6.8. Agency of Value

Three of the respondents had outsourced the function until recently. The CAEs interviewed acknowledge their agency relationship in acting "as a check and balance on how the management use the money […] Actually, the function of internal audit is more of the CEO's function." (Company B)

As pointed out by one of the CAEs, the presence of an IAF either outsourced or in-house is to comply with the listing requirements. Consequently, due to this compliance, the general public and the shareholders would perceive that there is good internal control and have confidence in the organisation. The organisation would legitimise the action to determine and continue with the type of IAF even though the IAF is ineffective, for example, as shown by the statement on the review of the effectiveness of IAF mentioned by Company A in section 6.5.1.

The in-house IAF shared common characteristics or homogeneity as stated in the institutional theory forwarded by DiMaggio and Powell (1983). As revealed earlier in the similarities of the CAEs' profiles, the interviewed CAEs are qualified and experienced professionals. Their profiles are also similar to the majority of the respondents of the survey (see Table 5-3 Chapter 5 section 5.3).

Further, in ensuring that the internal audit would be of benefit to the organisation, the CAEs would work closely with the management, including having feedback on the audit checklists (see item M06 in Chapter 5 section 5.5.6.2. d)) while maintaining their independence. They pointed out:

> Their feedback is very important because they are in the business. (Company D)
>
> […] look at which direction is the company moving to [...] which area that has high risk that we need to audit. One of the company's objectives is the need to minimise the cost of maintaining …. (Company C)

Overall, CAEs believe that they are valued as part of a team, whose actions, could affect the performance of their organisations. Team performance would require team members being able to set goals in congruent with the team's purpose and provide feedback for improvements (Rousseau et al., 2006). Dittenhofer (1997) had earlier suggested that

internal auditors should act as though they are a part of the management team; as a collegue or adviser to management, to gain their trust and not be classified as an outsider. Additionally, organisational identity dictates the roles of a unit or a group and most of the motivations for the actions of the team members which are consistent with the organisation's goals (M. Mills, Bettis, Miller, & Nolan, 2005; M. R. Mills & Bettis, 2006). An observation about leaderships is made by Khaliq (2001). He noted that "Asians generally put high value on friendship, good relations with people and the ability to adapt rather than to confront" and this trait is also attributed to Malaysians (Khaliq, 2001, p. 86 & 92). It is worth noting that the CAEs sense of identity as a team member, and being a valued team member of their organisations are strong, as explained below:

> When I go to each department and talk to the head of departments, in the open conference, we told them the function of internal audit and express what we do is not to find mistakes. We are part of the company even though we are independent. We are looking for ways to improve. So far, they are very supportive of our recommendations. (Company B)

> I always tell them if they have problems within their department for example, business projects, they could make use of my report as a tool. […] they can tell their story and fine-tune how to solve that problem with the help of my report. Management are more open to our suggestions. (Company B)

> At least we can give a comfort level to the management that what we are doing are according to the procedure and the international framework. […] we also work hand in hand with management. They will ask us how to comply with governance, internal control or have they done it the right way. (Company C)

> For planned audit, we look at process input and tell management what they can do better. We do not focus too much on compliance. Our focus is now to be their business partner. […] We will mention that there are other compensating controls that achieve the same objective. They can remove the control from the procedures instead of keeping the control and not doing it. (Company D)

> The desire is to bring people in and out as a training area for people to move on to a higher level, so that they have an overall view or helicopter view of the organisation and also developing skills for staff to be absorb into the management team. (Company E)

6.9. Summary

This chapter has clarified the empirical findings in Chapter 5, among others, about the activities in the IAF and the relationship between internal auditors and the ACs. The combination of findings, both quantitative and qualitative, provides support for the conceptual premises that internal audit is not just an agency with its legitimacy in the organisations being dictated by the fulfilment of regulatory requirements. The high commitment towards team performance of the CAEs, being a member of the organisation specifically senior management, points towards the internal auditor as an agency of value.

The next chapter concludes this study with the summary of the main findings, implications of the findings, areas of limitations and ends with avenues for future research.

CHAPTER 7: CONCLUSION

The Performance of the Internal Audit Function on Corporate Governance

7.1 Introduction

This study investigated the effectiveness of the IAF in three areas: AC reviews on IAF, internal audit activities and the internal audit findings on areas of corporate governance. This study uses a convergent mixed method where data are collected through a questionnaire survey and in-depth interviews with CAEs of public listed companies in Malaysia. The quality of the survey data was assessed using the Rasch model which provided detailed information about the responses given by the CAEs in terms of internal auditors' ability and the perceived difficulty of conducting the internal audit questionnaire items. Non-parametric tests are then applied to test the hypotheses. The interview data were analysed by themes and comparisons made on the views expressed by the CAEs about their IAFs and how they felt about their contributions to their organisations.

This chapter begins with a summary of the research questions and the main conclusions on the investigation made which merges both the results from the quantitative and qualitative phases. The remaining sections discuss the implications for research, policies and practices, research limitation and suggestions for future research.

7.2 Investigation on Internal Audit Function

The first recommendation for directors to report on the effectiveness of internal control was made in the 1992 Cadbury Committee report (Vinten, 2002). The regulatory provision for the listed companies also added that 'companies that do not have an internal audit function should from time to time review the need for one' and if there is one, to 'review annually its scope of work, authority and resources' (Vinten, 2002, pp. 28-29). These statements are the essence in the listing requirements about IAFs in Malaysia (Bursa Malaysia, 2000, 2009a, 2009b) which are investigated in this study.

The guiding research question is:
How effectively has the IAF in Malaysian public listed companies been practiced, in line with the level of collaborations and/or combined assurances, in an environment of espoused organisational excellence?

In addressing this question, the following areas were investigated and tested relating to:

I. What are the factors determining internal audit performance?
II. How does the AC affect the performance of the IAF?
III. How has internal audit enhanced corporate governance?

The factors outlined in the conceptual framework in Chapter 3 section 3.2 included internal audit structure: team size, member expertise and experience, combined audits and collaborations in audits; AC's involvement in the IAF: ACs' composition, reviews of internal audit planning, conduct of audit and audit recommendations; activities in each internal audit stage; and the areas of corporate governance where findings were made by internal audit. Results indicate that some of the factors did contribute to the effectiveness of IAF and impacted on corporate governance.

I. What are the factors determining internal audit performance?

To analyse this, the Rasch measurement model is used to examine what activities are critical to the conduct of internal audit (see Chapter 5 *Figure 5-2* section 5.5.5. and Table 5-8 in section 5.5.6.). With the non-parametric tests and further information from the interviews with CAEs, the following conclusions are made:

1. The qualitative analysis has identified that an in-house IAF contributes in determining the effectiveness of internal audit performance. By having an in-house function, the scope of internal audit are better able to cover specific risk areas and all business processes that would impact generally on governance (see Chapter 6 sections 6.5.1 and 6.5.2.1). The findings support other studies and views that indicate that an in-house IAF is more able to support ACs in ensuring the effectiveness of an organisation's internal control (e.g., K. Van Peursem & Jiang, 2008; Soh & Martinov-Bennie, 2011; Vanasco, 1996).
2. At all stages of the internal audit, certain internal audit tasks, prescribed as best practices, are more difficult to perform such as confirming key control areas

with auditees (P06), getting unrestricted access to information (P10), monitoring auditors' competency (P04), checking with auditees on how to detect errors (E03), using statistics to review systems performance (E04), audit reports are accepted without further queries (R04) and receiving reviews on checklists (M06). A majority of the findings are consistent with previous related studies on specific areas of internal audit (Abdullah et al., 2008; Abdullah & Masodi, 2012; Cooper et al., 1994; Cooper et al., 1996; Fadzil et al., 2005). The difficulties may relate to areas of competencies that the internal auditors could improve through up-skilling training activities.

3. Internal audit monitoring, comprise mainly of follow-up audits on audit recommendations and improvement activities, is relatively more difficult than other stages of internal audit (see *Figure 5-2* in Chapter 5 section 5.5.5). Audit team size, specifically team size of a maximum of 3 persons, significantly contributes to effective audit monitoring (H1d in Chapter 5 section 5.7.3). The findings on team size support the importance of having a team with an optimum size to facilitate the review process (Firth-Cozens, 1992; SANS Institute, 2007).
4. Audit team expertise instead of team experience affects internal audit planning. The post-hoc test showed that team expertise covering more than three areas significantly affects internal audit planning (H2a in Chapter 5 section 5.7.4). The interviews with CAEs also have indicated the importance of team dynamics, specifically size and expertise, to facilitate their internal audit activities.
5. The findings from the in-depth interviews with the CAEs showed that the CAEs view internal audit planning and monitoring as very important to ensure effectiveness in internal auditing (see Chapter 6 section 6.5.2.2). These views support the earlier findings in the quantitative analyses.
6. Even though the quantitative analysis did not show that collaborations are positively associated with internal audit performance, the interview data highlighted that collaborations are seen as a strategy for CAEs to perform effective audits to manage the gap in team expertise, such as audits of risk management, legal compliance and information technology (see Chapter 6 section 6.5.2.1). This finding supports Sarens and Lamboglia's (2014) conclusion that co-sourcing is done to breach the gap in expertise.

7. Combined assurance does not affect internal audit performance according to the quantitative analysis. However, the presence of combined assurance (26.5%) as shown in Table 5-16 in Chapter 5 section 5.7.6 suggests that combined assurance is recognised as a strategy used in internal audits (Benson, 1995; Pun et al., 2001). The result of this study provides additional knowledge about this internal audit strategy which could be investigated further.

II. How does the AC affect the performance of the IAF?

This research examines the IAF of listed companies, and an in depth explanation is made on the listing requirements on corporate governance in Malaysia in Chapter 2 sections 2.2.3. and 2.5. Various components of the IAF are investigated and the majority of the hypotheses that are supported relate to the interactions of ACs with the IAF (see Table 5-20 in Chapter 5 section 5.8). The following conclusions are derived from the reviews by ACs on the IAFs:

1. Different professional competencies of AC members do not influence internal audit performance. A majority of the respondents (70.6%) has 3 members in their ACs, which is the minimum number specified by the listing requirements. One of the members must have a financial background. The data from this study is consistent with those in previous studies (Haron et al., 2005, 2010; Mat Zain & Subramaniam, 2007). The qualitative data also shows that this requirement on professional background (see Table 6-1 in Chapter 6 section 6.4) is complied with. Even though ACs' professional competency does not influence internal audit performance, the interviewed CAEs view the ACs as supportive of the internal audit activities.
2. At the professional and regulatory level, effective relationship between ACs and the IAF has always been highlighted (Bursa Malaysia, 2009b; Deloitte, 2012; MIA, 2012; Vanasco, 1996). The current study is the first investigation on the specific regulatory requirements of Malaysian public listed companies regarding this relationship. The quantitative analyses show that the active reviews made by ACs in each stage of internal audit affect the performances of the related stage in the internal audit process, specifically:
    - Reviews of internal audit planning by ACs affect positively internal audit performance and the internal audit planning (H7 and H7a).

- Reviews of internal audit execution by ACs affect positively internal audit performance and the conduct of internal audit (H8 and H8a).
- Reviews of actions on internal audit recommendations by ACs affect positively internal audit performance and the internal audit reporting and monitoring (H9 and H9a).

The results support the recommendation by Schneider (2010) that ACs be involved in the determination of IAF resources and competency. The qualitative data also support the findings about the CAEs' appreciation for the ACs' active participation in the CAEs' appointments and the monitoring of management's actions on internal audit findings (Mat Zain & Subramaniam, 2007). The new empirical evidence in this study has also addressed the question on whether the quality of ACs' activities has a direct relationship with internal audit performance (Haron et al., 2005; Mat Zain & Subramaniam, 2007).

3. The results of the Rasch analysis shown in Table 5-8 in Chapter 5 section 5.5.6 and the findings in section 5.5.6.1 confirm the finding that the reviews of internal audit reports are always done with the greatest ease (Mat Zain & Subramaniam, 2007; Turley & Zaman, 2007). However, the most difficult task or relatively infrequent reviews by the ACs are the reviews of audit programs, internal audit processes and the resources of IAF. The quantitative results on these infrequent reviews by ACs are consistent with the views expressed by the CAEs in the in-depth interviews (see Chapter 6 section 6.6). The expectation that CAEs are the expert in the internal audit activities, as mentioned by the CAE of Company E, may be the most probable reason for these infrequent reviews and could be investigated further.

Overall, the focus on ACs interaction with IAF is justified. The robust results on the hypotheses tested indicate that the reviews by ACs on all stages of the internal audit activities are significant to the effectiveness of internal audit, and concurrently, have an impact on corporate governance.

III. How has internal audit enhanced corporate governance?

The third area investigated is how internal audit has enhanced corporate governance. Corporate governance is said to be beyond compliance and its purpose is to provide for

avenues of improvements in organisations (Arguden, 2010). There should be definitive areas identified in the corporate governance framework where improvements could be made by the senior management arising from the internal audit findings. The World Bank's (1991) framework for corporate governance (see Chapter 2 section 2.4) is used in this study to identify the findings raised by the IAFs in recent years. The Rasch analysis successfully map the relative difficulty of the internal audit findings based on the dimensions of corporate governance against the dimensions in the internal audit process and the involvement of ACs in the review of the internal audit activities (see *Figure* 5-2 in Chapter 5 section 5.5.5.). Overall, corporate governance items are more difficult to be determined then items tested for AC's involvement and the internal audit activities. The following conclusions are made:

1. High levels of internal audit performance are associated with increased recommendations for improvements of elements in the corporate governance framework (H10). The expectation that internal audit needs to have an impact on corporate governance is also mentioned in the in-depth interview (see comments by CAE of Company B in Chapter 6 section 6.7).
2. The World Bank's corporate governance framework (1991) is appropriate in determining the impact of internal audit on corporate governance. The dimensions as shown in *Figure 2-2* in Chapter 2 section 2.4 provide a basis for the linkage between IAF quality and its' impact on corporate governance (Sarens, 2009). This initial linkage could be explored further to find out the extent of improvements made and the impact on business processes.
3. The quantitative analysis identifies that internal audit findings on financial matters such as expenditure and revenue management remain the major issues frequently raised by IAFs. The results suggest that these areas are constantly being assessed in the audit plans, being areas customarily assessed (Al Athmay, 2008). The qualitative data also identify similar areas being given focus by the CAEs that are related to the financial matters, such as; financial audit, procurement and asset maintenance, and revenue leakage (see Chapter 6 section 6.7).
4. The Rasch analysis identifies issues such as corruption prevention, conflict resolution, information transparency and economic performance are not usually reported. These areas are areas that internal auditors could use to identify

irregularities and if improved upon by management, could lead to better risk management and fraud detection. In contrast, the CAEs interviewed have indicated that they have focused on risk management, fraud investigation, complaints and whistle blowing. The qualitative data supports the survey findings that most IAFs personnel were trained in fraud investigation and the internal audit used a risk-based approach (IIAM, 2009). However, IIAM (2009) also found that 20% of the respondents have stated that none of their internal auditors had been trained for fraud prevention, and this may have contributed to the infrequent reporting of areas relating to corruption and conflict resolution, taking into consideration Backman's (1999) view that the Malaysian environment is relatively not affected by corruption. Moreover, the results on team expertise (H2a) and the lack of fraud detection expertise highlighted by IIAM (2009) would also suggest that the internal auditors need to enhance their expertise in fraud prevention. Further training in fraud prevention would also necessarily lead to better knowledge in information system, enabling ease in performing information system audits and risk assurance (areas where collaborations are identified).

The theoretical framework for internal audit is firmly rooted in the agency theory, which explains why organisations have internal audits. The IAF works within the premise that the internal auditors are independent agents, assigned to monitor the internal control of organisations and assessing the performance of business processes. In order to sustain and excel in business performance, organisations would adopt strategies such as accreditation and teamwork excellence. How these strategies affect internal auditors, whereby CAEs are part of the senior management teams, could be interpreted in the views expressed by the CAEs (see Chapter 6 section 6.8). The conclusions from the collective explanations by the CAEs about their presence in their organisations as providing value are:

1. The internal auditors believe they are independent agents even though they also provide advisory services, such as in risk management and compliance activities.
2. Internal auditors perceive themselves and are seen as a valued team member who provides feedback to management in capacities more than monitoring of

business performance. This view confirms the collegial style that could lead to success in internal auditing forwarded by Dittenhofer (1997). One of the CAE's has also clarified that the IAF is a training ground for managers.

3. The identification of in-house IAF as a management team that makes a difference to the business performance indicates their presence in the organisation serves more than a legitimate reason and compliance to institutional obligations (cf. Taylor, Sulaiman and Sheahan, 2001) Instead the organisational identity and identification theory describes the position of internal auditors better since they view their presence as part of a performing team that is essential in ensuring the continued existence of their organisations. The CAEs' views agree with the actions identified by others (M. Mills, Bettis, Miller, & Nolan, 2005; M. R. Mills & Bettis, 2006) when the members of an organisation identify themselves with the organisation.
4. The in-house internal audit function provides more value than outsourced providers because in-house internal auditors are familiar with the business processes. This finding supports the views that internal audit is a "core" function which is better able to detect management biasness and irregularities when there is an in-house team (Johl et al., 2013; K. Van Peursem & Jiang, 2008).

7.3. Implications

7.3.1 Theoretical Implications

This study has added new knowledge on internal auditing in Malaysia. While many studies have examined internal audit solely using agency theory or legitimacy theory, this study additionally reviewed other theories. IAFs' main objectives are to ensure effectiveness of internal control and business processes amidst current business strategies of organisational excellence. Most organisations adopt strategies which include risk management and international certifications for their goods and services. Excellence in services requires performing teams as described by Vaill (1982) in section 2.3.4. p. 23. The internal audit team is considered a performing team. Since the CAEs are mainly in the middle and senior management levels (see Table 5-3 section 5.3) and reporting to the ACs, the internal audit team could also be placed in the the senior management team of an organisation. The positioning of IAF within their organisations

is within the precepts of agency and institutional theories. However, the views expressed by the interviewed CAEs of their services and their perception of their vital presence in their organisations in assessing internal control, risk management, and being involved in business processes in an advisory capacity, have clearly shown that their presence is identified more with organisational identity and identification theory. Hence, the presence of in-house IAF can be considered as an agency of value, being identified and recognised as a valued senior management team within the corporate governance structure.

7.3.2. Implications for Research Methodology

Research on corporate governance has only considered the OECD's definition of corporate governance, which deals mainly with stakeholders interests. An internal audit involves reviewing the way business is carried out including reviewing the governance structure, via the decision-making process and the necessary systems put in place to disseminate information and making decision-making transparent. The use of the World Bank (1991) corporate governance framework has provided a structure to examine where an effective IAF has made an impact through the recommendations made arising from the internal audit. Consistent with the suggestion by Vanasco (1994), the areas highlighted in the audit reports that could easily be related to business processes would better guide the senior management in what actions/improvements to make.

Unlike other studies on internal auditing that focused on specific areas such as internal audit activities and audit committees, this study include both these areas and the components of the IAF structure. By including team compositions such as experience, expertise, team size, and collaborations of audits, this study provides a deeper insight into the internal audit activities and the relationship with ACs. The audit strategies undertaken by the in-house IAF are relevant to the effective performance of the IAF. Without the investigations into the effects of the internal audit structure on internal audit, the level of impact of certain audit strategies, areas not researched before, such as expertise and collaborations would not be uncovered and be researched further.

The approach taken in this study, convergent mixed method, provides more insight on the IAF performance that cannot be confirmed by the quantitative method alone. The

significant associations of certain factors in the overall assessment of the IAF through the tests on hypotheses could be compared and substantiated with the information derived from the interviews made with CAEs who come from a different industry background, having experienced situations with outsourced and in-house IAFs. For example, even though collaborations are not significantly related to internal audit performance in the quantitative analysis, the interviewed CAEs asserted that collaborations are used to fill the gaps in audit team expertise.

Additionally, the quality of the data is assessed by Rasch measurement analysis. The analysis has provided information on the level of difficulties in performing each task; internal audit activities, the reviews by ACs on the IAF, and gave insights on the issues relating to the different dimensions of corporate governance. The knowledge about the level of difficulties in the task investigated in this study could be used to substantiate the information gathered through the in-depth interviews and further hypotheses testing. Lastly, the Rasch measurement has provided a model to determine the probability of success in the performance of IAF, which could be used as a performance index. The first study using Rasch measurement in audit research was done only on one area, to determine the success of performing internal audit activities (Abdullah, A Rashid, & Masodi, 2008), without considering the components of ACs' involvement or the impact of internal audit on corporate governance. Rasch measurement is already entrenched in the field of medical sciences and education (e.g., Green et al., 1984; Griffin, 2007; Tennant, McKenna, & Hagell, 2004). Future research in audit using Rasch measurement may benefit more in investigating the richness and making meaningful inferences of collected data.

7.3.3. Implications for Policy Makers

The results of the interviews pointed to the importance of having an in-house IAF. The policy for mandating an IAF without specifying the type of IAF may need to be reviewed in view of the findings from both the quantitative and qualitative enquiries which suggest greater reviews be made by ACs for each stage of the internal audit. Such increase in reviews will not be possible if the IAF is fully outsourced.

This study supports the views expressed by others regarding the interaction of IAFs and ACs (Goodwin, 2004; Mat Zain & Subramaniam, 2007; Turley & Zaman, 2007). ACs' authority, the required expertise specifically having financial background and ACs' reviews on the internal audit work are essential in ensuring that IAF are effective. Since the reviews by ACs directly affects internal audit performance, the findings regarding difficulty in accessing information and the lesser intensity in the reviews of internal audit resources, processes and programs may need to be addressed by the regulatory bodies to further enhance the effectiveness of ACs.

The areas of findings investigated by using the World Bank (1991) corporate governance framework would aid the ACs to better review the internal control of organisations. Audit findings could be reported by using all or some dimensions of the corporate governance framework: legal framework/corporate policies, information and transparency, management improvements, and accountability (see *Figure 2-2* in Chapter 2 section 2.4.). The internal audit report would provide an overall view of areas being managed well and areas impacted by deficiencies in the internal control or business processes corresponding to the dimensions listed above.

7.3.4. Implications for Practice

For a successful implementation of a performance system, where a process is sequential, the initial stage needs to be executed properly before the next stage is undertaken (Waal, 2003). Internal audit activities are sequential, from audit planning to audit monitoring. The most crucial stage is internal audit planning because this will determine the scope of the audit, detailing areas of concern to be reviewed, audit objectives, audit procedures and the composition of the team members. The communication with the AC at this stage should also include feedback from management on significant risks, internal control and any limitations on the scope of internal audit processes (Bailey, 2007). With the present low reviews of resources, internal audit processes and programs highlighted by the present study (see Chapter 5 section 5.5.6.1 and Chapter 6 section 6.6), greater communication with the AC is required. A review may be necessary to evaluate the possibility of establishing practice notes in detailing the reviews by ACs on the IAFs necessary to comply with the listing requirements.

Team structure for an in-house IAF is very important to the quality of the internal audit. This means an IAF that comprises of only one, the lone CAE in some instances to satisfy the listing requirements, is inadequate. The results and analyses suggest that the minimum number should be three. Inadequate number of internal audit resource has the potential to lead to inadequacy of monitoring activities, thus follow-up activities are ineffective in assessing the effectiveness of corrective and preventative actions taken by management in improving their business processes or managing their business risks. The roll-over effect will be insufficient information necessary to plan for the forthcoming audit; the significant effect of the previous audit findings on the business processes which should be considered in the determination of areas to be audited and the audit tests to be performed.

The skill or knowledge gained in only the same area would not suffice to handle different risk situations as businesses expand through mergers and acquisitions and business innovations. Currently, businesses are more focused on areas such as corporate responsibility and sustainability, cyber threat management and social media. Hence, expertise in other areas related to the business processes is required and internal auditors need to equip themselves with the necessary knowledge to enable them to audit effectively. The results and analyses suggest that the team members should have more than three expertise areas. Strategies that could be used to bridge the gap in skills and knowledge may be through the use of collaborations, which is now gaining acceptance by the CAEs. The presence of combined audits as an audit strategy is also an avenue that the CAEs could use in improving the effectiveness of their internal audit such as combining performance audit with risk management or health and safety audits. More collaborations and combined audits should be encouraged as this could help to ensure that there is adequate and effective use of resource to perform internal audits that would provide a thorough coverage of business processes.

Effective internal audit function positively impacted corporate governance. The suggestions by Gramling and Hermanson (2009) and Sarens (2009) on the usefulness of the internal audit reports and the frequency of actions based on the audit recommendations on corporate governance are pertinent. Effective internal audit function positively influences the findings in corporate governance. With a competent

internal audit team who have the necessary expertise, together with quality interactions with the ACs through their reviews of various stages of the internal audit process, better evaluation of corporate governance can be achieved. With this scenario, the ACs will be kept informed about significant audit findings which may include conflict resolution, inefficiency, irregularities or corrupt practices and ineffectiveness of systems such as information dissemination and retrieval. The increase in responsibility and perceived high success (77%) in fraud detection (IIAM, 2009) did not emerge in this study; rather, corruption prevention and conflict resolution are found to be very infrequently reported. The internal auditing standards have underscored that audit reports should bear significant findings and highlight what actions had been made by senior management (Vanasco, 1994). With constant and quality feedback to the ACs which include whether the areas highlighted are showing deficiencies or otherwise, improvements in corporate governance identified by using the dimensions such as those using the World Bank's framework (1991) could be made.

7.4. Limitations of the Current Study

The following limitations are to be considered when interpreting the results in terms of generalising the IAF practices to those outside Malaysia and data sources.

7.4.1. Small sample size

The sample size of 68 responses could be improved. All the data were obtained through the cooperation of the Institute of Internal Auditors Malaysia (IIAM), the professional body for internal auditors in Malaysia. The institutional policy in not participating in surveys, mentioned in Chapter 4, has also led to the small number of responses. Although this sample size is comparatively acceptable relative to other studies in internal audit, another approach is to get the cooperation of the Bursa Malaysia who is the regulator for all listed companies in Malaysia.

7.4.2. Generalisability

This study is located in Malaysia and limited to public listed companies. Non-listed companies and state owned companies have not been included even though combined assurance activities may exist, especially when these companies are already practising

internal audit for a variety of reasons. The results from this study may therefore not be generalisable to state-owned companies and to other countries.

7.4.3. Sensitiveness of the Study

Internal auditors are enjoined to confidentiality of information. Not just internal auditors but also external auditors, advocated change to uphold this confidentiality required in their independent reviews of the organisations. It is possible that the respondents may be reluctant to provide information on the areas of corporate governance where they have made findings, even though confidentiality as to their identity has been assured through non-identification of survey instruments and the mail-out was done only by IIAM. Therefore, the study only focuses on the number of findings in each area; without any specifications as to the exact findings which needed corrective or preventive actions by management. Although other studies have supported the use of outcomes to gauge the effectiveness of internal audit (Dittenhofer, 2001) the results may not be indicative of the extent of the impact on corporate governance due to the sensitiveness of information.

7.5. Suggestions for Future Research

Several avenues could be explored:

7.5.1. Extending Rasch measurement

This study has extended the application of the Rasch measurement, often used to measure performance in the field of medical sciences and education, to assess the overall performance of the IAF, the respective internal audit activities and the IAF's impact on corporate governance. For the component of the involvement of AC in the IAF, the present study assesses only eight areas in the review of the IAF. Future studies could explore other determinants of the internal audit performance, such as the reviews as listed in the internal control statement of the listing requirements and specific activities in risk management.

7.5.2. Respondents for qualitative enquiry

Previous research has alluded to the lack of interactions between the ACs with CAEs (Haron et al, 2005). The views of CAEs in this study lend further insight to the

quantitative analyses results especially the level of interactions between these two parties. This study looks at the perception of the providers themselves about the internal audit activities. How accurate this perception will depend on the level of self-insight of the CAEs on their IAFs' performances. Other views could be those of the AC members, senior managers and external auditors.

7.5.3. Data collection

The sample has been taken from the list of IIAM's corporate members. In light of the limitation on small sample, to further increase the sample size, the sample could be extended to include both the main board and the second board companies. This could allow for a more flexible approach in researching the IAF and its related components.

7.5.4. Research paradigm

The present study uses a functionalistic paradigm to examine issues pertaining to the IAF and corporate governance. It also uses an interpretive approach to better understand the agency relationship of internal auditors in their organisations. Other paradigms like critical realism and pure interpretive approach may provide a different dimension to explain the relationship of the IAF and corporate governance. Such paradigms may necessitate the use of case studies to gauge the performance of the internal audit function by conducting in-depth interviews and gathering data through other means with respondents which could include CAEs, ACs and senior managers.

7.6. Conclusion

Literature on internal audit has recognised the need to have quality in internal auditing. There has been a growing focus among the professionals and the regulatory bodies for internal audits to be of value to the organisation and in helping their organisation to manage risk and in reducing the occurrence for fraudulent activities which may result in financial failures.

The findings in this study have enriched our understanding of the performance of internal audit functions and its impact on corporate governance with further suggestions on future research.

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Appendix 1 *Questionnaire*

INTERNAL AUDIT SURVEY

Thank you for participating in this survey. This is an anonymous questionnaire. You should read the Information Letter carefully as it explains fully the intention of the study. Please ensure that you do not write your name (or any other comments that could identify you) on the questionnaire. By completing the questionnaire, you are consenting to take part in this study. This questionnaire presents a list of items which represents activities during an audit process from inception to the closing of an audit finding. Should you have any query on this study, kindly contact me at the following email address: razimaha@our.edu.ecu.au. Please return the completed survey by 30th April 2012.

Individual information

1. Gender
   Male [M] ☐ Female [F] ☐

2. Age
   20 – 29 [1] ☐ 30 - 39 [2] ☐ 40 - 49 [3] ☐ 50 – 59 [4] ☐ Above 60 [5] ☐

3. Management level
   Supporting Staff [1] ☐ Executive [2] ☐ Middle Management [3] ☐ Senior Management [4] ☐

4. Educational background
   Diploma [1] ☐ Bachelor [2] ☐ Postgraduate [3] ☐

   Area of specialization: Accounting [1] ☐ Finance [2] ☐ Economics [3] ☐

   Others (please specify): [4]. ☐ ……..

5. Years of experience
   < 3 years [1] ☐ 3 – 7 years [2] ☐ > 7 years [3] ☐

Company Information

1. Industry sector: ……

2. Size of Organisation (Revenue in RM billion in last financial year):

   Below 0.5 b [1] ☐ 0.5 – 9.9 b [2] ☐ 10 – 19.9 b [3] ☐ Above 20 b [4] ☐

3. Number of employees:
   Below 1000 [1] ☐ 1001 – 5000 [2] ☐ 5001 – 10000 [3] ☐ 10000+ [4] ☐

4. Type of Internal Audit Department

   Financial [1] ☐ Quality [2] ☐ Others (please specify) [3] ☐

   …….

5. Your department's reporting level in the organisation

Audit Committee [1] ☐ Head of Department/ Management Meeting [2] ☐ Board of Directors[3] ☐

Others (please specify) [4] ☐ ….…….

6. Size of internal audit department and background (total number of persons): ……

(please specify number of persons in the boxes below)

Finance [1] ☐ Accounting [2] ☐ Information Technology [3] ☐

Engineering [4] ☐ Others (please specify area of expertise and number of persons) [5] ☐

……

……

7. Internal auditors years of experience (please specify number of persons in the boxes below)
< 3 years [1] ☐ 3 – 7 years[2] ☐ > 7 years [3] ☐

8. Does your organisation have any certification or accreditation, for e.g., ISO9001, ISO14001, ISO17025, which requires internal audit to be conducted? Yes[1] ☐ No[2] ☐

If Yes, please specify all certification or accreditation held:

…….

…….

9. The number of internal auditors that make up an audit team for an audit assignment:

…..…… persons

10. If there is another department that conducts audits for example, quality management or environmental audits , please specify:

Department name: ……..

Educational background of Head of Department:
Diploma [1] ☐ Bachelor [2] ☐ Postgraduate [3] ☐

Size of department and background (total number of persons): ……
(please specify number of persons in the boxes below) …

Finance [1] ☐ Accounting[2] ☐ Information Technology[3] ☐

Engineering [4] ☐ Others [5] ☐

If others (please specify)
……

Reporting level in the organisation (please specify): ……..

11. Composition of Audit Committee

a. Number of Audit Committee members: …… persons

Executive directors: …… persons Non-executive directors: …… persons

Independent directors: …… persons Non-independent directors: …… persons

b. Professional background of Audit Committee members

Membership of professional bodies:

Malaysian Institute of Accountants (MIA): …… persons

If the Audit Committee members hold other professional memberships other than with MIA, please specify:

……..: …… persons
(Name of professional body)

……..: …… persons
(Name of professional body)

……..: …… persons
(Name of professional body)

……..: …… persons
(Name of professional body)

12. For any given audit assignment, has there been any collaboration with staff outside of your internal audit department? Please specify the frequency of such occurrences in the past two years. If the type of audit activity has not been conducted at all, input N/A in the column for *Types of audit activities*. If there has been no collaboration in relation to the audit activity, input N/A in the columns for *Staff / department collaborated* and the relevant years.

Types of audit activities	Staff / department collaborated	Year 2009	Year 2010
E.g. Legal compliance N/A			
E.g. Risk assessment	*Research & Development;* *Procurement & IT*	N/A 3	2 N/A
Risk assessment			
Legal compliance			
Health and safety			
Information system security			
Process audit			
Performance audit			
Human resource audit			
Environmental and sustainable development			
Others (please specify)			

13. For any given audit assignment, have there been any instances that each of the audits in Q12 were conducted together with one or more types of audit? Please specify the frequency of such occurrences in the past two years. Input N/A if none of the audits were combined.

Types of combined audit activities (Please specify the combinations)	Staff / department collaborated	Year 2009	Year 2010

14. What is the level of involvement of the reporting authority (audit committee or other committee) in the following activities?

For each item, circle one of the numbers:
1 – **Never**, **2 – Sometimes, 3 – Usually,** and **4 – Always.**

a.	Review the scope of the internal audit activity.	1	2	3	4
b.	Review the functions of the internal audit department.	1	2	3	4
c.	Review the competency of the internal audit function	1	2	3	4
d.	Review the resources of the internal audit function	1	2	3	4
e.	Review the internal audit program	1	2	3	4
f.	Review the internal audit processes	1	2	3	4
g.	Review the results of the internal audit	1	2	3	4
h.	Review the actions taken by management on the recommendations of the internal auditors	1	2	3	4

15. Please identity the areas and frequency of occurrence where issues or weaknesses has been reported by internal auditors in the following areas. Input N/A if no issues were raised or reported in the internal audits conducted.

Areas in which issues or audit findings raised	Issues Raised (Number)		Recommendations Implemented (Number)	
	2009	2010	2009	2010
Revenue management (delivery of goods and services, collection procedures, demand forecasting, pricing)				
Expenditure management (budgets, capital expenditures, inventory management, outsourcing)				
Personnel management (recruitment, orientation, staff development, performance appraisal, planning personnel needs)				
Financial performance (financial systems, investments, compliance with debt covenants, audit reviews, fraud detection, financial leverage)				
Economic performance (identification of waste and inefficiencies, profitability of ventures)				
Complaints procedure (feedbacks, hotlines, complaints, actions on complaints)				
Rules and policies change procedure (availability of rules and policies, standard operating procedures, frequency of updates, audit mandates, reporting structures, risk management)				
Compliance to rules (workable rules, traceability of transactions, reduced arbitrariness, management policies and rules do not conflict with existing laws and regulations)				
Rule enforcement (authorization process, competent administrators)				
Conflict resolution (binding decisions on disputes, arbitration)				
Information transparency (availability of financial results and decisions by management, results of risk and environmental assessments)				
Corruption prevention (tender process for procurement, 'whistle blowing', joint appraisals of projects, off-budget expenditures)				
Analysis of data (statistical techniques, use of relevant data, productivity analysis)				
Dissemination of information (management information system, clarity and accuracy of information)				

Appendix 1 *Questionnaire*

Each category represents **your degree of perception as auditor** towards each item when you conduct an audit. For each item, circle one of the numbers:
1 – **Never**, **2 – Sometimes, 3 – Usually,** and **4 – Always.**

16. How would you rate the occurrence of the following activities in relation to the internal audits in your organisation?

1.	Set performance objectives that management had identified for business process as a reference point in audit program.	1	2	3	4
2.	Set key performance metrics such as budgeted vs actual audit time for audit assignments.	1	2	3	4
3.	Appoint auditors with the necessary skills relative to the complexity of the area to be audited.	1	2	3	4
4.	Monitor auditors' competency for training purposes.	1	2	3	4
5.	Verify management policies for all processes have been communicated.	1	2	3	4
6.	Confirm with auditee key control areas of business processes that are automated vs manual.	1	2	3	4
7.	Evaluate effectiveness of policy implementation in the organisation.	1	2	3	4
8.	Identify processes that management highlighted as areas of concern.	1	2	3	4
9.	Communicate audit plan to the organisation, both at the Board of Directors and operations, before execution of audit activities.	1	2	3	4
10.	Management gives access to information without any restrictions.	1	2	3	4
11.	Verify that auditee understands the use of information or transaction that is being handled.	1	2	3	4
12.	Determine situations where override is made to the process or controls.	1	2	3	4
13.	Check with auditee on how to detect errors in the transaction or process.	1	2	3	4
14.	Use statistical methods to review systems performance or productivity of area audited.	1	2	3	4
15.	Determine from auditee changes made in processes or controls.	1	2	3	4
16.	Identify issues involving potential waste in resources.	1	2	3	4
17.	Determine availability of information on consistency of transactions processed.	1	2	3	4
18.	Clarify root causes of audit findings to management.	1	2	3	4

19.	List audit findings according to significance of findings and impact on the organisation.	1	2	3	4
20.	Inform management that follow- up audits will be conducted.	1	2	3	4
21.	Auditees are available as scheduled in the audit plan.	1	2	3	4
22.	Management seriously views corrective actions as avenue for improvements.	1	2	3	4
23.	Audit reports specify clearly implications/potential of problems arising from audit findings.	1	2	3	4
24.	Audit report contains status of previous audit recommendations, e.g. whether remedied or in progress.	1	2	3	4
25.	Audit reports accepted by management without further queries.	1	2	3	4
26.	Audit reports give information on inefficiencies in resource management.	1	2	3	4
27.	Audit team leaders discuss with management any issues in the area audited arising from the conduct of the present audit.	1	2	3	4
28.	Discuss reasonableness of audit findings/recommendations in audit reports with management.	1	2	3	4
29.	Review samples of data from recent records showing new actions made in follow-up audit visit.	1	2	3	4
30.	Review feedback on performance of audit activities with management.	1	2	3	4
31.	Management monitors improvement activities generated within the organisation.	1	2	3	4
32.	Analyse data using statistical methods in promoting preventive measures.	1	2	3	4
33.	Receive reviews on audit reports from reporting authority within the organisation, e.g. audit committee or Board of Directors.	1	2	3	4
34.	Receive reviews outside of internal audit, for e.g. from senior managers, on audit checklists for incorporation in audits.	1	2	3	4
35.	Amend documented audit procedures to update for current regulatory requirements on a continuous basis.	1	2	3	4

- Thank you for your participation -

Appendix 2 *Survey Information Letter*

Edith Cowan University
Faculty of Business and Law

Chief Internal Audit
Internal Audit Department

23 March 2012

Internal Audit: Conduct of internal audit and involvement of audit committee

Good corporate governance has become a major focus worldwide following various corporate failures and financial crises. I would like to invite you to take part in a survey on internal audit activities and the involvement of audit committee in the internal audit function of your organisation. This study is conducted by Razimah Abdullah, a Doctor of Philosophy (Accounting) candidate in the Faculty of Business and Law at Edith Cowan University. The research is funded by the Edith Cowan University.

The study will focus on how an internal audit department is managed, the types of audit activities undertaken and how internal audit impacts on corporate governance. Information on the level of involvement of audit committee in the internal audit function is also sought. The results of this study will provide useful information about the roles of internal audit department which could be used in formulating a measure on internal audit effectiveness and its impact on corporate governance including recommendations for improvements in organisations.

It is important that you complete all the questions. The usefulness and outcome of the study will depend greatly on the care and honesty with which you answer the questions. Please read the instructions carefully and choose a response that best indicates your assessment of each activity.

Confidentiality: I understand that you might not want to be identified. This is an anonymous questionnaire and individual responses will be kept strictly confidential.

In order to maintain confidentiality, Edith Cowan University will include your views but not identify you in any reports that are written. If you have any questions about the project, please contact me or:	This project has been approved by the Edith Cowan University Human Research Ethics Committee. If you have any concerns or complaints about the project and would like to speak with an independent person, please contact:
Professor Malcolm Smith (Principal Supervisor) School of Accounting, Finance and Economics Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Email: malcolm.smith@ecu.edu.au	Research Ethics Officer Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Phone: 6304 2170 Fax: 6304 2661 Email: research.ethics@ecu.edu.au

We really appreciate your reply by 30 April 2012. Thank you.

Sincerely,

Razimah Abdullah
School of Accounting, Finance and Economics
Faculty of Business and Law
Edith Cowan University
270 Joondalup Drive
Joondalup WA 6027
AUSTRALIA
Email: razimaha@our.ecu.edu.au

Appendix 3 *IIAM Letter*

The Institute of Internal Auditors Malaysia
(309740-D)

5 April 2012

Dear Member,

Survey on Internal Audit: Conduct of Internal Audit and Involvement of Audit Committee

We are pleased to inform you that the Faculty of Business and Law at Edith Cowan University, Australia is conducting a survey on the "Conduct of Internal Audit and Involvement of Audit Committee". This survey will focus on how internal audit departments are managed, the types of audit activities undertaken and the level of involvement of the audit committee.

The information collected will be held in the strictest confidence. No names of individuals or organisations will be revealed. The questionnaire will take approximately 20 minutes to complete. We strongly encourage you to participate and would appreciate if you could kindly return the duly completed survey form, using the enclosed self-addressed reply paid envelope before 30 April 2012.

The findings of the study will certainly provide valuable input to the internal audit profession. Feedback from your organisation is vital to the success of this survey and your support is much appreciated.

Thank you.

For and on behalf of
THE INSTITUTE OF INTERNAL AUDITORS MALAYSIA

YONG NGEAK CHOO
Executive Director

YNC/ti

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E-mail: ijdm@po.jaring.my Website: www.iiam.com.my

Appendix 4 *Interview Information Letter*

Edith Cowan University
Faculty of Business and Law

Internal Audit: Conduct of internal audit and involvement of audit committee

Good corporate governance has become a major focus worldwide following various corporate failures and financial crises. The roles of internal audit department and its link to corporate governance has not been thoroughly investigated. I would like to invite you to take part in an in-depth interview on internal audit. This interview is conducted by Razimah Abdullah, a Doctor of Philosophy (Accounting) candidate in the Faculty of Business and Law at Edith Cowan University. The research is funded by the Edith Cowan University.

The study investigates how internal audit departments are managed, the types of audit activities undertaken and how the internal audit performance is measured. Information on the level of involvement of audit committee in the internal audit function and how organisations have benefit from the internal audits are also sought. An example of the question that will be asked is: Do you feel that the internal audit has any impact in the corporate governance of this company?

You may withdraw from the study at any time you wish even though you have consented to participate in the study. I anticipate that the interview will take up to one hour for a full understanding of your internal audit activities. Your contribution will provide useful information about the roles of internal audit department which could be used in formulating a measure on internal audit effectiveness and its impact on corporate governance.

Confidentiality: You and your organisation will not be identified individually so that responses become anonymous. The reporting may, however, include the text you provide by way of comments. Any recordings stored on the computer will be protected by passwords. I will erase digital recordings when all the reports for the research have been accepted. What you say will be kept strictly confidential. I will provide you with a copy of the interview pertaining to your organisation if required. If you would like to participate, please sign the Informed Consent Form (provided) to take part in the study.

In order to maintain confidentiality, Edith Cowan University will include your views but not identify you in any reports that are written. If you have any questions about the project, please contact me or:	This project has been approved by the Edith Cowan University Human Research Ethics Committee. If you have any concerns or complaints about the project and would like to speak with an independent person, please contact:
Professor Malcolm Smith (Principal Supervisor) School of Accounting, Finance and Economics Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Email: Malcolm.smith@ecu.edu.au	Research Ethics Officer Edith Cowan University 270 Joondalup Drive JOONDALUP WA 6027 Phone: 6304 2170 Fax: 6304 2661 Email: research.ethics@ecu.edu.au

I wish to express my gratitude for your assistance. I look forward to hearing your views.

Sincerely,

Razimah Abdullah
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Faculty of Business and Law
Edith Cowan University
270 Joondalup Drive
Joondalup WA 6027
AUSTRALIA
Email: razimaha@our.ecu.edu.au

Appendix 5 *Interview Consent Form*

Razimah Abdullah
School of Accounting, Finance and Economics
Faculty of Business and Law
Edith Cowan University
270 Joondalup Drive
JOONDALUP WA 6027
Email: razimaha@our.ecu.edu.au

Informed Consent Document

Internal Audit: Conduct of internal audit and involvement of audit committee

This case study is conducted by Razimah Abdullah, a Doctor of Philosophy (Accounting) candidate in the Faculty of Business and Law at Edith Cowan University. The research is funded by the Edith Cowan University.

I, on behalf of my organisation, confirm the following:

- I have been provided with a copy of the information letter which explains the study
- I have read the letter and understood what the study is about
- I have had opportunities to ask questions about what the letter means and my questions have been answered to my satisfaction
- I have been given the contact details if I have any other questions
- I understand that what I say is being used only for the purposes of this research
- I know my identity will not be revealed unless I agree otherwise
- I agree to the researcher recording what I say on a digital recorder
- I know that I will be asked for my views to find out about the internal audit activities, what I think about the measurement of internal audit effectiveness and the impacts of internal audit on corporate governance
- I know that the information gathered on internal audit reports and the involvement of audit committee in internal audit activities will not divulged information of a sensitive nature but only to the extent of broad areas in corporate governance
- I am free to withdraw at any time and do not need to give a reason
- I agree to publications such as journal articles that will be produced from this study
- I freely agree to take part in this research

Name (Please print) :

Organisation :

Phone number/Email :

Signed :

Date :

Appendix 6 *Interview Guide*

Internal audit structure

1.1. **Q** Could you describe the organisation structure of the internal audit department?
Prompt - e.g. in-house or out-source
IF in-house, when was the department established?
Probe – why was the department established
IF out-source, why and what motivate this action
Probe – types of services or audits done, frequency of audits, team members, liaison officer, etc.

1.2. **Q** What are the composition and experience level of internal auditors?
Probe – number of staff, team members , years of experience, guidelines used on recruitment etc.

1.3. **Q** What are the skills and background of internal auditors?
Probe – their qualification, industry expertise
Why are these important in the recruitment process?

1.4. **Q** Has there been any instance where internal audit is carried out with other departments or other departmental staff members?
Prompt – e.g. collaboration for IT audit, risk assessment, health and safety
Probe – Description of the situation and why?
When was it done? Frequency, departments involved, types of audits, etc. Why was collaboration done?

Internal audit activities

2.1. **Q** What are the types of audit conducted in the company?
Prompt – e.g. operational, financial, quality audits, etc.
Probe – Are there any other department doing internal audits?
IF there is another department doing audit or internal checks, such as quality audits,
Do you consider this as internal audits?
Why is it considered as not internal audits?
What is the nature of the checks carried out by them?
Who do these 'auditors' report to? Is it to the Audit Committee?

2.2. **Q** Have any of the audits you mentioned been conducted as a combined activity?
Probe – How was it done? Why it is not considered as an audit strategy?

2.3. **Q** How do you carry out the audit activities? Are there any particular stages in the conduct of the activities?
Probe – Description of the stages and who is involved.
Timing and frequency.

2.4. **Q** Please explain why these stages in the audit are important to your company?
Probe – Which stage have priority? Why ?

2.5. **Q** Do you feel that internal audit has any impact in the corporate governance of this company?
Probe – What are the situations that you feel that the company has benefitted from internal audit?
Why do you think that the situation create an impact?
How do other department feel about or view your work?

2.6. **Q** Are there specific areas that you feel that internal audit has contributed to improvements in the company? Please specify the areas.
Prompt – e.g. compliance, transparency, information system, disputes, management improvement, human resource, etc.

2.7. **Q** How do you measure the performance of the internal audit function?
Prompt – e.g. key performance indicators, feedbacks from auditees or audit committee, actions on audit findings, etc.

Involvement of audit committee

3.1. **Q** What are the composition and professional background of the audit committee?
Probe – Any documents that can show the information?
How do these affect the relationship with you?

3.2. **Q** Is the audit committee involved in the activities of internal audit?
Prompt – e.g.

i. Review of the scope and functions of the internal audit
ii. Review of the competency of the internal audit function
iii. Review of the resources of the internal audit function
iv. Review of the audit program of the internal audit
v. Review of the processes of the internal audit
vi. Review of the results of the internal audit
vii. Review of the actions taken by management on the recommendations of the internal audit function

Probe – How involved is the audit committee, for e.g, in appointment of internal audit staff, performance review, audit scope and particular steps in audit programs

3.3. **Q** Are there any other areas that affect corporate governance where audit committee is involved? Please describe them.

3.4. **Q** Is there anything else you think I should know about your internal audit activities?

Appendix 7 *Distribution of data and the results of Shapiro-Wilk test on normality*

	Skewness		Kurtosis		Shapiro-Wilk		
	Statistic	z	Statistic	z	Statistic	df	Sig.
Audit committee involvement							
AC01 Review scope of internal audit activity	-.350	-1.205	-1.255	-2.186	.789	68	.000
AC02 Review functions of internal audit department	-.605	-2.081	-.618	-1.077	.834	68	.000
AC03 Review competency of internal audit function	-.119	-.410	-1.041	-1.813	.836	68	.000
AC04 Review resources of internal audit function	.091	.312	-1.024	-1.784	.834	68	.000
AC05 Review internal audit program	.164	.565	-1.228	-2.139	.864	68	.000
AC06 Review internal audit processes	.522	1.796	-.370	-.644	.807	68	.000
AC07 Review internal audit results	-2.306	-7.929	4.812	8.384	.481	68	.000
AC08 Review management actions on recommendations	-1.633	-5.616	1.809	3.152	.588	68	.000
Audit planning							
P01 Set performance objectives as reference in audit program.	-.280	-.964	-.736	-1.281	.786	68	.000
P02 Set key performance metrics for audit assignments.	-.629	-2.165	-.770	-1.342	.762	68	.000
P03 Appoint auditors with the necessary skills.	-.995	-3.421	-.688	2.053	.770	68	.000
P04 Monitor auditors' competency for training purposes.	-.643	-2.210	-.767	.759	.812	68	.000
P05 Verify communication of management policies.	-.768	-2.641	-1.017	-.653	.782	68	.000
P06 Confirm key control areas of business processes.	-.726	-2.496	-1.030	.028	.812	68	.000
P07 Evaluate effectiveness of policy implementation.	-1.026	-3.529	-.146	-.255	.700	68	.000
P08 Identify processes of concern to management.	-.629	-2.165	-.770	-1.342	.762	68	.000
P09 Communicate audit plan to BOD and operations.	-.815	-2.804	-.532	-.927	.735	68	.000
P10 Unrestricted access to information.	-.498	-1.712	-1.110	-.521	.835	68	.000
Audit execution							
E01 Verify understanding of use of information or transaction handled.	-.755	-2.598	.352	.612	.816	68	.000
E02 Determine overrides to processes or controls.	-.637	-2.189	-.056	-.097	.802	68	.000
E03 Check with auditee on how to detect errors.	-.760	-2.615	.872	1.519	.797	68	.000
E04 Use statistics to review systems performance.	-.373	-1.283	-.599	-1.044	.859	68	.000

Appendix 7 *Distribution of data and the results of Shapiro-Wilk test on normality*

	Skewness		Kurtosis		Shapiro-Wilk		
	Statistic	z	Statistic	z	Statistic	df	Sig.
E05 Determine from auditee changes in processes or controls.	-.791	-2.721	-.356	-.620	.726	68	.000
E06 Identify issues of potential waste in resources.	-.386	-1.327	-.454	-.791	.843	68	.000
E07 Determine availability of information on consistency of transactions.	-.214	-.737	-.555	-.966	.752	68	.000
E08 Clarify root causes of audit findings.	-.875	-3.009	-.165	-.287	.767	68	.000
E09 List audit findings based on significance and impact.	-1.329	-4.572	.784	1.367	.643	68	.000
E10 Inform management of follow-up audits.	-1.257	-4.325	.314	.546	.657	68	.000
E11 Auditees available as scheduled.	-.022	-.076	-1.045	-1.820	.809	68	.000
Audit reporting							
R01 Corrective actions seen as avenue for improvements.	-.330	-1.134	-.656	-1.144	.772	68	.000
R02 Reports specify clearly implications/potential of problems.	-1.627	-5.595	1.409	2.454	.587	68	.000
R03 Report contains status of previous audit recommendations.	-.620	-2.133	-.851	-1.483	.763	68	.000
R04 Reports accepted without further queries.	.066	.228	-1.037	-1.806	.808	68	.000
R05 Reports give information on inefficiencies in resource management.	-.429	-1.477	-.618	-1.077	.847	68	.000
R06 Team leaders discuss issues with management on conduct of audit.	-1.540	-5.297	1.496	2.607	.602	68	.000
R07 Discuss reasonableness of audit findings with management.	-.808	-2.778	-.303	-.528	.700	68	.000
Audit monitoring							
M01 Review samples from recent records in follow-up audit.	-.574	-1.973	-.598	-1.042	.719	68	.000
M02 Review feedback on audit activities with management	-.583	-2.006	-.654	-1.139	.760	68	.000
M03 Management monitors improvement activities.	-.317	-1.090	-.841	-1.465	.790	68	.000
M04 Statistical data analysis in promoting preventive measures.	-.417	-1.433	-.506	-.882	.856	68	.000
M05 Receive reviews on audit reports from reporting authority.	-.913	-3.139	-.131	-.229	.759	68	.000
M06 Receive reviews outside of internal audit on audit checklists.	-.157	-.540	-.481	-.839	.868	68	.000
M07 Continuous updates of audit procedures.	-.628	-2.161	-.628	-1.094	.756	68	.000

Appendix 8 *Locations, Standard Errors, infit, outfit and point-measure correlation for items in Rasch analysis*

ENTRY NUMBER	TOTAL SCORE	TOTAL COUNT	MEASURE	MODEL S.E.	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD	PT-MEASURE CORR.	PT-MEASURE EXP.	EXACT MATCH OBS%	EXACT MATCH EXP%	Item
53	84	68	3.82	.28	.95	-.1	.86	-.4	.47	.34	77.9	78.3	F10R
56	90	68	3.41	.25	1.36	1.6	1.17	.8	.42	.37	77.9	71.3	F13R
55	94	68	3.18	.23	1.33	1.6	1.25	1.1	.40	.39	70.6	68.3	F12R
48	96	68	3.07	.23	1.12	.7	.91	-.4	.56	.40	69.1	65.4	F05R
54	96	68	3.07	.23	1.05	.3	.99	.0	.44	.40	64.7	65.4	F11R
57	96	68	3.07	.23	.96	-.1	1.11	.6	.23	.40	58.8	65.4	F14R
52	97	68	3.02	.22	1.01	.1	.97	-.1	.46	.40	63.2	64.9	F09R
49	101	68	2.83	.21	1.12	.7	1.22	1.1	.14	.42	51.5	61.7	F06R
47	107	68	2.57	.20	.76	-1.5	.81	-1.0	.48	.44	64.7	58.2	F04R
51	109	68	2.49	.20	1.10	.6	1.09	.5	.52	.44	58.8	57.5	F08R
46	115	68	2.26	.19	.69	-2.0	.71	-1.8	.47	.45	58.8	54.0	F03R
50	130	68	1.75	.18	1.19	1.2	1.16	1.0	.49	.48	51.5	52.4	F07R
44	143	68	1.35	.17	1.33	1.9	1.28	1.7	.42	.49	52.9	50.5	F01R
45	148	68	1.21	.17	1.37	2.1	1.38	2.2	.21	.50	51.5	50.4	F02R
5	163	68	.79	.17	2.09	5.4	2.12	5.5	.23	.50	33.8	48.7	AC05
6	173	68	.52	.16	.91	-.5	.93	-.4	.36	.50	55.9	48.6	AC06
42	183	68	.25	.16	1.11	.8	1.12	.8	.38	.50	42.6	48.1	M06
4	194	68	-.05	.17	.96	-.2	1.02	.2	.43	.49	47.1	48.2	AC04
22	198	68	-.16	.17	1.13	.9	1.18	1.2	.45	.49	39.7	48.5	E04
40	199	68	-.19	.17	1.32	1.9	1.34	2.0	.32	.49	41.2	48.5	M04
21	201	68	-.25	.17	.91	-.5	.94	-.3	.43	.49	57.4	48.7	E03
33	201	68	-.25	.17	1.08	.6	1.11	.8	.21	.49	47.1	48.7	R04
3	202	68	-.27	.17	1.05	.4	1.03	.3	.43	.48	52.9	49.0	AC03
34	204	68	-.33	.17	.93	-.4	.91	-.6	.61	.48	51.5	49.0	R05
24	205	68	-.36	.17	.87	-.8	.87	-.8	.55	.48	50.0	49.2	E06
29	205	68	-.36	.17	1.03	.2	1.04	.3	.27	.48	44.1	49.2	E11
2	206	68	-.39	.17	1.40	2.4	1.49	2.7	.43	.48	35.3	49.1	AC02
18	209	68	-.48	.17	.92	-.5	.90	-.6	.52	.47	51.5	49.9	P10
12	212	68	-.57	.17	.82	-1.2	.81	-1.2	.51	.47	51.5	50.4	P04
19	212	68	-.57	.17	.74	-1.8	.73	-1.7	.66	.47	67.6	50.4	E01
1	217	68	-.72	.18	1.00	.1	1.03	.3	.46	.46	45.6	50.7	AC01
14	217	68	-.72	.18	.84	-1.0	.79	-1.3	.63	.46	57.4	50.7	P06
9	219	68	-.78	.18	.85	-.9	1.11	.7	.33	.46	52.9	50.7	P01
39	219	68	-.78	.18	.93	-.4	.94	-.3	.36	.46	52.9	50.7	M03
20	220	68	-.82	.18	.83	-1.1	.86	-.8	.51	.45	50.0	51.0	E02
30	223	68	-.91	.18	.72	-1.8	.76	-1.5	.48	.45	67.6	52.7	R01
11	224	68	-.95	.18	.96	-.2	.97	-.1	.46	.45	58.8	52.8	P03
13	224	68	-.95	.18	.94	-.3	.92	-.4	.58	.45	50.0	52.8	P05
25	224	68	-.95	.18	.63	-2.6	.70	-1.9	.46	.45	64.7	52.8	E07
32	226	68	-1.02	.19	1.06	.4	1.02	.2	.46	.44	57.4	52.8	R03
26	227	68	-1.05	.19	1.18	1.1	1.04	.3	.44	.44	54.4	53.5	E08
10	228	68	-1.09	.19	1.09	.6	1.13	.7	.32	.43	48.5	53.9	P02
16	228	68	-1.09	.19	.66	-2.2	.62	-2.4	.69	.43	61.8	53.9	P08
41	228	68	-1.09	.19	1.26	1.5	1.29	1.5	.38	.43	50.0	53.9	M05
38	229	68	-1.12	.19	.77	-1.4	.87	-.7	.48	.43	57.4	54.8	M02
43	230	68	-1.16	.19	.85	-.9	.90	-.5	.43	.43	51.5	55.0	M07
17	233	68	-1.27	.20	.73	-1.6	.70	-1.7	.64	.42	63.2	57.0	P09
23	236	68	-1.39	.20	.77	-1.3	.77	-1.2	.53	.41	64.7	58.5	E05
37	236	68	-1.39	.20	.61	-2.6	.58	-2.4	.60	.41	75.0	58.5	M01
15	238	68	-1.47	.20	.95	-.2	.81	-.9	.54	.40	67.6	59.3	P07
36	240	68	-1.55	.21	.72	-1.7	.77	-1.1	.52	.39	72.1	60.7	R07
28	242	68	-1.64	.21	1.23	1.2	1.36	1.5	.33	.39	57.4	63.1	E10
27	246	68	-1.83	.22	.92	-.4	.76	-1.0	.49	.37	66.2	67.5	E09
31	248	68	-1.94	.23	1.16	.8	.91	-.3	.48	.36	70.6	69.1	R02
35	250	68	-2.05	.24	.86	-.6	.71	-1.1	.54	.35	80.9	71.4	R06
8	251	68	-2.11	.24	.94	-.2	.77	-.9	.48	.34	73.5	72.1	AC08
7	258	68	-2.60	.29	1.02	.2	.77	-.6	.41	.29	82.4	80.4	AC07
MEAN	191.8	68.0	.00	.19	1.00	.0	.99	.0			57.8	56.3	
S.D.	52.1	.0	1.67	.03	.24	1.4	.25	1.3			11.1	8.2	

Appendix 9 *Most unexpected CAE's responses based on the observed data*

DATA	OBSERVED	EXPECTED	RESIDUAL	ST. RES.	MEASDIFF	Item	Person	Item	Person
1	1	3.66	-2.66	-4.98	2.44	41	31	M05	R31223232
2	2	3.84	-1.84	-4.79	3.29	9	6	P01	R06134223
2	1	3.77	-2.77	-6.15	2.90	2	6	AC02	R06134223
2	1	3.69	-2.69	-5.26	2.56	4	6	AC04	R06134223
3	1	3.88	-2.88	-8.69	3.63	38	6	M02	R06134223
2	1	3.83	-2.83	-7.23	3.25	28	2	E10	R02134223
4	1	1.71	-.71	-1.08	-1.47	48	2	F05R	R02134223
2	1	3.82	-2.82	-6.89	3.14	28	25	E10	R25124223
4	1	1.67	-.67	-1.03	-1.57	48	25	F05R	R25124223
4	1	1.46	-.46	-.80	-2.13	51	4	F08R	R04132242
3	1	1.21	-.21	-.50	-3.10	57	30	F14R	R30224523
1	1	3.52	-2.52	-4.15	2.02	11	9	P03	R09224113
3	1	1.22	-.22	-.51	-3.05	56	16	F13R	R16124223
4	1	1.55	-.55	-.91	-1.85	56	15	F13R	R15134233
2	1	3.63	-2.63	-4.76	2.34	39	15	M03	R15134233
4	1	1.80	-.80	-1.18	-1.28	49	15	F06R	R15134233
2	1	3.67	-2.67	-5.05	2.47	30	15	R01	R15134233
4	1	1.82	-.82	-1.20	-1.23	5	48	AC05	R48224213
2	1	1.07	-.07	-.28	-4.26	53	48	F10R	R48224213
1	1	3.28	-2.28	-3.30	1.46	2	68	AC02	R68133523
3	1	3.92	-2.92	-10.71	4.06	36	33	R07	R33124213
1	1	3.40	-2.40	-3.66	1.72	5	33	AC05	R33124213
3	1	1.31	-.31	-.62	-2.66	55	20	F12R	R20233423
3	1	1.34	-.34	-.65	-2.53	55	19	F12R	R19232423
2	1	3.69	-2.69	-5.20	2.53	7	56	AC07	R56144253
2	1	3.68	-2.68	-5.14	2.51	8	3	AC08	R03133113
2	1	3.66	-2.66	-5.03	2.46	23	52	E05	R52133213
2	1	3.65	-2.65	-4.94	2.42	31	60	R02	R60112253
2	1	3.65	-2.65	-4.92	2.41	35	41	R06	R41123522
2	2	3.57	-1.57	-2.69	2.16	10	64	P02	R64124113
1	1	3.18	-2.18	-3.05	1.26	40	64	M04	R64124113
3	1	1.37	-.37	-.69	-2.41	55	23	F12R	R23232413
4	1	1.93	-.93	-1.32	-1.00	6	34	AC06	R34223213
2	1	3.63	-2.63	-4.75	2.33	35	50	R06	R50123223
1	1	3.05	-2.05	-2.76	1.00	14	50	P06	R50123223
2	1	3.62	-2.62	-4.69	2.30	31	4	R02	R04132242
2	1	1.10	-.10	-.33	-3.92	52	49	F09R	R49143243
3	1	1.47	-.47	-.80	-2.11	45	49	F02R	R49143243
3	1	1.41	-.41	-.74	-2.29	47	57	F04R	R57212212
1	1	3.10	-2.10	-2.87	1.10	42	31	M06	R31223232
2	1	3.60	-2.60	-4.57	2.24	21	28	E03	R28234123
2	1	3.57	-2.57	-4.40	2.16	22	28	E04	R28234123
1	1	3.00	-2.00	-2.68	.92	3	19	AC03	R19232423
4	1	2.07	-1.07	-1.49	-.71	44	19	F01R	R19232423
1	1	3.06	-2.06	-2.79	1.03	2	19	AC02	R19232423
4	1	2.01	-1.01	-1.42	-.83	44	20	F01R	R20233423
2	1	3.58	-2.58	-4.47	2.19	38	8	M02	R08144313
1	1	3.02	-2.02	-2.72	.96	11	11	P03	R11132223
4	1	2.04	-1.04	-1.45	-.77	45	39	F02R	R39224343
2	1	3.58	-2.58	-4.43	2.17	1	54	AC01	R54122212