Performance Audit: The Need For a Responsive Approach

Case Study in Oman

A Doctoral Thesis

Submitted in Partial Fulfilment of the Requirements for the

Award of Doctor of Philosophy

By

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October 2016

Declaration

I declare that this thesis and the work presented in it are my own research and that has not been previously submitted for a degree in this or any other university. Where other sources of information have been used, such work have been cited and acknowledged within the text.

I also declare that all the information presented in this document has been obtained in accordance with academic rules and ethical conduct.

Sheikha S Al Subhi

Abstract

In recent times performance audit has become a subject of attention, experimentation, application and debate in the public sectors across the global world. Performance audit is not a replacement for financial audit; indeed, it is a type of audit that aims to examine the economy, efficiency and effectiveness of a public sector entity. Thus an important role is reserved for performance external auditing executed by external state audit institutions, sometimes known as national audit offices.

 A number of studies have criticized the contribution of performance audit in delivering recommendations that are not representative of citizens' needs and/or preferences and do not consider social values. Thus this thesis examines whether performance audit practices and reporting take into account the public perspective and social value performance elements. Moreover, it concentrates on understanding the process of decision-making by performance auditors during their assessment and evaluation of public sector performance. The latter involves discussion and explanation of the approach implemented by performance auditors and how does certain types of information in the early stages of the auditing process influence their reporting process. Further, this research provides arguments regarding the contribution of performance audit in improving public sector services, and provides recommendations for decision-makers.

The Throughput model is used to form a theoretical framework allowing us to understand the relation between using performance information and performance perception, and judgement and decision-making in performance

audit reporting. The different pathways show how auditors prioritize certain aspects of organizational performance in their assessment and decisions.

Auditors from the State of Audit Institution in Oman (SAI) participated in this study by responding to an online questionnaire. Structural equation modelling (SEM) via partial square least (PLS) was used as a data analysis approach to test the hypothetical relationships. The first stage used was the measurement model assessment, and the second stage was structural model assessment, via the smart PLS version 2. Additionally, indirect exploratory effects of the moderators (such as gender, age, experience level and educational level) were examined using multi-group analysis (MGA) method.

The findings show that auditors in performance audit rely heavily on performance information of the audited entity to make their judgements, and that their perception of social value and being public responsive does not impact upon their judgement. Simultaneously there was a direct relation between performance perception and decision-making, and a strong relation between judgement and decision choice (i.e. reporting) in performance audit. The findings located some areas of weakness in current performance audit practice. Moreover, the findings of this research may be of great value and have empirical contributions to make for government decision-makers, auditors of state of Audit institutions and managers of public sectors.

Key words: Performance Audit, Public Sector, State of Audit Institution, Public Perspective and Throughput Model.

Acknowledgment

In the name of Allah, the most Gracious and the most Merciful, all praises to Almighty Allah (God) for providing me with this opportunity and granting me the strength, courage and blessing to pursue this research. The completion of this thesis would not be possible without the valuable support, guidance, prayers and generous help from many people. I would therefore like to give my sincere thanks to all of them.

First and foremost, I would like to express my special appreciation and thanks to my supervisor, Professor Waymond Rodgers for his auspicious supervision, expertise, invaluable guidance, encouragement and motivational support. His professionalism is highly admired, and I feel fortunate and proud to be one of his students. Working with him has been a valuable experience that will benefit me for ever. I also would like to thank my second supervisor, Dr Amal Hayati Ahmed for her feedback and valuable comments.

A special thanks to my family. Words cannot express how grateful I am to my mother, my father and my siblings. Your endless support and prayers for me have sustained me thus far.

Very special thanks to all my friends who were involved in my study life and helped me to strive towards my goal. You keep encouraging and motivating me, cheering me up when I most need it. Thank you my friends for delegating your time to listen to me and your constant belief in me. Also I thank my doctoral fellows in Hull University for their support, advice and help. I am grateful to the Omani community in Hull who were like a family to me in the

UK. I am really being lucky to be one of you during my study journey in the UK.

Last, but not least, my special acknowledgement goes to Hull University Business School Research Office staff and the Graduate School for their kind assistance and support whenever needed.

Dedication

This PhD research thesis is dedicated to the loving memory of my beloved brother **Fareed AL Kindi**

With love and pride…

To my dearest parents, Aisha Al Kindi and Said Al Subhi.

To my beloved brothers and sisters, Ahmed, Fahd, Muhannad, Mohammed, Thuryah, Hind and Sara

List of publications

The following conference papers and journals associated with this thesis;

ALSubhi, S. (2013) Public Sector Reforms in Oman. The Changes in Accounting Control and Preformance Measurment., *Early Career Academics' Research Development Progarm in Hull.* University of Hull , Hull Business School, 16th-17th May 2013.

AlSubhi, S. (2015a) Performanc Audit in Public Sector; The Need for Responsiveness Approach, *BAFA NAG.* University of Hull , Hull, Sept 3rd-4th.

ALSubhi, S. (2015b) Performance Audit in Public Sector: The need for an enhanced social value Oman as Case Study., *European Auditing Research Network (EARNet) Conference.* University of Lausanne, 10th-12th September.

ALSubhi, S. (2015c) Performance audits in the public sector: The need for a responsive approach, *Annual Conference of the North Area Group.* University of Hull, Hull Business School, 3rd-4th September 2015.

AlSubhi, S. (2016) Performance Audit: Do Auditors Desire the Balance Between Being Responsive and Independent, *39th European Accounting Association Annual Congress*. Maastricht, The Netherlands, 11-13 May 2015. http://eaa2016.eaacongress.org/r/default.asp?iId=HIIMLL.

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List of abbreviations used in the Thesis

D	Decision
DPP	Democratic Performance Perception
3Es'	Economy, Efficiency and Effectiveness
INTOSAI	International Organization of Supreme Audit Institutions
IOO	Input, Output and Outcome
J	Judgement
NPM	New Public Management
PA	Performance Audit
PI	Performance Information
PP	Performance Perception
RPP	Responsive Performance Perceptions
SAI	State of Audit Institutions
SEM-PLS	Structural Equation Modelling- Partial Least Square

1. Chapter One: Introduction

1.1. Research Background

The role of accounting in the public sector has changed over the last decade, increasingly focusing on the measurability of activities and thus dominating the agenda-setting role, fostering a belief that accounting can provide reliable, technical tools to help public sector administration (Bowerman,1995). It is undeniable that in a rapidly changing, complicated world, full of uncertainty and limited resources, performance audit has become an essential element. It is a comparatively new form of audit that has spread widely among government auditors, where a governmental independent body applies investigation to make a formal assessment of an audited entity. Performance auditors have the responsibility of recognizing weaknesses in public sector agencies and suggesting proper actions.

Performance audit had been define by the International Organization of Supreme Audit Institutions (INTOSAI) as "audit of economy, efficiency and effectiveness with which the audited entity uses its resources in carrying out its responsibility" (Intosai,1992).This type of audit is complementary to financial audit and is not an alternative. It identifies the weaknesses in government programs or activities and suggests actions to revise practice or policy, or even develop strategy.

The role performance audit plays in improving the public sector has been an area of interest for many researchers. Some have discussed the role of auditors in examining policy (Geist & Mizrahi,1991). Others have pointed out

that the auditor can remain distant from politics, which is the perception of the auditors themselves. Hamburger (1989) claimed that almost all the literature presents the performance audit as a neutral, rational discipline (Bowerman,1995). However, an alternative view considers the potential of auditing and accounting to be a force that can control and create change within organizations (Bowerman,1995; McEldowney,1996; Power,1997). In addition, Henkel (1991) suggested that accounting information such as performance indicators can result in 'technical regulation', and that citizen's charter performance indictors would impact the democratic process dramatically. While the auditors may not question the policy, they have statutory duties and responsibilities to prepare audit reports for policy analysis. Others (McEldowney,1996; McSweeney,1988) believe in the role of the Audit Commission (now known as Public Sector Audit Appointments Limited) in changing the culture of the public sector and being a driving force in the improvement of public services.

The need for performance audit significantly increases as a result of widespread government reforms and enables the government to track and measure their objectives, strategies and achievements (Brudney et al,1999; Moynihan,2008). Moreover, it has been suggested (Moynihan & Pandey,2010) that terms such as 'performance' and 'result' have become ubiquitous in modern governance, and that administrative reforms are most commonly driven by a belief that governments experiencing 'performance deficit' should overcome this through assessing governmental activities. Thus the need for performance audit is becoming essential. In fact, performance audit first emerged in the late 1970s, and was further developed by the late

1990s and beyond (Johnsen et al,2001). State of Audit Institutions (SAIs), which are independent governmental agencies, carry out performance audit (PA) and traditional financial audits on public sector organizations, and have continued to expand their audit scope due to high demand for accountability and transparency. With this growth in demand has come the need for more research in this area.

1.2. Research Problem and Objectives

Despite the significant increase in accounting research over the past decades, research on auditing is relatively low (Kinney,2005; Nash,1973; Schwartz & Mayne,2005). According to Kinney (2005), little research has been done on how audits are conducted--especially the performance of the audit task--and how they might be improved. This study will also add to the literature on local government accounting, where there is a frequent cry for more research (Colquhoun,2013; Funkhouser,2011; Reichborn-Kjennerud & Johnsen,2011; Sargiacomo & Gomes,2011). There are few studies examining how performance audit impacts public sector organizations (see for example Morin,2014; Raudla et al,2015). The research on performance audit is still in its early stages, the need for research in this area being far from satisfied.

Governments globally have shifted their concern from how to raise money to examining the efficiency with which the money is spent; at the same time many countries are trying to make their public services better reflect their citizens' needs and preferences (Pollitt et al,1999b). In addition, government objectives have shifted from declaring cuts in costs to providing better service at cost standards: 'value for money' (Wall & Martin,2004).

Since the users of public services may experience and view service delivery differently from those who provide the services, including user perspective as input in performance audit reporting will make the audit more representative of citizen/consumer needs (which, I argue, is the ultimate principle). Therefore, the Supreme Audit Institutions (SAIs) could directly improve the quality of the public sector by analysing consumer perspective and communicating their needs and concerns to central Government and Parliament or the Council of Ministers, who in turn will take action. In fact, consumer involvement can be used as a tool for gathering evidence. Despite the various methods used to collect evidence about public sector performance, consumer perspective and satisfaction is still ignored by performance auditors in most Supreme Audit Institutions (SAIs). Certain methods can be used to uncover the truth about what is going on (Keen,1998). The problem this research address focus on poor consideration of public perspective and social value in performance audit and how that may affect the quality of their reporting. Moreover, it emphasises on understanding the process of decision-making by performance auditors during their assessment and evaluation of the public sector performance.

This study provides a better understanding of the concept of performance audit, which will be developed as a foundation for the proposed model for performance audit decisions. There are many conflicting views regarding the performance audit theoretical framework, its rationality, its nature and scope that will be clarified in the literature review section of this thesis. The literature suggests that PAs may have focused on rational concepts such as economy, efficiency and effectiveness at the expense of social value that should be realized by government programs. Social value refers to the 'soft' outcomes,

such as the "wider non-financial impacts of organizations, programmes and interventions, including the wellbeing of individuals, communities, social capital and the environment" (NAVCA,2012). Thus, a social value approach would consider how scarce resources are allocated and used in terms of the collective benefit to a community, rather than from an economic standpoint.

In this study we will investigate whether or not social value and public perspective of performance in the public sector is really taken into consideration by auditors in their reporting. What are the main areas of focus in PA audit reporting during their evaluation and assessment process? The pervious is an important aspect to be examined and discussed, due to its effect on decisions made by the authority at a later stage.

In addition, the models in this study could help auditors to overcome certain criticisms related to performance reporting. The study also links the SAI to the public by considering the needs and perspective of the public service, together with other factors like social value. Moreover, the models demonstrate how auditors made their decisions at earlier stages in defining and selecting the information (i.e. what to audit), and their perception of different performance aspects, would be affected. The argument on how the performance audit should represent the public in order to improve the accountability and transparency of governmental administration motivates more scholars to research this area and link theory to practice (Andrews,2005; Bakar et al,2011; Behn,2001; Glynn,1996). Although some researchers have studied the types of judgement made by auditors on performance (Keen,1998; Keen,1999), I intend to examine the choosing and operationalizing of audit criteria, and how this affects the evidence gathered

and decisions made, which is an area of research that needs to be investigated (Reichborn-Kjennerud & Johnsen,2011).

The research also sheds light on current issues in PA and how Agency theory can help to clarify the relationships among different stakeholders who directly and indirectly need to be considered by the performance auditors.

Finally, the Throughput model (Foss & Rodgers,2011; Rodgers,2006; Rodgers et al,2014) is used to develop a theoretical framework and as a basis for understanding PAs' decision choices in more detail. The model posits that four main concepts are employed in a certain sequence in the decision-making process and that there are six significant pathways among these four concepts: perception (P), information (I), judgement (J) and decision-making (D). The theoretical framework explains the processes that auditors follow during their decision–making in developing PA reports, and proposes which pathways they may adopt when focusing on certain aspects of organizational performance. These pathways may determine whether an auditor's report is more or less responsive.

1.3. Research Context

Oman is selected as an area of the research focus as, to the researcher's knowledge, no studies have been conducted to examine governmental audit in Oman in general, and performance audit more precisely. Oman is considered a good platform for this study for the following reasons: firstly, due to the Arab Spring protests, in which the public demanded of the Government more reforms in the public sector, the Government did redefine the State of Audit in 2011. Secondly, new laws expanded the ambit of the State of Audit to

include administrative audit and performance audit in order to enhance accountability, transparency and justice in public sector performance. Thirdly, despite the increased adoption of performance audit in State of Audit (Institutions) in Arab countries, little attention has been paid to this area in the literature.

This study reveals the current state of performance audit process completed by the SAI in evaluating governmental programs in Oman. The proposed model and study findings may be of value to the appropriate audit agency in the country and the public sector administration. The thesis will also be of value to those scholars interested in studying performance auditing or governmental audit in Oman and the Middle East generally, or who want to compare with other areas in the world.

In order to understand the different dimensions of the problem of performance auditing in Oman, it is important to take a deeper look at PA practice and evaluation process to reveal how it falls short of satisfying the authorities and decision-makers' needs.

1.4. **Research Question**

In order to address the importance of measurements concerned with public responsiveness and social value and other organizational measurements in PA practice, this study will examine the following questions:

Table 1: Research Questions

	Research questions
1	What is the current state of performance auditing in Oman?
2	To what extent can the Throughput model help to explain the process of decision-making by auditors in performance audit? This brings up several related questions, as follows: a) Can the auditors' perception of performance related to public responsiveness and social value affect the evaluation and judgement of auditors? b) Can the perception of auditors related to public responsiveness and social value affect the recommendations and decision choice? c) To what extent are the judgements and evaluation by auditors associated with the decision choices in PA? d) How does the information on performance in the public sector influence the evaluation or judgement in the performance audit process? e) Does the information on certain performance factors affect the auditors' perception of performance related to public responsiveness and social value? f) To what extent can the decisions and recommendations in performance audit be described as being responsive to public needs / social needs? g) Do moderators such as age, gender, experience and educational level affect the different pathways in the Throughput model?
3	What are the methods most commonly applied by the Omani SAI?
4	What are the obstacles or challenges most commonly faced by the Omani SAI?

(Source: Author)

1.5. Thesis Outline/ Structure

This thesis comprises seven chapters, as shown in Figure 1, which provides a visual presentation of the research outline. In this section, a brief description of each chapter is offered.

- Chapter Two: Literature review

This literature review chapter presents a review of the existing literature in PA and enables the identification of certain research gaps that are worthy of investigation. It begins by defining PA and how it is different from other types of audit. Additionally, it justifies the rationality behind PA, explaining its nature in detail. Using Agency theory, the researcher clarifies the complexity of the relation between PA and different stakeholders. Furthermore, the need for a responsive approach in PA discussion directs us to possible areas of research. It is worth noting the relation between the new public management and PA before giving details regarding the research context, which is the SAI in Oman.

- Chapter Three: The theoretical framework, Throughput model

The aim of this chapter is to address and test the research gaps identified in the previous chapter and to develop a theoretical framework and series of hypotheses. The chapter provides a theoretical framework based on the Throughput model for decision-making. The latter links two stages of decision choice in performance audit reporting by first presenting the influence of the performance information and performance perception on judgement, and second the impact of the judgement on the decision choices. Moreover,

literature supporting the effect of the following moderators--gender, age, experience and educational level--is presented with suggestions for further investigations in the area of PA research. The chapter concludes by listing all the hypotheses that are subject to rigorous testing at a later stage to determine whether they are statistically supported or not.

- Chapter Four: Research design and methodology

This chapter aims to introduce the methodological strategies followed by the researcher in this thesis to examine the theoretical framework and the hypotheses proposed in Chapter Three. It includes the research philosophy applied and its rationale for adoption. Next, it provides details of the sample and data collection procedure, followed by the instrumental development process for each latent variable in the measurement models.

Moreover, a section is devoted to each time horizon, with access and ethical considerations respectively related to the study being illustrated. An explanation regarding structural equation modelling (SEM) is provided as it is the statistical technique used for data analysis, paying extra attention to partial least square (PLS). The two stages of SEM-PLS analysis validation are outlined in brief, and the basic evaluation elements are explained.

- Chapter Five: Empirical analysis and results

This chapter mainly focuses on reporting in-depth empirical analysis for the models proposed in Chapter Three. It begins with primary data examination processes, such as data preparation, data coding, demographic profile representation of respondents, missing data testing, detecting outliers and

normality testing. Next, exploratory factor analysis (EFA) is performed using SPSS testing of the items used for each of the latent variables. A representation of the results of different statistical tests used to check for common method bias is then discussed. Most importantly, the empirical results for the models using PLS path modelling and multi-group analysis are then reported in two stages: measurement model results and structural model results.

- Chapter Six: Discussion of the findings

This chapter presents a detailed discussion of the findings and the results obtained in the previous chapter. The discussion is built upon the theoretical framework, theory and hypotheses developed for the current study as well as the existing literature.

- Chapter Seven: Conclusion

This chapter sums up the research overall key findings obtained by analysing the proposed theoretical models on PA decision-making/reporting, using SEM-PLS methodology. Additionally, it provides the major contributions of the research based on three perspectives: contribution to literature review, contribution to measurements, and methodology and practical implications. The chapter concludes by highlighting some limitations of the study and outlining possible avenues for future studies on PA.

The Thesis Outline

Chapter 1

Introduction
* Background *Research Problems & Objectives * Research Questions

Chapter 2

Literature Review

Chapter 3

Theoretical Framework

Chapter 4

Research Design & Methodology

Chapter 5

Empirical Analysis & Result

1- Primary Data Analysis

2- Measurement Model Results

3- Structural Model Results

Chapter 6

Discussion Chapter

Chapter 7

Conclusion
* Key Findings *Contributions & Implications *Limitations & Recommendation for future studies

Figure 1 the structure of the thesis.

(Source: Author)

2. Chapter Two: Literature Review

2.1. Introduction

The aim of this chapter is to provide a review of PA, its relevance and application. In this review it is argued that the application of a responsive approach in the audit may result in an improvement to services in the public sector. The chapter is outlined as follows: first, a definition of performance audit is given. Next there will be a discussion regarding the rationality of PA, followed by a description of the nature and scope of PA. After that, there will be a section about the use of performance indicators, preceded by another section on performance auditing and its relation to different stakeholders, where agency theory is used to explain the nature of these relations. Most importantly, the sections on the responsiveness approach in PA, and New Public Management and PA will provide interesting facts related to this research area. Finally, brief information concerning the context of this study, which is Oman's State of Audit Institution, will conclude the chapter.

2.2. Performance Audit Definition

Performance audit is a well-known tool of integrity agencies and has attracted the attention of many scholars (Barzelay,1997; Guthrie & Parker,1999; Kells & Hodge,2010; Parker,1986; Parker & Guthrie,1991; Pollitt et al,1999f). In more recent times, PA has been practised throughout the world, and many pubic audit offices spend much of their time conducting it (Kells & Hodge,2010; Lapsley & Pong,2000). According to Kells & Hodge (2010), defining PA has engaged the minds of accountants, public auditors themselves and scholars

for a long period of time. It is important to point out that many are still unclear on the difference between performance audit and other audit types (such as operational audit, management audit and value-for-money audit) because the terms are often used interchangeably. In the following section, some definitions and discussions will briefly outline the difference between performance audit and other auditing types.

Academic and professional literature provides no clear, commonly agreed upon definition of performance audit because of the broad scope of its activities (Shand & Anand,1996) However, the most widely accepted definitions connect performance auditing with a review of the "three Es"-- economy, efficiency and effectiveness of public entities or programs. The International Organization of Supreme Audit Institutions (INTOSAI) reports that performance audit includes: the audit of the **economy** of administrative activities in accordance with administrative principles, practices and management policies; audit of the **efficiency** of utilization, or usage of resources provided to the audited entity, such as human, financial and other resources, and examination of information systems, performance measures and monitoring arrangements, and any other process used by audited entities for resolving any identified deficiencies; the audit of the **effectiveness** of performance regarding the achievement of objectives allocated to the entity subject to audit, and audit of the actual effect of these activities in relation to the intended impact (Intosai,1992). Although terms such as "value-for-money audit" and "performance audit" are sometimes used interchangeably by some auditors and academics because they share the same meaning, in this thesis the formal term "performance audit" will be used. The term has been adopted

by the International Organization of Supreme Audit Institutions (Daujotait & Mačerinskien,2008).

It has been claimed that the origins of performance audit can be traced to the 1960s, or even earlier, as suggested by Dewar (1985). However, performance audit as a distinct practice dates back to the late 1970s. It represents a modern type of audit, predominantly practised by the state, and does not have any equivalent in the private sector or in commercial auditing. The image of performance audit goes beyond the traditional view of audits being a technical tool centred on "checking the books" to verify whether they have been accurately and properly kept (Pollitt et al,1999c). The exact terms within which audit organizations undertake this activity may vary from country to country and over time. Therefore, we should not rush to a conclusion on what it is or is not, but instead we should explore the concept itself. Recently, practices termed such "performance audit" or "value-for-money audit" have become central activities for powerful organizations, such as Supreme Audit Institutions (SAIs). For example, the Australian Auditor-General Act 1997 briefly described the performance audit as 'a review or examination of any aspect of the operations of a person or body'. Moreover, the US Government Accountability Office (GAO) standards defined it as a concern with the "three Es", of government, organizations, programs, or activities. The program audit is further described as effectiveness of the achievements of objectives in compliance with laws and regulations. The mandate of performance audit by SAIs is only partial in some countries, since it is still considered to be a widening of the traditional mandate of institutions. Others have accepted it as part of the SAI repertoire for decades (Pollitt et al,1999c).

According to Cafferky (1990), the internal audit role is increasingly broadening its boundaries from simply being a checking function and has adopted several approaches, such as the operational audit. He defined operational audit and value-for-money audit as "terms often given to specific aspects of internal audit function which relate not just to reviews of business performance and efficiencies [and] can therefore be seen to have a closer relationship to the 'bottom line' than the internal control reports" (Cafferky, 1990).

Moreover, he claimed that operational audit is oriented towards the organization and its structure, and to how the business operates. Thus it is extremely important for the auditors to have an understanding of the organization and how its various parts are related. Therefore, the performance audit is not limited to the SAI's auditors, but can be practised by the internal auditors too. Meanwhile, Godick (1979) attributed the beginnings of operational auditing to the US General Accounting Office (GAO) in the late 1960s, where the Standards for Audit of Governmental Organization, Programs, Activities and Functions introduced information about auditing for economy, efficiency and effectiveness. Godick (1979); Meddaugh (1979) agreed that this audit is still relatively new in practice, even though it was mentioned in audit standard books in the early 1960s and 1970s. However, Greenawalt (1995) noted that although it may seem that operational auditing is relatively new, this type of service was already provided, without the use of such terminology. While CPAs can perform the operational audit as outside contractors, the internal auditing staff within an organization are still the primary source of operational auditing services to management. It is clear that the operational audit is better suited to internal audit in the private sector than

in the public sector. Value-for-money auditing is quite common, notably in the UK. A National Audit Office (NAO) brochure states that "our value-for-money investigations evaluate the economy, efficiency and effectiveness achieved in major fields of revenue and expenditure and in the management of resources" (National Audit,1987). The early 1980s brought the introduction of value-for-money audit in the UK, signifying a shift from input measurement to output measurement (Glynn,1996). It is clear from the above definition of the value-for-money audit that this is the UK version of PA practiced in countries such as the USA, Europe and Australia. Audit institutions in other countries use their own terms for PA, e.g. "comprehensive auditing" in Canada or "effectiveness audit" in Sweden to refer to the performance audit. Having different terms to name one type of audit practice adds unnecessary complexity with regards to any particular audit. The first European country to formally adopt the performance audit was Sweden, via its National Bureau in 1970. Meanwhile, performance audit appeared in Canada in 1977, although the Auditor General in Quebec was not authorised to conduct it in Governmental agencies until 1985 (Morin,2003).

According to Johnsen et al (2001), performance audit was fully established, with its own procedures and staff, by the 1990s in most countries such as Australia, Canada, Finland, New Zealand, Sweden, the UK and the USA.

Most of the literature regarding PA refers to developed countries, regardless of the fact that an increasing number of developing countries' SAIs have been adopting PA during the last few years. However, PA literature in these countries still receives little attention.

Lonsdale et al (2011) justified the growth of PA in SAIs in developing nations as being stimulated by project funding, for example, by the World Bank, European Commission, Asian Development Bank, or led by SAIs with well-developed PA regimes.

The 2014 stock-taking of the INTOSAI revealed that within developing countries, around 68% of SAIs reported that they met the benchmark for financial audit, 60% for compliance audit and only 46% for performance audit (Anonymous,2015). This can be compared to 2010 stocktaking figures, showing that the coverage of financial and compliance audit had increased, while there was no objective data on PA coverage. The focus on financial audit is not surprising; especially for countries with low income where it is more significant, and where the financial audit coverage criteria were met by 71% of SAIs. However, the PA criteria were met by only 40% (Anonymous,2015).

It is true that various types of audit that are relatively new, such as operative audits, management audits, quality audits and environmental audits have emerged, but these are used mainly in the private sector and are characterized as internalized corporate control. On the other hand, performance audits or value-for-money audits are carried out by SAIs and are considered to be external control systems operating on public sector entities (Pollitt et al,1999c). However, there is a different view that suggests the possibility of implementing PA in private sectors, even though this is rare, and applying PA methods to both public and private sectors (Kells & Hodge,2010). The table below summarizes how the performance audit is defined according to different countries and their audit agencies.

Table 2: Performance Audit Definition

Institution /term	Definition of Performance Audit
International Organization of Supreme Audit Institutions (INTOSAI) /**Performance Audit**	Audit of the *economy* of administrative activities in accordance with administrative principles, practices and management policies. Audit of *efficiency* of utilization or usage of resources provided to the audited entity, such as human, financial and other resources, and examination of information systems, performance measures and monitoring arrangements and any process by audited entities for remedying any identified deficiencies. Audit of *effectiveness* of performance regarding the achievement of objectives allocated to the entity subject to audit and audit of actual effect of these activities in relation to the intended impact (Intosai,1992).
US Government Accountability Office (GAO)/	'*Three Es'* of government, organizations, programs, or activities. The program audit is further described as effectiveness of the achievements of objectives and compliance with laws and regulations.
Australian Auditor-General Act	'A review or examination of any aspect of the operations of a person or body'. Defined in 1997
National Audit Office (NAO) United Kingdom/**Value-for-Money Audit (VFM)**	"Our value-for-money investigations evaluate the *economy, efficiency and effectiveness* achieved in major fields of revenue and expenditure and in the management of resources"

(Source: Author)

According to Moynihan & Pandey (2010), the expressions "performance" and "result" have become universal in contemporary governance in recent times, most administrative reforms being commonly motivated by the belief that governments experience a "performance deficit". The latter is best overcome by measuring governmental activity results compared to their effort, which creates the need for performance information, and consequently performance audit becomes essential. The mandates of PA encompass aspects of organizational efficiency, effectiveness, compliance with laws and regulations, identification of fraud and misconduct, probity and other aspects of integrity and organizational performance (Kells & Hodge,2010).

Despite the richness and straightforward nature of PA, it is said to be a vague concept that is difficult to define (Gendron et al,2007b; Kells & Hodge,2010; Lindeberg,2007). It is claimed by different authors that the concept is not really well understood, is ambiguous, an open question, unresolved and debatable. This difficultly in defining PA contributes to the fact that authors in the field sometimes overlook the aspect of defining the concept and proceed to the analysis (Lindeberg,2007). This is what is described as the paradox of PA.

In summary, although there are many terminologies that could be used interchangeably to refer to performance audit, these concepts commonly share an examination of economy, efficiency and effectiveness in both financial and non-financial terms, in order to judge governmental activities. It can also refer to "good management", "sound administrative principles" and "remedying deficiencies" (Pollitt et al,1999e). While it is beyond the scope of this study to cover all available definitions of these concepts, the focus of the

thesis will mainly be on the performance audit as this term is used most frequently, and also because of the recent adoption of this type of audit by the SAI in Oman, where in the term used is PA.

2.3. Rationality of Performance Audit

So why PA, and what are the main reasons and motivating factors for its implementation? What does it have to do with enhancing public sector accountability, transparency and performance? These questions will be addressed in the following section.

According to Moynihan & Pandey (2010), terms such as "performance" and "result" have become ubiquitous in contemporary or modern governance, administrative reforms being commonly driven by a belief that most governments experience a "performance deficit". The latter is best overcome through measuring the governmental activity results compared with their effort, where the need for performance information begins and performance audit becomes essential.

Others commented that widespread governmental reforms facilitate the agencies' ability to track and measure their objectives, strategies and achievements (Brudney et al,1999; Moynihan,2008).

Moreover, Gregory (1995) pointed to the paradoxes of the "New Public Management" (NPM) where the greater the freedom a bureaucracy is given on how to deliver public services, the more intrusive becomes the auditing of outcomes and targets achievement ordered by government. Performance

auditing is vital to ensure that managers in the public sector are accountable despite their discretionary freedom (Norton & Smith,2008). Meanwhile, others have commented on the increased consciousness of the public and its representatives, which reflects upon the growth of accountability demand on those who manage public resources (Daujotait & Mačerinskien,2008). Coinciding with these changes, the role of external auditors has expanded from simply focusing on the accounts and reporting the regularity of the audited entity, to evaluation of management performance and emphasis on issues such as economy, efficiency and effectiveness in the use of public funds.

The traditional role of auditing, where regularity is the main concern, has been overtaken by adding new responsibilities for examining the proper arrangements in place to secure value for money in the use of public resources. Auditing must now also enhance the public sector organization's capability in measuring cost-savings arising from changes in working patterns and practices (Lapsley & Pong,2000). Added to this, the expectations of the national audit office or state of audit institution by both the public and central Government have grown. PA is expected to provide more comprehensive information for assessing performance in order to more effectively hold executives to account (Lonsdale,2008).

Looking at the historical development and scope of government auditing, one may notice that, for a long period of time, most governments have been mainly concerned with ensuring that expenditure of public funds is according to budget allocation and applicable laws, rules and regulations. Therefore, the focus has not been future oriented, failing to recognize the consequences of

expenditure. From the researcher's perspective, this is a reason for expanding the scope of audit and developing it to include other perspectives, which are future oriented. According to Pollitt (1993a), the development of performance audit ran parallel with the period of "managerialism" from the late 1970s to 1980s:

> "The emphasis of the government's evaluator efforts moved away from those ambitious attempts to identify effectiveness and impact which had characterized the age of enlightenment. Now efficiency and economy were the main foci. The driving manager, not the 'scientific' policy analyst, was the charismatic figure of the period. Planning went (temporarily) out of fashion. The achievement of performance targets (usually including 'savings' or 'cost improvements') became the sign of good administrative health" (p.356).

Recent literature on performance audit draws attention to changes that have taken place in the work and environment of this type of audit compared with the old approach of conservatism (Lonsdale,2008; Power,1997). Many government documents gave pride of place to the pursuit of the three Es (economy, efficiency and effectiveness) and "value for money" (Pollitt,1993a).

Also, it is important not to ignore the pressure on governments in managing the scarce resources and the increased size of public expenditure, and where there is a demand for receiving full value for the money spent.

The increased demands of people and organizations and the significant growth in the different aspects of services provided are another driving force for performance audit. Thus, organizations (whether private or public) are continuously developing in order to maintain their level of effectiveness, due

to the rapid growth and changes surrounding us in different fields, such technology, policy, public interest and others. This also leads to expansion of auditing services to include the performance audit.

The need for performance audit techniques in both the private and public sectors is increasing dramatically, being used by managers in order to assess the effectiveness, efficiency and economy of operations (Goodwin,2004). According to Ahlenius (2000), the auditor general of Sweden reported that the supreme audit institutions continue to expand their auditing scope as the demands for accountability and transparency in government programs increase. She also states the purpose of the audit to be: (1) compliance with government laws and regulations and (2) efficiency and effectiveness in government undertakings. To explain the second point further, the state of audit institution determines whether the audited entity has met all of their goals and objectives set by the government according to the programs and activities of the audited entity. Hence the findings of the state of audit are presented with proposals for improvement. Many governments around the globe are trying to enhance the accountability of their public sector through SAIs and internal audit systems. For instance, the following was cited in the UK's NAO Value for Money Handbook (NAO,1997):

> "Our main concern is accountability to Parliament and ultimately the taxpayer— to assure them that public funds and resources are used properly and to good effect. We do this by providing Parliament with independent information and advice about how economically, efficiently and effectively the bodies we examine have used their resources and by highlighting instances where the proper conduct of public business may be at risk" (p.49).

Similarly the US GAO clarified in their Government Accounting Standard and, more precisely, in their definition of performance audit, that accountability will be enhanced or improved by expanding the scope of auditing to include the performance audit: "An objective and systematic examination of evidence for the purpose of providing an independent assessment of the performance of a government organization, program… in order to provide information to improve public accountability and facilitate decision-making" GAO (2007) (p.14).

Thus, it is clear that most SAIs around the globe understand that in order to enhance the accountability of public administrations, it is necessary to expand their audit scope and include PA along with other type of audit service they provide.

Additionally, Percy (2001) argues that public sector auditors should not only seek to maintain confidence in public sector spending, but also to add value and enhance the process of achieving performance improvement in the audited entity. The latter focuses on the performance auditor's role in facilitating improved performance in addition to their controlling or confirmatory roles. Moreover, Brodtrick (2004) suggests that public institutions--like the audit general office or what are known as supreme audit institutions--should be seen as instruments that achieve the public purpose, and therefore when society desires or needs changes, then they need to change accordingly. That is why national audit offices have changed their traditional practice of focusing on financial audit compliance only, and expanded to include performance audit and evaluations (Lonsdale et al,2011).

2.4. **Nature and Scope of Performance Audit**

The application of performance audit in the public sector is widespread across the globe, whereby an independent body applies an investigation in order to make a formal assessment of an entity (Everett,2003; Tillema & ter Bogt,2010). The investigation outcomes are communicated through a report to parties within or outside the organization in order to hold politicians or managers accountable (Glynn,1996).

According to Lonsdale (2008), PA is far from being a static or unchanging activity, unlike financial audit; this flexibility is due to the lack of a widely accepted framework and rules. This type of audit can add credibility to the quality of public sector administration, stimulate confidence in public sector entities, contribute to office management and help different members of governing bodies discharge their responsibility of good governance. Similarly, Barzelay (1997) stated that as the "performance auditing domain becomes institutionalized, the level of activity will increase, perhaps accompanied by the elaboration of distinct subtypes or product line extensions". According to Brodtrick (2004), most of the academic and practitioner literature on performance audit or indicators is drawn from two models of organizational performance, namely the input output outcome model and the 3Es model, which are related but not consistent (Midwinter,1994). In fact, both models contain a sequence of steps in the "service production" process. Performance in the public sector may incorporate several aspects such as effectiveness, efficiency, quality, compliance, implementation, meeting standards of good governance, sustainability, and so on (Overman & van Thiel,2015).

Most literature relies on the input, output, outcome model and the 3Es (i.e. economy, efficiency and effectiveness) to explain performance in the public sector, providing clear specification of performance constituents. (For further information on this matter, see Boyne (2002). They have been used as guides for many empirical studies on public sector performance (Boyne,2003; Talbot,1999). From my point of view, although these models are more practical than academic, they provide a better visualization of PA and make it easier to comprehend. These two models will be discussed in detail in the following section.

2.4.1. The 3E model

The 3Es simply refer to economy, efficiency and effectiveness. The performance audit, as Pollitt (2003) has suggested, is a means of improving an organization's efficiency and effectiveness. Roberts & Pollitt (1994) declared, based on case research completed by the British National Audit Office, that performance audit reports could enable elected politicians to discuss issues on more equal terms with members of the Executive, at same time monitoring their activities and holding them accountable. Moreover, Elliott (2002), reflecting on Power (1997) definition of PA stated that PA and its equivalents (VFM auditing and operational auditing) evaluate performance of government organizations using three criteria called "the 3Es", labelled economy, efficiency and effectiveness.

The following table describes the 3Es criteria using descriptions by Pollitt et al in their book on performance audit and public management (Pollitt et al,1999e).

Table 3 The 3Es Definition

The 3Es Criteria Of PA	Definition
Economy	Minimize the cost of resources consumed or used in regard to appropriate quality, **i.e. _spend less_**
Efficiency	Comparison between the outputs of services or goods or any results of programs, activities, or projects and the resources used to produce these outputs, **i.e. _spending well_**
Effectiveness	The relation between the intended results and the actual result of the project, activities, or program. Here the output of services or goods produced is assessed according to policy objectives, operational goals and intended effects, **i.e_. spend wisely_**

(Adapted from: Pollitt, Girre, Lonsdale, Mul, & Summa, 1999b)

**Economy** refers to minimizing the cost of resources used, consumed, or purchased, having regard for appropriate quality, in other words, spending less. According to Henley (1989), _economy_ means the achievement of a given result with the least expenditure of money and other resources. For auditors, this concept is not straightforward. Despite the clarity of its definition, it is still a challenging task for auditors to verify whether the inputs chosen are the most economical way of using public funds, whether the resources available

have been consumed in an economical way, and whether the quality and quantity of the inputs are optimal and suitably co-ordinated (INTOSAI,2004).

Efficiency is related to the relationship between the outputs of the services, goods, and any other results of activities or programmes and the resources used to produce them. It is judging how maximum output could be achieved for a given input, i.e. spending well or minimize input to achieve a given level of output. Increasing the number of patients served in a hospital using existing resources is an example of efficiency. Therefore, inefficiency can occur where there is over-supply, or an excess of resources.

Effectiveness is concerned with the relationship between the intended and actual results of projects, programs, or activities. It assesses whether the outputs of the goods, services, or programs have successfully achieved the policy objectives, operational goals and intended effects: it is spending wisely (Pollitt et al,1999e).

Based on the above definitions of the 3Es, Figure 1 represents the relationships among the 3Es. Firstly, the aspect of *economy* being to keep costs low means that the audited entity should make resources available at the requested time, in appropriate quantity and quality, at minimum cost. Secondly, the aspect of *efficiency* deals with how the audited entity has used the resources provided compared with the services and goods (output) produced. The third aspect, *effectiveness*, primarily compares the intended results (outcomes) of the product or services to what has been achieved (output).

Performance Audit: (3Es) and IOO interaction

| Economy | Efficiency | Effectiveness |

| Input | Output | Outcomes |

| Financial and non-Financial resources | Goods and Services provided | • Results e.g. achievements of goals.
• Clients satisfactions
• Program impacts and Effects |
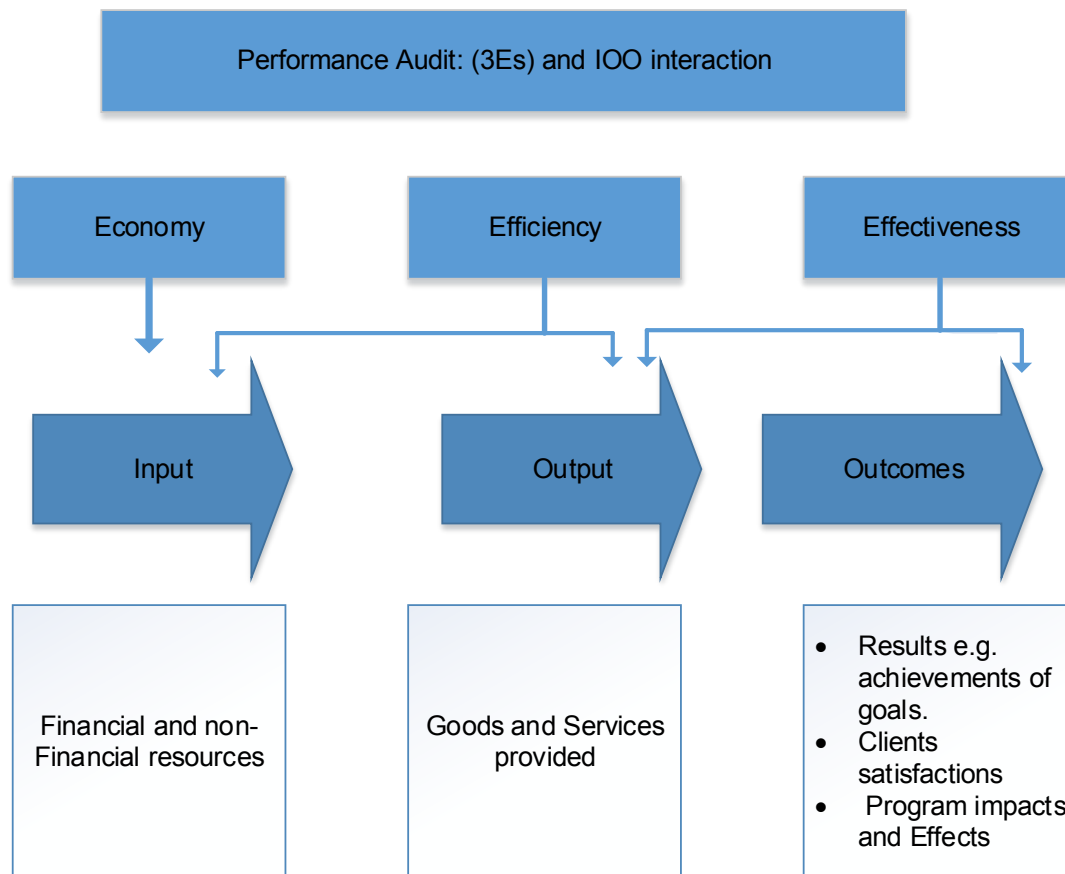
Figure 2 Relationship between the 3Es in PA

(Source: Author)

According to Smith (1990), performance indicators are needed for the economy audit in order to plan levels of input. (Performance indicators may include any factor, such as the cost of unit inputs in comparison with the actual input, etc.) For example, where an economy audit is conducted for building a hospital, there is a need to evaluate the contract and control procedures of the project, to assess to what extent the building has been constructed according to the approved time schedule, and at the lowest cost possible, or within the agreed cost limits (National Audit,1991).

Meanwhile, it has been argued that ineffectiveness occurs if the output of the program does not reflect the desired goal or does not have an appropriate

impact on the community (Ball,1998). Similarly, measuring effectiveness is not an easy task for auditors (Pendlebury & Shreim,1990):

> "The effectiveness in many public services is, of course, difficult to determine. Objectives are often imprecise and ambiguous, and even if they were not, their achievement will frequently be impossible to measure. Under such circumstances, the evaluation of effectiveness is an inherently subjective process and the appropriateness of involving auditors has always been a matter for concern" (p.177).

Efficiency is commonly measured through a formula that divides the actual output (the result obtained) by the actual input (the resources used). If the result is equal or higher than one, then the situation is deemed to be acceptable (Bucharest,2003; Jones & Pendlebury,2000). Similarly, the UK NAO claimed that the entity can arrive at efficient operations in two ways: first, by minimizing the inputs used to produce a given quantity and quality of output or second, by maximizing the quantity of output of a given quality using given input resources (National Audit,1991). Additionally, two other methods can be used to improve efficiency: increasing output by a greater proportion than the appropriate increase in inputs, or decreasing the input by a greater proportion than the appropriate decrease in output (Jones & Pendlebury,2000; Prowle,1999).

Effectiveness is concerned with an ends-oriented, instead of means-oriented, objective (Hatherly & Parker,1988). It can be assessed by comparing outcomes with the goals and objectives, predetermined by the policy objectives and measured by dividing the result obtained by the results intended (Bucharest,2003). However, others (Bovaird & Martin,1995) criticise

the limit of effectiveness, which is to evaluate the achievements of the goals and objectives of the program and activities against the ones that are predetermined. They suggested that effectiveness should be evaluated against the influence of public services on community welfare or the achievement of objectives that have a direct effect on the community. The latter suggestion is important if a government wants to know how the program or activities affect the users or the public at large. Comparing the outcomes to the predetermined goals and objectives set up by the government itself will not reveal the real picture or, at least, it will not be completely unbiased.

Furthermore, the economy aspect in the 3Es model is frequently described as the cost of producing specific service inputs of a given quality, e.g. for staff or equipment (Jackson,1988). This aspect is a straightforward element of performance that the authority should minimize. However, minimizing the cost or the price paid for production does not necessarily indicate good performance levels. For example, lowering the wages of the local government force will definitely lower the total expenditure, but that could conflict with other goals or policies of local government. According to Bouckaert (1993), the loose part of the economy is of little value in gauging performance. Often, the high or low level of expenditure on local services cannot, by itself, be used to judge the success or failure of local authorities (Andrews et al,2010) .

In contrast, efficiency and effectiveness are important elements for government evaluation or performance indicators. Jackson (1982) defined two types of efficiency:

1. Technical efficiency - the cost per unit of output, e.g. the cost of an hour of teaching compared to the output of teaching in that hour.

2. Allocative efficiency - the responsiveness of service to public preferences (cited in (Boyne,2002).

Jackson (2009) suggested that careful assessment should take place on what is currently being provided, and the value which users place on it when looking at allocative efficiency. Responsiveness is an important dimension of efficiency that indicates the level of performance that should be measured. The responsiveness approach in PA is discussed in more detail in Section 2.7 of this chapter.

Similarly, the aspect of effectiveness amongst the 3Es can be defined in different ways, the most common being reference to the achievements of the formal objectives of services. As affirmed by Boyne (2002), "Information on formal effectiveness is necessary, but not sufficient, for evaluating the performance of public services".

2.4.2. Risks concerning the 3Es

Where the main objective of the economy element is to keep the cost levels low in order to achieve the given objectives, the general risks regarding this element can be summarized in the following way (Daujotait & Mačerinskien,2008):

1- Waste (allocating resources which are not needed to achieve the desired results or outputs, or simply the desired result could be achieved without the use of those unnecessary resources). The waste could be in financial or human resources, equipment or inventories.

2- Overpaying (paying a higher price for resources which could be obtained at lower prices, e.g. unreasonable supply contract).

3- Unnecessary quality (paying for higher quality than needed or required for the resources used, in order to achieve the outputs or results).

In order to overcome these risks, performance auditors need to address certain issues regarding the economy element, for example, to examine whether the audited entity acquired the right amount and type of resources at minimum cost, whether the entity managers were aware of all the other alternatives available and had been wise in their choice of quality, quantity and other aspects, in order to achieve the required objectives at minimum cost.

Similarly, there are other audit risks related to the aspect of efficiency that could be summarized as follows:

1- Leakages (occur when the resources or inputs used by the audit entity do not result in the desired outputs).

2- Low productive input/output ratios.

3- Slow implementation or delays.

Therefore, performance auditors need to address issues such as whether the outputs have been produced cost effectively, whether the process of implantation was managed properly, whether there was any unnecessary overlap and whether this was avoidable or not.

The former leads us to the general risks related to the third element in performance audit, which is effectiveness. These are:

1- Failure in achieving objectives, resulting in undesired outcomes.

2- Faulty policy design, e.g. inappropriate assessment of needs, unclear objectives, or impracticability in implementing the policy or objectives.

It was also suggested by Daujotait & Mačerinskien (2008) that it is the duty of performance auditors to address certain issues and limit the general risk of ineffectiveness, for example, assessing the extent to which the intended outputs have been produced and involved in the operation.

2.4.3. Input Output Outcome Model

The Input Output Outcome (IOO) model is presented in Figure 3 below, whilst Figure 4 illustrates how the models are interrelated and should both be considered in performance audit.
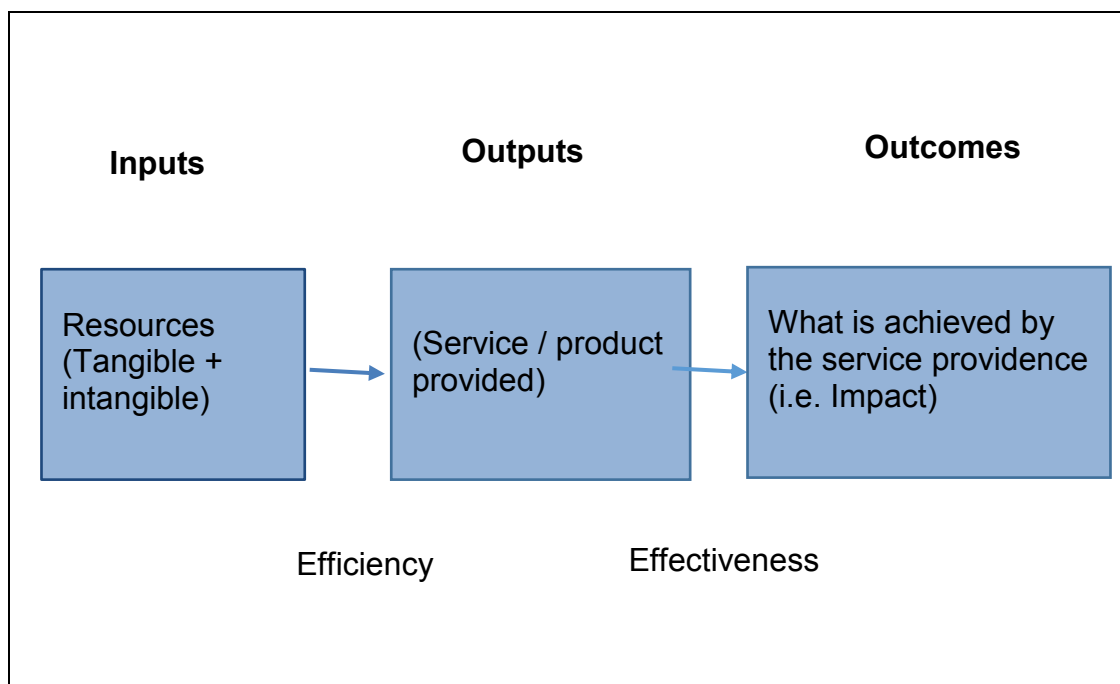
Figure 3 Input Output Outcome model

(Source: Author)
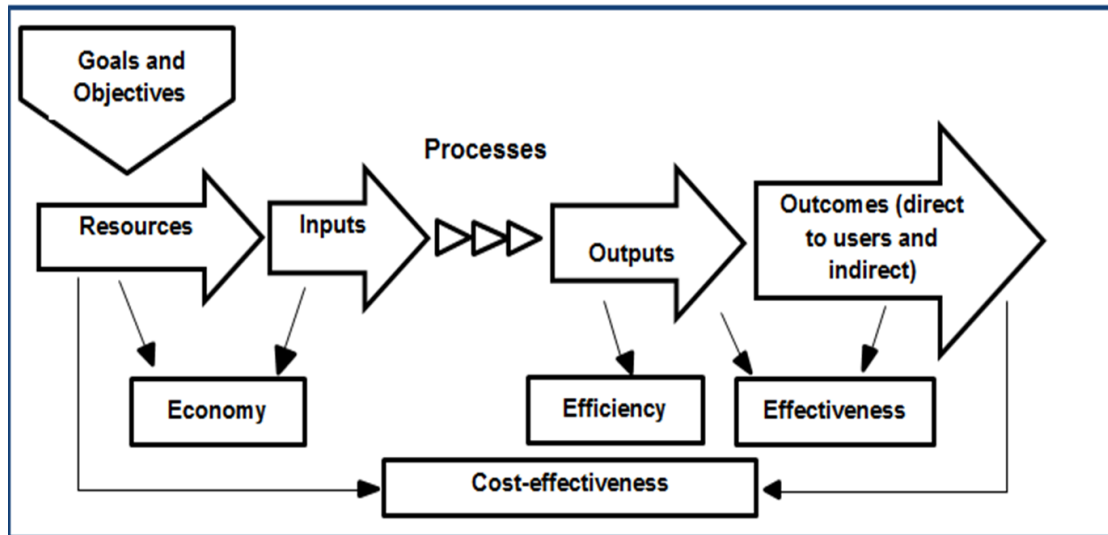
Figure 4 The interaction between the Input Output Outcome and 3Es

(Source: Author)

Other criteria for evaluation could be developed through using the IOO model of organizational performance. The inputs element includes expenditure on tangible resources like equipment and materials, or intangible resources like time, effort and energy, and could also include wages for labour, although these levels reveal little about performance. Output is displayed by the amount of service, along with its quality, e.g. the number of services provided compared with speed of delivery and accessibility of provision. In comparison, the outcome could be indicated based on whether the impact is positive or negative; for example, the increase in opportunities for employment due to new project implementation would be a positive effect. Moreover, outcomes encompass the formal effectiveness of a service. According to Boyne (2002), outcome is considered to be at the centre of evaluation criteria for performance in public sector organizations. Outcomes can be assessed, for example, by the level of equity or fairness of service allocation of output

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according to gender, age, income and geographic area. Unlike the private sector, the public sector is supposed to provide services according to the needs of the citizen rather than the ability to pay. Indicators of fairness help to assess if this has been achieved and to make a comparison of equity or fairness levels among different services across local authorities.

Moreover, the IOO model ties the inputs and outcomes together as indicators of cost effectiveness, which provides a clear judgement of value for money since it links the start and end of the service provision process. Thus, through the use of the IOO model, the performance indicators will provide knowledge about the relationship between the cost (inputs) and the consequence, or the effect (outcomes). Applying this model could help to answer how much spending is required for achieving a particular quality of service.

However, the IOO model has several drawbacks. It has been criticized for ignoring the responsiveness of service to public preference which "is an important aspect of the organizational success and failure that should be at the heart of a set of performance indicators" (Pollitt,1988, p. 80). The concept of responsiveness could be viewed from two different angles: firstly, from the perspective of the direct user, i.e. those who are the direct recipients of the service, for example, patients in hospital, or students at university; secondly, from the perspective of the local community, or citizens at large, for these are the people who may be indirect users of a service, or indirectly affected by that service provision.

At the same time, it has been argued that the model focuses more on the interests of external, rather than internal stakeholders. Therefore, this

imbalance should be reduced. For example, staff satisfaction levels should be measured in conjunction with customer satisfaction, since the first may be a good precursor for the latter.

In addition, the model ignores the role of the public sector as a democratic institution and not only as a service provider. It is suggested that a set of performance indicators should reflect the democratic outcomes, which can include dimensions of local democracy, such as the level of public participation (elections), probity (absence of fraud in public officers and proper use of public funds) and accountability (ministers and public officers being answerable for their actions) (Boyne,2003; Boyne,2002).

According to Daujotait & Mačerinskien (2008) the interaction between the IOO model and the 3Es model can be extended to include socioeconomic problems and needs subsequent to outcomes and results. That is, results and outcomes may raise socioeconomic problems, which, in turn, draw attention to the different needs of the surrounding community and environment. The latter should be recognized by government and policy-makers, due to their influence on the objective setting for corrective action or policy.

It is clear that both the 3Es and IOO models structure the basics of performance indicators that serve as a tool for assessment of organizational performance in the public sector, yet there are still many other aspects to explore in terms of how the auditors prioritise and filter them in order to make the decisions in their reports. In general, the public sector is supposed to perform well when outputs and outcome are high and attained at low cost, which could be described as being efficient and yielding value for money.

However, these models do not help to explain the relation between effectiveness and service outcomes for end users and performance measurement of the entity.

The factors influencing the organizational performance of individual public sector organizations are abundant (Rainey & Steinbauer,1999). Which of these indicators addresses the concern of certain groups of stakeholders? Will the auditors' decision outcomes be biased due to a focus on certain performance indicators over others? Have the previous questions been addressed before? These questions lead us to the next section, which discusses the literature regarding performance indicators from the point of view of previous researchers.

2.5. The Use of Performance Indicators

An important question to ask here is whether there is any common agreement on how performance measurement should be conducted, or how indicators should be applied in the public sector, and whether this will lead to an overall improvement in performance and accountability. While Roberts (1990) drew attention to the lack of consensus regarding what performance indicators are intended to do, Henkel (1991) commented that performance indicators are intended to provide central government with an overview of the performance of the government entity, which will help it in policy and resource allocation decisions. Therefore, performance indicators could serve as a control mechanism or means of monitoring the performance of the regions and districts to which government delegates' local spending power.

However, Smith (1990) drew attention to the difficulty of having an absolute yardstick on which to judge performance in the public sector. He added that while the government may set certain targets for educational attainment, speeding on roads, mortality rates etc., these can usually be determined only with regards to existing performance. Thus, the success of the performance indicator package depends on the amount of comparative data available. In other words, it may involve comparisons from one year to another (particularly favoured for central government activity and nationalized industries), or from one jurisdiction to another (typically local authority areas, but possibly countries too).

In addition, Bowerman (1995) summarized several factors which cause difficulties in using performance indicators for evaluation purposes. Firstly, there is a risk that intended results may not be achieved due to the possibility of manipulation of objectives and reported performance by administrative officers. Managers may focus mainly on reporting acceptable performance, rather than changing the substantive activity. They may also be motivated to manipulate information systems and to redefine organizational policies.

Secondly, lack of indication of who owns the performance reflected by the indicators--plus confusion regarding the role of the recipients of performance indicators (i.e. consumers/citizens) --may decrease the accountability of politicians.

Thirdly, no clear guidance exists in order to clarify whether over-achievement of one target compensates for under-achievement in others, or even what the consequences are of breaching the standards. Indeed, citizens' only right is to

information, not to action, nor compensation. All these difficulties, along with public apathy towards government affairs (see the meagre voting in local elections), may result in the poor impact of performance indicators.

Conversely, Carter (1989) described performance indicators as ideal instruments for exercising central control, allowing central government to be the "back seat driver" of the public sector service. With the help of comparative audited data on a whole range of local authority activities, central government could use such information to allocate funds and resources, and decide "appropriate" levels of service.

Below is a summary of the different dimensions of organizational performance based on the Boyne (2002) study as a checklist for evaluating a set of performance indicators, where each dimension has a number of sub-dimensions. It is useful to measure and assess the performance of specific services, or even of local government as a whole. The study used those performance criteria to match with performance indicators used by the auditees' entities in the UK, i.e., the checklist developed was applied to check statutory performance indicators in England and Wales.

Table 4 organizational performance dimensions

Dimension of Organizational performance in local government	
Outputs	Quantity
	Quality
Efficiency	Cost per unit of output
Service outcomes	Formal effectiveness
	Impact
	Equity
	Cost per unit of service
Responsiveness	Consumer satisfaction
	Citizen satisfaction
	Staff satisfaction
	Cost per unit of responsiveness
Democratic outcomes	Probity
	Participation
	Accountability
	Cost per unit of democratic outcome

(Source: Adapted from Boyne (2002))

The proposed checklist above is designed to encourage performance auditors, not necessarily to be an absolute and clearly established list, but to challenge their way of judging the indicators. For example, looking at service outcomes for education and how formal effectiveness is measured, are exam results the only way to measure it? Is it even relevant to the impact of education upon society? The checklist suggests some ideas, such as responsiveness and democracy, which are more relevant to modern government and more clearly linked to NPM.

According to Smith (1990), there are three reasons why public organizations might have differences in performance:

(1) Organizations might have different objectives where, for example, each district or region has different local preferences for the services provided. For example, in an area where the percentage of illiteracy among young people is high, the schools' objectives may be to encourage parents to enroll their children by offering free education. However, school objectives may differ in an area where parents are aware of the value of education and the percentage of illiteracy is low.

(2) The needs of each organization that was compared are different. Although the objectives are identical, the resources required to deliver a standard level of service may vary significantly. For instance, the population of a particular area and the service users may affect the needs and level of resources.

(3) The cost that organizations may pay could be different.

From the discussion above, we suggest the need for an empirical study to examine the usage of different dimensions of performance indicators by performance auditors. Also, the empirical spotlight needs to be shone on how the auditors value the information of each dimension, which will then be used to analyse and make judgements regarding the performance of the audited entity.

That would then help us to understand the effect of the performance indicators on the decisions and recommendations made by the auditors in their final reports. It is important to draw attention to how the information may represent the interests of different groups of stakeholders whether internal or external, which the auditors should bear in mind in the judgement process. Although some researchers have pointed to the weakness of the performance indicators in addressing the needs of some central stakeholders, little empirical work has been carried out examining the way auditors prioritise the different dimensions of organizational performance information and link it to the auditor's judgement and decision-making.

Moreover, from the point of view of the researcher, the study should be targeting some geographic areas that scholars have ignored or paid little attention, such as developing countries and the Middle East, in order to examine to what extent performance audit practice is comparable to that of developed countries.

2.6. **Performance Auditing and its Relation with Different Stakeholders**

During the last decade, it is undeniable that expectations for public provision of services have risen and been accompanied by increasing pressure for accountability to diverse groups of stakeholders. In these public organizations, diverse groups of stakeholders may share little agreement on expectations, goals and standards with regards to how the provision of public services should be managed. The area of accountability in performance audit still needs more attention from scholars, as emphasised by Lonsdale et al (2011, p. 46) who stated that: "while accountability concepts have been a foundation of public administration over the years, there has been precious little focus on audit institutions". However, recently scholars have started to become more interested in certain groups of stakeholders with whom performance auditors deal. For example, Vanlandingham (2011) declared that scholarly literature focuses on the importance of involving central stakeholders in performance audit in order to address accountability issues. So it is necessary to know first who these different groups are, the possible expectations of each group and how the supreme audit institutions deal with them.

According to Day & Klein (1987, p. 5), accountability is related to responsibility: "One cannot be accountable to anyone unless one also has responsibility for doing something". Meanwhile, Simon (1991) viewed responsibility in three different ways, as legal authority, i.e. getting the job done, moral obligation and responsiveness to value. The last can be explained as the responsibility of the public officer charged with carrying out the performance of a task to

keep in mind reference to the values held by those charging the officer with carrying out that function or task.

According to Pollitt et al. (1999), performance audit started as a practice within supreme audit institutions (SAIs) in the late 1970s and 1980s. In many countries, SAIs are located near the heart of the state apparatus, and thus the performance audit or value-for-money is considered to have political and democratic significance. Almost all countries have an SAI, and currently performance audit is part of the legal mandate of at least 188 SAIs, according to information displayed by the International Organization of Supreme Audit Institutions on their website (INTOSAI,2010). Since the essential purpose of the performance audit is to examine the economy, efficiency and effectiveness of an audited entity's activities, program, or project (Arthur et al,2011), it serves the government by providing a wide ranging analysis of the 3Es of governmental agencies' practice and programs, which help the government and Parliament to make suitable decisions. The question here, which they must consider carefully, is: who are the direct stakeholders for the SAIs? The key users of SAI reports are normally parliamentary committees, in the case of European countries, Congress in the USA, or central government in other countries. However, there are others who could be considered as indirect users, for example the media, academia, professional bodies and individual users, who could also be considered as central stakeholders (Sloan,1996). However, some SAIs do not make their reports accessible to the public, which affects the way auditors feel about their accountability (González et al,2008).

In fact, an audit report is a basic document that illustrates management or administration accountability, but also includes the auditor's accountability (Radeliffe,1999). That is because the report shows their work, based on their auditing of management performance, and their rewards are determined by their colleagues' perceptions of how well they have enhanced their "showcase" (i.e., their audit report). Thus, as Radeliffe (1999) declared, accountability in PA applies to both the auditees (i.e. management of auditee entity) and the auditors themselves. To explain the relation of each group to PA, and to understand the accountability of PA and agency theory, this will be discussed in the section below.

2.6.1. Agency Theory and Performance Audit

Agency theory presents the problem of the different relationships between different stakeholders. Pratt & Zeckhauser explained the relation between the agent and the principal in a simple way: "Whenever one depends on the action of another, agency relationships arise where the individual who takes the action is the agent and the one affected is the principal" (Pratt & Zeckhauser,1985, p. 2). The agency problem results from the agency-principal relation. The principal in this scenario (generally) has less information than does the agent, a situation which is normally described as "information asymmetry", i.e. hidden information that adversely affects the principal's ability to monitor the agent effectively and check whether their interests are properly accomplished by the agent (Adams,1994; Jensen & Payne,2005). Another problem could occur when a principal assumes that the agent will attempt to maximize his/her own interests rather than those of the principal (Streim,1994).

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The conflicts of interest between the agent and the principal are agency theory problems. The literature on agency problems often discusses two problems: information asymmetry and risk-sharing, which arises when agents and principals respond differently to risk (Eisenhardt,1989). Pareto-efficiency was introduced as the optimal way of solving these problems. It suggests that both the principal and the agent will incur contracting costs, i.e. they will acquire an external auditing body for scrutiny at the same time as the agent will acquire an internal audit in order to signal to the principal their accountability and transparency (Ross,1973). According to the previous discussion, SAIs aim to minimize the agency problem due to their overall role which involves the evaluation of administration performance in the public sector (i.e. agent), and to ensure the accuracy and fairness of the financial statements presented to the principal, i.e. the government. According to Streim (1994), SAIs represent a special bonding/monitoring device to eliminate the agency problem. Similarly Blume & Voigt (2011) claimed that many states attempt to mitigate the effect of principal-agent problems by creating SAIs. Meanwhile, Wallace (2004) suggests that the increase in demand to audit occurs due to the existence of agency problems in the first place. Without the existence of such problems, the SAI would be a superfluous cost for the government (Streim,1994).

The SAIs themselves and the administrative managers in the ministries of the public sector are both agents of the principal (central government). To illustrate this point, both auditors at SAIs and public sector managers or administrators are agents of central government, yet the SAIs enjoy independence from the public sector, as they are considered external auditing

bodies. Since the SAIs report to central government, it is clear that government is the principal here. However, the SAI reports are also accessible to Parliament/Council of Ministers, so those are considered principals too. However some still argue that public sector organizations are considered to be agents for multiple principals within and outside their boundaries, and not only to central government (Lonsdale et al,2011). When the principals hire or employ an auditor, additional agency relationships arise. The auditors, like any other employees hired by the government, are interested in maximizing their own utility. At the same time, it is hard for the government (principal) to measure their efforts directly. The situation at hand leads us to a critical question, previously raised by Roberts (1979, p. 29): "If the owner hires an auditor to make sure that the manager is not cheating him, how is the owner assured that the auditor is not also cheating him by not delivering the agreed upon level of auditing services?" The next question that comes to mind is: what should the public/citizen or the service users (in the auditee entity) consider in this relationship to PA? Can the SAIs consider them as another principal, since the government is trying to protect public money by giving authority to the SAIs to monitor the administrative managers in the first place? According to some (Fama,1980; Fama & Jensen,1983; Jensen & Meckling,1976), the external audit can play a vital role in protecting the owners' interests due to the separation of management and ownership. As the theory suggests, the owner (principal) needs protection, since the managers (agent) could act in their own interests rather than considering the interests of the principal. Therefore, to minimize the risk of an agent–principal problem, external auditors oversee the process, which includes monitoring the

performance of the managers, evaluating the internal control system and ensuring that the financial statements of the audited entities are accurate and according to the rules and regulations (Hoque,2006; Williamson,1975). Figure 5 illustrates the group of different stakeholders and the type of relation to SAIs according to the agent–principal relationship. The figure presents four different groups: citizens, who are the taxpayers, voters and, at the same time, clients of the services provided by the government, such as hospitals or schools. The second group is the Parliament, Congress in the USA, or the Al Shura Council, who are elected representatives in many Arab countries. Also there is central Government, which recruits the ministers and the administrators. In addition, there are the media, academia and professional bodies, who also might have different interests to those in the PA report.
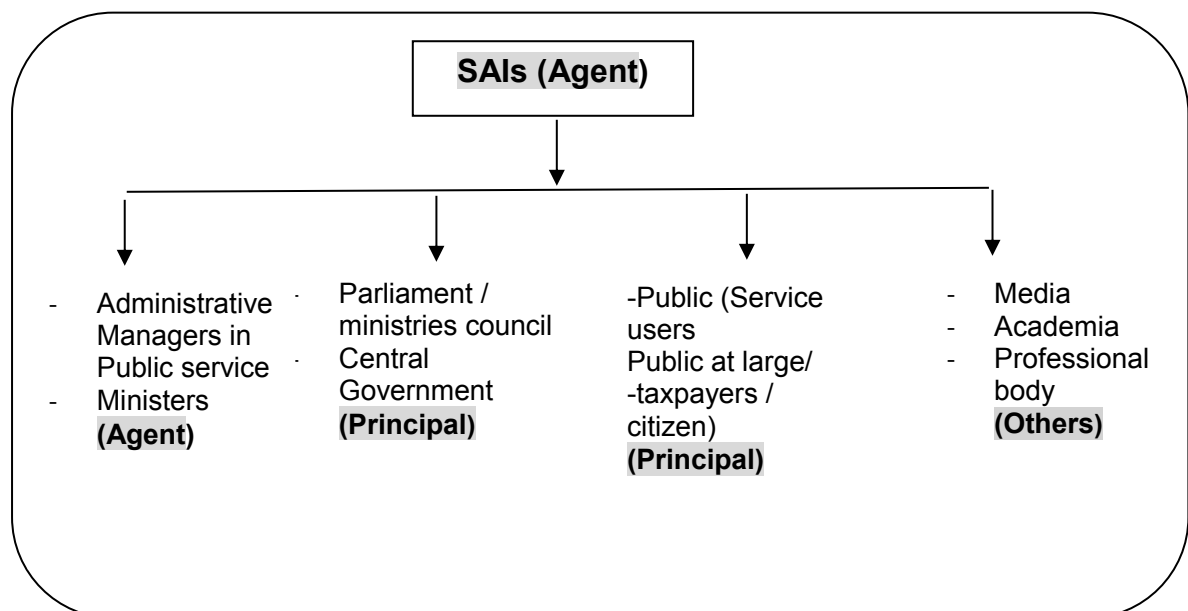
Figure 5 The realtionship between the State of Audit Institution and other stakeholders

(Source: Author)

2.6.1.1 Parliament and Government

The principal/agent relation exists between the citizen and Parliament, as the latter is elected by the citizens to represent their interests and put forward their ideas to the government (Smith,1990), but this principal/agent problem has nothing to do with SAIs. It is covered by the media and political parties instead (Lonsdale et al,2011). Furthermore, Parliament can play an important role in approving and changing government policy and spending. Thus the principal/agent problem exists here between Parliament, the government and the ministers. In most countries, government spending still has to be approved by Parliament/Congress/the Al-Shura Council. However, the Parliament cannot be sure that the government is going to spend money according to the budget appropriations. Parliament needs to hold government to account.

The government usually has to provide a detailed report on the compliance of budgeting with actual spending, which is prepared by the SAI in order to increase government credibility and reduce biased and manipulated data. Moreover, the government is responsible for reporting their performance, as well to Parliament, i.e. how economically, efficiently and effectively they perform in their programs (which is known as performance audit), again performed by the SAI. That is because the Parliament cannot observe the actions taken by government administration or members. Thus, the SAI provides a report on governmental performance, to hold government accountable to Parliament. That is not the only reason why Parliament might be interested in the SAI audit report. It is known that politicians are good at

playing with numbers to support their claims when they talk to the public (i.e. voters) during their election campaigns. Rose (1991) comments on the importance of "numbers and quantification" in politics, stating that:

> "Paradoxically, in the same process in which numbers achieve a privileged status in political decision, they simultaneously promise a "de-politicisation" of politics by redrawing the boundaries between politics and the objectives purporting to act as automatic technical mechanisms for making judgement, prioritizing problems and allocating scare resource." (p.674).

At the same time, the auditing role in politics, especially with regards to the use and legitimism of numbers, has been neglected in the research (Bowerman,1995). In fact, public auditors are viewed as being more independent than private auditors, since there is no threat of terminating their contract with a client if their report is not in the interests of the principal. Given the fact that SAI auditors are not appointed by the auditee entity, but by the government, so they do not serve the interests of the administrators, we could conclude that they are not serving the interests of the government either.

Ultimately the government would not want to inform Parliament that it did not do well; after all, both the administrators and the auditors of SAIs work for the same employer (central government). This prompts us to ask what the incentives are that make the auditors in SAIs work harder and deliver high quality reports that are completely independent from the administration and central government. Interestingly, Streim (1994) summarised four reasons that identify why the agency problem arises, even where Parliament has used the SAI audit report, or used the SAIs as a monitoring tool:

- Auditors receive a fixed salary which is joint with unobservable effort choice; i.e., there is not much incentive to work harder (see for example Barnea et al,1985).

- Almost all the auditors at SAIs, including the directors of the SAIs, hold lifetime tenure positions. There is no actual threat that they will be fired, or that their contract will be terminated, which does not constitute an incentive to work hard.

- Unlike private auditing institutions, the SAI will not lose income or lose clients simply due to poor reputation of their audit reporting quality, which normally forces the auditors in private auditing to work harder and provide a high quality of reporting (DeAngelo,1981). To clarify the latter, even if the SAI does a bad job (i.e. bad quality reporting), they will still continue to do their audit for the next period, since there is no competitor to whom to shift the business.

- Unlike in private auditing, governmental auditing does not have any liability rules, i.e. there is no penalty if the auditing fails to provide accurate and quality reporting, or does not fulfil requirements.

Those four reasons illustrate how hard it is for the PA to be completely independent of the central government, and show that the principal/agency problem is a reality, with lack of incentives to provide high quality reporting by auditors.

Compared with the private sector, SAI auditors are not going to lose a client easily without a sufficient reason. From my perspective, this motivates the auditors to write a good report even if this conflicts with the interests of public or administrative officers who will not terminate the relationship with them, unlike private auditors. Meanwhile, if it is assumed that auditors are just like any other agent and want to maximize their own interests, then even if their audits report conflicts with the administrative officers, it will still maximize their interests.

In addition, creating another level of auditing to audit the SAIs will not solve the agency problem and may lead to an infinite regress (Blume & Voigt,2011). If the monitors in our case here is SAI have monetary rewards that are based on their monitoring, this will create more motives for concentrating on the most important inefficiencies in monetary terms. Added to that, if they have competitors, i.e. actors who are interested in the same goal, for example, the media, uncovering government inefficiencies, like the media, this will encourage the SAIs to be even more active (Blume & Voigt,2011).

Apparently there is a problem in motivating performance auditors to make high-quality audits, and there is an urgent need to develop better technology to measure both efficiency and effectiveness. However, Streim (1994) argued that even if these problems were solved, another problem remains, which is how to make sure that the politicians would really read and use the auditor's report.

2.6.1.2 Government and administration

The principal/agent problem exists between central government and ministers (i.e. managers), because the government employs managers to carry out their programs (Lonsdale et al,2011; Smith,1990). How does one define government? According to the World Bank (1992):

> "Governance is the manner in which power is exercised in the management of a country's economic and social resources for development", or "the manner in which public officials and institutions acquire and exercise the authority to shape public policy and provide public goods and services" (definitions cited by (Oehler-Sincai,2008), p.4).

The administration applies the policy and should achieve the targeted strategy assigned by government, whereby the monitoring system comes first by internal audit, and secondly by the SAIs to hold the administration accountable. Therefore, SAI reports could be described as control systems, enabling the principal to adequately control their agent and to judge the performance of ministries who act on their behalf (Smith,1990). Also, the public, as clients of the service, can hold the service provider directly responsible for their performance. For example, they could take the issue directly to court, or select another service provider if possible. Thus each group has different interests in the information provided by the SAIs. For example, the ministries could be interested in knowing how their performance could be improved. Similarly, the public might want to know whether government spends their money from taxes wisely. Here the citizen enters the chain of accountability in two aspects, firstly as a taxpayer/voter, and secondly as a consumer of public services (Smith,1990). Parliament wants to know

what the government does, and what the consequences of government policy are, in order to use that information in their election campaigns (Ashworth et al,2001).

2.6.1.3 Citizens and SAIs

According to Power (1997), the types of principal/agent can be listed in many different ways. For example, principals can include shareholders, local residents, taxpayers and future generations. Others even go so far as to advise performance auditors to consider the public as their ultimate client, regardless of the immediate formal superiority of the performance auditors as a legislative body due to professional insistence on audit independence and objectivity (Norton & Smith,2008; Wheat,1991). Similarly, Smith (1990) argued that citizens are the principal in the first instance, while the government is the agent for the electorate. Moreover, Bowerman (1994) commented on the accountability of value-for-money auditing in the UK, recommending that the auditors should determine whether the management or the public are their main priority in this type of audit. According to Bowerman, VFM audit "has lost its way; it needs to rediscover its accountability roots" (Bowerman, 1994, p.209). The lack of clarity about the role of the auditors in guiding the managers or blaming them, and confusion regarding who the audit client is, all represent the deficiency in external audits of public sector standards and accountability framework.

2.6.1.4 Media and other stakeholder

The relation between the media and the SAIs depends on the nature of the communication strategy or policy that SAIs take towards the public and mass

media. The priority of being more open and transparent to the public in general is an initiative for a clear strategy, which SAIs should follow. According to Pollitt et al (1999f), a small number of SAIs started to publicize their work in booklets and brochures in the 1990s, and although this communication was limited, it established ties with the public and the media. Now many SAIs and NAOs make annual reports of all their various audits accessible to the general public. In addition, INTOSAI (International Organization of Supreme Audit Institutions) set openness and transparency as a principle in their communication policy in 2005 (González et al,2008). According to the manual of performance audit developed by INTOSAI, publicized audit reports increase the credibility of the audit function, and SAIs are advised to make their audit results directly accessible to the general public and media unless prohibited by legislation or regulations (Intosai,1992). So, are the SAIs accountable to the media? That is still questionable, as the relationship itself is tied to the policy the SAIs will follow with the media. It has been noticed by many SAIs around the world that communication with the media opens the door for the public to get to know about SAI activities and news updates. For instance, the Austrian Court of Audit found that its relationship and presence with the media influences its activities. The UK NAO publishes its audit reports along with a press notice, and a press officer will be appointed to answer the journalists' questions (González et al,2008).

In contrast, not all SAIs have such a way of communicating with the public or the media. For instance, Greek and Danish SAIs did not maintain any communication strategy with the media or the public, neither publicizing their audit findings and reports, nor having a press office responsible for press

releases, at least until 2008 (González et al,2008). Regarding the Omani SAI, it was noticed that while they maintain some communication strategy with the media and the public, it is still restricted, although they do have a press office responsible for releasing their news and roles on their website. In addition, the SAI has released a smart phone application enabling the public and citizens to inform it about any fraud or misuse of public resources in any public sector entities. However, the SAI in Oman has still not publicized their audit report to the public. If SAIs do not publish their reports to the public, the likelihood of prompting bureaucrats to change their behaviour seems to be low (Blume & Voigt,2011).

It could be suggested that if Parliament and the media find from prior experience that performance audits really do have a great impact, then they will devote a great deal of attention to this type of audit; but if their expectations, based on experience, are low, then less attention is likely to be devoted to it. Therefore, the impact of a PA report could be indirectly amplified by the attention gained through the press and the Parliament, which may stimulate the audited organization to follow up on the PA, and that in turn may lead to improvements and effective audit (Lonsdale et al,2011). At the same time, media coverage may have a negative influence which could discourage the officials (Morin,2004). It was observed that when Parliament pays more attention to PA, the media may direct that attention towards political debate, which motivates the process of adaptation and change to follow the recommendations in PA reports by the auditees' entities (Raudla et al,2015). Empirical studies in Canada show that intervention of parliamentarians and media coverage play an important part in facilitating the changes undertaken

in response to the PA (Morin,2004; 2014). Another study in the USA shows that actions by legislators and media attention both increase the influence of PA (Raudla et al,2015).

The engagement of SAIs with the media, academics, and other entities (such as citizens) can sustain their reputation, which, in turn, can support or limit interference. Thus, it is important for the authority of SAIs to bear in mind the significance of establishing a good communications policy towards the media, public and other stakeholders.

2.6.1.5 Complexity of PA and their accountability to different stakeholders

The accessibility of performance audit reports can improve the quality of the political and democratic processes. For example, in a case research done by Roberts & Pollitt (1994), they suggest that audit reports can enable elected politicians to discuss some issues on more equal terms with members of the executive branch, and to monitor their activities in order to hold them accountable. Despite this, others see the relationship between accountability and performance auditing as more complicated, for a number of reasons (Everett,2003; Glynn,1996). For instance, while the performance audit provides elected politicians and citizens with information regarding an organization's programs or activities input, outputs and efficiency, it may be difficult for them to understand and be of minor interest to them (Tillema & ter Bogt,2010). Many have commented on the complexity of this type of audit due to its comprehensive view and since it is not exclusive to an organization's performance, measuring not only economy, efficiency and effectiveness, but

also including non-economic issues, such as equity, responsiveness, impartiality, social justice, legality and legitimacy (Everett,2003; Pallot,2003; Tillema & ter Bogt,2010). Similarly, public sector accountability also shares a complex nature "due to two types of mandate which are delegated down the hierarchy of principal–agent, which ranges from the voting citizens and the elected body that represents them, via the Executive to the organization's managers." (Tillema & ter Bogt,2010, p. 758).

However, others still see performance audits as a checking instrument for the principals because the agents may act against the principals' interests and fail to reduce "information asymmetries", or, as Moesen (1994) calls it, "the manipulation of biased information by the agents", as the agents have access to more information than do the principals. Moreover, PA may be considered as a risk reduction practice to limit the chance of fraud, waste and abuse, whilst not removing it completely. Each group has different preferences, whether they be citizens, Parliament, ministries, and governments. Even local government institutions and levels may have different goals and strategies, and consequently their preferences may differ. Therefore, the pressure on the need for PA information increases over time. That could be another reason leading to increased interest in performance measurement (Hood,1991; 1995), and the audit and evaluation explosion (Power,1997), which , in turn, is part of the new public management reforms. Therefore, SAIs could be described as institutions for informing preferences and political instruments for different stakeholders.

Thus, performance auditors--like any other auditors--are accountable to all their report users. Their accountability in relation to others beyond agent and

principal could also be emphasised. For example, it might be about the need "by some party to establish the credibility and reliability of information for which they are responsible which is expected to be used and relied on by a specified group or groups of which the members may not be constant or individually identifiable" (Flint,1988, p. 22). Lonsdale et al (2011) commented on Flint's assertion that accountability makes it necessary for the auditing party to be independent, whereby its audit process is based on freedom from investigatory and reporting restrictions. They add that auditors in SAIs face the problem both of agency and "whose benefit are we measuring", which leads them to recognise the needs of multiple stakeholders.

It is known that diversity and complexity could be caused by the expansion of information, new technologies and multiculturalism. It is hard for auditors to be more comprehensive when it comes to dealing with the massive data and information accessible to them via the public sector administration, or even from the end-users directly. New technology makes it easy to obtain end-user feedback and records, and to filter the public sector data.

A study by Raudla et al (2015) investigated whether the two main functions of PA--ensuring accountability and contribution to change--are compatible or incompatible. Although some studies suggested a trade-off between these two functions, where PA tend to be used more for the purpose of accountability, it was less likely to be perceived as an instrument of change and improvement (Behn,2001; Reichborn-Kjennerud & Johnsen,2011). However, findings by Raudla et al (2015) show no significantly negative correlation between these two functions. Thus, there is no strong evidence to

suggest a trade-off between the functions of ensuring accountability and contribution to change.

In fact, there is no clear difference between the client, consumer, shareholder, beneficiaries of audit, users of audit report, or even the audience, all of whom the external auditors in the public sector have to address. One can assume that the principals (accountees) are those who are entrusted with public resources, and to whom are convened the responsibilities of sound management. The public voters (electorate at large) are the primary accountees. The Ministerial Council or Parliament is considered to be an accountee, since they are representative of the public. Central government and ministers could all be accountees, based on their internal accountability. Additionally, from a future perspective, the next generation could be classified as accountees (Moon,2001). In a more logical description of performance auditors relative to the more general view, Johnsen et al (2001) stated that "performance auditors could be relatively successful agents for *society at large* [emphasis added] as principal in providing performance information as a collective good and thus function as watchdogs for democracy and transparency, the society is not a homogenous entity" (p.596).

2.7. Responsive Approach in PA

2.7.1. The need for responsive approach

The complex and dynamic nature of public policy creates natural tension between itself and performance audit (Lonsdale et al,2011). In the modern world in which the public policy-maker operates, knowledge and preferences will differ and change continuously (Lonsdale et al,2011). Thus, the performance audit needs to track all these changes. The problems of the modern world are extraordinarily complicated, the only thing remaining constant being change itself. One of the criticisms regarding performance audit is that it focuses on the objectives, targets and criteria, and criticises the shortcomings. Yet, performance audit does not seem to reflect the idea that those aspects actually relate to society's real problems and people's concerns (Reichborn-Kjennerud & Johnsen,2011; van der Knaap,2011). Although the use of norms and criteria make the auditor's work easier and more focused, it may lead to limited evaluation and also limit auditing questions and answers. It is risky to tie the monitoring and evaluation of a program to limited norms or criteria, because this will not enable the auditors to explain any disappointment towards the program and performance, or even to see the full picture or context behind that performance (Van der Knaap,2004).

Being responsive and responsible is about being able to track the changes, while being dynamic is what van der Knaap (2011, p. 305) described as "responsive performance auditing". He noted that this means auditors should pay close attention to the changes in "context, knowledge, and stakeholders' beliefs and preferences and deciding how to incorporate these changes into

performance judgements, conclusions and recommendations for improvements". This is consistent with Raudla et al (2015) opinion regarding the expected contribution of PA in learning, improvement and change in the public sector. Similarly, Raudla et al (2015) noted that the usefulness of PA and implementation of changes can be facilitated by dialogic and a reflective approach in the audit process. The auditors in this process should be open to dialogue and involve the stakeholders while taking into account the observations of the auditees (Lonsdale & Bechberger,2011; Morin,2004; Reichborn-Kjennerud & Johnsen,2011). However, this does not mean that auditors should abandon their traditional judgement criteria or become totally passive recipients of others' interpretations and criteria, denying all the benefits from policy objectives, performance indicators and performance targets (van der Knaap,2011). The auditors should maintain their independence and benefit from being responsive and open to complexity and change, which will enhance their audit repertoire and add to the deliberate consideration of dynamic complexity (Lonsdale et al,2011). In other words, they should implement responsiveness in their audit procedures, methods and standards. The responsive audit is as well acknowledged in the guidelines of the INTOSAI, where an orientation towards citizens' needs is promoted, and where the actual impact of activities compared with the intended impact is included (INTOSAI,2010). For example, the following is taken from the guidelines:

"While financial auditing tends to apply relatively fixed standards, performance auditing is more flexible in its choice of subjects, audit objects, methods, and opinions. Performance auditing is not a regular

audit with formalised opinions, and it does not have its roots in private auditing. It is an independent examination made on a non-recurring basis. It is by nature wide-ranging and open to judgements and interpretations…. It is not a checklist-based form of auditing. The special feature of performance auditing is due to variety and complexity of questions relating to its work". (INTOSAI,2010 see pg 12).

The responsive performance audit may be defined as an audit where the auditors still use the well-established norms, standards and criteria, but also consider:

- Changes in contexts, knowledge and preferences in public policy that have arisen.
- Testing how the auditee has responded to these changes before making any assessment or judgement in their audit report.

Thus performance auditors are expected to apply dynamic rather than static norms, standards and criteria, and not limit or narrow their investigation of whether policy programs' objectives have been met and indicators and criteria attained. Two simple questions to guide the auditors in their audit are:

- Are the things being done right?
- Are the right things being done?

The first question focuses on how appropriately the policies are being implemented and whether the activities are being carried out correctly. Therefore, the auditors here need to check out whether the executives are following the rules and regulations and the production of their activities are according to the norms, standards and criteria. The focus here is mainly on the input and the process, rather than the outputs and the outcomes. The second question, however, investigates the effectiveness, which in this case

is the impact of the activities or policies implemented on society (Lonsdale et al,2011). The focus is more on the outcomes rather than on input and process. The auditors should link government policy and programs to the results obtained and to how they impact society.

Many scholars insist on the pluralist, interdependent nature of both the public sector and society, for instance Abma (2005); Lonsdale et al (2011); Schwandt (2001; 2002), which supports the responsive approach, participation and cooperation of many individuals' needs in the public sector. Meanwhile van der Knaap (2011) argued that responsiveness to social change and changes from different stakeholders' perspectives is essential to any political system. Also, Bemelmans-Videc et al (2007, p. 249) noted: "rarely does a program or intervention work completely interdependently of the interventions of other actors or the influence of other factors". The authors of the latter statement argue that, with an ever-changing environment, responsive programs become a must, and should change their objectives to respond to feedback. They go further and argue that the gap between public policy intentions on the one hand, and the complex ever-changing nature of society's preferences and problems contribute to the failure and disappointment of public sector programmes and policy, on the other hand, it is even advised that auditors should apply qualitative methods that depend on conversation and dialogue when they assess the results of policy programs (Abma,2005). For example, when auditing hospitals or schools, the auditors could assess the program results by referring to stakeholders' opinions, values and standards, especially since they are different from those of the administrative documents.

It is important to mention that this approach is not without problems or challenges, one of which is timing. It can be time-consuming to follow the correct route to accomplish a task, and difficult to anticipate the time taken to evaluate a given program. For example, auditing a program early in its implementation might not allow enough time to demonstrate the program's worth, while waiting too long to do the audit might fail to prevent bad results from becoming worse. Second, "the responsiveness should not be mistaken for discriminately using stakeholders' concerns and complaints against auditees" (Van der Knaap,2012), i.e. following the stakeholders comments and ideas without logically and carefully going over and evaluating them. The responsive approach should consider all the stakeholders, not necessarily preferring one group to another. Rather, it should have a complete picture of the input invested, service process and the results obtained. Third, there is no single way or simple guide to this approach that can fit all the audit contexts, nor is there a fair way to critique the policy objectives and performance indicators.

2.7.2. Examples for initiative responsive approach

It is well known that good government in any country provides citizens and the public with the services they require. However, what is noticeable is that the feedback regarding those services tends to be ignored. Being attentive to user feedback should align public services with user perception, which is a way of giving the public a say in matters that affect them. Citizen feedback regarding services provided can be useful elements in performance audit, since it indicates the outcome of public services. The information can be used by the audit reports to inform governments about possible improvements to public

services, and to be aware of public needs and opinions, rather than merely measuring efficiency, effectiveness and economy of the government programs. In fact the Government Audit Standards of the United States have pointed to the challenges of balancing the needs of the different stakeholders (Bernstein et al,2002; GAO,2007). However it is also important for audit institutions to maintain independence and objectivity in their relationships with different stakeholders, such as Congress and citizens, as key users of audit reports (GAO,2007).

While a study done by Yang & Hsieh (2007) found that stakeholder participation is a positive predictor of the perceived effectiveness of performance measures, Ho (2006) found that citizen participation in performance measurement practices increases the perceived value or usefulness of the data in the eyes of elected officials. However, we have not yet established which are the most popular ways of enabling citizen participation, for example, customer surveys, phone calls or even e-mails, that would improve public sector accountability and transparency, and enhance the performance of the public sector. According to Moynihan & Pandey (2010), feedback from the public, together with outreach may exert some pressure on managers to justify their decisions and legitimate programs, and look for further support from stakeholders, and yet there is some reason to believe that the relationship might be negative too.

To this researcher's knowledge, few studies have been conducted to test how the involvement of users' opinions regarding services or products during the performance audit would affect the findings and quality of the performance audit reporting, which may in turn influence improvements in public sector

services. However, the researcher does not claim that the user perspective in performance audit is not conducted by SAIs around the globe. In fact, the choice of method for collecting evidence in performance audit is guided by the SAI's own standards, which could partly be internationally agreed. The choice will reflect what the SAI's auditors and managers see as appropriate and adequate ways of collecting evidence. For example, one former senior official suggested that empirical evidence obtained through different surveys like mail, telephone, or face-to-face encounters is an insufficient foundation for a judgemental audit. Thus the analysis and conclusion is heavily reliant on the documentary evidence (Leeuw,1996). Therefore, it is important to draw attention to the fact that SAIs can play an important part in encouraging a degree of conservatism, which works against innovation.

Lonsdale (2000b), in his exploratory research, mentioned that a number of SAIs use non-traditional methods of collecting performance information. For example, the UK NAO used a survey in order to get the view of users of the National Library of Scotland, and the Swedish National Audit Bureau selected a random representative sample of 3000 people aged between 18-74 in 1998 to take part in telephone interviews. Although the purposes of the data collection may differ, it still involves the user's perspective of the service. This leads us to question whether the usage of such information obtained via public involvement will add value to the performance audit or not. Here follows a comparison of the methodology used by five European SAIs, as described by Pollitt et al (1999e):

> "Perhaps one could say that, since the mid-1980s, the Swedish and UK SAIs
> have each given some prominence to increasing their methodological self-

consciousness and sophistication, whereas the Dutch, Finnish and French SAIs have, in different ways and degrees, been somewhat more reticent. That is not to imply that the Algemene Rekenkamer, VTV, and Cour are in some sense lagging behind in a race. Indeed, each of these has attempted some ambitious studies. However, they seem to have made less of a public or professional issue out of 'tools and techniques'. There is less evidence, in their cases, of descriptions of their methods in their reports, of technical handbooks or mandatory training courses or any of the other paraphernalia of self-conscious technical self-improvement". (p. 5).

According to Stephen & Lonsdale (2000), greater efforts have been made to involve stakeholders in examinations, although not to the extent that "constructivists" would like. There is, however, recognition that different parties have different views, which need to be accommodated or acknowledged in their reports.

Moreover, it was observed by Schultz & Brown (2003) that increasing priority is being given to customer service satisfaction within the auditing profession. Norton & Smith (2008, p. 926) state "performance auditing has become so successful with government management that the majority of engagements have manifestly shifted from mandates of the legislature to individual client requests". Figure 6 illustrates how the perspective of the user is related to the effectiveness aspect of performance audit, where the user's perspective is somehow ignored in performance auditing. In order for the performance audit to get the full picture with regards to how well the auditee entity is working, it is essential to know the service user's perspective and feedback, not only the input and output of the service.

In addition, it was suggested by Arthur et al (2012) that the triangulation method of data collection could be used by auditors, where the traditional performance audit approach can by combined with a "user-centred approach" (information from users) which will provide the auditor with valuable information about public service quality.

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┌──────────────┐      ┌──────────────┐      ┌──────────────────┐
│ Resources    │ ───▶ │ Product/     │ ───▶ │ User Feedback    │
│              │      │ service      │      │ (Consumer/ user  │
│ (Input)      │      │ (Output)     │      │ perspective)     │
└──────┬───────┘      └──────┬───────┘      └────────┬─────────┘
       │                     │                       │
       ▼                     ▼                       ▼
┌──────────────────────┐          ┌──────────────────┐
│ Economy+ Efficiency  │          │  Effectiveness   │
└──────────────────────┘          └──────────────────┘
```
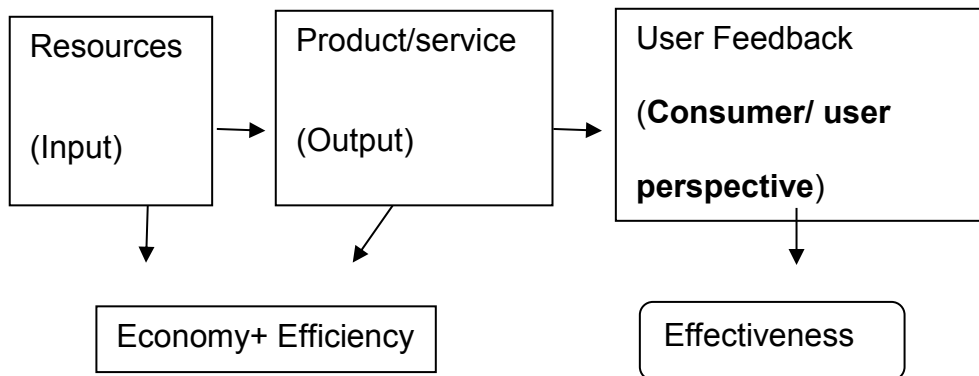
Figure 6 Consumer Perspective in relation to the effectiveness element of the 3Es in performance auditing

(Source: Author)

The triangulation approach will enhance the variety of the data sources in the audit process; instead of depending on one traditional source of data on how the entity is managed, expanding it to include the users adds variety to audit evidences. An example of such an approach is described by Radcliffe (2008) cited in Auditors of State (1996) as the multi-method approach audit followed by the performance auditors in auditing. Cleveland City school district in Ohio used this approach in 1996, which included: an examination of previous studies and reports issued on the district; comparison with other similar school districts; interviews with school administrators, principals and parents;

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discussion with "legislative leaders in the state Department of Education, current and previous school board members and interested Cleveland citizens" (P.110). Their approach contained several methods and targeted many different groups involved with the audited organization.

Additionally, a more recent study by Gao (2012) examined the effect of using the citizen satisfaction survey in assessing the performance of Chinese local government. The study concluded that the survey was useful for indicating public concerns and alerting the government to continue making efforts to resolve these issues. At the same time, it was helpful for local officials to use this information in making decisions on resource allocation and service improvements. In addition, van der Knaap (2011) discussed the initiative of the Netherlands Court of Audit in bringing user perspective, or what they described as responsiveness in performance audit, by creating "reality checks". This is a test to make sure that an idea is consistent with the real world. The objective of this initiative was to provide both Parliament and central government with information on the actual effects of public policy programs. After identifying the problems affecting citizens and businesses and how governments translate these problems into policy objectives and measures, the Audit Court interviewed representatives from target groups and other stakeholders in order to know their thoughts on official objectives and criteria. The auditors then analysed actual use of the policy schemes by target groups using available data from entities, statistics and monitoring reports, in addition to live negotiations, meetings, etc. Finally, the results were reported to the policymakers for their reaction. This test revealed to the decision maker

the importance to actively test out whether the assumption of policies makes sense before the introduction of policy measures ordering implementation.

Being open to the nature of the audit, approach methodology, standards, criteria and criticisms, as well being responsive to what the stakeholders and auditees have to say regarding the audit questions, its findings and the usefulness of recommendations, are all considered as first steps to responsiveness and effective audit (Lonsdale et al,2011).

The Netherlands Court of Audit (NCA) applied a responsive approach by including participatory methods. This responsive audit includes two stages: (1) actors and analysis and (2) selection of methods and actions. In the first stage the Court of Audit defines the main actors and stakeholders and their possible respective interests. That means involving the main parties and their perceptions of the upcoming audit. Moreover, the different parties participating in the topic of audit questions can come to an agreement on defining the program problem or policy domain, relevant values and norms and what necessary improvements should be considered (Lonsdale et al,2011). In the second stage, the audit team and the other stakeholders as well, are invited to a discussion to select the appropriate actions and audit approach. Thus, the audit at the NCA involves the stakeholders in two stages before the audit even starts, to get all voices heard on matters that concern them. This participation makes the audit work by emphasising crucial areas that impact society, not from an administrative perspective only, but also from the perspective of representatives of the different stakeholders.

The reality check by NCA was used, for example, in improving safety in small businesses, energy saving measures for existing homes, and web-based assistance for the chronically ill (van der Knaap,2011). The reality check revealed the fact that policymakers should involve the stakeholders before the introduction of policy measures and during implementation, to test whether the assumptions behind the policy make sense to society and the results intended are desired by all parties. This approach gives an updated view of policy scheme validity and effectiveness, and continues the learning process for the organization (both the audit agency and the auditee's entity). According to van der Knaap (2011), one positive effect of the NCA responsive approach is the use of evaluation reports by the central planning agency to tailor policy measures to the issues and concerns of the affected and targeted groups. The adoption of responsive performance audit approach is not without problems; one of them being that it is time-consuming. Resistance to the responsive audit approach is expected and can create conflict and debate regarding the methodological issues. For example, some argue that an audit will not question the policy and objectives where the auditors had to limit their intervention and be totally independent (Ahlenius,2000). In a study by Alwardat et al (2015), the findings revealed that performance audits had little influence on their clients due to what they described as "power asymmetry" (which was also a reason for delaying the responsive approach). Auditors do not have enough time to examine each and every department, and therefore they take only a general overview, based on selected evidence found in the auditees' data. That data alone is not sufficient to convince the auditees of the reliability of their findings and the value that recommendations are going to

add towards improvements in their entity (Alwardat et al,2015). Normally the auditees filter the proposed recommendations via what is known as the "logic of appropriateness" of their own entity. Thus the more the auditees agree with the audit criteria and approach, the more likely it is that they would agree to implement the changes and recommendations, and vice versa (Reichborn-Kjennerud & Johnsen,2011). The budget for this audit approach will definitely be higher than the traditional approach, which may contribute to low implementation. Moreover, it was argued that, due to the nature of the audit that emphasizes control and attributes blame, it may facilitate a defensive manoeuvre by the auditees (Lonsdale & Bechberger,2011), which may in turn limit the learning opportunities (Lonsdale & Bechberger,2011; Raudla et al,2015). This will also limit the innovation and creative methods needed in the responsive approach.

2.8. New Public Management and Performance Audit

In general, many scholars and professionals have used the term "NPM" as an abbreviation referring to New Public Management, which has been increasingly adopted by different countries in the last two decades (Pollitt et al,2007). According to Oehler-Sincai (2008), academics like Hood (1991), Pollitt (1990) and Hoggett (1991) coined the acronym, "NPM". Although it originated in the 1980s, it came to full fruition in the early 1990s. It is hard to separate NPM from performance audit, or to talk about one without mentioning the other, due to their connection. Indeed, the relation between NPM and PA is close. The spread of NPM caused some shifts in PA in order

to consider the risks associated with NPM reforms (Hepworth,2009). According to Power (1997), NPM has contributed to the widespread use of the state audit due to its emphasis on the use of audit as a controlling tool. PA has played an important role in legitimizing changes in government controls in accordance with NPM, such as promoting the idea that government should be accountable in its results (Hepworth,2009).

According to (Dunleavy & Hood,1994; Schick & Commission,1996), NPM could be considered an empirical style of organizing public services, encompassing changes in different government systems, such as financial management, personnel management and even auditing. Thus, it could be argued to be a support mechanism to structure and manage public sector service. It is defined as: "the shift in public management styles, public management reform, and it consists of deliberate changes to the structures and processes of public sector organizations with the objective of getting them to run better" (Pollitt & Bouckaert,2004, p. 8) (i.e. making the public sector run better by being more modernised, efficient and economical). Leeuw (1996), for example, suggested that NPM emphasizes "economy, efficiency and effectiveness of governmental organizations, policy instruments and policy programs" and aims for a better quality of service delivery. In fact, that is no different from the emphasis or focus of PA, but the NPM is more concerned with the implementation of changes by a new management style, whilst PA is more concerned with auditing them. In addition, NPM attempts to free up control over and advance greater responsibility towards the administration of public services, giving more flexibility and autonomy to managers, and placing

more emphasis on risk management and performance measures (Leeuw,1996).

While Common (2001) suggested that NPM seeks to modernise the management style of the public sector and make it more efficient and economical, he also recommended testing the assertion that NPM is now becoming global. Additionally, others have claimed that NPM reforms did not take place in different countries at the same time, but rather that unparalleled growth in managerialism occurred gradually under the reforms (Alwardat et al,2015; Pollitt,1993b). According to Pollitt et al (2007), although many countries have adopted NPM, they differ in application and practice. Its existence blends in with the local context, and that is because NPM is not a coherent set of ideas and tools. For example, the UK could be considered to be more of a marketing institution, while Nordic countries are more like modernizers (Pollitt et al,2007). To illustrate, the UK e-Government's goal was to improve delivery of the service to clients (rather than citizens), while in Denmark the Government seeks to improve citizen participation. Both strategies are, and were part of the NPM reforms (Pollitt et al,2007) .

However, the NPM has been criticized for the fact that many reforms did not completely lead to radical change in the role and model of government bureaucracies in Europe (Pollitt et al,2007). Also, if changes like privatization, decentralization and agent faction occur within weak, independent, or autonomous monitoring institutions, it creates corruption and abuse of the environment (Oehler-Sincai,2008). The recent public sector reforms can be seen as part of the shift to improve efficiency and quality and promote a better

style of management on a national level, but are not necessarily connected to the spread of NPM on the national level (Common,2004).

NPM has been a subject of study and debate by many scholars and researchers since 1991, which magnifies its impact. The exaggerated focus on NPM-style reforms may have distorted the view of the public management practice evolution and given too much credit to only one philosophical approach as an agent of public sector reform, which in turn facilitates a bias in our understanding and interpretation of public administrative progress (Wise,2002). The last claim argued that, to some extent, the topic of NPM reforms had enlarged to explain each and every change and evolution in public administration. There are many activities that fall under the umbrella of NPM, and there is no clear agreement on the meaning of the construct that can be asserted (Hood,1995; Pollitt,1995).

Below are some of the points that Hood (1991) summarized as a common theme developing from organizational change or reforms such as NPM:

- More emphasis on performance measurement via performance indicators and standards, and clear goals and objectives.
- More focus given to the output instead of the procedure of performance measurement.
- Motivate decentralization and disaggregation of organizational departments into agencies, use of divisional structural, use of contract–like relationships rather than traditional hierarchical control.
- Introducing quasi-markets and market-style structure of management practice.

- Enhancing managerial accountability via clear assignment of responsibility for action.

It assumes that a government with these organizational mechanisms will become leaner, smarter, more efficient and even more effective (Leeuw,1996).

2.8.1. NPM and PA

NPM in this sense requires competent and committed managers to implement policies and provide services having the following characteristics, summarized in Table 5 below:

Table 5: Elements managers need to fulfil in providing good service according to NPM

Element	Explanation
Economical	Low cost/spend less
Efficient	Maximizing outputs within budget while maintaining good quality
Effective	Satisfying clients/citizens with good quality
Ethical	Seen as friendly, fair and honest
Accountable	Open and transparent, keeping people well informed (accountable to end-users)
Responsive	Consultative, considering the priorities of different stakeholders (including those in disadvantaged categories and minorities)
Eclectic	Adaptable, choosing what appears to have positive outcomes and giving up what is harmful to the economy, to society as whole and to the environment

(Source: ((Osborne, 2001;Polidano, 1999 cited in Oehler-Sincai,2008))

These new elements create a shift from an internal orientation to bureaucratic rules, to an external orientation towards meeting citizens' needs and wishes, (i.e. being more responsive). This shift is consistent with the responsive approach in PA discussed in the previous section of this thesis. Hence if the Government's view is more NPM-like, then the object of audit should be aligned to NPM objectives.

Due to public sector reforms and NPM, many auditors have realized the need to engage more with the auditees (Pollitt,2003; Power,2003). However, such activity is not without problems, because this engagement has contributed to a shift in public sector auditors becoming more involved with policymaking (Gendron et al,2001).

Although managers in the public service seem to think positively about NPM, they assume that it has been founded upon new descriptive vocabulary such as "accountability, results, efficiency, inputs, outputs, outcomes and process, measures where some of them were so ambiguous" (Gendron et al,2007b, p. 113). As one of the divisional manager's states: "[We had] to break out of the mode of just reporting on what we did in each of our little units…. It was a big change in thinking." Although NPM requires that managers be empowered, the irony is that internal control, performance measures and auditing oversights have all been increasing dramatically (Norton & Smith,2008). Thus, even with more freedom to change the traditional bureaucratic management of how public services are to be delivered, the auditing of results and outcomes that are predetermined by government are what becomes more important (Gregory,1995). Leeuw (1996) declared that NPM gives priority to each of the following elements: "economy, efficiency and effectiveness of

government organizations, policy instruments, and policy programs", yet simultaneously places less emphasis on compliance with the prescribed processes, rules and procedures. This freedom provides public service managers with greater autonomy and flexibility on how they should deliver the service. Furthermore, it facilitates SAIs to focus more on performance measurement rather than compliance with regulatory processes (Norton & Smith,2008).

As to how services should be delivered, reforms encouraging governments to adopt NPM consequently affected the PA agenda to cope with the changes in public sector management. For example, it may include an obligation to evaluate the extent to which value for money has been achieved in service delivery or on the purchases of goods from suppliers (Norton & Smith,2008). Moreover, the PA may also be required to ensure that public administration is accountable for exercising new discretionary rules/standards. Leeuw (1996) drew attention to how PA can reveal unintended and undesired consequences of the NPM, especially with the freedom given to purchasers who can choose from whom they will purchase, and providers who can select for whom they will provide. This can result in unintended or undesired outcomes in services such health and welfare, because it may affect those in need (e.g. the minority group in terms of gender or geographical area), and equity will not be achieved. The risk of these unintended consequences could be reduced if the PA looks at the how the organization has been responsive to different groups, including minority groups, to resolve issues of equity. To overcome the risk of creating inadequate performance measures, Smith (1995) recommended that it is useful to include staff at all levels to develop and implement performance

measurement schemes, in order for the auditors to have more open communication with the auditees on the criteria applied in PA and NPM. Although this advice to involve the staff on a larger scale might be a useful recommendation, it ignores the end-user's perspective in such a measurement scheme.

One might ask why there is a need for PA if the goals of NPM are aligned with PA. The issue is that there is no reason, a priori, to suggest that these goals will indeed be met. Striving for performance improvement by a government does not mean that it is already realizing such improvements. Studies have shown that policymaking can be promising where the politician and bureaucrats, in stressing their importance, believe that they have already realized it. Thus, the PA makes it possible to investigate and distinguish between ambitions, intentions and realizations (Leeuw,1996). The adoption of NPM has been mimicked by many organizations hoping to follow the successes of those who adopted it earlier, and yet, although they may have the right form, the substance wrong, which may promote legitimation, more than innovation. Therefore, PA can unravel such aspects of NPM implementation and adoption. While the benefits are clear, the risks associated with NPM reforms that auditing has to deal with include:

- Shift to secrecy, i.e. unwillingness to share information due to the threat of competition.
- Emphasis on performance and performance-related pay or rewards, which may force management to pay more attention to those aspects of service delivery, and which negatively, affects other features of the services.

- The managers may set the performance measurement to fit their own interests rather than those of the customer or clients.

- Managers can focus on their own objectives, due to separation of decision making and incentives in the system (Hepworth,2009).

A study by Butterfield et al (2004) on NPM reform in the UK revealed some weaknesses or drawbacks of this reform. The first they pointed to is that the NPM leads to focus on improving accountability through further emphasizing the output and abandoning the outcome, which, in turn, encourages managers to manipulate the system to display high performance levels. Secondly, it results in a lack of accountability at an operational level due to the application of individual performance indicators that are normally determined by individual forms of strategic level. This creates a gap between what was designed to be measured, and what is actually done. Thirdly, although NPM advocates minimizing the level of bureaucracy, the findings show that it leads to more detailed scrutiny and paperwork, with no adequate flexibility for the leadership to become customer-oriented.

Due to the separation of organizational units and the creation of agencies to provide public service after implementation of reforms, the volume of the internal audit routine has increased. Each unit is required to submit their reports, which will then be audited individually. Weir & Hall (1994) argued that these organizations are heterogeneous groups, might have different audit and accountability mechanisms and are not controlled by formal representative institutions. This sheds light on the difficulty of practicing performance audit on these organizations or units and arrangements to secure appropriate means of accountability (Barrett,1996).

Another point discussed is the shift auditing has made from examining the accounting system, internal controls and financial statements to proactive examination via performance auditing, evaluation and participation in planning. Thus, auditing in the public sector has extended its scope to provide services in strategic and operational planning, although that might seem to conflict with their main role and professional standards.

2.9. Oman's State of Audit Institution

Oman, along with its Gulf neighbours, has also been exposed to the global reform movements, loosely characterized by New Public Management (NPM), and it might confidently expect that changes will follow these international trend lines. However, despite these wider contextual changes and the compelling international reform movements, administrative performance remains poor "and the inability of Arab Governments to reform bureaucracy still seem puzzling" (Jabbra & Jabbra,2005, p. 136).

Since this study aims to investigate performance audit in Oman during the year 2014--following the period of protest in 2011, which led to many reforms, including reform in the State of Audit itself--it is important to discuss the protest events and talk about the changes that occurred in SAI after that.

 Arab Spring protests did occur in Oman, although they did not last for long. "The protests in Oman in 2011 did not ask for political/regime changes, instead they demanded focus on material things such as providing more job opportunities for the citizens, better working conditions, better public services, allowing the Islamic banking service, and minor political reforms"

(Belcsák,2012, p. 22). One of the reforms that the Government made in response to public demand was the change and re-defining of the State of Audit.

The effects of the Arab Spring in Oman were not made obvious in the global news networks, or perhaps they were overshadowed, due to their being less dramatic and significant than those occurring in other Middle Eastern countries, like Bahrain, Libya, Egypt and Syria (Fenton,2011; Worrall,2012). The public demonstration that took place in January 2011 was a major shock to the traditionally conservative Sultanate and for the ruling elite, as it was challenging 40 years of success of the ruler, His Majesty Sultan Qaboos bin Said (Fenton,2011). In fact, Sheikh Ahmed, the Grand Mufti of Oman, commented on the demonstration in Dhofar (in the southern region of Oman) as follows: "The youth of Dhofar have asked for their rights without attacking anyone and have organized the protests in a civilized manner" (Worrall,2012, p. 101).

According to Worrall (2012), the demands of the people in the protests in Oman were different from other Middle Eastern countries as the protestors did not ask for change to the political regime and the protests were brought under control by the government after just four days. Yet they still had an impact in Oman and spurred Sultan Qaboos into action on different economic, social and political reforms. So, how did the demonstration start, and what was the reason behind it?   According to Worrall (2012) the protest started on the 17[th] of January, 2011, a few days after the Tunisian President Zine ben Ali fled to Saudi Arabia. It began with around 200 people demanding action against the corruption brought about by the administrators in the government. They also

demanded lower prices for basic goods and higher wages. The number of protestors started to grow, involving people from different regions in Oman. Their demands concerned corruption cases and public administrators' lack of accountability, and, due to high unemployment rate, it was unsurprising that other demands centred on the job market.

As a reaction to the protest, a series of political and economic reforms were brought into place. For example, more than a dozen ministers were removed, and the national Economic Ministry was dissolved. Added to that was the creation of a committee tasked with giving law-making powers to the Council of Oman. The Council of Oman had representatives elected from both the Al Shura Council (similar to Parliament) and from the State Council (which includes representatives from the ministries and government administration).

Moreover, Al-Haribi, the head of a national independent non-profit think tank, considered that the decision by the ruler to grant legislative and regulatory powers to "Majlis Al Shura", which had previously only been a consultative body, would encourage voters to send qualified professionals like auditors and lawyers to the advisory council (Fenton,2011).

In addition to their requests, the public demanded investigations of all ministers and permanent anti-corruption machinery, ensuring protection of public money and strengthening the judiciary's independence. Apparently the SAIs had not been transparent regarding corruption and ensuring the accountability of the public administration, and thus did not inspire public trust, at least before the demonstration period. The public asked for a specific administratively and legally independent authority for Al Shura members to

combat the administrative and national corruption, rather than simply allowing the SAI to be more efficient in dealing with corruption and accountability issues. Here again, the public wanted to transfer the power of investigating corruption to Al Shura, rather than the SAI. This event draws attention to the ineffectiveness of the SAI in Oman before the demonstration of 2011, and to what possible actions were taken by the regime to fix that. Due to the lack of research in this sensitive area, it is hard to describe or investigate the efficiency of SAI in Oman before 2011, besides which the SAI did not, and still does not publicize their audit reports to the public.

2.9.1. Responses to protest and recent development of SAI

The government began to respond to public demands on the 27th of February, starting with an exceptionally successful meeting with the Shura Council, which formed a committee to study the protesters' demands (Worrall,2012). Then on the 1st of March the Sultan announced the first of the reforms, which was the establishment of the Public Authority for Consumer Protection, chartered to control prices, profiteering and the quality of goods in the market. Also, the Ministry of National Economy was completely abolished, and a national Audit Committee was created to tackle corruption.

One of the adjustments to the SAI was that it is now requested to send copies of its reports to the Al Shura Council and the State Council, who review them to get clear picture. At the same time, the Al Shura Council has been given the authority to interrogate any of the ministers if they suspect that he/she has overreached and bucked the law or used public funds in an inappropriate way (AL Hooti,2012).

In another attempt by the regime to show its determination to fight endemic corruption within the state institutions, the prerogatives of the State Financial and Administrative Audit Institution (SFAAI) were expanded by the Sultan's Decree 111/2011, the "State Audit Law" and Royal Decree 112/2011, issuing the law on Safeguarding of Public Property and Preventing of Conflict of Interest--the "Law on Public Funds".

In April 2013, the Institution issued a ministerial decision introducing new State Audit Executive Regulations (Anonymous,2013). Its expanded mission included detecting financial and administrative irregularities, ensuring transparency in financial and administrative transactions and providing recommendations on how to avoid conflicts of interest.

Since 2013, around 40 civil servants and businessmen have been tried in corruption cases. Among those are the former Secretary General of the Ministry of National Economy Mohamed al-Khusaibi; Indian businessman Mohamed Ali, co-founder of Galfar group; and Ahmed al-Wahaibi chief executive of the government-owned company Oman Oil. However, as stated by Valeri (2015 P. 16)

> "Despite all the hopes that rested with the SFAAI and its ambitious mission, though, people involved in these cases have not been among the big economic and political players who had attracted the protesters' wrath and who have embodied the conflict of interest between politics and business since the 1970s".

The needs of the protesters have shifted the government's concern from how to raise money to questioning the efficiency with which the money is being

spent. It is no wonder that is not the only concern of Oman's government, as it was declared, "recent years have witnessed attempts by governments to move away from the traditional question of how money is raised to enquiry into the efficiency with which money is spent" (Norton & Smith,2008, p. 921). This approach is one of the NPM's principle goals: to achieve greater accountability in the spending of public money through measuring to what extent the delivering of public services meets its targets (Behn,2001; König,1996).

Accordingly, the name of the State of Audit Institution has changed to the State of Financial and Administrative Audit Institution (SFAAI), a new chairman has been appointed and the State has been giving more prerogatives and obligations. At the same time, the law regulating SFAAI, issued by Royal Decree 111/11, has redefined its role. The new law has expanded the ambit of SFAAI to include the administrative audit in order to enhance accountability, transparency and justice in terms of its performance in the public sector. One might ask, so what is the relation between performance audit and reforms in the public sector? Well, since the reforms were brought in to ensure that the public sector is providing better services, and that resources are used in an accountable, economical and efficient way by the administrative bodies, this creates the need for performance audit.

The new mandate of performance audit, which is administrative audit, occurred as one of reforms in SFAA. Therefore, there is a need to explore how the Omani SAI introduces and organizes performance audit, what role it plays in their overall agenda and how they plan to enhance public sector accountability and transparency.

The members of SAI inherited a number of powers and rights in relation to questions regarding the matter of public funds, such as development plans, privatization and restructuring procedures. Government institutions, as well as companies where the government owns 40% shares, are subject to investigation and supervision by the SAI (State Audit Institution-Oman,2014). These supervisory prerogatives may include:

- Reviewing the implementation and achievement of objectives of development projects

- Inspection of abidance to estimated costs within the set time frame

- Reviewing resource development and cost rationalization

- Authority to expose cases of power or position abuse, conflicts of interest, favoritism and financial and administrative irregularities, to demand accountability and take necessary measures in this regard

- Applying electronic archiving of all the SAI operations and upgrading of its website (State Audit Institution-Oman,2014).

These provisions have expanded the Institution's ambit to be able to ensure higher levels of transparency, accountability and justice in the performance and behavior of the Omani governmental bodies and officials. Meanwhile, this expansion in their prerogative has also expanded the Institution's mandate to go beyond financial domains.

The Institution also has the power to access necessary documents, seize documented evidence, conduct investigations and even make arrests, as well as referrals to public prosecution. In addition, other institutions, such as the Royal Police, different governmental agencies, technicians and individuals

may be enlisted to assist the Institution in carrying out its duties and powers. In order to avoid the abuse of power and prerogatives assigned to Institution members, and to ensure integrity, justice and transparency, the SAI obliges its members to take an oath. At the same time, its members are subject to strict financial supervision, and prohibited from accepting gifts, sitting on the boards of public institutions and, of course, disclosing confidential matters. Thus, the new regulations have enriched the Institution's independence and enforcement capacity under the law.

The need for research in this area is further exacerbated by the lack of official documentation publicly available concerning reform efforts. This is in line with major Arab cultural characteristics and practices, where the management culture is "based on talking, not writing" (Tayeb,2005). As a result, there is a lack of recorded information about policy decisions.

It was mentioned earlier that international reform movements, characterized by NPM, may take root in the administrative systems of the Gulf States. The appearance of NPM within a bureaucratic setting has been equated with administrative modernization and with a wider linkage to a neo-liberal reform agenda (Massey & Pyper,2005). Sixteen years on from Hood (1991) landmark article, which predicted the international portability and diffusion of NPM, it continues to be associated with the managerialization of the public sector, particularly where market forces are brought to bear on core areas of public service delivery. The link with modernization is compelling, but limiting, in that a broader definition of the public sector is required, rather than a set of piecemeal reforms aimed at various public organizations or sectors. Thus, a more recent international trend around the discourse of "good governance"

has appeared, which now infects many of the prescriptions for reform emanating from international institutions such as the World Bank and the United Nations. The Arab Human Development Report 2002 noted that reforming public administration is a central and urgent task for Arab countries; it lies at the core of the wider agenda of institutional reform (cited at Farjānī,2002).

The reforms in the State of Audit in Oman were due to the government responding to public demand for improvement in public sector services and enhancing accountability, transparency and performance measurement. This, in turn, is expected to stimulate some changes in internal control, performance measurement and internal audit within public organizations.

2.10. Conclusion

This chapter has presented a review of the existing literature in performance audit, and identified certain research gaps that are worth further investigation and fulfilment. First, the chapter provided a clear definition of PA, which is sometimes confused with other types of audit. Next, the nature of PA was illustrated with the help of two organizational performance models: 3Es and IOO model. In addition, the complex nature of the relation between PA and other stakeholders was discussed and linked to the need for a responsive approach in PA. Finally, the chapter provided important information about the research context (i.e. SAI in Oman).

Therefore, to address and test the research gaps that have been referred to, a theoretical framework and development of hypotheses are discussed in detail in the following chapter.

3. Chapter Three: The Theoretical Framework, Throughput Model

3.1. Introduction

It is essential for the researcher to start with a framework within which to work and which is testable. Therefore, the aim of this chapter is to develop a series of hypotheses within the context of a conceptual model. The Throughput model for decision-making is used as a basis to create the proposed theoretical framework. Section 3.2 provides a general description of the Throughput model, and detailed information regarding its definition, its applications and the rationale for its application in this research is laid out. Sections 3.3, 3.4 and 3.5 then break down the Throughput model into two stages that present the influence of performance information and performance perception on both judgement and decisions in the context of PA. Next, the moderating factors are introduced in Section 3.6, which presents the influence of gender, age, experience and education. The chapter concludes by listing all the hypotheses that are subject to rigorous testing at a later stage to determine whether they are statistically supported or not.

3.2. General Description of Throughput Model

In this thesis, the Throughput model (Rodgers,1991; 1997; 1999; 2006; 2010) is used to build the theoretical framework and apply the data analyses. This model allows more detailed analysis of the interaction effects between decision-makers' use of information and other, different components of their information processing capabilities. Process thinking controls the type of

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decisions we make in our everyday lives (Rodgers,1997). The proposed model incorporates the constructs of information, perception, judgement and decision (Foss & Rodgers,2011). The most recent application of this model was conducted in financial auditing and the context of financial decision-making (Rodgers et al,2013; Rodgers et al,2014) and internal audits (Foss & Rodgers,2011).

However, the decision-making environment of PA is significantly different from that of financial audit, or even internal audit (Pei et al,1992). As we know, the objective of the financial audit is to attest to the company management assertions in the financial statements, while the objective of PA is to provide a clear picture about the entity's economic, efficiency and effectiveness evaluation. Another important difference between the financial and performance audit context is the consequences of the decisions made by these two audits. Financial audit is subject to legal penalties if it fails to detect misrepresentations in financial statements, but that is not applicable in the context of PA, due to the absence of such legal penalties (Pei et al,1992). This contributes to the difference in perception of the consequences of decisions which would alter the judgement-making for both audits (Hogarth,1987). Therefore, applying the Throughput model in this study will diversify its application, and enrich the literature on PA.

According to Foss & Rodgers (2011), the Throughput model conceptualizes assessments or decisions as outcomes of the interaction between perception (problem framing information encoding and biases), available information and judgement (analysis process). The latter stages are always present in the context of decision-making, and the ordering and the predominance of them

influences the outcomes of the decisions made. The initial information processing modelling usually has a series of information processing, which the Throughput model takes further, making the assumption that parallel processing provides a more interpretative cognitive schema. It suggests that there are various, often simultaneous pathways that lead to a decision or assessment. In addition, the decision-makers may use different mental processes, and may choose different information to reach their decisions (Rodgers,2006).

This study incorporates the Throughput model with emphasis on the sub-process, in reference to the attributes of judgement and perception, along with information that will enhance and influence the decisions taken by performance auditors regarding performance assessment in the public sector. It will examine whether the auditors are influenced by certain perceptions they make regarding measurements concerning public responsiveness and social value (e.g. user satisfaction, employee satisfaction, equity or fairness of service provision and user feedback, etc.) in their judgement, in order to make more representative decisions and recommendations.

The figure below describes the theoretical framework of Throughput model, where the arrows from one construct to another represent hypotheses and casual relationships that explain the different outcomes in decisions made by performance auditors.
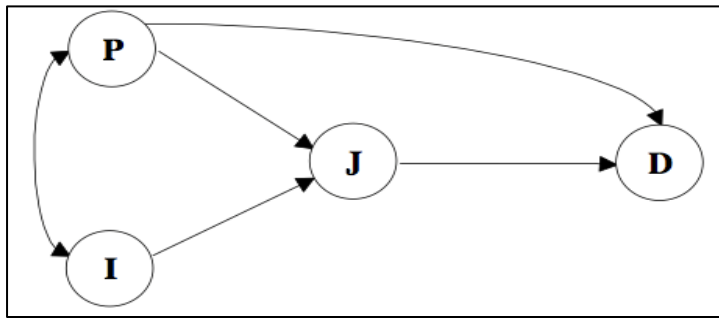
(Source: (Rodgers, (2006) P. 5)

The decision-making processes can be represented in an organized manner, and, to study the methods of these decision processes, it is essential to break up the paths that are represented with the arrows in Figure 6, into different sets of individual pathways. This incorporates the experiential work that demonstrates how the auditors in the field of performance audit perceive the importance of relevant performance information. For this purpose, the paths should be traced and analysed separately (Rodgers & Gago,2001see pg. 30).

The model discussed reinforces the analysis and examination of the perceptions and information incorporated by the performance indicators, which can be used by the auditors in the field of performance audit within the public sector, and which could also influence the assessment and judgement of the auditors. The latter can also affect the outcomes of the decisions and recommendations made during the process of the audit (Rodgers,1997) . Throughput model contains six pathways, as follows:

- **The Expedient Pathway (P $\longrightarrow$ D)**

    This pathway suggests that the decision is made without judgement, while the information is disregarded; will, the decisions being made

based on perception only (Rodgers & Gago,2001, p. 360). In certain situations, the individuals may be confronted with time pressure, unstable environment, or uncertainty, which forces them to make a decision without using accurate information at the judgement stage. To put it in another way, not using information effectively because of incomplete information, noise interference, or interpretation problems promotes the use of this pathway (Rodgers,2006). Many of our own decisions use this pathway, based on personal or professional experience, which allows us to emphasise a strategy or draw on our knowledge base.

- **The Ruling Guide Pathway (P⟶J⟶D)**

This pathway assumes that the information is disregarded too, but the decision is made via judgement. For instance, the information might be incomplete, irrelevant or even unreliable, and is therefore ignored, with judgement based on individual perception, and decisions being placed according to Foss & Rodgers (2011, p. 690). To explain it in simple way, this pathway suggests that perception drives how and what is analysed before taking a decision. It is a useful pathway to handle both stable and unstable environments (Rodgers,2006).

- **The Analytical Pathway (I⟶J⟶D)**

The decision in this pathway is made after considering the information at the judgement stage (Rodgers,2006). The information here is reliable and programmable, and the individuals make their decisions without any pre-

conceived perceptions. This pathway is named analytical, because it is more analytical than the other pathways, where perceptual framing is downplayed in making a decision. This pathway works well when the environment is stable and information sources are reliable and relevant.

- **The Revisionist Pathway (I$\longrightarrow$P$\longrightarrow$D)**

The assumption made in this pathway is that the decision-maker formulates a perception from the information presented to him/her earlier in making the decision (Rodgers,1999, p. 140). The information here has great influence on the perception made, which leads to the choice of final decision. The information available is very important, and should not be ignored. It influences the perception and decision without detailed analysis, due to time pressure, or because of an unstable environment (Rodgers,2006).

- **The Value Driven Pathway (P$\longrightarrow$I$\longrightarrow$J$\longrightarrow$D)**

This pathway suggests that the perception of an individual is determined by the type of information, whereas perception should be considered and analysed at the judgement stage, and then based on this, the decision is made (Rodgers,1991, p. 260). This means that the framing of a particular problem proposes the type of information that will be selected and used for further analysis to make a decision.

- **The Global Perspective Pathway (I→P→J→D)**

This pathway argues that the information dominates and determines the perception framed by individuals. The latter is then considered during the judgement process, and helps to reach the final decision. Unlike the previous path, information here is deemed to be relevant and reliable, and has an impact on perception, most information sources being deemed suitable for future processing by perceptual framing and analysis (Rodgers,2006).

The six pathways can be divided into four major groups: no information, lack of perceptual influence, no detailed analysis and complete use of the four concepts (Rodgers,2006).

- No information

  P→D

  P→J→D

- Lack of perceptual Influence

  I→J→D

- No detailed analysis (no judgement)

  P→D

  I→P→D

- Complete use of the four concepts

  P→I→J→D

  I→P→J→D

3.3. The Effect of Performance Information on Auditors' Judgements

It is argued that PA addresses the importance of issues of input/output relationships, together with purchases and contractual relationships, which in fact, are directed at one aspect of the PA, namely costs or expenditure (Jackson,1988). The literature on PA suggested that one of the main roles of performance auditors is to examine the records of the audited organization, before framing their opinion and judgement on a report (Wheat,1991). Those records normally include information about the resources used by the entity to achieve the objectives set up by central Government. Thus auditors must express their opinion on how the management have used those resources in an economical and efficient way, as well as commenting on the internal control procedures (Jackson,2009; Jacobs,1998; Parker & Guthrie,1991). In addition, (Pendlebury & Shreim,1991); Wheat (1991) state that performance audit recommendations report suggestions on how the audited entity could improve its performance. Accordingly, this reveals where the auditors place the most emphasis in the process of their assessment, starting with the management of resources and internal controls, then moving on to judge how efficiently and economically the organization achieves its objectives, and finally looking to areas of improvement.

It was noticeable that auditors tend to be concerned more about legal issues and compliance with rules (Reichborn-Kjennerud & Johnsen,2011), which might even be greater than the examination of management practices (Pollitt,2003). Thus, checking if the entity follows the rules and the regulations,

and procedural compliance is one of the most important performance indicators or measures to assess and judge in performance audits. However, (Leeuw,1996) noticed that focusing on procedural and formal information of performance seems to be 'counterproductive', and that formal standards reviewed by auditors will not enhance performance levels. In other words, that should not be the main focus of the auditors, if they are looking for improvement. In order to support learning and innovation, and face the challenges of modern societies, working towards achieving performance improvements becomes essential in the public sector (Voss et al,2005).

According to Pei et al (1992), performance auditors collect evidence on the effects of the programme or activities based on the two related measures of outputs and impacts. While the output measures emphasise the programme/activity's efficiency by assessing its resource utilization, the impact measures focus on the programme/activity's effectiveness in meeting its pre-established long-term objectives (Reed,1986). Normally the evidence of the outputs measured describes the actual goods or services produced by the auditee entity, and the impacts measured show the degree to which the activity/programme was able to achieve the intended outcomes. Neither type of evidence is available simply on a short-term basis (Pei et al,1992). Therefore, the auditors may face some challenges in finding the information or evidence needed for PA.

Auditors sometimes seek to advance their expertise by checking the different mechanisms of inscriptions available to them, such as standards, measures and guidelines in other jurisdictions, in order to assess them and ascertain if their office could rely upon them and use them as their own performance

standards (Gendron et al,2007b). It may be argued that the absence of detailed standards and rules creates the motivation for auditors to come up with agreed knowledge and sensibility that allows them to broadcast the economy, efficiency and effectiveness of audit practices (Radeliffe,1999). The latter confirms the subjectivity of the information element in performance audit. Auditors still have to filter which measuring standards to rely on in their audits, due to there being no clear cut-off point. Moreover, it was suggested by Gendron et al (2007b) that audit offices or SAIs are impacted by the influence of the performance audit information and reports from the public. The office's assessments are influenced by the perceived impact of performance and the fact that the public are active participants in the improvement of performance measures. This was noted by an office auditor's statement in his quote below:

"[The city of] Boston did a big fancy report [with a lot of measures] and put it in the library and nobody looked at it. It was too long – it was this thick. So [other jurisdictions] are able to do it [i.e., to develop performance measures and report on them], so you have all that stuff happening. So people I think, the citizens are starting to expect people to do that, they expect government to do that. So it is a bit of an education process. Provide people with the information and they react to the information. Now you provide it they expect it, and then they are seeing how much better it could be too. And they give you feedback, so it is an iterative process." (Gendron et al,2007b, p. 115).

Performance information has been discussed in the literature review based on the IOO and 3E's models and the PA standards, which are basically a guide for the auditors. The auditors then evaluate and analyse the performance of

the entity, based on the attainment of available information. The assessment and analysis influences the decisions and recommendations made in the audit report submitted to higher authority in the audited institution, and then to the Ministry Council. Unlike financial auditors, performance auditors rely on information related to the economy, efficiency and effectiveness of the audited entity in reaching their auditing decisions. Due to the objectives of this type of audit, Jackson (1988) argued that PA addresses issues of input/output relationships, as well as issues of purchases and contractual relationships. In fact, the latter relates to two aspects of PA: costs and expenditure. Therefore, the 3Es and the input/output criteria form the basis of the information in the Throughput model.

This performance information normally obtained by auditors to evaluate the overall performance of the entity, yet this information, is not always responsive to the needs of all the stakeholders, as argued earlier. However, the auditors consider their perceptions before evaluating the information and examining the performance of the entity. This has an impact on their judgements, decisions and recommendations, which are presented in the audit reports at the end of the auditing period. These perceptions take into consideration other performance indicators or dimensions that represent certain key stakeholders (e.g. users' satisfaction, services impact on the local community, equality of service provision, employee satisfaction, public views and feedback, customer complaints, and accountability and probity of government staff). These aspects are highlighted because a number of studies have pointed out their significance as indicators of public need; thus,

incorporating them into the auditors' perspectives can enhance PA's responsiveness (Andrews & Boyne,2010; Arthur et al,2012; Percy,2001).

Moreover, others, such as Vanlandingham (2011), have declared that the scholarly literature focuses on the importance of involving central stakeholders. The key users of the SAI's reports are normally parliamentary committees in European countries, Congress in the USA, or central Government in other countries, which is the case in this study. However, there are other users, for example the media, academia, professional bodies and individual users, who should also be considered as central stakeholders (Bowerman,1994; Sloan,1996). The information can then be used in the audit reports to inform the Government about possible improvements to public services, making it aware of public needs and opinions, rather than merely measuring the efficiency, effectiveness and economy of government programmes. In the following section there will be a detailed discussion concerning each stage of the model. First, a clarification about the effect of performance information on auditors' judgements is presented. Then an explanation of the effect of perception (public perspective) on auditors' judgements is offered. Following that, the effect of judgement and perception upon decisions is explained. Next, the moderator's effect is justified. Later the hypotheses for this study will be outlined.

3.4. The Effect of Perception on Auditors' Judgements

It was mentioned earlier that a primary motivation for this study was to examine the influence of public perspective information, or the measures taken by PA on the formulation of knowledge structures used in the judgement stage. Thus, perception on the pre-mentioned information would be influenced by the decision-makers' knowledge base. The public perspective information (as presented in the measurement model) includes organizational measures such as user satisfaction, impact of services on local community, equality of service provision, employee satisfaction, public views and feedback, customer complaints, accountability and probity of government staff. These aspects were selected because a number of studies point to their significance as indicators or measures of public needs and perspectives (Andrews & Boyne,2010; Arthur et al,2011; Boyne,2003; Boyne,2002; Everett,2003; Percy,2001).

In the public sector, where the number of the stakeholders is normally quite large, it is important to assimilate the viewpoint of all interested groups concerning the project/programme's success (Cox et al,2003; Shamas-ur-Rehman Toor,2010). Although, the end-users look at project/programme success from the macro viewpoint, other stakeholders, such as managers are concerned with the micro viewpoint (e.g. completion on time, spending within budget, etc.). The macro view here places more emphasis on the long-term gains of the project or programme, while the micro view is more concerned with short-term gains, such as low cost. Therefore, it is not surprising that they analyse performance differently.

Moreover, customer satisfaction and the overall satisfaction of stakeholders should be among the performance evaluation criteria, for they are key indicators of project success (Bryde & Brown,2004; Pinto & Slevin,1988). Others, such as Jackson (2009) have drawn attention to the complex nature of the public sector, since it serves multiple objectives, has a diversity of clients, supplies a wide range of polices and services, and exists within a complex, uncertain socio-political or socio-economic environment. He added that performance judgements on such organizations are also complex, and that therefore when evaluating performance, this complexity needs to be recognized. Too often, the more easily measured dimensions of performance are recorded, while the deeper, more valued aspects are normally ignored. Even the private sector has currently shifted the focus onto a much richer set of performances than the simple approach, which puts emphasis on simple financial statement measures of probability and rate on investments including: customer satisfaction, performance processes and the quality of products or services. This suggestion was confirmed in the findings of Rodgers et al (2013). The latter does not deny the fact that they are still few and the majority still prefer financial information.

Although perception does not change the actual information, it still influences auditors on the type and magnitude of information that will be selected or used for further processing before making their decisions. Besides this it can change or alter the auditor's perception on the importance of the information (Rodgers,1997; 1999; 2010). Thus, perception and information are represented as interdependent in the model.

3.5. Second Phase: The Effect of Judgement and the Decision Choice

Judgement is described by Rodgers & Housel (2004, p. 527) as "a phase that represents a culmination of information process and knowledge acquisition". They added that it involves problem solving analysis, where in order to complete the analysis, the auditors should get enough sets of operations. Difficulty may arise if an inaccurate operator is used (Waller & Felix Jr,1984). The auditor's evaluations and assessments represent procedural knowledge that is formed through a variety of learning mechanisms, such as composition and proceduralization (Anderson,1987). Judgement represents the unobserved concept that reflects procedural knowledge.

According to Tubbs (1992), the knowledge structure has shown a profound effect on the auditor's decision-making. In addition, professional and personal attitudes and competence have an impact on the practice and development of the performance audit. For example, it was found that there was a shift in the focus of public sector auditing from auditing for probity and compliance, to auditing for performance in terms of economy, efficiency and effectiveness at the Australian Nation Office (Hamburger,1989). Whereas, the Canadian Audit General and Federal Audit Office focused on the management of public sector resources during the period of 1973 to 1978, the Alberta Audit General focused on the lack of accountability from 1960 to 1970 (Nath et al,2005). Therefore, even the way performance audit is practised and their evaluation areas are affected by the professional and personal attitudes, competence and knowledge of their auditors, which can then affect the audit emergence in

those institutions. According to Keen (1999), the judgement and analytical skill used by performance auditing teams influence the way they view the evidence required, data collection and analysis strategies that they follow.

3.6. **Moderating Effects**

What are moderators, and why is it significant to study their effect in the context of PA? This section will provide an answer to these questions. The moderator variable has been defined by (Baron & Kenny,1986, p. 1174) as a "variable that affects the direction and/or strength of the relation between independent or predictor variable and dependent criterion variable". The increase in the usage of moderating variables arose due to their ability to enhance the understanding of the relationship between the independent variables and dependent variables (Walsh et al,2008).

In this thesis there are four moderator variables that are demographic and qualitative in nature (Gender, Age, Experience and Educational qualification). They are expected to show the impact on the indirect relationship proposed in the previous framework model presented later in this chapter (Figure 8).

According to Sarstedt et al (2011), the assumption that the 'homogeneity' between the different groups of respondents is unrealistic, because individuals normally tend to be heterogeneous due to their perceptions and evaluations of latent constructs. 'Heterogeneity' exists when different groups of participants exhibit differences in their model relationships, which motivate researchers to identify and understand such differences (Hair et al,2013a). It is not advisable to ignore the population's heterogeneity, as it may result in

the results being biased, and can lead to inaccurate conclusions with theoretical and practical implications (Sarstedt et al,2009). The discussion about the moderators' application and how to test it using multi-group analysis will be detailed in the chapter on research design and methodology. In the next section there will be a brief discussion that supports the study of each of the selected moderators in this thesis.

In fact the need for more research on the relationship between auditors' individual characteristics and the quality of audit reporting was highlighted by Church et al (2008). It is still unclear as to whether different individual characteristics can significantly affect audit judgement and decision–making. The personal attributes or characteristics of individual auditors may involve but not exclusively age, gender and risk preferences, but this has not yet been really examined in archival research of audit, including PA. The reason is probably due to the lack of data available (Gul et al,2013). According to Zuraidah & Takiah (2006), demographic variables such as gender, experience and knowledge have been linked to the task complexity in audit performance in past studies where sometimes tasted a lone or combined. For example, Umar & Anandarajan (2004) looked at whether factors like gender, experience, professional qualifications and position had an impact on the independence of an auditors' judgements. Thus, based on the previous discussion, there is a need to examine the moderator variables in more depth and investigate their effect on the direction or the strength of the path in the model.

3.6.1. Moderating Effect of Gender

Many studies on auditing have demonstrated the influence of individual– aspect factors, such as gender and task complexity on auditors' judgements (Chung & Monroe,2001). According to Hardies et al (2010), each gender responds differently in problem-solving, risk preference and cognitive style. Additionally, a great deal of literature on psychology argues that, on average, women are more risk-averse and more conservative in finance-related matters than men (Gul et al,2013).

The effects of gender on the performing of tasks involving judgement, and how performance may change according to task complexity have been studied in depth in cognitive psychology and marketing literatures. This motived the researcher of this study to consider gender as an important individual factor that may impact and moderate the relationship paths in the different constructs. Some of the literature has suggested that females tend to be more efficient and effective information processors than males in tasks involving complex decisions, due to their ability to differentiate between integrated decision cues (Chung & Monroe,2001). Moreover, a theoretical framework developed by Meyers-Levy (1986) explained the difference between the styles of male and female information processing. This framework suggested that males do not use all the information available, but they are more selective, and tend to be much more limited in terms of information processing, while females tend to be more detailed processors, and prefer to use most of the information available. This was supported in an experimental study by Chung & Monroe (1998), who discovered that female students paid higher attention to disconfirming information compared with

male students, which supports the notion of gender differences in the style of information processing . Another study highlighting the issue of gender found that female auditors tend to be influenced by male CFOs, whereas female CFOs do not have as much of an influence on male auditors (Gold et al,2009).

That apart, to our knowledge, i.e. influence of gender on information processing and judgement has not been a subject of study in the context performance audit.

3.6.2. Moderating Effect of Age and Experience level

The effect of individual differences, such as age and experience on audit quality has been expressed by many researchers (Abdolmohammadi & Wright,1987; Gul et al,2013). The latter paper found that auditors' individual characteristics could affect their judgements and decisions. This issue has not only been investigated in auditing. For example, a study done surrounding different behavioural contexts examined the impact of age and experience and found that age influences the performance of decision-making more than experience does; little evidence was found supporting the belief that older managers are less facile in the use of information processors (Taylor,1975). According to Gul et al (2013), those auditors who are recruited to the big audit firms tend to be people of more conservative personalities, which might lead to more conservative auditing outcomes. Moreover, Abdolmohammadi & Wright (1987) found that the influence of experience is significant when task complexity is explicitly considered. According to Choo & Trotman (1991), there is a difference between experienced and non-experienced auditors in

terms of the amount, type and clustering of items recalled, which shows the relationship between knowledge structure and judgements among the different groups of auditors (i.e. experienced and non-experienced).

Moreover, another study, by Alissa et al (2014), provides additional evidence on how auditor characteristics can influence audit performance, and how task complexity and auditor experience moderates the impact of auditor effort on performance. The findings suggest that experience moderates a positive relationship between auditor effort and performance. Nevertheless, when the complexity is high, auditor experience strengthens the positive effect of auditor effort on performance. Interestingly, age was found to have a positive correlation with ethical sensitivity, which suggests that older accounting students are more likely to detect ethical issues in professional scenarios. However, the same study showed that there was no association found between age and student ethical sensitivity level though multivariate analysis (Samuel & Philomena,2006). In addition, experience was examined against the independence of auditor judgement, and was found to be significantly related (Umar & Anandarajan,2004).

Much of the literature in auditing suggests that demographic characteristics, such as gender, education and amount of experience are associated with attributes relevant to auditor judgement and decision-making (Francis,2004; Nelson,2009). This motivated the researcher to test these and other demographic values in a different auditing context, such as performance audit.

3.6.3. Moderating Effect of Educational / Qualification level

Education level was also another important area investigated in the context of auditing. For example, Gul et al (2013) study showed that auditors with graduate degrees tend to be more aggressive than others in their judgement and decision-making. They also argued that auditors' educational background could impact their knowledge, risk preference and values. A study conducted by Bertrand & Schoar (2002) found that CEOs with M.B.A. degrees are more aggressive than those without. Whether this holds true is yet to be seen in the context of auditors, and, more precisely, in PA.

Meanwhile Yu-Shu et al (2009) suggested that higher investment in human capital (i.e. auditors) correspond to higher levels of auditor quality, and that audit firms with well-educated, well-trained professionals are better able to adapt to the changing nature of the market in performing their auditing tasks. It was argued that age and education are powerful predictors of the individual level of moral reasoning in many auditing and accounting studies. For example, Shaub (1995) paper provides evidence that audit students and auditors' moral reasoning was impacted by gender, academic success and ethics education. It was also suggested earlier by Meinhardt et al (1987) that the educational attainment of auditors is important, and can improve the quality of governmental audits. Thus it is crucial to examine whether educational qualifications moderate or affect the different paths in the model or framework discussed in this chapter. The need for a change in audit educational focus was conveyed by Knechel (2000) as he stated:

"Auditors do not merely dwell in a world of debits and credits, but rather must deal with the more challenging issues of risks, controls, performance measurement, and audit evidence. To rise to these challenges, new graduates need to develop skills in critical reasoning, information search, interpersonal interaction, communication, and decision-making" (p.695).

Moreover, it was debated that education in auditing can limit or reduce the audit expectation gap, since it helps students to better understand the roles and responsibilities of the audit profession (Ihendinihu & Robert,2014). The importance of audit training and knowledge was expressed by Umar & Anandarajan (2004, pp. 22-32) thus: "the evidence suggests that training is the most important factor in increasing auditor awareness and independence...auditor training is the area that the policy makers should concentrate on when considering ways of increasing independence of judgement".

Educational experience is essential for audit professionals to obtain, because it lays the foundation of their role, which is summarized as gathering evidence, evaluating and expressing judgements, and decisions regarding the economic position and operation of an organization (Chaffey et al,2011). Thus it is important to seek its moderating effect on the different paths of the model.

3.7. Hypotheses for Model One

Developing the structural model representing the underlying concepts/theories

3.7.1. Developing path model (1)

It was mentioned previously in this chapter that the Throughput model, representing the structural model, would be applied in the performance audit

content. The arrow from one circle (construct) to another represents the hypothesis relationship. In the proposed model there are five hypotheses, which aim to test the direct relationships, and other hypotheses to test moderator effect, based on the discussion of the last section and the literature review in Chapter Two. Figure 7 and 8 describes the structural model (highlighting the hypothesis), while the measurement model for each latent variable will be discussed later in more detail in Chapter Four. The following is a list of the hypothesis.

Direct relationships

H0.1: Performance information used in performance audit is associated with the judgement or evaluation by performance auditors.

H1.1: Performance information used in performance audit is not associated with the judgement or evaluation by performance auditors.

H0.2: Performance information used in performance audit is associated with performance perception of auditors.

H1.2: Performance information used in performance audit is not associated with performance perception made by auditors.

H0.3: Performance perception regarding public perspective influences the judgement and evaluation by made by auditors.

H3.1: Performance perception regarding public perspective does not influence the judgement and evaluation by made by auditors.

H0.4: Performance perception made by performance auditors is associated with responsive audit reporting.

H1.4: Performance perception made by performance auditors is not associated with responsive audit reporting.

H0.5: Auditors' judgement influence responsive reporting in performance audit.

H1.5: Auditors' judgements do not influence responsive reporting in performance audit.
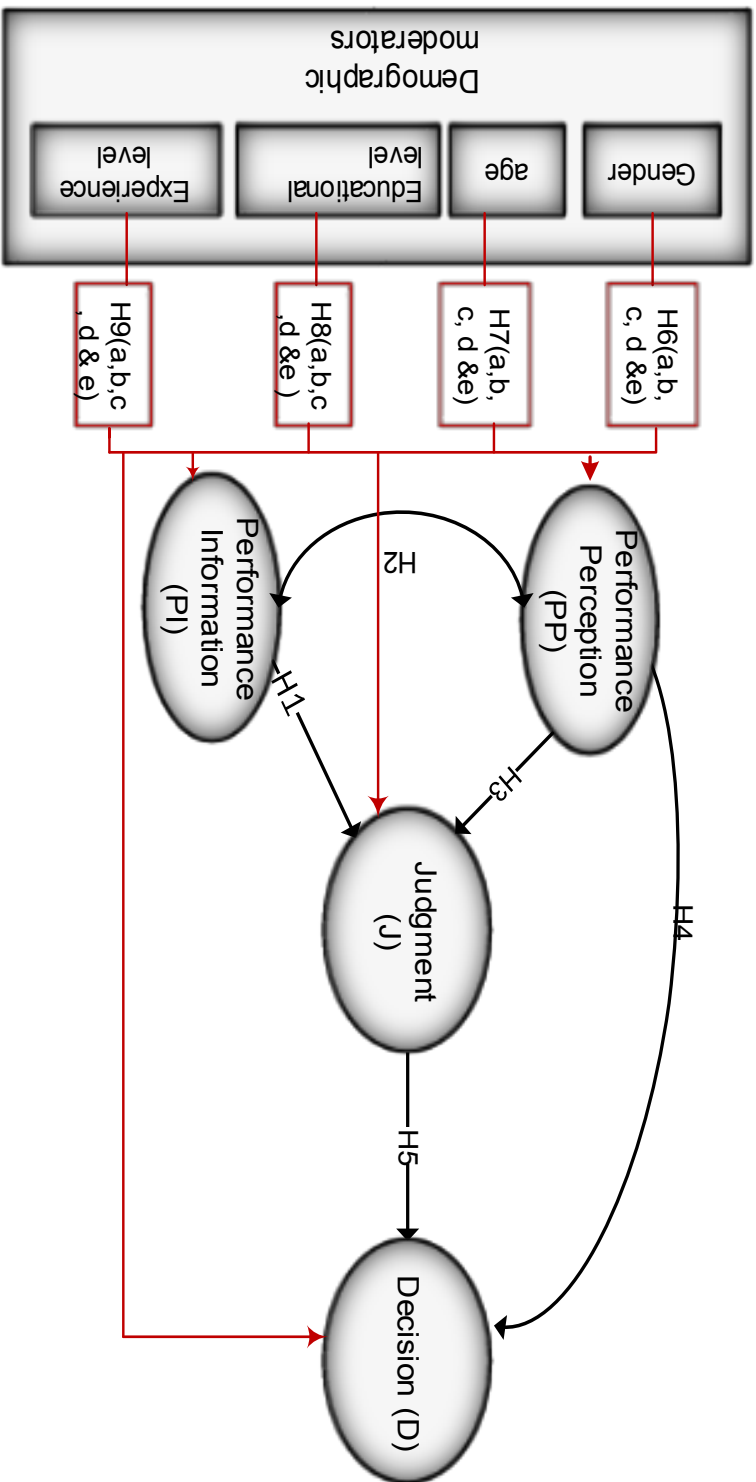
Figure 7 The conceptual framework for model One

(Source: Author)

3.7.2. Moderation impact (demographic variables) hypothesis

H0.6a The influence of performance information towards judgement is moderated via gender.

H1.6a The influence of performance information towards judgement is not moderated via gender.

H0.6b The influence of performance perceptions towards judgement is moderated by gender.

H1.6b The influence of performance perceptions towards judgement is not moderated by gender.

H0.6c The influence of judgement towards audit reporting is moderated by gender.

H1.6c The influence of judgement towards audit reporting is not moderated by gender.

H0.6d The influence of performance information towards performance perception is moderated by gender.

H1.6d The influence of performance information towards performance perception is not moderated by gender.

H0.6e The influence of performance perception towards reporting is moderated via gender.

H1.6e The influence of performance perception towards reporting is not moderated via gender.

H0.7a The influence of performance perceptions towards judgement is moderated by age.

H1.7a The influence of performance perceptions towards judgement is not moderated by age.

H0.7b The influence of performance information towards judgement is moderated by age.

H1.7b The influence of performance information towards judgement is not moderated by age.

H0.7c The influence of judgement towards audit reporting is moderated by age via age.

H1.7c The influence of judgement towards audit reporting is not moderated by age via age.

H0.7d The influence of performance information towards performance perception is moderated by age.

H1.7d The influence of performance information towards performance perception is not moderated by age.

H0.7e The influence of performance perception towards reporting is moderated via age.

H1.7e The influence of performance perception toward reporting is not moderated via age.

H0.8a The influence of performance perceptions towards judgement is moderated by educational level.

H1.8a The influence of performance perceptions towards judgement is not moderated by educational level.

H0.8b The influence of performance information towards judgement is moderated via educational level.

H1.8b The influence of performance information towards judgement is not moderated via educational level.

H0.8c The influence of judgement towards audit reporting is moderated by educational level.

H1.8c The influence of judgement towards audit reporting is not moderated by educational level.

H0.8d The influence of performance information towards performance perception is moderated by educational level.

H1.8d The influence of performance information towards performance perception is not moderated by educational level.

H0.8e The influence of performance perception towards reporting is moderated via educational level.

H1.8e The influence of performance perception towards reporting is not moderated via educational level.

H0.9a The influence of performance perceptions towards judgement is moderated by experience level.

H.19a The influence of performance perceptions towards judgement is not moderated by experience level.

H0.9b The influence of performance information towards judgement is moderated via experience level.

H1.9b The influence of performance information towards judgement is not moderated via experience level.

H0.9c The influence of judgement towards audit reporting is moderated by experience level.

H1.9c The influence of judgement towards audit reporting is not moderated by experience level.

H0.9d The influence of performance information towards performance perception is moderated by experience level.

H1.9d The influence of performance information towards performance perception is not moderated by experience level.

H0.9e The influence of performance perception towards reporting is moderated via experience level.

H1.9e The influence of performance perception towards reporting is not moderated via experience level.

3.7.3. Additional Hypothesis related to Model Two

H0.10 Responsive performance perception is associated with the judgement made by auditors.

H1.10 Responsive performance perception is not associated with the judgement made by auditors.

H0.11 Democratic performance perception is associated with the judgement process by auditors.

H0.11 Democratic performance perception is not associated with the judgement process by auditors.

H0.12 Responsive performance perception affects the reporting decisions made by auditors.

H1.12 Responsive performance perception does not affect the reporting decisions made by auditors.

H0.13 Democratic performance perception impacts the reporting decisions made by auditors.

H1.13 Democratic performance perception does not impact the reporting decisions made by auditors.
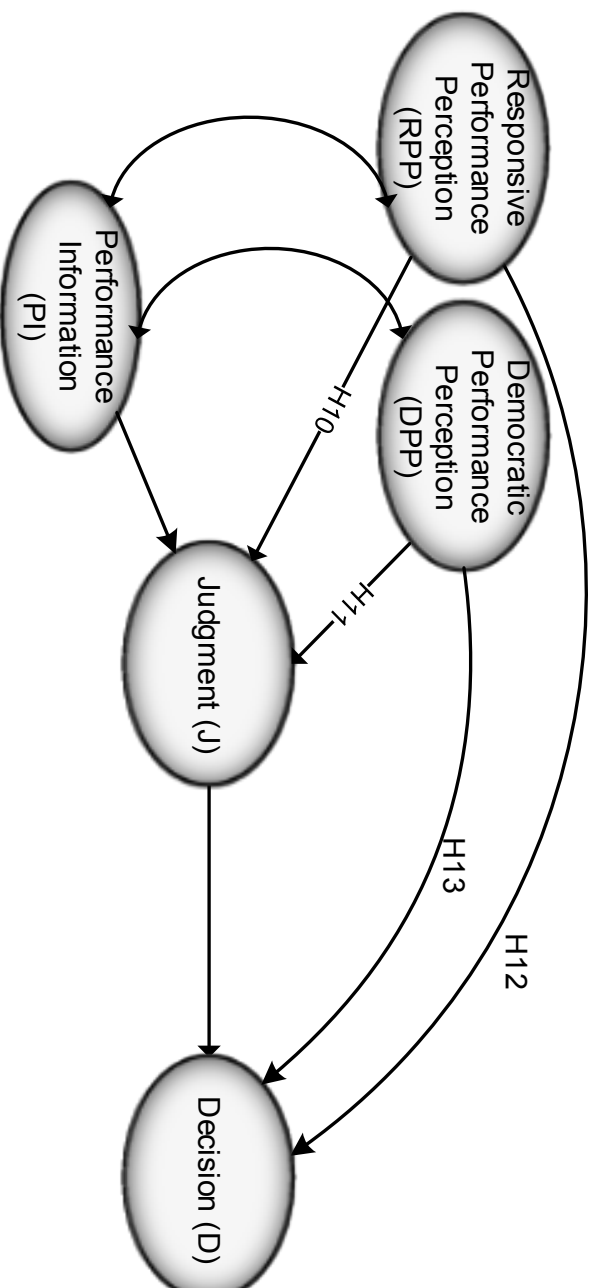
Figure 8 The conceptual framework for model two

(Source: Author)

3.8. Conclusion

This chapter has provided a theoretical framework based on the Throughput model and the literature review of PA in the previous chapter. The chapter explained the direct relation between performance information, performance perception (which is based on public perspective) and judgement. Also, it verified the direct relation between performance perception and decision-making. Moreover, the direct relation between judgement and decisions by auditors was justified. In addition, the moderation effect due to factors of gender, age, experience and educational level has been discussed. In order for the hypotheses that has been developed in this chapter to be tested, the next chapter proposes the research design and methodology applied in this thesis.

4. Chapter Four: Research Design and Methodology

4.1. Introduction

Preceding the theoretical framework and the development of hypothesis in the previous chapter, this chapter describes the methodological strategies applied in this thesis. The chapter is divided into fourteen sections. It begins with research philosophy (i.e. detailed epistemological and ontological consideration), followed by explaining the rational for adopting the positivist research paradigm. Then, the following section verifies the research population and the sampling process. The next section discusses the data collection method applied, which is an online questionnaire.

Most importantly in section nine, the chapter as well explains in detail, the items or instruments development process for each construct in the measurement models and their items with graphical presentations and tables presenting their details such as the scale used. Moreover, a section for each of the time horizons of the study, gaining access to data and ethical consideration related to the study is discussed respectively. Following that, another critical section in this chapter where the statistical techniques used in data analysis is explained. Further emphasis is given to Structural Equation Modelling (SEM) where its fundamental and basic principles are discussed. In the latter section the justification for appropriateness of the Partial Least Square approach (PLS) for testing the hypothesized relationship in the conceptual model for this research is illustrated and the two stages evaluation the of SEM-PLS is outlined. Finally, the last section provides the summary of the chapter.

4.2. Understanding Epistemological and Ontological Considerations

The word 'philosophy' in the Oxford English Dictionary is referred to as; the study of the fundamental nature of knowledge, reality and existence (Oxford,2005, p. 1278). It is a perspective that assists a scholar or researcher to perceive reality in the way in which it is described, and its relationship with knowledge that explains how the reality has been observed. According to Richardson et al (2000) philosophical assumptions are a set of paradigms that are based on beliefs that guide an investigator's action, to know how the world works, and what characteristics of human nature are necessary. A paradigm is "a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done, and how results should be interpreted" (Bryman,1988, p. 4). Thomas Kuhn initially introduced the term itself in early 1960s.

Guba & Lincoln (1994) classified the complexities of different research philosophies into three essential groups: ontology, epistemology and methodology. While ontology focuses on questions regarding the nature of the reality to be known or investigated, epistemology refers to questions about the relationship of the researcher to the problem being researched. For Gray (2009) ontology is about understanding what exists, whereas epistemology is trying to establish what it is to know something.

However, methodology emphasises the techniques of the research process for collecting and validating the empirical evidence. Moreover, three philosophical paradigms classified by Guba & Lincoln (1994) and Lincoln &

Guba (2000) into four schools of thoughts which are: positivism, post-positivism, critical theory and constructivism.

- Positivism; this paradigm assumes that an external world is existent and the collected data are independent from the researchers, and therefore free of bias (Saunders et al,2009). It assumes that there are reasons for cause and effect relationships. Also, this paradigm focuses on valid and objectively true facts that are collected by experiments or observation and are empirically measured by quantitative methods (Hatch & Cunliffe,2006; Saunders et al,2009). This paradigm believes that the nature of the science is by developing a hypothesis and testing it by measuring observable facts and numbers.

- Post-positivism: a school of thought established in the early 19th century that proposes that, a researcher cannot be 'positive' about claimed knowledge (Creswell et al,2003).

- Critical theory: this paradigm is based on the principle of realism/subjectivism where the social phenomenon is dependent upon a social actor's conceptualization and the way he/she understands reality (Bryman & Bell,2007). Also in this paradigm, researchers' perception is influenced by the research objectives due to how they are inter-linked with each other (Guba & Lincoln,1994). The method of inquiry in this school is mainly observation and the interview process, in which a problem is based on theoretical concepts studied to present a hypothesis that can be examined (Bryman & Bell,2007).

- Constructivism: (also referred to as 'postmodernism') a paradigm that advocates social phenomenon and their meanings (Bryman &

Bell,2007). Similar to critical theory, the background principle is based on subjectivism, with one main exception: realities are produced or developed through social interaction that is often shared or categorized by many individuals together. The methods of inquiry for examining the research objectives in constructivism are mainly interviews (Guba & Lincoln,1994).

It is stated by (Cunliffe,2011, p. 3) that "researchers need to figure out their assumptions about the nature of social reality and what it means to be human (ontology) and the nature and purpose of knowledge (epistemology) before deciding which research methods might be appropriate". Thus in the next section the researcher justifies the selection of the approach of positivism.

4.3. Selection of Positivism Research Approach

It is important to determine the direction of the research based on the nature of the problem addressed in the study and the objectives. Therefore, from the perspective of the researcher the selection of a positivist approach is appropriate for this study. Quantitative research emphasizes the approach of quantifying, in terms of collecting and analysing data rather than words. Qualitative researches are exploring and trying to understand the phenomena, process or (the study concern) instead of measuring things and finding the causality relation between variables. While the qualitative research uses the inductive approach where the theories are generated rather than tested, quantitative research entails the deductive approach in which the accent is placed on the testing of the theories (Bryman & Bell,2003).

Despite of the existing theories used in this study regarding the performance auditing in the public sector, their perception and enactment in Oman's public sector (PA) is still uncovered. It is worth noting that the theoretical framework placed on the literature review adopted is the starting point to guide the inquiry and to collect adequate data that are directly involved with the phenomena being examined and analysed. Therefore, the purpose is not to collect the data that will fit and test a theory rather to develop and generate a theory in regards to the social realities been grounded.

In common it could be argued that this study shares some of the realist characteristics. According to Hatch & Cunliffe (2006), the realist researcher is an investigator who attempts to understand the mechanisms and structures of institutional forms and practices, how they emerge over time; how they could empower (constrain) social actors and how they changed. Moreover, the realists believe that reality can exist at multiple levels and it can be inductive or theory building. The realists which treads upon a similar path to that of the positivist, emphasises that science is based upon the rationale of empiricism, thus the social object should be scientifically studied rather than studied through language and discourse.

Methodologically the positivist approach attempts to test reasoning using a deductive process (Hirschheim & Klein,1992). In this approach the researcher will properly 1) formulate hypotheses, models, or causal relationship within constructs, 2) likely to use quantitative methods to study relationships, and 3) the researcher's value-free interpretation objective (Chen & Hirschheim,2004). Positivist epistemology searches for an explanation and prediction of what happens in the social world by looking for regularities and casual relationships

between its constituent elements; it is in essence, based upon the traditional approaches, which dominate the natural sciences. However, the interpretive researchers are not seeking to prove or disapprove a hypothesis like a positivist study, instead it tries "to identify, explore, and explain how all the factors in a particular social setting are related and interdependent" (Oates,2005, p. 292).

Looking back at the research questions addressed in this study we can see that the research questions of (what and how) match the nature of positivist the approach. The literature indicates that possible methods of inquiry in the positivist approach could be: observations, measurements, surveys, questionnaire instruments, laboratory and field experiments, statistical analysis, simulations, and case studies (Mingers,2003).

The primary objective of this research is to investigate the process taken by performance auditors in order to make their decision at their final report. It involves examining their way of judgement and their perception. Exploring the moderating impact of demographic variables such age, gender, experience and education level was also of interest to the investigation. Consequently, from an ontological perspective, the positivist approach is found to be more appropriate for this study. In common, Orlikowski & Baroudi (1991, p. 9) state, that in positivist ontology, "the role of researcher is to discover the objective of physical and social reality by crafting precise measures that will detect and gauge those dimensions of reality that interests the researcher." This research is also supporting the perspective of a positivist epistemological approach which, as argued by Chua (1986) believes that knowledge can be verified or

shown to be false through empirical testable theories and a hypothetical-deductive approach.

Additionally, this research aims to test if the information and perception will affect the judgement, which in turn will influence the decision they will make. To avoid bias or the impact of a researcher on a researched object, critical and constructivism theories are completely over-looked. The researcher developed a theoretical framework that clearly defines the variables/ constructs, illustrates their nature relations (e.g. dependent, independent) and provides details of elements / items. Furthermore, the aim of this research is purely based on objectivism and there is little or no interference required by the researcher on the research problem, therefore adopting a critical and constructivist research approach is unjustifiable because both of these are based on a relativist (also called subjectivist) approach with an interlocking relationship between the researcher and the researched object (Guba & Lincoln,1994; Mertens,1998). Thus, a quantitative research method will be applied in this study in order to develop a solid and rigorous consistency between the theoretical and philosophical assumptions.

The researcher acknowledges that other philosophical approaches might be appropriate to be applied for a study like this, yet the rationality here can be argued in favour of the positivist approach. Other approaches like the post-positivist required conducting interviews to explore the nature of relationships, which need to gain access into the participants working in SAI, which is very hard to get if you are not an employee there, not to mention that literature reveals up-date studies in this approach.

Therefore, this study is deductive (the theory is used as background to quantitative investigation), rather than an inductive and building theory. It is important to justify that the theoretical framework developed in the theoretical lens chapter was adapted as the starting point to guide the research enquiry, in order to collect rich levels of data that is related to the phenomenon being studied or investigated. Accordingly, the data collected is not to fit or test a theory, but to develop a theory in the light of the social reality discovered.

The deductive approach helps the researcher to explain the causal relationships between different variables. Moreover, researchers can develop hypotheses and controls to allow them to be tested. At the same time the researcher can also apply a highly structured methodology to facilitate replication, in order to ensure reliability (Gill & Johnson,2002). Also, deductive analysis can be operationalized in a way that allows facts to be measured quantitatively. The final characteristic of the deductive approach is generalisation, where it is necessary to select samples of a sufficient numerical size (Saunders et al,2009). In this study the researcher is looking to generalize the results to help understand the significance of including the public and social perspectives in performance audit reports.

4.4. Sample Nature and Size

The data collection and examination is one of the essential stages in application of SEM. In this study the researcher planned to use the Smart-PLS software for data examination and analysis. This stage is significantly important when the researcher anticipates applying SEM. Appling of SEM methods requested that quantitative data be used. Although some researchers involve primary data like this research, still others can apply or use secondary data, as long they are quantitative in nature. It is claimed by Hair et al (2013a) that social science researchers in general, rely on primary data obtained from structured questionnaires for their SEM analysis.

Since the study targets the performance auditors who mainly work for the State of Audit Institutions (SAI), the online questionnaire is considered to be adequate. The link of the questionnaire sent to the State of Audit in Oman, where the number of the auditors is approximately less than 500. The small sample size is often abused with argument linked to the use of PLS-SEM and sometimes leads to scepticism in the use of PLS-SEM (Hair et al,2013a). It is indicated that PLS-SEM is a good choice when the sample size is small and compared to its covariance-based counterpart, PLS-SEM has a higher level of statistical power whether the study has complex model structure or a small sample size. The sample size should be equal or greater than the recommended and fostered by often-cited 10 times rule (Barclay et al,1995).

This rule suggests that the sample should be equal or greater than by 10 times, than the largest number of formative indicators used to measure a

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single construct or 10 times more than the largest number of structural paths directed at a particular construct in the structural model.

Whilst all the indicators used in this thesis are reflective, the 10 times rule suggests that, the sample size should be equal or greater than 80 due to the largest number of structural paths being directed is 8 (see Performance Information and Judgement at measurement model next chapter). Moreover, it is important to consider as well the statistical power analysis for multiple regression models as suggested by Cohen (1992). An alternative way is by using the programs such as G*Power in order to do the power analysis specific to model setups. The Cohen Power primer table is useful to detect minimum R square value of 0.10, 0.25, 0.50 and 0.75 in any endogenous constructs in the structural model for significant of level 1%, 5% and 10% assuming the commonly used level of 80% statistical power and a specific level of PLS path complexity (in this study 8 is the maximum number of arrows pointing at a construct). According to the table the study needs 84 or 174 observations to achieve a statistical power of 80% for detecting R square value of at least 0.25 or 0.10 respectively (with a 5 % probability of error).

4.5. Research Strategy and Design

This research uses a quantitative paradigm where a single method of data collection used targeted the Auditors at SAI in Oman. According to Bryman & Bell (2007) research design helped the researcher to establish a framework for collecting and analysing data, while the research method is simply a technique for collecting the data which can include specific tools, such as a survey or structured interviews, experiments …etc. The table 6 listed the

research structure and design stages during the earlier process of the research before the data collection and analysis is considered.

Table 6 Research Structure and desgin before data collection and anaysis

First Stage	• Preparing the first draft of defining the research problem • Developing the research objectives and questions. • Developing the initial Theoretical framework and hypotheses.
Second Stage	• Design the research methodological phase • Creating the structural model and the Measurement Model • Define each construct variable measurement items
Third stage	• Prepare the piloting study stage • Test the online questionnaire and modify the final questionnaire based on the pilot study analysis • Start the data collection
Note: analysing and preparation of Literature Review carried out continually in all the stages	

(Source: Author)

4.6. Selection of Survey Research Strategy

It is essential to select the appropriate method or strategy for the research in order to avoid decisions that could be contentious. There are several research approaches and methodologies that have been devised in the field of social sciences, such as laboratory experimental research, field experiments research, survey methods, case studies, action research, grounded theory, ethnography, phenomenology, numerical methods etc. (Chen & Hirschheim,2004; Creswell et al,2003; Crotty,1998; Myers,1997). Amongst

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these research approaches, the survey research approach is most appropriate for the present context of the study.

There are mono and multiple research methods. While the mono method uses a single data collection technique and analysis procedure, the multiple methods employs more than one data collection and corresponding analysis procedures in order to answer the research questions. As Tashakkori & Teddlie (2003) argued that the multiple methods choice is becoming more popular in business and management studies, where the researcher may use quantitative and qualitative or a combination of both as well maximising primary and secondary data. In order to answer the research questions, the researcher will be using a survey or the questionnaires as the main source of data.

The rationales behind choosing survey research are as follows: First, it is the most appropriate research strategy to achieve the objectives in this study, and it is most relevant to the current context of the study. Also, with this method the chance of gaining access to the participants is easier than others and may not be as time consuming or as expensive.

4.7. Data Collection

The data collection is implanted at two stages; firstly, the data is collected for the pilot study, secondly it is collected for the main study. For both stages, the online questionnaire is developed using web-based surveys server entitled; Qualtircs (www.qualtrics.com). Access to the questionnaire for the pilot study is via a link emailed to groups of auditors at various organizations that agree to participate in the study. To increase the size of the pilot sample the link is

also posted on various social networking groups, emailed to various related organisations and individuals e.g. a group of Performance Auditors in LinkedIn website. Although the link of the modified questionnaire for the main study was prepared in April 2014, after checking the reliability and validity of the pilot study, the main study data collection started on the 20[th] of June 2014. The survey link was provided to the secretary office of the SAI's deputy Head at the SAI in Oman who forwarded the e-mail to the auditors in SAI. The total respondents to the survey were 231. There were 27 responses found to be partially completed, and therefore discarded. Finally, a total of 204 useable responses were collected for this study.

4.8. Scale Used

It is difficult to determine human attitudes. Sekaran (2000), propose two main groups of scales (rating and ranking) scales. Furthermore, she identifies ten scaling methods within the rating scale. This study applies a seven point Likert scale which was developed by Rensis Likert in 1932, (Likert,1932). The scale typically assesses the strength of the argument or disagreement for groups of statements. It is the most frequent and easiest method for gathering information from participants by researchers using the survey method (Bryman & Bell,2003; Sekaran,2000; Viswanathan et al,2004). From the researchers' point of view this method does not require much time commitment from participants, especially in the case of online questionnaires.

4.9. Instrument /Item Development

The instrument used in the study contained number of questions related to each of the constructs in the model (see the questionnaire in the appendix) where the participants were asked to indicate their response on a scale ranging from (1) i.e. strongly disagree to (7) i.e. strongly agree. All the statements used to capture the construct variables, are framed as positive rather than negative. The justification for the items validity and reliability and the analysis method will be discussed in detail in section 3.14 as well as in Chapter 5. Meanwhile, Table 7 and Figure 14 presents the number of items or indicators used to measure each construct variable and the structural model. Note that the moderators are not emphasised in this section nor are the related hypotheses as they are not a construct and all the hypotheses are already mentioned in the previous chapter.

Table 7 Items used to measure the construct and related hypotheses

Construct	No. Items	Scale	Hypotheses
Performance information (PI)	Eight	7-point Likert scale	H1:(PI1, PI2, PI3, PI4PI5, PI6, PI7, PI8) ➔ (J)
Performance perception on public perspective (PP)	Seven	7-Point Likert Scale	H3:(PP1, PP2, PP3, PP4, PP5, PP6, PP7,) ➔(J) H2:(PP1, PP2, PP3, PP4, PP5, PP6, PP7,) ➔(PI) H4: PP(PP1, PP2, PP3, PP4, PP5, PP6, PP7)➔D
Judgement (J)	Eight	7-Point Likert Scale	H5: J (J1, J2, J3, J4, J5, J6, J7, J8)➔D
Decision choice (D)	Five	7-Point Likert Scale	Previously connected

(Source: Author)
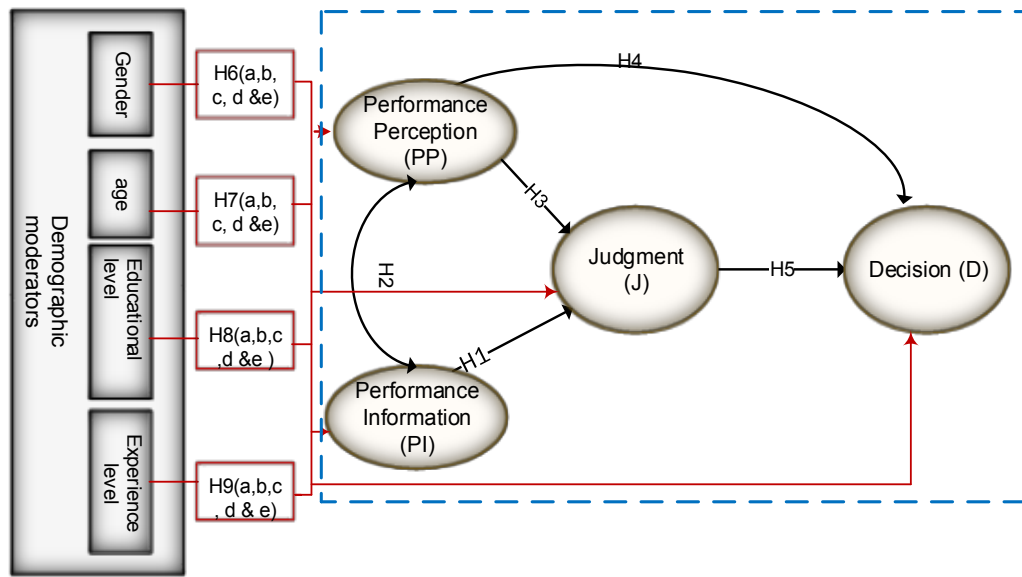
Figure 9 The Structural Model used in this study

(Source: Author). Note; where the moderators here outside the dotted lines

4.9.1. Measurement models for latent variables

The measurement model for the first construct (performance information) is based on two models of organizational performance, which are the three Es. Model and the IOO model. Multiple items are used instead of a single item to measure the concept of performance information. A reflective measurement model is applied of eight indicators or items. According to Hair et al (2013a) the reflective constructs normally uses as target constructs of theoretically/conceptually established PLS path model, while the formative constructs may be explanatory independent variables that can be seen as drivers of these target constructs. Thus, during the data analysis phase, the theoretical/conceptual mode of the measurement models can be tested empirically using confirmatory analysis for PLS-SEM. Thus, during the data

analysis phase, the theoretical/conceptual mode of the measurement models can be tested empirically using confirmatory analysis for PLS-SEM. Therefore, the constructs of information are measured by means of eight reflective items; PI1, PI2, PI3, PI4, PI5, PI6, PI7, PI8. They are related to the following survey questions in Table 8 and presented in diagram at Figure 10.

Table 8 Performance Information's Indicators

Indicators for performance information measurement model constructs

Item	Performance Information	Construct
PI1	Economic aspect (e.g. expenditure and the utilization of public funds)	Economy +In put
PI2	Quantity of output (e.g. ratio of the services provided per day/ month etc.)	Output & Efficiency
PI3	Cost per unit of production/service	Efficiency
PI4	Achievement of goals and objectives of the audited entity	Effectiveness
PI5	Effectiveness in achieving the output of the programmes, activities or projects.	Effectiveness
PI6	Meeting the time schedule of providing the services or projects completion in the audited entity	Effectiveness
PI7	The Legitimacy and Legality of management of purchase tenders, supply agreements and contract	Efficiency
PI8	Quality of output (e.g. compare between the quality of service provided to the standards and norms)	Efficiency (output)

(Source: Author)

The previous questions are derived from two organization performance models (3Es and IOO) that define the performance auditing and the main purpose of this type of audit.
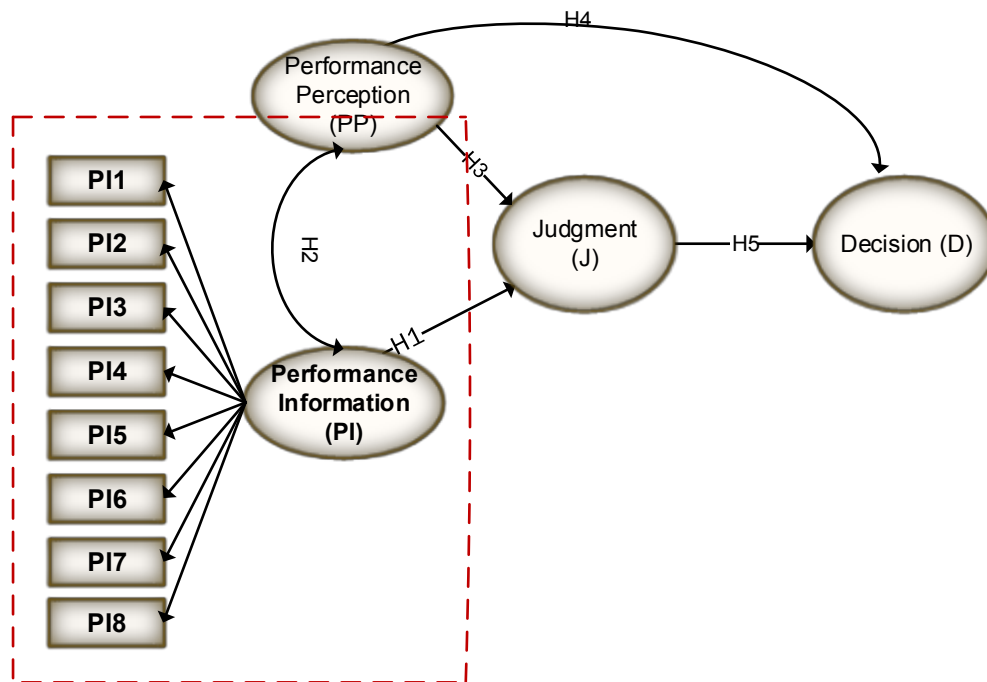
Figure 10 Measurement mode for Performance Information

(Source: Author)

The measurement of the second construct, which is performance perception on the public perspective, is applied by using eight reflective indicators. The questions that created to test this concept of perception are based on prior literatures and studies by former researchers in performance audit. The perception here is some dimensions of organizational performance, are less likely to be given attention by auditors or are perceived differently see Andrews & Boyne (2010) and Heikkila & Isett (2007) as well as Gao (2012) and Arthur et al (2012).The perception constructs measured by the mean of eight items or indicators, which are PP1, PP2, PP3, PP4, PP5, PP6, PP7 and PP8, are presented on the question at Table 9 and Figure 11.

Table 9 Performance Perception Indicators

Indicators for Performance Perception measurement model constructs

Perception (PP)		
Items		Construct
PP1	Overall impact of the entity's activities or their service provision has on society, local community or environment (e.g. how providing a free meal to students at local school may affect the students, parents and society)	Outcome impact
PP2	Users satisfaction of the service provided	Responsiveness
PP3	Employee satisfaction	Responsiveness
PP4	Equity or fairness of service provision (e.g. distribution of service by gender, age, race, income and geographical area)	Responsiveness **(This item deleted in first Model)**
PP5	Accountability of governmental officers (i.e. how answerable of their actions)	Democratic outcome
PP6	User feedback and their perspective on the services provided	Democratic outcome
PP7	Probity of staff (fraud absent and proper use of public funds)	Democratic outcome

(Source: Author)
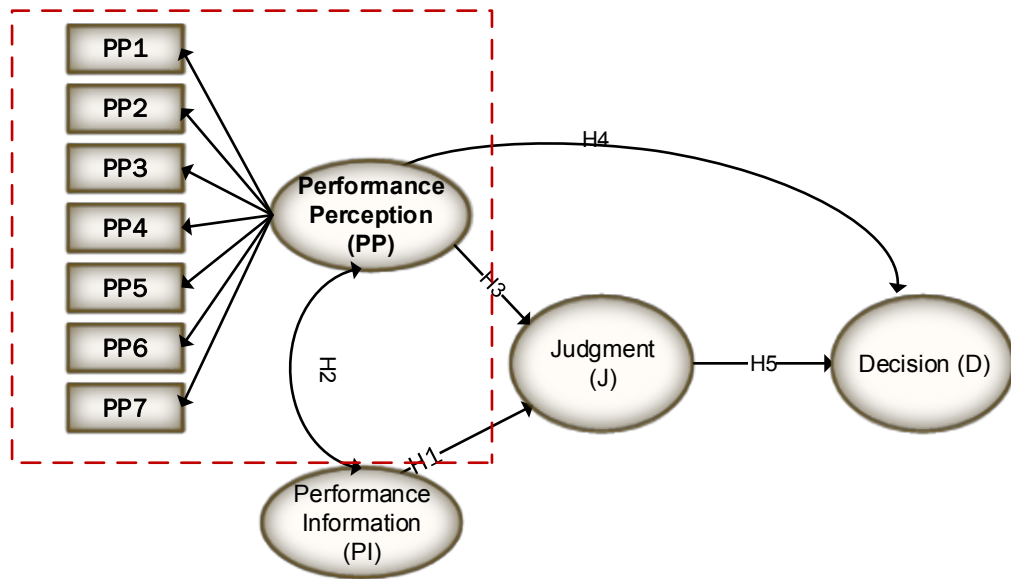
Figure 11 Measurement Model for Performance Perception

(Source: Author)

The third construct, which is judgement, is measured by multi-reflective items. Those items or indicators are driven by eight survey questions based on a framework introduced by Hammond (1996) and developed by Keen (1999), where the framework discusses the basic judgement criteria applied in performance auditing. Moreover, the same framework is tested by Kells (2010) whereby a forth element is added. In addition, the researcher also, borrowed questions of the judgement part that is used in the study by Foss & Rodgers (2011).The survey questions that test the judgement concept and the measurement model is summarised in Table 10 and Figure 12 below.

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Table 10 Judgement Indicators

Indicators for Judgement measurement model constructs

Judgement (J)		
Items		Construct
J1	Using external experts increase the credibility of performance audit report	Auditors and team skills
J2	The auditors have sufficient knowledge and do not need to be trained	Auditors and team skills **(this item deleted later)**
J3	The auditors are professional in their approach	Auditors and team skills
J4	Auditors conclusion are based on appropriate & sufficient evidence	Auditors and team skills
J5	The audit team always discuss the objectives and agenda of audit before starting their audit procedures	Auditors and team skills
J6	Consensus among teams is important due to its influence on the team views about evidence, data collection and analysis strategy pursued	Auditors and team skills
J7	At the end of audit, the team presents their report to the highest authorities in the audited entity to ensure that they agrees that individual facts and judgements made in the report were all correct and fair	Auditors and team skills
J8	Continue dialogue and understanding between auditors and audited entity personnel is essential in order to again acceptance for audit report recommendations	Auditors and team skills

(Source: Author)
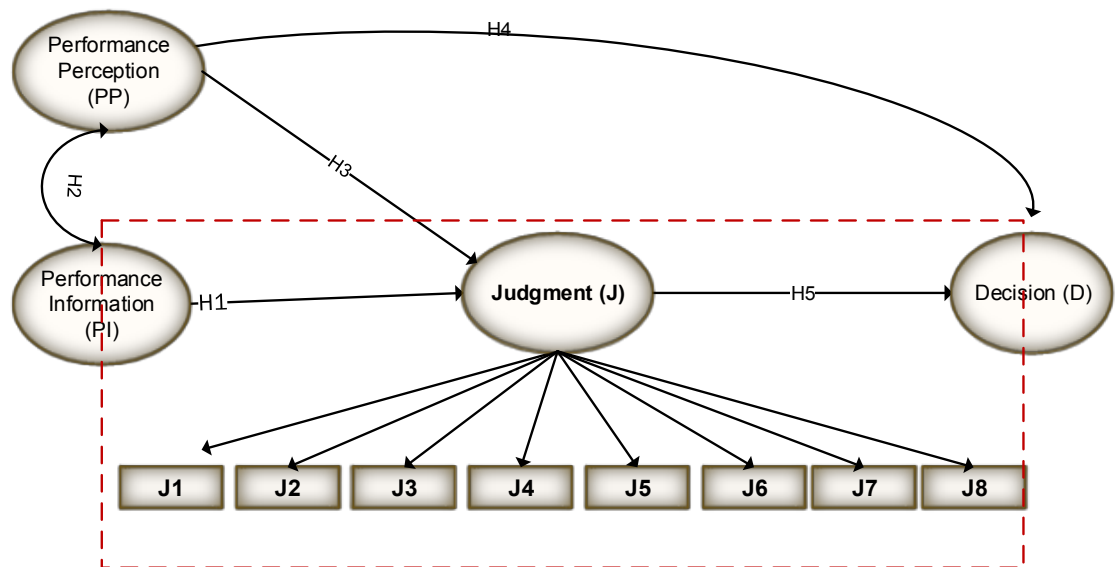
Figure 12 Measurement Model for Judgement

(Source: Author)

The fourth construct is decision choice. Since it is clear that the arrows are pointing from the construct to the observed indicators in the measurement model below, reflective indicators or items are applied to measure this construct. Some of questions of the decision making were borrowed from the decision section in (Foss & Rodgers,2011) such as Question Number1, others were developed by researcher's relying on the literatures and the International standards of performance audit. They represent the basic objective of responsive reporting in PA. See Table 11 and Figure 13.

Table 11 Indicators for Decision choice measurment model

Indicators for Decision choice measurement model constructs	
Decision choice (D)	
Items	Description
D1	Audit recommendations are constructive and feasible
D2	Performance audit reports help policy makers to assess the overall performance of the government administration
D3	The recommendations in the reports are of good value to citizens and public service users
D4	Performance audit report presents evidence and well-founded conclusions that contribute to the central governments considerations of change and improvement in public services
D5	Hold managers and administrative executive accountable and monitor their activities

(Source:Author)
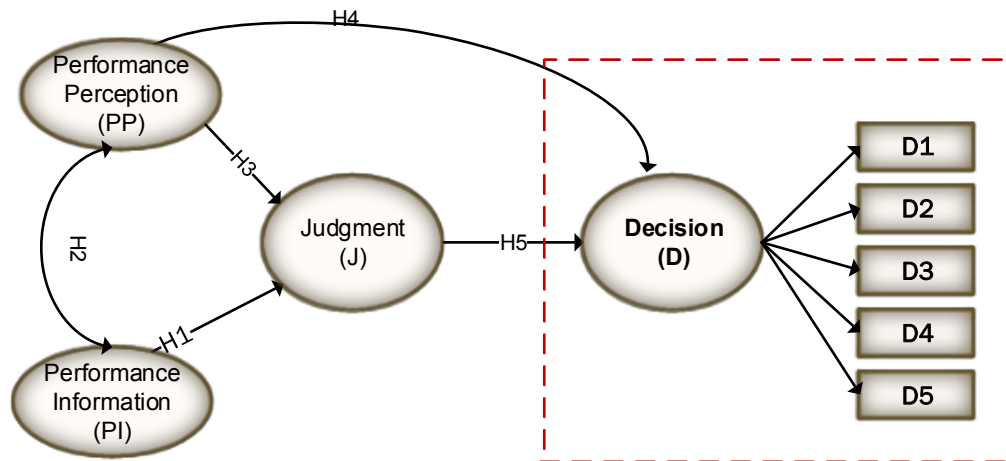
Figure 13 Measurement model for Decision choice

(Source: Author)
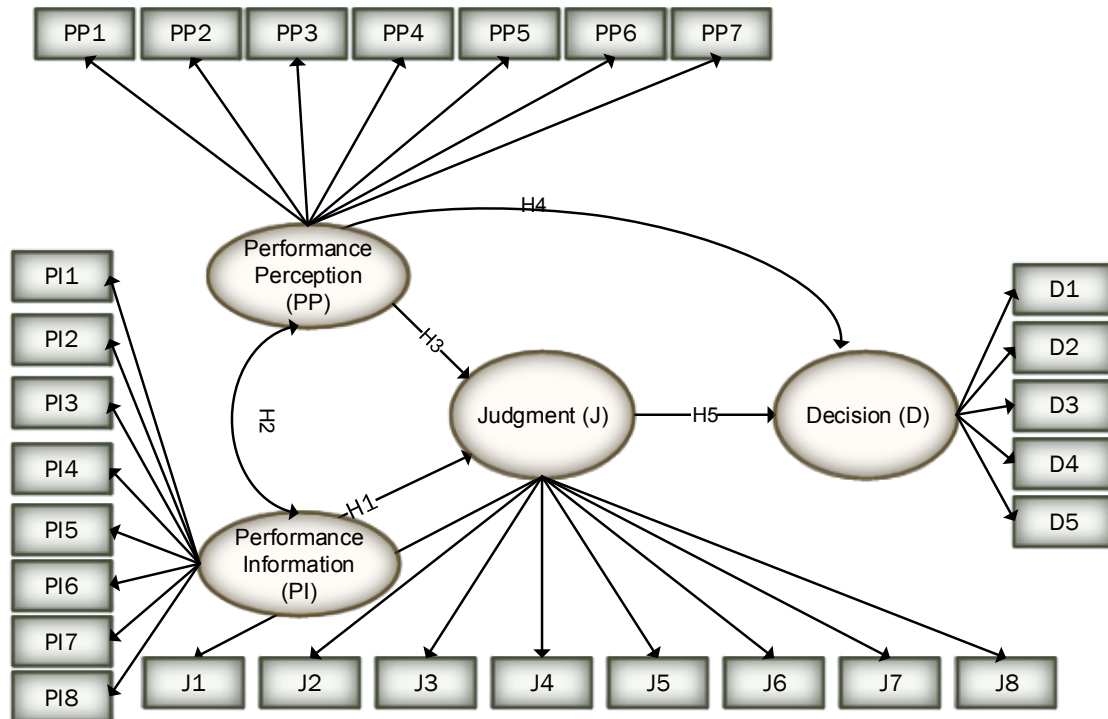
Figure 14 the Overall Measurement Model

(Source: Author)

4.10. Time Horizons

Due to time constraints, a cross-sectional time horizon is used, as it is the most appropriate for this research. Cross-sectional research is the study of a particular phenomenon or phenomena at a specific time. It is defined by Sekaran (2000) as a one shot study that needs to be conducted just once to collect data. According to Robson (2002), cross-sectional studies often use the survey strategy and seek to explain how factors are related in different organizations, such as relationships between different variables. In comparison, longitudinal studies required the researcher to collect the data at more than just one point in time, to see changes in the dependent variables (Sekaran,2000).

In this study the main sources of data collected is through online questionnaires. In the earlier stage of the research it was planned to have a discussion with the deputy Director office in the SAI Oman, where it is necessary to get the full support and coordination during the whole period of data collection and data analysis. Since much of the data will be collected from auditors in the SAI this is essential. It is necessary to get the permission and support from the higher-level managers in SAI. Moreover, the researcher needed to get a formal letter from the Omani cultural Office of Oman embassy in London to support the researcher in their study.

Since the study did not aim to examine the changes in dependent variables, the cross sectional study is selected, whereby the researcher doesn't have to wait for years for the data collection, thus the cross-sectional method is considered adequate.

4.11. Gaining Access

It is undoubtedly known that the research project success and completion depends on securing the access to the organizations, people and data (Ritchie & Lewis,2003) .

At an earlier stage in this study, the researcher seeks different ways to communicate with SAI in Oman and other countries. However, getting access was not easy at all. First the researcher set up a meeting with the manager of social community office at SAI in Oman and discussed possible co-operation in the future and whether the SAI are going to help the researcher to circulate the online questionnaire to the auditor in their institution or not. The researcher learnt that a letter was needed from both the University and the

Embassy in London confirming that the student is at the data collection stage and how the data is going to be used and managed. Therefore, the researcher knew in advance the possibility of the SAI in Oman facilitating the approach to reach the main participants in this study. However, the researcher was not fortunate in attempting to convince other SAI's in different countries like the UK and Australia or even America and that was due to various reasons, some of which were due to a strong confidentiality policy of some of these SAI's or the National Audit Office or General Audit. Also the inability to visit and talk in person with the relevant person decreases the chance to gain access and the probability of participating in the study. Also, the limited time frame of the study was an important element to limit the data that researcher collected from one Institution.

4.12. Ethical Considerations

Ethical issues and anonymity have been stressed by many researchers in social and business science studies, whether it is qualitative or quantitative, due to its importance and effects (Collis et al,2003; Myers,2009; Tilley & Woodthorpe,2011). In addition, as Burns & Bursn (2000) pointed out, it is the responsibility of the researcher to inform the participants regarding their right to privacy and to understand the main purpose of the data collection. That normally should to be clearly stated in the cover letter accompany the questionnaire. Also, Payne (2004) added that participants should be freely able to give their informed consent and should be advised that they can terminate their participation at any time for any reason. Also, to minimize any risk of harm it is advised that participants should be fully assured of anonymity and confidentiality (Tilley & Woodthorpe,2011). Moreover, the lack of ethical

consideration at any stage during the data collection may cause a lack of cooperation from the participants and prevent the researcher from collecting the desired data sample (Sekaran,2000; Zikmund,2003).

The researcher plans to take the following procedures into consideration before and during data collection. First and most importantly, complete the Ethical Approval process and paper work of Hull University Business Schools' Ethic Committee and obtain confirmation from the Ethic Committee before starting the data collection stage (i.e. distributing the survey links to participants). Furthermore, the researcher is going to request a letter from the Ministry of Higher Education in Oman giving confirmation that the data collection is conducted as a stage of a PhD project and the latter would be presented to the participants since the study participants are Omani and the data collection process is conducted in Oman. Although the survey which the researcher intends to use is online, the participants will be presented first, with a brief cover letter that explains the purpose of the study, who is undertaking it, why it is being carried out and requesting their approval to voluntary continue taking the survey or simply skip the survey by clicking skip which will lead them out of the webpage. In addition, the participants can print the consent form after accepting to take the survey by pressing on the 'yes' choice.

Also, participants can close the survey at any time. Moreover, they will be notified and assured that their inputs and feedbacks would be used for research purposes only and it will be considered to be private. No sensitive information that could reveal the participants' personality are requested such as their name, job title or organizational branch name. All the information

provided by participants will be saved in a secured environment, where only the researcher has access to and will not be shared/used by other person/s or research centres. A copy of the cover letter is presented with the questionnaire in the Appendix

4.13. Structural Equation Modelling: Fundamentals and Basic

Social science researchers have used the statistical analysis tools for many years to extend their ability to develop and confirm their research findings. According to Hair et al (2013a), the application of the first generation statistical methods dominated the research landscape, however, since the 1990s, the second generation methods have expanded widely, it even represents almost 50% of the statistical tools used in empirical research in some disciplines.

Researchers used to rely on univariate and bivariate analysis in order to understand data and relationships, yet to comprehend more complex relationships, it is increasingly necessary to apply multivariate data analysis methods (Hair et al,2013a). This analysis involves multiple advance techniques to analyse relationships between multiple variables simultaneously. The researcher found this analysis to be suitable because they often hypothesize certain given outcomes of interest or dependent variables that are affected or associated with more than one independent variable. Table 12 summaries some essential information regarding the multivariate data analysis. As it is clear from the table that regression techniques based approaches e.g. multiple regression, logistic regression and

analysis of variance are confirmatory first generation, while techniques such as explanatory factor analysis, cluster analysis and multidimensional scaling are considered as explanatory first generation techniques.

However, it is important to bring to attention that the distinction between confirmatory and exploratory is not clear-cut. For example, a researcher may use a regression analysis to examine a relationship between dependent and independent variables based on prior research theories and concepts, but the same techniques are also applicable to explore whether additional independent variables show the same relationship for extending the theories or the concept being tested (Hair et al,2013a). Thus, the first part of the test is confirmatory and the second is exploratory.

Although the first generation techniques have been widely applied in social researches, over the last 20 years many researchers have been turning to second-generation techniques to overcome the limitations of the first-generation methods. These methods are known as structural equation modelling (SEM) and could also be known as casual modelling, causal analysis, simultaneous equation modelling, path analysis and analysis for covariance structure (Tabachnick & Fidell,2007). The SEM allows the researcher to examine the structure of interrelationships expressed in a series of equations similar to a series of multiple regression equations (Hair et al,2006).

Table 12 Comparison between the First and second statistical generation techniques

Type of statistical procedure	Exploratory	Confirmatory
First generation statistical techniques	1. Cluster analysis 2. Exploratory factor analysis 3. Multidimensional scaling	1. Analysis of variance 2. Logistic regression 3. Multiple regression
Second generation statistical techniques	1. PLS-SEM	1. CB-SEM 2. Confirmatory factor analysis

(Source: Adapted from Hair et al., 2014)

There are two main types of SEM techniques: (1) Covariance-based SEM (CB-SEM) and (2) Partial Least Square (PLS-SEM) path modelling. Figure 15 demonstrate the basic structural equation model as an example.
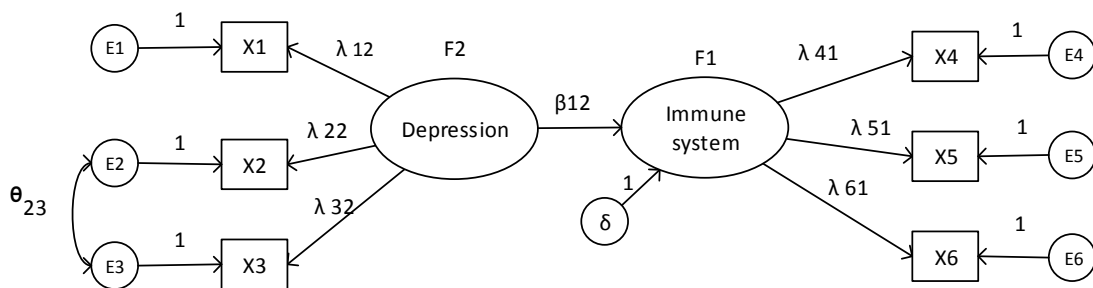
Figure 15 Example of SEM

(Source: Taken from Blunch (2012, P.10)

In SEM, hypothetical constructs are recognised as latent variables (e.g.F1 and F2 in Figure 15). These constructs are not directly observable, yet they are measured indirectly by observed variables known as indicators (e.g. X1...X6). The model explains whether two or more latent variables are (or are

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not) related to each other. The structural relations that form the model are represented in a path diagram where the unidirectional arrows linked to the latent variables presents the causal relationship. Therefore, the model consists of two parts:

1. The Structural model - that describes the causal relations between the constructs or what is also known as latent variables, it is stated by Blunch (2012) that "mapping this connection is the main purpose of the analysis".

2. The Measurement model - describes the connection between the constructs and their indicators/items i.e. illustrates how the latent variables is measured

The previous diagram can be expressed through the following equations:

$$F_1 = \beta_{12}F_2 + \delta$$

$$x_1 = \lambda_{12}F_2 + \varepsilon_1 \qquad x_4 = \lambda_{41}F_1 + \varepsilon_4$$

$$x_2 = \lambda_{22}F_2 + \varepsilon_2 \qquad x_5 = \lambda_{51}F_1 + \varepsilon_5$$

$$x_3 = \lambda_{23}F_2 + \varepsilon_3 \qquad x_6 = \lambda_{61}F_1 + \varepsilon_6$$

The first equation is the structural model and the rest of the six equations represent the measurement model. According to Blunch (2012) both the equations and the graph have their advantages in explaining the model. The graph has communicative power, which makes the model easy to visualise while the equations provide algebraic manipulations. The latent variables that are explained or predicted in the model are described as endogenous variables (e.g. F1 in Figure 15), while the latent variables that provide the explanation or prediction are described as exogenous variables (e.g. F2).

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One of the reasons why the researcher prefers the SEM analysis approach, rather than any other method, is that this approach effectively evaluates the structural path and measurement models especially when the structural path includes multi-dependent variables, the measurement models involves multi-indicators to measure the latent variables and the structural path includes multi-stages or level of constructs (Astrachan et al,2014).

Other reasons includes the following as it summarised by Astrachan et al (2014):

- When dealing with latent constructs and complex models.

It is not unusual in social science research to use a complex model where the latent constructs cannot be observed or measured directly, especially at the theory development and testing stage, which may consist of multiple constructs and interactive effects (Astrachan et al,2014). Moreover, the SEM provides an assessment of the errors in the structural model unlike the multiple regression analysis, which assumes there is no error in the data. That improves the accuracy of the finding as stated by Wang & Wang (2012, p. 1) SEM ''provides a powerful means of simultaneously assessing the quality of measurement and examining causal relationships among constructs''.

- When analysing direct, indirect, and total effects.

SEM helps researchers to test the direct effect, which is the relationship between the different dependent and independent variables. In addition, it tests the indirect effect, which involves the relationship between independent and dependent variables that are mediated or moderated by some other

variables. In addition, it tests the total effects, which relate to the sum of two or more direct or indirect effects.

- When assessing structural models

SEM allows the researchers to test the structural relationship simultaneously unlike the regression where the path analysis in the structural relationship examine each path separately which may not lead to accurate results.

In this thesis the conceptual models developed were based on a set of interrelationships between constructs and the dependent variable in one relation can become the independent variable in subsequent relationships, this complex relationship makes use of SEM more appropriate than the other statistical techniques. Besides using the simple first generation techniques would not be able to test the complexity of the conceptual model propose. In the following sections each type of SEM will be described separately.

4.13.1. Covariance-based Structural Equation Modelling

The Structural equation modelling has two main approaches as has been stated earlier; Covariance-Based (CB SEM) is one of them. Both approaches follow the two-step procedure, which first specifies a path model of latent variables (i.e. structural model) and is followed by assigning a set of indicators for each latent variables (i.e. measurement model). A proper specification of the measurement model is essential before deriving any significant meaning from the analysis of the structural model. Thus, this approach has the primary objective of presenting the measurement items extracted from a theory which are supported by the collected and examined data (Jöreskog & Sörbom,1996).

According to Hair et al (2012) both approaches were developed in about the same time but their evolution did not occur in a similar fashion, the CB-SEM has experienced methodological advances and become a widely adopted and used approach in social sciences. Hair et al (2012) justified that due to the early development of the LISREL software in the 1970s (Jöreskog & Sörbom,1996). In comparison to the first PLS-SEM software LVPLS was only available in the 1980s after being introduced by Lohmoller. Later in the 1990's Chin developed a graphical user interfaces for LVPLS program (PLS Graph) (Chin,2003). The model fitting onto CB-SEM is based on estimating the observed covariance matrix. However, as a requirement of the model fit, CB-SEM have to reject or reduce some of the relevant items in the measurement model, thus reducing the validity of the constructs (Hair et al,2013a).

The CB-SEM has been characterized as a confirmatory approach, whereby the theoretical model has to be defined by the researcher prior to data analysis, i.e. a full description of the exact number of the dependent and independent variables, relationship between the different constructs, type of the measurement model whether reflective or formative indicators will be used and number of indicators (Williams et al,2009). Therefore, if the model developed by the researcher lacks theoretical foundation, the CB-SEM would not be appropriate method of analysis. Those restrictions in the model fit in CB-SEM made it more appropriate for established theory test and confirmation rather than developing and exploring. Furthermore, it generally requires a large sample size that may not by accessible to some researchers (Astrachan et al,2014). Moreover, it was suggested by Kelloway (1998) that the sample size in CB-SEM should range from between 100 and 200, while

Bentler & Chou (1987, p. 91) introduced a guideline to define a simple size, which should be equal to the ratio of 5:1 and preferably 10:1. For example, CB-SEM requires a sample size that is five times the number of indicators in the model (So if the model is having 30 indicator variables on three constructs, than the sample needed is 150 (5x30). Moreover, another limitation to the CB-SEM maximum likelihood approach is the restriction of the normality assumption where the data should be normally distributed.

There are a number of software packages available that enable the researchers to apply the CB-SEM analysis such as LISREL, AMOS and EQE which do not require profound statistical knowledge (Babin et al,2008; Hair et al,2010). However, it is still essential to know when it is appropriate to use SEM, its requirements and interpretation, and also to know which approach of SEM is appropriate to choose and apply for data analysis.

4.13.2. Partial Least Square Path Modelling

The primary purpose of the PLS-SEM is to develop theories in exploratory research that is performed by focusing on maximising the explained variance of all the dependent variables when testing the model (Hair et al,2013a). The PLS-SEM estimation procedure is different from CB-SEM; it is an ordinary least squares (OLS) regression-based method instead of Maximum likelihood. In fact, the PLS-SEM estimates the coefficients which represent the path model relationships that maximize the R^2 values of the endogenous constructs by minimizing the error term (i.e. residual variance) (Hair et al,2013a). Thus, the PLS-SEM is described as a variance-based approach to SEM, it is also known as a soft modelling approach.

Meanwhile, it is essential to differentiate between the PLS-SEM and PLS regression, which is another multivariate data analysis technique. The latter explores linear relationships between multiple independent variables and single or multiple dependent variables (Hair et al,2013a), While the PLS-SEM depends on pre-detailed networks of relationships between constructs and between constructs and their measures.

The sample size restriction in PLS-SEM is much less than those necessary for CB-SEM. According to Hair et al (2013a, p. 15) PLS-SEM "works effectively with small sample sizes and complex models and makes practically no assumptions about the underlying data" (i.e. data distributions such as normality). For example, Chin & Newsted (1999) demonstrated an extreme case with 20 respondents as the sample size in which the PLS is used for data analysis. Barclay et al (1995) suggested that the sample size in the PLS path model should be equal to the larger of ten times the largest number of formative observed variables used to measure a single construct, or ten times the largest number of structural paths directed to a particular latent variable in the structural model.

Alternatively, it is also recommended to use programmes such as G* power which could enable the researchers in performing power analyses specific to model set-up or even use different rules of thumb, such as those suggested by Cohen (1992) in his statistical power analyses for multiple regression models. Although, there is no established rule in PLS that restricts the minimum sample size (Lee et al,2011), researchers should be more logical when determining the appropriate sample size in order to avoid low levels of statistical power.

One of the advantages that PLS-SEM has over CB-SEM is that it supports the application of both formative and reflective indicators. According to Hair et al (2012) there is an increase in interest of applying the formative measurement in different research fields such as: organizational behaviour, strategy, marketing and management information system. Thus, the PLS-SEM helps the researchers to test models with high complexity.

Despite the popularity of PLS techniques in different disciplines, accounting research was slower in its general acceptance of PLS and other SEM techniques (Lee et al,2011). The previously mentioned authors also tie the reason for the low application of PLS in accounting research to the lack of understanding of PLS's benefits and it applicability. In their study, which conducted a review during the period between 1997 and 2010 in different accounting journals, they found that only 20 studies used PLS as their data analysis technique. That confirms the limited use of PLS in the accounting literature. Moreover, PLS methodologically is not limited to data collection via surveys and could include experiments and archival data (Lee et al,2011).

The researchers can use several software packages available on the market to perform the PLS-SEM analysis such as PLS-graph 3.0 (Chin,2003), Smart PLS 3.0 (Ringle et al,2005) XLSTAT-PLSM (Addinsoft SARL,2007-2008) and Warp PLS 5.0 (Kock,2009).

4.13.3. Justification for applying SEM with PLS approach.

The process of justifying the rationale behind the adoption of the PLS-SEM approach over the CB-SEM is not to favour one approach over the other; instead it is intended to reveal their suitability for this current study. It is the

researchers' responsibility to find out the best method, which is most suitable, appropriate and applicable for their "research objective, data characteristics and model setup". (Hair et al,2013a, p. 18). After careful study of both the covariance based and PLS-SEM approaches, the researcher chose to use PLS-SEM for data analysis in this study for the following reasons: First, PLS-SEM was previously successfully implemented in testing such structural models e.g. (Guiral et al,2010; Rodgers et al,2013; Rodgers & Guiral,2011). Second, the purpose of adopting PLS is based on its suitability in terms of the characteristics of the data in this current study. For example, the normality assumption of the data is not tenable (check the normality Sub-section in the next chapter). It is known that CB-SEM has restricted requirements regarding the distribution of the multivariate data. Therefore, examining the structural modelling via applying the CB-SEM wouldn't be sensible because it may pose a threat to the model as it fails to converge as per requirement (Hair et al,2006; Tabachnick & Fidell,2007).

Furthermore, while PLS does not make assumptions about a specific multivariate normality and interval-scaled data, it is a good technique for theory building and doesn't merely predict the path relations without a prerequisite of the sample size and a multivariate distribution of data (Chin,2000). Most of the indicators applied in the measurement model that are used to test the constructs have not the been used in previous studies which makes the PLS more of an applicable approach for exploratory purposes, since there is little or no knowledge at all in regards to how the variables are related (Hair et al,2013a). Another reason for not adapting the CB-SEM is that, even though the whole sample size is 204, that is still not enough to test

the moderation effect because it is required that there is at least 100 per group (Hair et al,2006). Comparing to CB-SEM the PLS-SEM is more useful in coping with highly complex models containing large numbers of latent variables / constructs and observed variables / indicators (Hair et al,2013a). Additionally according to Astrachan et al (2014, p. 126) PLS is recommended " because of its ability to handle small sample sizes, complex models with numerous endogenous and exogenous constructs and indicator variables, or non-normal data distributions while still producing viable results".

4.14. Basic Model Evaluation in PLS

Although PLS path modelling assesses the measurement and structural model simultaneously (Chin & Newsted,1999; Hair et al,2014). It has been suggested that the PLS path model is being analysed and interpreted in two stages on a hierarchal basis; first the assessment of the inner-model or measurement model and then the assessment of outer-model structural model (Anderson & Gerbing,1988; Jones et al,2002). In the first stage, it is required to examine psychometric reliability and validity tests for the measurement model. In the second stage, the assessment done via examining the multiple regression techniques (i.e. hypothetical relationship and their significance level). It is the responsibility of the researcher to assure the validity and the reliability of the latent variables before drawing any conclusion regarding the relationship between the latent variables. According to Hair et al. (2014), researcher using PLS–SEM depends on measures indicating the model's predictive capabilities to judge the quality of the model. The evaluation of both (i.e. measurement and structural) model results, builds on a set of non-parametric evaluation standards via using techniques such as

bootstrapping and blindfolding (Hair et al,2013a). Table 13 presents a summary of systematic evaluation criteria that each researcher should be aware of in evaluating both structural and measurement model suggested by Hair et al. (2014)

Table 13 systematic evaluation of PLS-SEM result

Stage one : Evaluation of Measurement Models	
A: Reflective Measurement Models	B:Formative Measurement Models
- Internal consistency or composite reliability - Indicator reliability - Convergent validity or average variance extracted - Discriminant validity	- Convergent validity - Collinearity among indicators - Significance and relevance of outer weights.
Stage two: Evaluation of the structural model	
- Coefficients of determination (R^2) - Predictive relevance (Q^2) - Size and significance of path coefficients f^2 effect sizes q^2 effect sizes	

(Source: Adapted from (Hair et al., 2013))

4.14.1. Stage One: The Evaluation of the Measurement Model

The measurement model describes the relationship between constructs and their corresponding items or indicator variables (Hair et al,2013a). Sometimes the researcher can use prior research measures or develop a new set of measures because occasionally he/she faces a lack of established measurements, which is the case in this study (see in the instrument development section earlier in this chapter). When assessing the measurement model it is essential to differentiate between the reflective and formative constructs first since each one has different concepts, thus require different evaluation measures. Reflective measures are evaluated based on their internal consistency, reliability and validity (see Table 13), while with formative measures it is important to ensure the content validity before the data collection and path estimates; then the researcher can assess them in terms of their convergent validity, collinearity among indicators, the significant and the relevance of outer weight (Hair et al,2013a). The following section focuses on providing the explanation of the reflective measurement evaluation since the researcher did not implement any formative indicators.

4.14.1.1 Reliability

Reliability refers to the ability of a measure to consistently reflect the construct that it is measuring (i.e. reliability is about reproducibility) (Field,2013). It is also defined by Blunch (2012, p. 31) as "ability to give nearly identical results in repeated measurements under identical conditions." The reliability can refer to item reliability or internal consistency that is defined bellow.

- **Item reliability**

There are several ways to assess the reliability in PLS; first the researcher can examine the individual item reliability. The item reliability measures the amount of variance in an item due to underlying latent variables rather than to error (Chin,1998) . A rule of thumb that is widely applied by the researcher is to accept items with loading of 0.7 and higher (Chin,2010). The factor loading are correlations therefore, items with 0.7 loading or higher implies that more than 50% of the variance (i.e. loading squared) in the item is due to its underlying latent variables (Barclay et al,1995). However, some argue that items with a factor loading value of 0.5 might be acceptable as long as there are additional observed variables that measure the same constructs that load highly (Chin & Newsted,1999) . If the items loading with less of 0.4- 0.5 then it should be deleted (Hair et al,2013a)

- **Internal consistency**

The internal consistency can be defined as the homogeneity of the items in the measure, or it could be described as to what extent item responses correlate with the total test score. Cronbach's alpha is the traditional test or criteria for evaluating the internal consistency, as it "provides estimate of reliability based on inter-correlations of the observed indicator variables" (Hair et al,2013a, p. 101). Cronbach's alpha, assumes that all the items in the model are equally reliable which means that all the items have equal outer loadings on the latent variable. Thus, it may over or under estimate scale reliability. Due to such limitation, it is recommended to use alternative measures to internal consistency, such as composite reliability, during model

estimation (Hair et al,2011a). The pervious criterion takes into account the outer loading of the items or indicator variables and can be interpreted in the same way as Cronbach's alpha. In general composite reliability with a high value indicates higher levels of reliability. According to (Hair et al,2013a) composite reliability values of 0.6 to 0.7 are acceptable in exploratory research whereas, values between 0.7 and 0.9 are satisfactory in advanced stages of research. Moreover, any values less than 0.6 indicate a lack of reliability while indicators that had loading of 0.4 and lower should be deleted from the scale (Hair et al,2011a). It is advised that any item with loading between 0.4 and 0.7 should only be considered for removal from the scale if the deleting will result in increase in the composite reliability.

The required level of Cronbach alpha to be adequate has to be higher than 0.7 (Lee et al,2011). Reliability alone doesn't simply assure the model validity; therefore, it is important to examine the construct validity by assessing both the convergent validity and discriminant validity.

- **Average Variance Extracted (AVE)**

The AVE was proposed by Fornell and Larcker (1981) in order to measure the amount of variance that a construct captures from its measuring items comparative to the amount due to measurement error (i.e. it is the average variance shared between the latent variable and its indicators). AVE indicates the average communality for the construct factor, where it should be greater than 0.5 (Chin,1998) That means the factors should explain at least half the variance of their associated indicators. It is argued by Hair et al (2012) that an AVE value of 0.5 or higher presents a sufficient degree of convergent validity,

showing that the latent variable has the capability to explain more than 50% of its indicators' variance. However, the AVE value of less than 0.5 shows that on average more error remains in the observed variable than variance explained by the latent variable (Chin,2010; Hair et al,2010).

4.14.1.2   *Validity*

It is not sufficient to measure only the reliability of the measurement model; it is also essential to verify its validity (Blunch,2012). Validity can be described as accuracy or correctness (Iacobucci & Churchill,2010). It is recommended that each item or indicator reflecting a construct should have outer loading value above 0.7 and each construct's average variance extracted (AVE) is .0.5 or higher to support good convergent validity.

- **Content validity**

The content validity, which is also known as face validity measures "the extent to which the indicators capture the major facets of the construct" (Hair et al,2014). It is argued that content validity could be evaluated in discussion with colleagues or experts in the same field of the concept being tested. (Blunch,2012; Hair et al,2014). The researcher did the latter during the pilot study period where each items' validity is discussed with the auditors. Moreover, it is assured through the literature review (Iacobucci & Churchill,2010). Therefore, in order to ensure content validity, it is important to define the construct by reviewing the literature carefully to determine how the construct has previously been used and described (Iacobucci & Churchill,2010). To establish content validity, the researcher needs to carefully select the measurement scale that best fits the content domains.

The researcher in this study follows the following procedure to improve the content validity; (1) the measurement scale developed after prior links made to the literature review and reviewing the previous scaled used. (2) The Pre-test and pilot study were performed during the questionnaire design process.

- **Construct validity**

In fact, the construct validity of the reflective measurement model assessment focuses on convergent validity and discriminant validity. The convergent validity explains that the correlation between the observed variables measures and represents the same construct. To check the convergent validity the researcher needs to examine (AVE) that should be of 0.5 or higher to indicate a sufficient degree (Hair et al,2011a). Secondly, the convergent validity can be assessed by evaluating Cronbach's alpha and composite reliability (Hair et al,2010)

Discriminant validity ensures that a construct measure is empirically distinct and entitles phenomena of interest (i.e. the construct being tested) that other measures in a model do not capture (Hair et al,2010). To describe the previous in clearer way, we can say that, discriminant validity is the ability of the construct to measure what it is intended to measure (Hair et al,2014). To assess the discriminant validity, the researcher needs to put two measures forward; (1) Fornell and Larcker criterion and (2) cross loadings.

The Fornell and Larcker criterion 1981(Fornell & Larcker,1981) suggested that, if latent variable shares more variance with its associated indicators than it shares with other latent variables in the structural model than the discriminant validity is established (Hair et al,2011a). To put the previous in

statistical terms, to fit the requirement, the AVE of each construct must be greater than the construct's highest squared correlation with any other construct in the model (Hair et al,2011a). The second way to establish the discriminant validity is to assess the cross loading of the indicator with its associated construct which is also called "item-level discriminant validity". It should be higher than its loadings with all the remaining constructs (Hair et al,2011a). If this requirement fails then, "the measure in question is unable to discriminate as to whether it belongs to the construct it was intended to measure or to another" (Chin,2010 P. 671).

4.14.2.   Stage Two: The Evaluation of the Structural Model

According to (Chin,2010), it is not logical to test the theoretical model (the structural model) in question, if the measurement model which is representing the constructs of the internet is not valid and reliable in the first place. Thus, after establishing the appropriateness of the measurement scales via the measurement model assessment, and ensuring their validity and reliability then the next step is to provide evidence supporting the theoretical model as exemplified by the structural portion of the model in the study.

Consequently, the second stage of analysing and interpreting the PLS-SEM is the assessment of the structural model. This stage is proceed by the researcher after assessing the different elements of reliability and validity of the measurement model as explained in the previous section. Performing the structural model results assessment enables the researcher to define how well the empirical data supports the theoretical framework and helps to decide if the theory has been empirically confirmed (Hair et al,2013b). A structural

model of PLS clarifies the relationships between the latent variables in a model, which are specified based on hypotheses advanced from relevant theoretical reasoning (Hulland,1999).

While PLS analysis focuses on variance explanation and establishing the significance of all path estimates, the predictive power of the structural model is evaluated via R^2 of the endogenous constructs. The PLS R^2 result value shows the amount of variance in the latent variables in the question that is explained by the proposed model (Chin,2010). Therefore, in the structural model the researcher can start by examining the R-square value for each dependent latent variable. Moreover, the change in R-square can be assessed in order to find out whether a certain independent latent variable had an impact on a specific dependent latent variable, normally that is measured by the effect size f^2 (for more detail regarding how it is calculated is provided in the next chapter).

Since the aspect of PLS is different from CB-SEM, PLS-SEM it is assessed based on heuristic criteria that are determined by the model's predicative capabilities rather than goodness of fit (Hair et al,2013a). PLS endorses the bootstrapping approach for estimating the precision of the PLS parameter estimates. It represents a non-parametric approach where N sample sets or subsamples are created in order to obtain N estimates for each parameter in the model. Then each sample is drawn by sampling with the replacements from the original sample until the number of cases are identical or at least higher to the original sample set (Chin,2010). According to hair Hair et al (2013a) 5000 bootstrap samples are recommended.

While the measurement model provides the PLS estimates of items loading and residual covariance, the structural model provides the estimate of path coefficients and the correlations among the constructs and the R-square value of each of the constructs. Thus, the researcher should look at key elements in assessing the structural model such as path coefficients, determination of coefficient (i.e. R-square value of the endogens latent variables), effect size f^2 and predicative relevance Q². These statistical criteria have been recommended to make a strong case for the model predictive capabilities (Chin,1998; Hair et al,2011b; Henseler et al,2009a). To explain the latter, pseudo F-test ($i.e. f^2$ effect size) enables the researcher to evaluate the independent variable's incremental explanation of the dependent variable. Meanwhile the Stone-Geisser Q² test allows for assessment of the models' predictive relevance and the changes in Q² helps in evaluating the relative impact of the structural model for predicting the observed measures of the dependent variable by the q^2 effect size (Chin,1998).

4.14.2.1   *Standard Path Coefficient*

According to Hair et al (2013a) the standard path coefficient represents the hypothesis relationships between the constructs where the path coefficient takes a standardised value between +1 and -1. The examination and the interpretation of the individual path coefficients can be in the same manner as traditional regression (Chin,1998; Henseler et al,2009a). If the estimated path coefficient value is closer to zero, then that means there is a very weak relationship and a very close value to zero means statistically speaking, a non-significant relation (i.e. not significantly different from zero). The case is different if the value of the estimated path coefficient is close to +1, which

reflects a strong positive relationship, while it will be a strong negative relationship if it is close to -1. The sign of the estimated path coefficient should match a prior formed hypothesis sign in order for the hypothesis to be supported.

Re-sampling techniques is required to determine the confidence intervals of the path coefficients and statistical inference (Henseler et al,2009a). Thus, the bootstrapping is used for estimating the precision of the PLS estimates that provides confidence intervals for the parameter estimates and builds the basis for statistical inference. Whether it is to be concluded that the coefficient of the path in PLS is significant or not depends on its standard error that is obtained via the bootstrapping which as well, allows for the computing of the t-value.

4.14.2.2   Determination of coefficient (R^2)

The Determination of coefficient R^2 is the most commonly used measurement to examine the structural model (Hair et al,2013b). It measures the model's predictive accuracy and calculates the squared correlation between a specific endogenous construct 's actual and estimated values. It could be described also, as the amount of variance in the endogenous variable explained by all the exogenous variables that are connected to it in the model. According to (Chin,1998) R^2 values of each endogenous latent variables is an important criterion of assessment as the PLS model accomplishes its objective of error minimisations by examining the determination of coefficient (R^2) values. The R^2 value range from zero to one, the more the value closer to one the higher level of predictive accuracy. There is no rule of thumb for the accepted level of R^2 values; this really depends to the level of the model complexity and the

research field. For example, 0.20 R^2 values are considered as high in consumer behaviour disciplines (Hair et al,2011b; Henseler et al,2009a). However, it is suggested by chin (Chin,1998) that 0.19, 0.33 and 0.67 in PLS models are consider as weak, moderate and substantial respectively.

Moreover, in order to reduce bias, researchers are advised to look at the adjusted R^2 instead of relying on the R^2 value, since adding additional constructs to the model normally ends up in an increase to the R^2 value even if that construct is not significant enough to explain the endogenous variable in the model (Hair et al,2013a). The adjusted R^2 is a modified criterion based on the number of the exogenous constructs used in the model relatively to the sample size (Hair et al,2013a).

4.14.2.3   *Predictive Relevance (Q^2)*

The Q^2 test is developed by Geisser (1975) and Stone (1974). While the R^2 value measures the predictive accuracy, Stone-Geissers' Q^2 value indicates the model's predictive relevance. In other words, the test indicates how well observed values are reproduced by the model and its estimated parameters (Esposito Vinzi et al,2010). Thus, if Q^2 value is larger than zero it means that the model has predictive relevance whereas if it has a value less than zero then the model lacks predictive relevance (Chin,1998). There are two types of Q^2 that can be obtained during the process of blindfolding, which are: cross-validated communality and cross-validation redundancy. The latter is suggested to be used in examining the predictive relevance of the theoretical model (Chin,1998).

The blindfolding process used to obtain Q^2 is considered as a sample reuse that omits every d^{th} (i.e. distance) data point in the endogenous construct's indicators and estimates the parameters with what is left of the data points (Chin,1998; Esposito Vinzi et al,2010). The omitted values are treated as the missing data when running the PLS-SEM algorithm (i.e. replaced using mean value). "The resulting estimates are then is used to predict the omitted data points thus the difference between the true omitted data points and the predicted ones is then used as input for the Q^2 measure" (Hair et al,2013a, p. 178). It is important to note that this process of blindfolding is adequate only for the reflective measurement model and those with single item endogenous constructs (Henseler,2009).

4.15. Conclusion

This Chapter has outlined the research philosophy, approach and the methodological strategies behind the current study. After verifying the research paradigm in social science in general, justification for applying the positivist paradigm and the quantitative approach was presented earlier during this chapter. In addition, different key issues were discussed, such as; the research deigns, data collections and methods used (i.e. online questionnaire). A detailed presentation is given for each instruments used in the measurement models. Finally, the chapter is concluded with proposed statistical techniques to be applied in this research for the data analysis, followed by an explanation of the rationality behind choosing the PLS approach with its basic validation process of two stages. In brief, this chapter provides the connection or the bridge that links the theoretical framework and

hypothesis developed in the previous chapter with the empirical analysis and results to be outlined in the following chapter.

5. Chapter Five: Empirical Analysis and Results

5.1. Introduction

Having discussed and justified an appropriate research methodology, design and data collection strategy in the previous chapter, this chapter's focus is on is the empirical analysis and results. After the introduction, the chapter starts with primary data analysis processes such as data preparation like data editing and coding, demographic profile representation of respondents, missing data checking, detecting outliers and normality testing. In order to confirm the instruments relations with underlying constructs as proposed in the model framework, exploratory factor analysis (EFA) is performed in section (5.2.6) using SPSS. In addition, in the next section, the method variance and the statistical test result for common method bias are presented.

The chapter then presents and explains the (SEM-PLS) empirical analysis results of the two stages approach via using Smart PLS software. The first stage is the measurement model evaluation section, which present the convergent validity, discriminant validity and reliability results in order to validate the measurement models. The later procedure ensures that only reliable and valid measures of constructs are being used in the models to arrive to the conclusions about the nature of relationships among constructs. The second stage in (SEM-PLS) evaluation discussed is to assess the structural model that involved hypothesis testing via individual path tests, explained variance in dependent constructs and predictive reliance. The structural model reveals the nature of the relationship between the performance information, performance perception, and judgement and

decision choice in PA. Moreover, the chapter presented interesting results of the total effect and importance performance matrix analysis IPMA. The moderating effect of different demographic variables tested and verified in section 5.6. Following that an overall assessment of the models is examined. Prior to the chapter conclusion, a section of extra data analysis that is not part of SEM-PLS modelling is reported. A discussion of the results in this chapter will be provided in the following chapter.

5.2. Primary Data Analysis

5.2.1. Primary preparation of the data

5.2.1.1 Data editing and coding

Editing the raw data is the first step in preparing the data for analysis. According to Cooper & Schindler (2008) the purposes for editing the data is to assure the accuracy of the data, consistency of the question intent and other information in the survey, uniformly of data entered, complete and arranged to simplify coding and tabulation. Another reason for editing is to checks for omission or missing data. In this thesis the researcher chose not to include the cases with partial completed survey as they were considered as missing data. All the responses where downloaded from the researcher account in the Qualtris server, which provided the result in SPSS, Excel and csv file format, after getting the adequate sample. Then they were deleted from the server as part of the ethical considerations in order to ensure that these responses are used only for this study.

The responses were first downloaded in a SPSS file since in this format the research is able to convert the data to other files format like Excel or CSV while it is difficult to do the other way around. In SPSS it is easy to locate the missing values, to perform some primary data analysis e.g. (data description, frequencies and outliers) and the coding process. The process of coding involves assigning labels, symbols or numbers to each response (Cooper & Schindler,2008; Pallant,2010). However, the online questionnaire server provides invisible coding for each respondent where the respondent identity is not revealed and the code only appears to the researcher once the respondent complete answering the questions and the link is closed. The coding was applied to assign variable names to each measurement statement in the questionnaire where each statement signifies a measurement items for its represented a latent variable. This coding process could be performed before the questionnaire is answered (preceding) or even after the questionnaire is answered (post-coding) (Cooper & Schindler,2008). In this thesis, the post-coding method was adapted. The following procedure was undertaken after the raw data file in SPSS is downloaded for Coding:

- First names for each items in the data view screen of SPSS was recorded by the question number in sequential order of each section in the questionnaire for example, Q1-1, Q1-2: Q1-8
- These questions were matched with each of measurement items of the constructs for example Q1-1 was matched with Performance Information (PI) Construct, indicator/item number 1. Therefore, it was coded as PI1, while Q2-1 matched with the second construct Performance Perception PP and item 2 thus coded as PP2.

- The SPSS program then checks for any partial completed cases to be deleted.

- New csv file created with measurement items named that modified for example PI1: PI7, PP1:PP8, J1:J8, D1:D5 rather than using question numbers, which later upload in the Smart PLS for data analysis.

5.2.2. Demographic Profile of Respondents

This section presents the demographic profile of the participants in this study. Simple data description is reported regarding their gender, age, educational level and experience. Table 14 show the frequency and the percentage of the data of the latter categories. Out of the 204 respondents who participant in the survey, 138 where male (67.6%) compared to 66 (32.4%) who were female. The latter percentage was not surprising where the male staffs in general form more than half in State of Audit Institution in Oman; therefore, the sample is representing the population.

Moreover, as it is clear from the table that most of the respondents hold a bachelor degree with 60% followed by group of professional qualification and Masters (14% and 12%) respectively. Still around 15 (7.4%) of the respondents' report that they had other qualification different from the ones listed in the options and about (14) (6.9%) mentioned that they have higher school certificate.

In addition, the majority of the respondents, 54 out of 204 that count for (26.5%) had 5 to 9 years of experience in auditing. Around 40 (19.6 %) of the respondents had 10 to 14 years of experience while about 33 (16%) and 32 (15.7%) are having less than 5 years of experience and 15 to 19 years of

experience in audit respectively. Relatively the group of 25 to 29 and 30 and above year of experience have shared the same percept of 6.4 of the total respondents and only 19 out of 204 participants had 20 to 24 year of experience.

The researcher had classified the age group into 5 categories. The highest frequency of respondents is the age group of 25-35 followed by age group of 36-46 with frequency of 83 (41%) and 59 (29%) respectively. while the youngest age group (up to 25) participants are almost 21(10%) of the total participants, the lowest frequency of respondents is the age of 50 & above with only 12 participants. The respondents with age group of 45-55 are 29 out of the 204, which count around 14%.

Table 14 Demographic data of participants

Description	Categories	Frequency	Percept
Gender	Male	138	67.6
	Female	66	32.4
Educational Qualification	High school certificate	14	6.9
	Bachelor	123	60.3
	Master	24	11.8
	Professional qualification e.g. ACCA, CMA,CPA,CPT, PhD	28	13.7
	Other	15	7.4
Years of Experience in Auditing	Under 5	33	16.2
	5 to 9	54	26.5
	10 to14	40	19.6
	15 to 19	32	15.7
	20 to 24	19	9.3
	25 to 29	13	6.4
	30& above	13	6.4
Age	UP to 25	21	10.3
	25-35	83	40.7
	36-45	59	28.9
	46-55	29	14.2
	56 & above	12	5.9

(Source: Author)

5.2.3. Missing Data

Missing value occurs if the participants in the targeted sample fail to provide the answers to one or more questions in the survey or the questionnaire.

The online questionnaire designed for this study does not allow any missing data because the participant cannot proceed to the next page if they did not answer all the questions. Hence there is no chance for missing data occurrence, and the researcher does not have to worry about the problem. However, the server of the online questionnaire allows the researcher to get the partial completed questionnaire. There were 12 cases of respondents who barely completed the first page of the questionnaire, which includes only 16% of the total questions in the survey. Those cases were dropped since they were 5.5% as it recommend by Hair et al (2010) missing data under 10% can be ignored.

5.2.4. Detecting Outliers

The outliers are observations that unusually stand out differently from other observations, it could be extreme high or extreme low value on a variable (a univariate outlier) or a unique combination of values across different variables (multivariate outliers) (Hair et al,2010). There are several methods available to detect outlines in univariate, bivariate and multivariate condition. To perform univariate test for outliers first the researcher transfers all the data to standardised scores (i.e. z-scores) with the mean of zero and standard deviation of one. The outliers for a small sample could identified as +/-2.5 or higher, yet for a large sample (over 80) the value could be extended up to +/-

4 (Hair et al,2010). The value of 4 is used to detect outliers in this study. The following table show a demonstration of the univariate outliers found in this study data set with the help of using SPSS.

Table 15 Outliners cases

S.No.	Variable	Case of Outliers	Standardised values i.e. Z-score > +_ 4.0
1	PI1	169	-4.89901
2	J1	8	-4.42887
3	J3	169	-4.79901
4	J4	169	-4.13105
5	J5	169	-4.85046
6	J8	169	-4.09048
8	D1	169	-4.09605
9	D2	169	-4.1324
10	D3	169	-5.00278
11	D4	169	-4.71861
12	D5	78	-4.35705
		169	-4.35705

(Source: Author)

The box Plot tools in SPSS is used to provide a graphical way for detecting the multivariate outliers. The Figures (34, 35, 36, and 37) in the appendix represent the cases of the outliers which identifies the extreme outliers' cases and a circles shows the mild outliers cases. Moreover, Mahalanobis D^2 is used to detect outliers. This technique considered as multivariate assessment of each observation across a set of variables. (i.e. multidimensional version of z-score) (Tabachnick & Fidell,2007). It is suggested that if a case D^2/df value exceeds 2.5 in small sample and 3 or 4 in large sample; it is likely to be consider as an outlier. It is as well suggested that conservative levels of significance (e.g. 0.005 or .001) to be used with Mahalanobis distance measure as the threshold value for designation as an outlier.

To compute the Mahalanobis D^2 values the researcher used the liner regression function in SPSS. Also the t-value of significance computed by using 1-CDF.CHISQ in compute function where df=13. Table 16 presents the results of the data set where few multivariate outliers' cases found with probability less or equal to 0.001 associated with D^2.

According to Hair (2010), the researcher had to make the retention or exclusion decision not just based on the outliers' characteristics but also based on the main objective of the analysis. In addition, despite the fact that outliers could be problematic, they still can be retained in a way that will not distort the results (Tabachnick & Fidell,2007). Since this study's main analysis method is SEM-PLS, which does not strictly, required the normality assumption to be obtained in the data. Therefore, this study retained the outliers especially as they are not affecting the study analysis or results.

Table 16 Multivariate outliners' cases

S.No.	Outliers case	Mahalanobis D^2	D^2/df	P-value
1	10	81.07162	6.24	0.00
2	169	79.66551	6.13	0.00
3	8	73.30084	5.64	0.00
4	100	61.68848	4.75	0.00
5	31	61.22623	4.71	0.00
6	5	60.79544	4.68	0.00
7	94	57.88788	4.45	0.00
8	88	57.86952	4.45	0.00
9	101	57.65066	4.43	0.00
10	22	57.36092	4.41	0.00
11	83	57.06724	4.39	0.00
12	195	56.84495	4.37	0.00
13	78	54.44896	4.19	0.00
14	155	53.61492	4.12	0.00

 (Source: Author)

5.2.5. Normality

Although the normality of the data is not an essential assumption in SEM-PLS, the researcher undertakes tests of the data normality to understand the nature of data set before any analysis could be performed. Since the total number of observation is 204 which is higher than 30, the sample is normally distribution according the central limit theorem. According to (Hair et al,2006) the severity of normality is based on the sample size, the larger sample size reduce the negative effect of non-normality.

There are different ways to check the data normality for example Skewness, Kurtosis and z-value. Also, histogram, normal Q-Q plots and Box Plots which visually indicate if the data approximately follows a normal distribution or not. First the researcher examines the Skewness and Kurtosis values of each variable/observation in the data set using SPSS program. According to Hair et al (2010) Kurtosis is the "peaked" or "flatness" of the data distribution compared with the normal distribution. In fact, the normal distribution should have a Kurtosis value of zero, but the positive value describe a peaked distribution and negative value indicate a flatter distribution (Hair et al,2010). The Skewness measures the balance or symmetrical of the data distribution where the normal distribution has a Skewness value of zero. However, positive skew indicates a shifted to the left and negative Skewness indicates a shift to the right (Hair et al,2010).

To assess this study data's shape of distribution (i.e. its normality), researchers first examine the Skewness and Kurtosis of each variable. Table 17 &18 present all variables statistic skewness and kurtosis calculated using

the SPSS program. To calculate the value of skewness and Kurtosis, the statistic value should be divided by the standard error. Table 18 show the calculated skewness and kurtosis, which indicated that most of the values are >+/- 1.96 that corresponds to a 0.05 error level. Almost all the variables (bold in Table 17) are shift to the right since the skewness values are negative and greater than 1.96. Also, more than half of the variables have positive kurtosis, which indicate that the data has a peaked distribution. As we can see in Table 18 some of the variables were within the normal range of kurtosis more than in skewness. Furthermore, Kolomogorov-Smirnov and Shapiro-Wilk (K-S) statistics values for all the variables were presented in Table 19 and the result reveal that all the variables were significant, which indicate the violation of the normality assumption. Still, the significant of K-S test for large sample cannot indicate a deviation of the data from normality (Field,2013).

The Kolomgorov-Smirnov and Shapiro–Wilk test show that all the variables have significant value of (0.000) which suggest that all variables depart form normality predominantly show negative skewness (i.e. shift to the right). According to Pallant (2010), this situation is quite common in studies dealing with a large sample size of more than 30. The negative skewness does not necessarily designate a problem with the scale, it is rather reflects the underlying nature of the construct being measured (Pallant,2010). Since PLS doesn't require any normality assumptions and relatively handles the non-normal distributions well (Chin,1998), thus PLS–SEM techniques suited this study well. PLS use bootstrapping to measure the significance of the relationships that works well with the non-normal data distribution (Hair et al,2010).

Table 17 Descriptive statistics

	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PI1	204	1	7	5.9	1	-1.196	0.17	2.978	0.339
PI2	204	2	7	5.49	1.138	-0.611	0.17	0.305	0.339
PI3	204	2	7	5.49	1.304	-0.742	0.17	-0.079	0.339
PI4	204	3	7	5.88	1.127	-0.882	0.17	0.102	0.339
PI5	204	2	7	5.67	1.155	-0.551	0.17	-0.451	0.339
PI6	204	3	7	5.77	1.115	-0.741	0.17	-0.072	0.339
PI7	204	3	7	5.87	1.057	-0.602	0.17	-0.347	0.339
PI8	204	1	7	5.37	1.274	-0.656	0.17	-0.101	0.339
PP1	204	1	7	5.54	1.268	-0.875	0.17	0.566	0.339
PP2	204	1	7	5.41	1.327	-0.715	0.17	0.097	0.339
PP3	204	1	7	4.78	1.476	-0.392	0.17	-0.43	0.339
PP4	204	1	7	5.39	1.376	-1.066	0.17	1.377	0.339
PP5	204	1	7	5.78	1.268	-1.255	0.17	1.741	0.339
PP6	204	2	7	5.27	1.26	-0.462	0.17	-0.411	0.339
PP7	204	2	7	6.05	1.111	-1.284	0.17	1.553	0.339
J1	204	2	7	5.97	0.895	-1.097	0.17	2.229	0.339
J2	204	2	7	5.29	0.927	-0.319	0.17	1.192	0.339
J3	204	1	7	5.85	1.011	-0.884	0.17	1.811	0.339
J4	204	1	7	5.72	1.143	-0.775	0.17	0.609	0.339
J5	204	1	7	5.97	1.024	-1.211	0.17	2.755	0.339
J6	204	1	7	5.66	1.14	-0.919	0.17	1.206	0.339
J7	204	1	7	6.02	1.087	-1.154	0.17	1.746	0.339
J8	204	2	7	5.76	1.23	-0.975	0.17	0.636	0.339
D1	204	2	7	5.95	0.963	-0.726	0.17	0.499	0.339
D2	204	2	7	5.88	0.939	-0.734	0.17	1.029	0.339
D3	204	1	7	5.99	0.997	-1.123	0.17	2.496	0.339
D4	204	1	7	5.85	1.027	-0.902	0.17	1.644	0.339
D5	204	1	7	5.82	1.106	-1.224	0.17	2.94	0.339

(Source: Author)

Table 18 Calculated Skewness and Kurtosis

Variables	Skewness/st error	Kurtosis/st error
PI1	-7.035294118	8.784660767
PI2	-3.594117647	0.899705015
PI3	-4.364705882	-0.233038348
PI4	-5.188235294	0.300884956
PI5	-3.241176471	-1.330383481
PI6	-4.358823529	-0.212389381
PI7	-3.541176471	-1.02359882
PI8	-3.858823529	-0.297935103
PP1	-5.147058824	1.669616519
PP2	-4.205882353	0.286135693
PP3	-2.305882353	-1.268436578
PP4	-6.270588235	4.061946903
PP5	-7.382352941	5.135693215
PP6	-2.717647059	-1.212389381
PP7	-7.552941176	4.581120944
J1	-6.452941176	6.575221239
J2	-1.876470588	3.516224189
J3	-5.2	5.342182891
J4	-4.558823529	1.796460177
J5	-7.123529412	8.126843658
J6	-5.405882353	3.557522124
J7	-6.788235294	5.150442478
J8	-5.735294118	1.876106195
D1	-4.270588235	1.471976401
D2	-4.317647059	3.03539823
D3	-6.605882353	7.362831858
D4	-5.305882353	4.849557522
D5	-7.2	8.672566372

(Source: Author)

Table 19 (K-S) normality test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PI1	.237	204	.000	.834	204	.000
PI2	.183	204	.000	.894	204	.000
PI3	.212	204	.000	.885	204	.000
PI4	.225	204	.000	.840	204	.000
PI5	.205	204	.000	.882	204	.000
PI6	.224	204	.000	.863	204	.000
PI7	.215	204	.000	.854	204	.000
PI8	.213	204	.000	.896	204	.000
PP1	.214	204	.000	.882	204	.000
PP2	.191	204	.000	.897	204	.000
PP3	.176	204	.000	.935	204	.000
PP4	.190	204	.000	.872	204	.000
PP5	.219	204	.000	.831	204	.000
PP6	.185	204	.000	.909	204	.000
PP7	.254	204	.000	.791	204	.000
J1	.275	204	.000	.825	204	.000
J2	.267	204	.000	.862	204	.000
J3	.195	204	.000	.848	204	.000
J4	.195	204	.000	.872	204	.000
J5	.214	204	.000	.823	204	.000
J6	.220	204	.000	.874	204	.000
J7	.253	204	.000	.807	204	.000
J8	.215	204	.000	.851	204	.000
D1	.209	204	.000	.850	204	.000
D2	.212	204	.000	.848	204	.000
D3	.212	204	.000	.822	204	.000
D4	.206	204	.000	.854	204	.000
D5	.188	204	.000	.825	204	.000

a. Lilliefors Significance Correction, (Source: Author)

5.2.6. Factor analysis

The factor analysis (FA) is used in this study to further examine the measurement items applied by the researcher. According to Tabachnick & Fidell (2007) one of the best way to understand the underlying structure regarding a specific theory and its variables in the analysis, is to apply factor analysis. In day to day language, factor analysis is a statistical procedure that is performed in order to identify clusters or groups of related items know as factors or arrange like items. In fact, this analysis is used to reduce or condense the information contained in a number of measuring items into smaller sets or groups of new composite dimensions (factors) with a minimum loss of information (Hair et al,2010). It is important to draw to attention to two type of FA, one is Exploratory Factor Analysis (EFA) and the second one is the Confirmatory Factor Analysis (CFA). The EFA helps to summarised the data, reduced the data and derive the dimensions (Hair et al,2006; Sureshchandar et al,2001). It is preferable for studies with little theoretical basis or for explorative studies. Whereas the CFA purpose is to validate or confirm the measurement factors that exists within set of variables included in the theoretical model (Hair et al,2006). It is often performed during structural equation modelling.

The researcher's objective from applying the EFA at this stage of the study was to check the validity of the instruments or items used in the survey (i.e. to test to what extent the measurement items correspond to the latent variables presented in the conceptual framework proposed earlier at the chapter three). Also the result of the EFA such as variable selection will help the researcher to proceed with the other multivariate techniques in our case PLS-SEM.

Although the multivariate techniques develop to accommodate multiple variables, researchers will look for the most appropriate set of variables to include in their analysis (Hair et al., 2010)

The principal component analysis (PCA) was selected as a method of extraction in this study rather than other methods like principal factors, maximum likelihood factoring, image factoring, alpha factoring and un-weighted and generalised weighted lest squares factoring. The common factor and component analysis are both used widely by researchers. In most statistical programs the component model is the default method. Hair et al (2010, p. 107) summarise two conditions of when the use of CPA is appropriate as follow:

- Data reduction is the main purpose, here the researcher is focusing on the minimum number of factors needed in order to account for the maximum portion of the total variance that present in the original set of variables
- Previous knowledge proposes that "specific and error variance" denote a fairly small proportion of the total variance.

And here are the two conditions of when the common factor is appropriate according to Hair et al (2010, p. 108):

- The main purpose is to define the latent dominations or constructs denoting in the original data.
- The researcher has little knowledge regarding the amount of specific and error variance thus he/she try to minimise this variance as much as possible.

In fact, in the empirical research the common factor and component analysis arrive to the same result if the number of the variables exceeds 30 or the communalities are over 0.6 (Hair et al,2010) . According to Tabachnick & Fidell (2007), PCA extract the maximum variance from the data set where the first component extract highest variance and last component extract least

variance. Furthermore it reduces the large set of variables into a smaller number of components through transferring interrelated variables into new unrelated linear composite variables (Hair et al,2006) . In addition, a common factor is more closely aligned with the development of new scales (Worthington & Whittaker,2006).

In common the varimax (one of the orthogonal methods) rotational method is selected to be applied in this research. Most researchers normally utilized the rotational techniques available in the statistic programs, since there is no particular analytical reason to suggest preference on one rotational method over another (Hair et al,2010). Yet he also suggested rules of thumb that should guide the researcher in selecting the rotational method (see Table 20). "The varimax method maximizes the number of variances of required loadings of factor matrix" also it provides much clearer separation of the factors (Hair et al,2010, p. 116). Furthermore, according to Pallant (2010) interpretation of the result obtained through the orthogonal rotation are much easier than the oblique rotation method. Looking to the guiding rules of thumb, the main concerns of the researcher at this stage of the analysis is to check how the extended the indicators / items developed in the questionnaire fit each construct they are supposed to measure, thus the orthogonal varimax is best fit for the purpose of the analysis objectives.

Table 20 Rule of thumb regarding the choose between the orthogonal or oblique rotation

Rules of thumb (selecting rotation methods)
A- orthogonal rotation methods
Preferred when the research main goal is data reduction to a smaller number of variables or a set of uncorrelated measures for use in subsequent use in other multivariate techniques.
B- oblique rotation methods
Preferred when the main goal of the research is to obtain several theoretical meaningful factors or contracts.

(Source: Adapted form Hair et al (2010, p. 115)

The first test carried out to verify if the factor analysis was suitable or not is Kaiser-Meyer-Olkin (KMO) test to measure sampling adequacy and the second is the Bartlett's test of Sphericity. The value KMO should be 0.6 or more to proceed with the factor analysis and means that the relationship between items is statistically significant in addition suitable for EFA to deliver a parsimonious set of factors (Tabachnick & Fidell,2007). However, the significance of Bartlett's test of Sphericity present that the correlation among measurement items are suitable for EFA and higher than 0.3 (Field,2013; Hair et al,2010) listed the description of the guidelines regarding the value of KMO in the Table 21.

Table 21 Description of KMO value

Description of KMO value	KMO value in numbers
Marvellous	0.90s
Meritorious	0.80s
Middling	0.70s
Mediocre	0.60s
Merde/ unacceptable	0.50s

(Source: Field (2013))

Initially 28 items were examined using EFA in this study. The results of the KMO test and Bartlett's shown in the table 22 below. The value of the KMO was 0.905 which is higher than 0.6 and the Bartlett's test was significant (P<0.005) thus it is appropriate to proceed with EFA.

Table 22 KMO and Bartlett's test applied to the current study

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.905
Bartlett's Test of Sphericity	Approx. Chi-Square	2585.538
	Df.	378
	Sig.	0.000

(Source: Author)

The Table 23 shows the communalities explained by each items. As it is clear from the table that almost all the items shared above 0.5 or almost 0.5 communalities with their components (with some exceptions like PI7, PP6 &

PP7, had communalities less than 0.5 but not less than 0.4). Before removing the items with low communalities in order to improve or refine the scale (Hair et al,2006) it is suggested to check the outer loading known as factor loading (Churchill Jr,1979; Pallant,2010). Table 24 presents the pattern matrix/component matrix and Table 26 present each items loading factor along with their corresponding communality, mean and standard deviation. It is clear from both tables that all the items with communality less than 0.5 were highly loaded into their relevant component. According to Hair et al (2006) if the items have factor loading less than 0.4 or cross loading higher than 0.4 then it's recommended to be removed as it indicates a weak consistency within scale. Looking at item J8 although it has an acceptable communality value >0.5 it had an issue of cross loading with factors 4 while this time it slightly load higher on factor 3 (Decision scale) than (Judgement scale), here the researcher decided to retain the item unless it will affect the main analysis in the second stage (SEM-PLS) because the cross loading does not mean the item (i.e. the question) is not theoretically representative to the scale and the objective here is the data reduction (to access the measurement items), looking as well to the overall contribution of the variable's on the research plus its communality are another reason to retain this item.

According to Worthington & Whittaker (2006) researchers should base their decision of delete or retain items on their factor solution rather than on the final length of the scale also they suggest that researcher should observe the conceptual consistency with other items on the factor. In fact, checking the J8 needed to know why it maybe cross load to Decision scale and the theoretical reason behind that. The question in this item link one of the important

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judgement criteria which is the continue dialogue and understanding among auditors and the audited entity in the judgement process to acceptance of audit recommendation. According to Einhorn & Hogarth (1981), most judgements and choices (decision choice) occur sequentially. Therefore, it is not surprisingly that judgement items may correlate with the decision scale.

Table 23 Communalities shared by individual items

Communalities		
Items	Initial	Extraction
PI1	1	0.535
PI2	1	0.528
PI3	1	0.608
PI4	1	0.508
PI5	1	0.480
PI6	1	0.571
PI7	**1**	**0.445**
PI8	1	0.467
PP1	1	0.467
PP2	1	0.632
PP3	1	0.563
PP4	1	0.486
PP5	1	0.566
PP6	**1**	**0.454**
PP7	**1**	**0.434**
J1	1	0.486
J2	1	0.495
J3	1	0.604
J4	1	0.555
J5	1	0.526
J6	1	0.514
J7	1	0.518
J8	1	0.551
D1	1	0.580
D2	1	0.703
D3	1	0.714
D4	1	0.563
D5	1	0.531
Extraction Method: Principal Component Analysis.		

(Source: Author)

Table 24 Rotated component Matrix

items	1	2	3	4
Rotated Component Matrix				
Component				
PI1	0.615			
PI2	0.683			
PI3	0.691			
PI4	0.641			
PI5	0.606			
PI6	0.65			
PI7	0.636			
PI8	0.557			
PP1		0.584		
PP2		0.762		
PP3		0.739		
PP4		0.668		
PP5		0.684		
PP6		0.603		
PP7		0.54		
J1				0.601
J2				0.687
J3				0.672
J4				0.698
J5				0.589
J6				0.538
J7				0.627
J8			0.541	0.451
D1			0.666	
D2			0.746	
D3			0.785	
D4			0.665	
D5			0.634	
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a Rotation converged in 6 iterations.				

(Source: Author)

Table 25 Items factors and Communalities

Items	Factor Loading	Communality	Mean	Mean std.E	S.D
PI1	.615	.535	5.90	.070	1.000
PI2	.683	.528	5.49	.080	1.138
PI3	.691	.608	5.49	.091	1.304
PI4	.641	.508	5.88	.079	1.127
PI5	.606	.480	5.67	.081	1.155
PI6	.650	.571	5.77	.078	1.115
PI7	.636	.445	5.87	.074	1.057
PI8	.557	.467	5.37	.089	1.274
PP1	.584	.467	5.54	.089	1.268
PP2	.762	.632	5.41	.093	1.327
PP3	.739	.563	4.78	.103	1.476
PP4	.668	.486	5.39	.096	1.376
PP5	.684	.566	5.78	.089	1.268
PP6	.603	.454	5.27	.088	1.260
PP7	.540	.434	6.05	.078	1.111
J1	.601	.486	5.97	.063	.895
J2	.687	.495	5.29	.065	.927
J3	.672	.604	5.85	.071	1.011
J4	.698	.555	5.72	.080	1.143
J5	.589	.526	5.97	.072	1.024
J6	.538	.514	5.66	.080	1.140
J7	.627	.518	6.02	.076	1.087
J8	.541	.551	5.76	.086	1.230
D1	.666	.580	5.95	.067	.963
D2	.746	.703	5.88	.066	.939
D3	.785	.714	5.99	.070	.997
D4	.665	.563	5.85	.072	1.027
D5	.634	.531	5.82	.077	1.106

(Source: Author)

 The factor loading indicate correlation between the original variables and its factors so it is important to draw to the attention the sample size and factor loading guidelines that suggested by Hair et al (2010) to identify the significance of factor loading. The Table 26 present different sample size and the factor loading necessary to be considered as significant.

Table 26 Guidelines for identifying significant factor loading on the sample size

Guidelines for identifying the significant factor loading associated with sample size	
Sample size needed for significant*	Factor loading
350	.30
250	.35
200	**.40**
150	.45
120	.50
100	.55
85	.60
70	.65
60	.70
50	.75
*Significance is based on a 0.5 significant level $(\propto)$, a power level of 80 % and standard error assumed to be twice those of conventional correlation coefficients.	

(Source: Hair et al. (2010) P.117)

The guidelines suggested that for this study the significant factor loading should be 0.40 for 204 respondents (**bold and highlighted in the table**). Despite the 0.7 rule of thumb this study follow Hair et al (2010) guidelines and

will retain all items that had factors above 0.45 which assume items with 0.45 loading denote that 20 percent of the variance is accounted for by the factor. In addition, the researcher finds an interesting result when apply the image factoring as a method of factor analysis. As it is clear from Table 82 in the appendix that the cross loading is not exist where J8 in this method load only in one factor with the rest of the similar items scale load (i.e. judgement scale). Here the researcher sees it is wise not to remove the items J8 unless the main analyses of SEM-PLS suggest so. Image factoring is founded on the concept of an "image" of an item, based on the multiple regression of one item as dependent variable on all the other items as the independent variables. PCA is a determined solution that maximizes the variance of orthogonal factors that contain common, unique, and error variance among measures. Whereas, Image factoring is a determined solution that maximizes the variance of orthogonal factors with unique and error variance among measures removed. Although both methods analyse a correlation matrix, yet they differ in the term on the positive diagonal. PCA applies one, the standardized variance, on the positive diagonal, while image factoring applies the $R2$ between each measure and the others as the communality on the positive diagonal (Backs,1998).

It is observed that Image analysis (see Table 82 in the appendix) accounted for less overall variance than did PCA, and image analysis tended to produce factors that accounted for an equal proportion of variance. Thus, PCA was concluded to be the preferred extraction method because it steadily produced

solutions that accounted for a larger proportion of total variance and it is a simpler method both conceptually and computationally (Backs,1998).

5.3. Method Variance

According to Bagozzi et al (1991b, p. 421), method variance refers to "variance that is attributable to the measurement method rather than to the construct of interest". Method here refers to the form of measurement at different levels of abstraction for example the content of specific items, scale type, response format and general context. Several researchers agree that common method variance is considered as a potential problem in behavioural research and social science, because It is known as one of the main source of measurement error (Podsakoff et al,2003). According to MacKenzie & Podsakoff (2012) there is great deal of evidence suggest that common method variance effect items validities, items reliabilities and covariation between latent constructs. Also, It is widely assumed that the relationship between variables measured could be inflated due to common method bias (Conway & Lance,2010). Podsakoff & Todor (1985) stated, "Invariably, when self-report measures obtained from the same sample bias or general method variance arises" (P.65). In simple, common method variance can be described as "an umbrella or generic term for invalidity of measurement" Brannick et al (2010, p. 12).

Although method variance is often raised in the context of surveys /self-reports, (yet it is not limited to such reports), still researchers need be aware of its effect. Method variance matters because it represents an alternative explanation of substantive results. Thus, method variance might lead

researcher into faulty inferences regarding substantive questions of interest. Campbell & Fiske (1959) noted that any measurement instrument always includes (1) systematic error variance and (2) random error variance.

Fiske (1982) also suggests at abstract level, method effects might be interpreted in terms of response biases like halo effects, social desirability, acquiescence, leniency effects or yea-and nay-saying. Common method biases can have potentially serious effects on the research findings. Thus it is essential to understand their sources and when they are likely to be consider as a problem. Here are common sources of common method variance:

- Consistency motif or consistency effect: many researchers like Podsakoff et al (2003) and Osgood & Tannenbaum (1955) suggested that people try to respond to questions asked by the researcher in a consistent rational way and may search for similarities in the questions posed to them. The latter will produce relationships that would not exist at the same level in real-life settings. That would be a problem in a situation where the participants are asked to provide retrospective accounts of their attitudes, perceptions and behaviours.

- Researchers like Baumgartner & Steenkamp (2001); Podsakoff et al (2003) suggested two way to control for method biases which are statistical control and procedural control. The statistical control can be implemented after the data has been collected. The latter control is minimizing the effects of method bias through careful design of the study's procedures. The procedural control taken by the researcher in this thesis is briefly summaries in Table 27.

Table 27 Factors that raise methods bias and procedural control

Conditions that may cause a common method bias	Mechanism	Procedural control implemented in the survey
Lack of ability (e.g. verbal ability , education or cognitive sophistication)	The difficulty of the task of comprehending and understanding the meaning of the questions and making judgement.	Pretesting questions and the whole questionnaire more than once with different groups before the process of the final data collection.
Lack of experience thinking about the questionnaire topics	It could hinder the ability of the respondent to comprehend and link the key terms to relevant concepts.	Selecting the appropriate responses for the questionnaire. In this study the questionnaire only targets the auditors in SAI.
Complex/abstract questions	It increases the difficulty to understand the meaning of the questions and making judgements.	Any vague concepts were avoided. Also, clear examples were used to provide additional clarity when needed. Abbreviation was avoided , simple language and vocabulary used
Double-barrelled questions	Make the retrieval task more demanding and complicated. Also introduce ambiguities in response selection. The respondent not sure whether to answer only one part of the questions or average their responses to both parts of the question.	Avoiding the double-barrelled items/questions.
Lengthy scale	It effect the motivation to maintain cognitive effort needed to give optimal answers, result in less careful judgements , less thorough retrieval and poor comprehension	The length of the questionnaire was measured during the pre-test. The questionnaire server provided the details regarding the time completions which help the researcher during the pilot study to check the duration of participants. Making the items less repetitive.

Forced participation	It decreases the motivation to exert cognitive effort to provide accurate answers or a faithful report.	The cover letter in the first page requesting the participants to click on yes for approval to participate or no so they will not complete the questionnaire. Also, the respondents were told in the cover letter that they can stop at any point.
Context that arouse suspicions.	This may make the respondent conceal their true opinion. Also, it may make them select the middle scale category or randomly select scale carelessly despite their true feeling.	The respondents were informed regarding the main purpose of the questionnaire and that all the information will be kept secured and will not be used for other propose rather than this research.
Measurement condition that make consequences of a responses salient	This increase the respondent desire to edit their answer so that they provide a socially acceptable response or avoid undesirable consequences.	The anonymity/confidentiality of the questionnaire participants being maintained.
Grouping related items together	This make it easy for the respondent to use previously recalled information and prior answers to respond to current question. Also make it easier to edit answers for consistency, which leads to satisficing.	The researcher use randomizing techniques for each section in the questionnaire to control how the order of the questions effect the answers of the respondent.
Availability of answers to previous questions (i.e. memory)	This make it easy for the respondent to use pervious recall information and answers to respond to current question and give answer that are consistent with each other.	Physical availability eliminated by restricting access to pervious answer. The researcher did not design a back button where the respondent can go to the pervious section and page to edit or recall his/her answer.

(Source: Adapted from Baumgartner & Steenkamp (2001); Podsakoff et al (2003)

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5.3.1. Statistical test for common method bias.

The researcher applied Harman's single factor test. The researcher used SPSS to apply this technique in order to extract one factor un-rotated to check whether a single factor emerges for the majority of the variance. All the items are entered into an un-rotated exploratory factor analysis and the first factor accounted for only 34 % of the overall variance. Therefore, the common method variance likely does not affect the results since it is less than 50% as that suggested by Podsakoff & Organ (1986). Although this approach is one of the most widely used by researchers to address the common method bias issue, it has been criticized by many researchers due to its limitations (Kemery & Dunlap,1986; Podsakoff et al,2003). Consequently, another test performed, which is to examine the correlation matrix. Usually any highly correlated variables (value of r>.90) are evidence of common method bias (Bagozzi et al,1991a). The result of the correction matrix in this study does not include such value thus common method bias is not a problem. The correlation matrix can be found in Figure 38 at the Appendix.

Moreover, more advanced approaches applied to test common methods bias even further. A leading approach with PLS is to create a marker variable in the data collection that is unrelated to the theoretical model or the paths to be tested in the model. Later, a researcher would correlate the data to the marker variable, and if the correlations are high, then common methods bias probably exists (Lowry & Gaskin,2014). In this thesis a maker variable of three indicators, which is the difficulties and challenges in PA, is used to check if

there is any high correlation between the marker variable and other constructs. In our case there was very low correlation (which the highest is 0.264) see Table 28 of correlations below. Thus, this method indicates that no problem of common biased method exists in the data.

Table 28 Correlation matrix with marker variable

	PA	J	D	PP	Marker V
PA	1.000				
J	0.559	1.000			
D	0.566	0.674	1.000		
PP	0.555	0.434	0.440	1.000	
Marker Variable	0.264	0.052	0.097	0.241	1.000

(Source: Author)

5.4. Measurement Model Results

Empirical measurement enables the researcher to compare the theoretically established measurement and the structural models in the methodology and literature chapters with the reality, as described in the sample data. The first part in evaluating the measurement model is to assess the reliability and construct validity. In this study the reliability of the measurement model evaluated through (1) examine each indicator factor loadings (i.e. outer loadings in Smart PLS) on its respective latent variable (2) evaluating the internal consistency (i.e. varying such Cronbach's Alpha, composite reliability and AVE). In construct, the construct validity was assessed through (1) convergent validity and (2) discriminant validity.

The researcher follows the criterions and the guides for measurement model fitting that is summarized in Table 29 below.

Table 29 Measurement model assessment criterion and guidelines

Criterion	Acceptable guide	Source
(1) Construct Reliability indicator Loading	If outer loading value be 0.7 and higher then retain the indicator Between 0.4 and 0.7 then retain if deletion doesn't increase AVE and composite reliability measures above threshold Below 0.4 delete the indicators	(Churchill Jr,1979; Hair et al,2013a)
(2) Construct Reliability Cronbach's Alpha	0.7 or higher is acceptable for exploratory research, but for more advanced stage value between 0.7 to 0.9 is recommended	(Field,2013; Hair et al,2012)
(3) Construct Reliability Composite Reliability	0.7and higher is recommended	(Chin,2010; Hair et al,2012)
(4) Convergent validity	Each construct AVE value should be 0.5 or higher	(Fornell & Larcker,1981; Hair et al,2014; Hair et al,2010)
(5) Discriminant validity at item level	The loading of each item within its construct should be higher than it's cross loadings. Cross loadings should be less than 0.4	(Chin,1998) (Hair et al,2006; Hair et al,2013a)
(6) Discriminant validity at constructs level	Fornell and Larcker (1981) criterion: $\sqrt{AVE}$ of each constructs should be higher than the other construct's correlation with any other (i.e. inter-construct correlation)	(Hair et al,2013a)

(Source: Author)

5.4.1. Reliability of the measurement

In order to assess the measurement model, the first criteria that needs to be examined is the internal consistency of the observed items. According to the summarized criterion on Table 29, the reliability of the measurement should be assessed at items and construct level by examining standardised outer loadings, composite reliability and Cronbach's Alpha. Table 30 present the results of the former tests. It is clear from the result table that standardised outer loadings are ranging from 0.629 to 0.842 which satisfy the requirements of the minimum criterion 0.4 (Churchill Jr,1979; Hair et al,2013a). Moreover, the researcher followed (Hair et al,2014) who suggested condition for deleting the items that had outer loading between 0.4 to 0.7 only if that deletion will result for a better value in AVE and composite reliability. Two items are deleted in order to improve the value of the AVE, which are (PP4 and J2). Secondly, moving to the construct reliability, which was examined, by the Composite reliability and Cronbach's Alpha values the result of these values shown at Table 30, Figure 16 & 17 which were higher than the recommended value, therefore this study is data fulfil the reliability criteria.

5.4.2. Convergent validity

The convergent validity signifies that a set of indicators should represents one and the same underlying construct that can be demonstrated through their uni-dimensionality. In fact, in convergent validity, Fornell and Larcker (1981) first proposed AVE to measure the amount of variance that a construct captures from its measuring items relative to the amount assign to measurement error. AVE is calculated by adding the square factor loadings divided by the number of factors of the underlying construct. The result in

Table 30 shows that AVE is higher than 0.5 (i.e. the cut-off point), which means that each construct has the capability to explain more than the half of the variance on its measuring items on average. Prior removing the problematic variables, the AVE of PP and J did not meet the requirement of 0.5. However, after the deletion of PP4 and J2, all the construct's AVE value then met the criterion as shown in Table 30.

Table 30 AVE, composite reliability, Cronbach's Alpha

Items & Latent variables	Factor loading Smart PLS	AVE	Composite reliability	Cronbach's Alpha smart PLS	Cronbach's Alpha SPSS
Performance Information					
PI1	0.716	0.501	0.889	0.857	0.857
PI2	0.704				
PI3	0.788				
PI4	0.694				
PI5	0.629				
PI6	0.772				
PI7	0.642				
PI8	0.709				
Performance Perception					
PP1	0.702	0.518	0.866	0.814	0.814
PP2	0.749				
PP3	0.693				
PP5	0.754				
PP6	0.719				
PP7	0.696				
Judgement					
J1	0.689	0.519	0.883	0.845	0.842
J3	0.756				
J4	0.691				
J5	0.742				
J6	0.738				
J7	0.744				
J8	0.679				
Decision					
D1	0.792	0.632	0.895	0.854	0.851
D2	0.842				
D3	0.833				
D4	0.752				
D5	0.751				

(Source: Author)
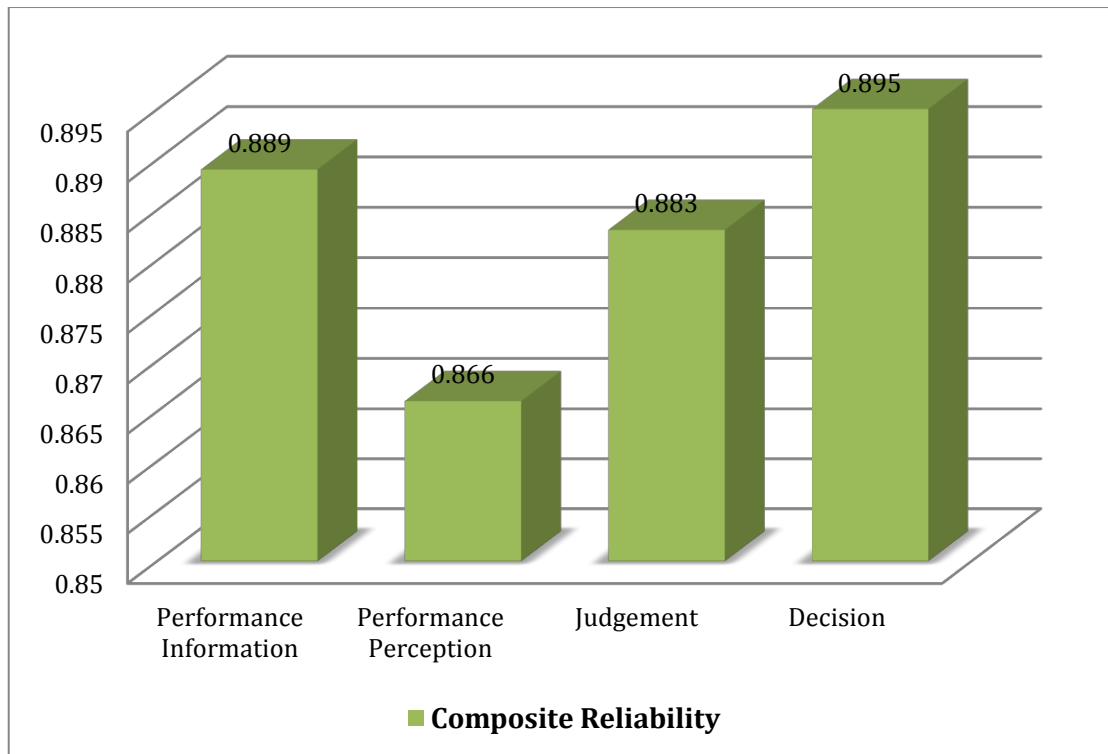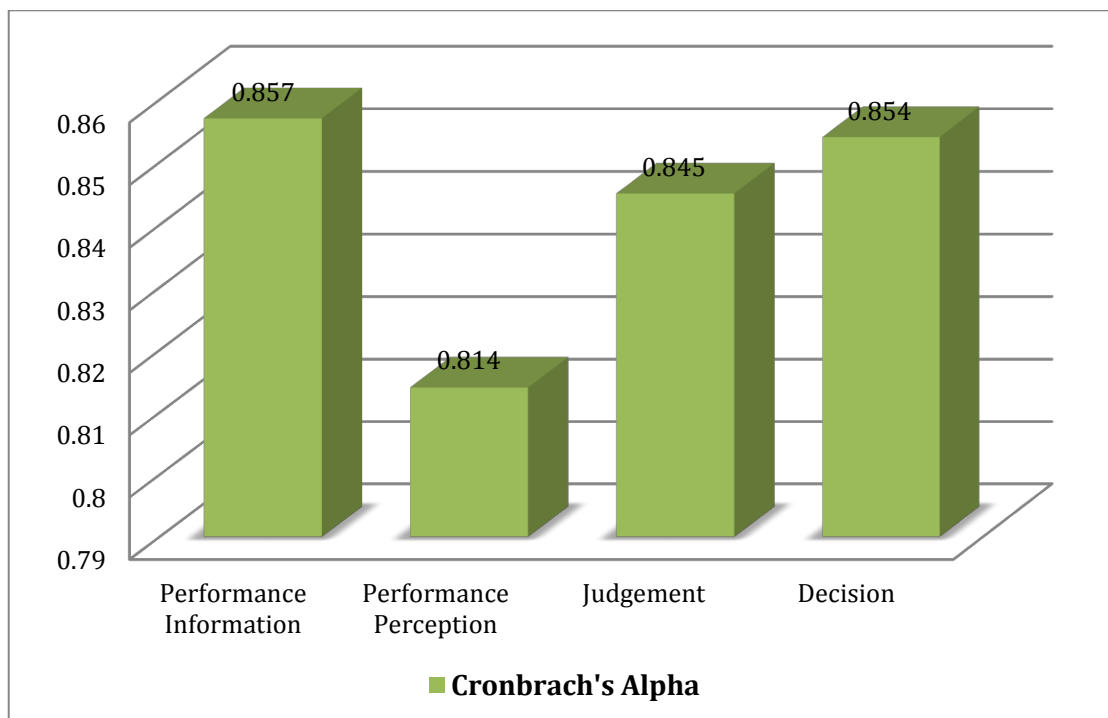
(Source: Author)

(Source: Author)

5.4.3. Discriminant validity

In this study the discriminant validity was examined using the Fornell and Larcker criterion (1981) for the construct level while at the items level comparison between the loading of the construct indicators and its cross loadings with others constructs was used. Table 31 show the result of the square root of the AVE values of each constructs and the correlation with other construct. It was clear that the square root of AVE values of the entire construct in this study range between 0.709 and 0.795, which were greater than any correlation of the constructs with each other. The latter, indicate that constructs in the study share more variance with their associated indicators than with any other construct, thus satisfy the discriminant validity test. Moreover, to check the discriminant validity at items level we need to check the cross loading. Table 32 present the cross loadings of all the indicators. The result demonstrates that all the indicators' outer loadings on their associated constructs were higher than all of their loadings on other constructs (i.e. the cross loadings). Therefore, there was no problem regarding the discriminant validity in this study.

Table 31 Fornell-Larcker Criterions

	Decision	Judgement	Performance Information	Performance Perception
Decision	0.795			
Judgement	0.673	0.720		
Performance Information	0.562	0.554	0.709	
Performance Perception	0.438	0.425	0.572	0.720

(Source: Author)

Table 32 Cross Loading

	Decision	Judgement	Performance Information	Performance Perception
D1	**0.792**	0.519	0.432	0.417
D2	**0.842**	0.582	0.457	0.426
D3	**0.833**	0.542	0.472	0.289
D4	**0.752**	0.499	0.444	0.275
D5	**0.751**	0.529	0.432	0.318
J1	0.431	**0.689**	0.445	0.324
J3	0.506	**0.756**	0.474	0.382
J4	0.440	**0.691**	0.372	0.232
J5	0.503	**0.742**	0.424	0.229
J6	0.526	**0.738**	0.378	0.332
J7	0.451	**0.744**	0.416	0.334
J8	0.538	**0.679**	0.272	0.303
PI1	0.497	0.476	**0.716**	0.358
PI2	0.390	0.369	**0.704**	0.346
PI3	0.450	0.452	**0.788**	0.427
PI4	0.448	0.369	**0.694**	0.366
PI5	0.225	0.239	**0.629**	0.430
PI6	0.406	0.452	**0.772**	0.486
PI7	0.325	0.341	**0.642**	0.346
PI8	0.417	0.401	**0.709**	0.466
PP1	0.360	0.294	0.430	**0.702**
PP2	0.341	0.315	0.388	**0.749**
PP3	0.211	0.240	0.330	**0.693**
PP5	0.335	0.375	0.433	**0.754**
PP6	0.312	0.304	0.409	**0.719**
PP7	0.305	0.290	0.456	**0.696**

(Source: Author)

5.4.4. Additional test for discriminant validity

According to Henseler et al (2015) researcher should apply different construct validity sub-types to confirm their results. Therefore, the researcher used an additional approach to assess the discriminate validity. The Heterotriat-Monotriat ratio (HTMT) of correlations is such an alternative approach derived from multitrait-multimethod matrix to examine the discriminate validity (Henseler et al,2015). The (HTMT) is the average of the heterotriat-hetero method correlations relative to the average of the montotrait-hetero method correlations (Henseler et al,2015). The exact threshold level/value of the HTMT is still debatable as some researchers suggest 0.85 as a threshold (e.g.Clark & Watson,1995), while others suggest 0.9 (e.g.Teo et al,2008). Table 33 show the HTMT ratio finding with 0.85 as cut-off point. The results confirm no violation since none of the values is greater than 0.85. Thus the data in this study do not indicate any discriminate validity issues.

Table 33 Heterotriat-Monotriat Ratio (HTMT)

	Decision	Judgement	Performance Information	Performance Perception
Decision				
Judgement	0.792			
Performance Information	0.653	0.641		
Performance Perception	0.513	0.506	0.675	

(Source: Author)

5.5. The Structural Model Results

Having confirming the appropriateness of the measurement model by establishing their validity and reliability, the next step addresses the assessment of the structural model results. This involves providing evidence for supporting the hypothesized relationships between the constructs, standardised path coefficients and significance and the relevance of the structural model relationships. Moreover, it is essential to evaluate both the endogenous variables' coefficient of R^2 and predictive relevance Q^2 plus the effect size f^2 and q^2. The following figure show the steps recommended for evaluating the structural model results by Hair et al (2013a).
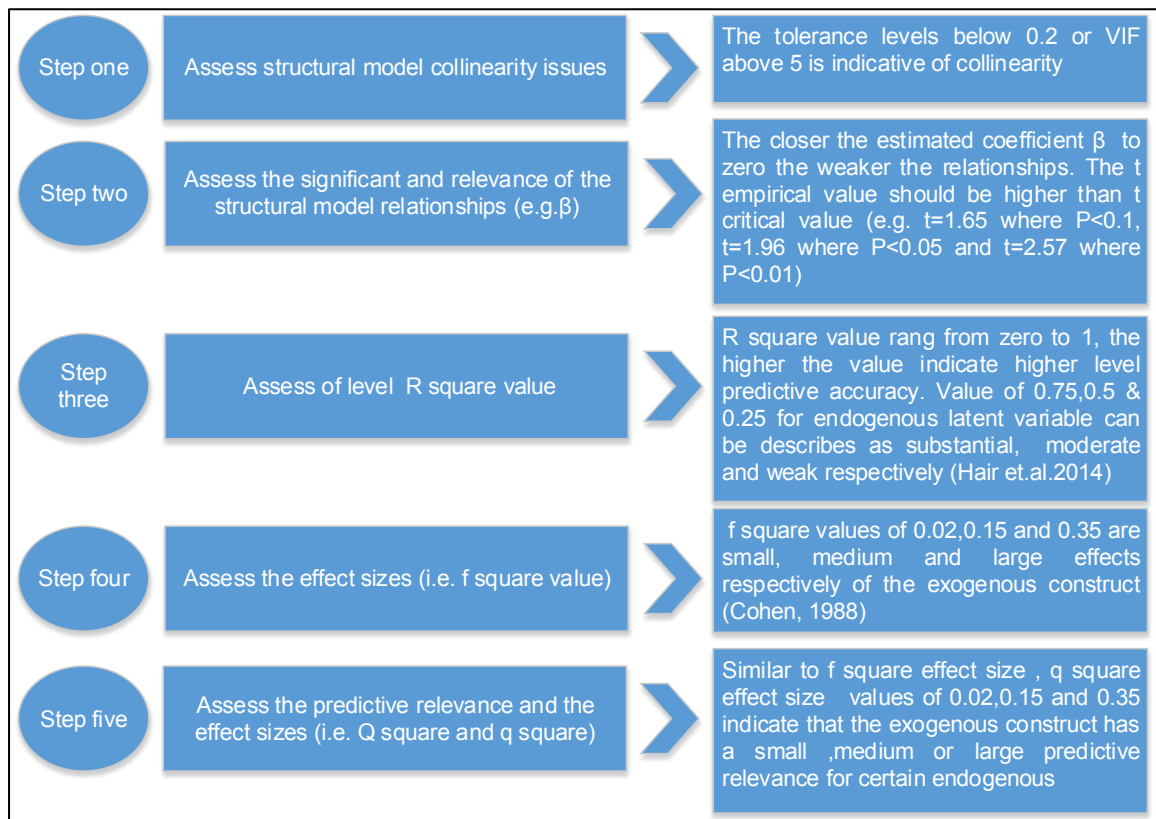
Figure 18 Assessment criteria for the sturctural model results

(Source: Adapted from Hair et al.(2013) Chapter six)

Figure 18 summarise the assessment stages of the structural model and threshold value for each criterion. To assess the collinearity issue among the predictor constructs in the structural model, the researcher used the Variance Inflation Factor (VIF) values calculated in smart PLS. Table 34 (i.e. Inner VIF) and Table 35 (i.e. Outer VIF) show that none of the VIF value is higher than 5, therefore collinearity is not an issue in this study.

Table 34 Inner VIF values

	Decision	Judgement	Performance Information	Performance Perception
Decision				
Judgement	1.221			
Performance Information		1.000		1.000
Performance Perception	1.221			

(Source: Author)

Table 35 Outer VIF values

Items	VIF
D1	1.848
D2	2.278
D3	2.230
D4	1.713
D5	1.620
J1	1.525
J3	1.765
J4	1.591
J5	1.709
J6	1.706
J7	1.744
J8	1.572
PI1	1.632
PI2	1.663
PI3	2.097
PI4	1.698
PI5	1.440
PI6	1.856
PI7	1.507
PI8	1.788
PP1	1.455
PP2	1.849
PP3	1.742
PP5	1.676
PP6	1.532
PP7	1.536

(Source: Author)

5.5.1. Path coefficients

Path coefficients also known as nomological validity, represent the hypothesized relationships between the constructs (Hair et al,2013a) . If the estimated path coefficient is close to +1 then this represent a strong positive relationship and vice versa if it is -1. However, if the estimate value was closer to zero, then it indicates a weak relationship, where the lower values normally are non-significantly different from zero. In this study the significance of the regression coefficient is tested via t-values and the corresponding p-values, which is obtained via using a PLS bootstrapping process. A samples of 5,000 were applied in the Bootstrap test with cases of 204 equal to the total observation in the study as recommended by Hair et al (2013a). Figure 19 show the graphical representation of paths while Table 36 show the results of the paths towards the dependent variables D and J. The individual path coefficients in the PLS structural model can be interpreted as standardized beta coefficients of Ordinary Least Squares regression (OLS) (Henseler et al,2009b). Thus those paths that are significant and reflect the hypothesized direction support the hypothesis proposed relationship empirically and those are not significant or show opposite signs to the hypothesis direction do not support the proposed hypothesis empirically (Hair et al,2013a).

Table 36 present the hypotheses along with the Path coefficients, t-values, p values and other details that help to determine the significant level of path coefficients in order to test the hypotheses. The result in Tables 36 and 37show that a high significant path was between Judgement and Decision ($\beta = .596 \ or \ 59.6\%$) with t=4.937 followed by Performance Information to Judgement path where ($\beta = .460 \ or \ 46\ \%$) with t=3.619. Meanwhile, it was

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found that the path of Performance Information to Performance Perception was also highly significant ($\beta = 0.571 or\ 57.1\%$) with t=8.969. These results mean that the decision by the performance auditors was predominantly influenced by their judgement. Also, the judgement itself was influence highly be the performance information. Thus those hypotheses were supported. While the path of Performance Perception to decision was not significant at level 5 % yet it was significant at level10 %. ($\beta = 0.184\ or\ 18.4\%$) with t=1.763. However, the path of Performance Perception to Judgement was not significant ($\beta = 0.164\ or\ 16.4\%$) with t=1.135 which indicates no support for the hypothesis of that path. The latter suggested that judgement by the performance auditors was not really influenced by the performance perceptions. For a clear picture please see Figures 20 and 21

Table 36 Path coefficients

	Decision	Judgement	Performance Information	Performance Perception
Decision				
Judgement	0.596			
Performance Information		0.460		0.571
Performance Perception	0.184	0.164		

(Source: Author)
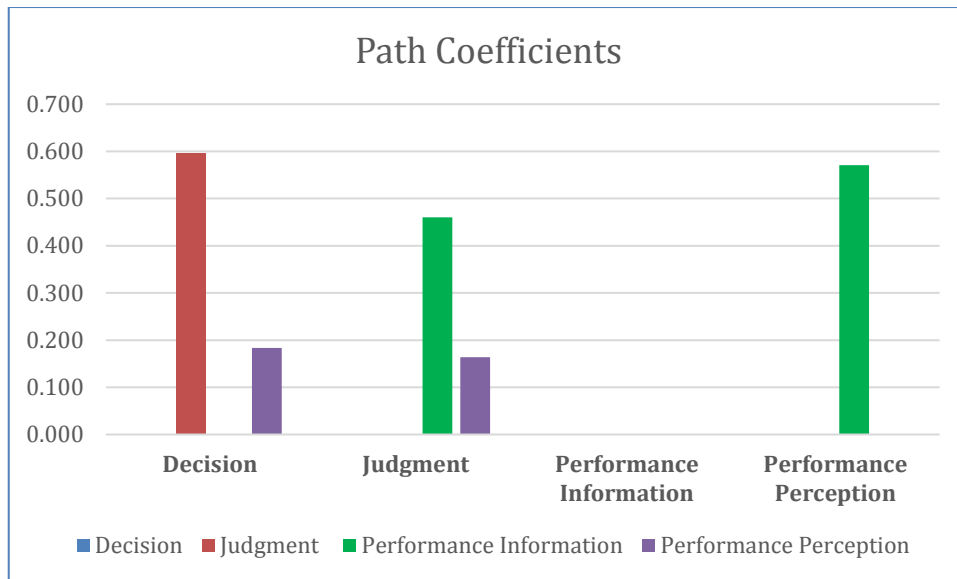
Figure 19 Path coefficients graph

(Source: Author)
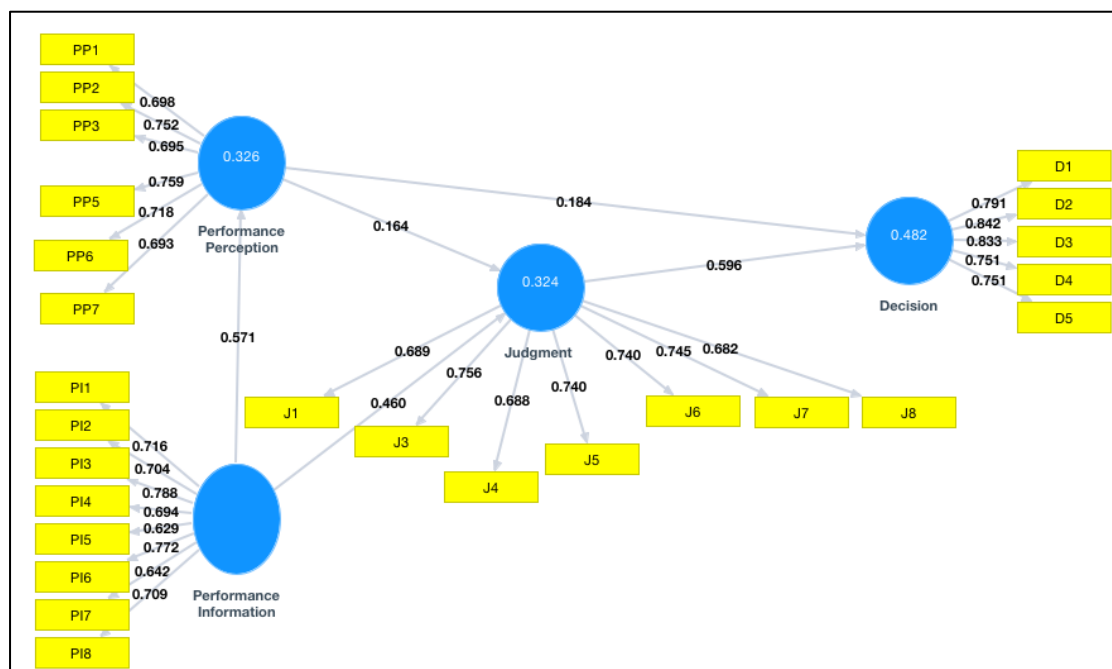
Figure 20: Screen shout of PLS algorithm result from smart PLS

(Source: Author)

Performance Perception
R² =0.326

β3= .164

β4=.184*

r=.571***

Judgment
R²= 0.324

β5=.596***

Decision
R²= 0.482

β1=.460***

Performance Information
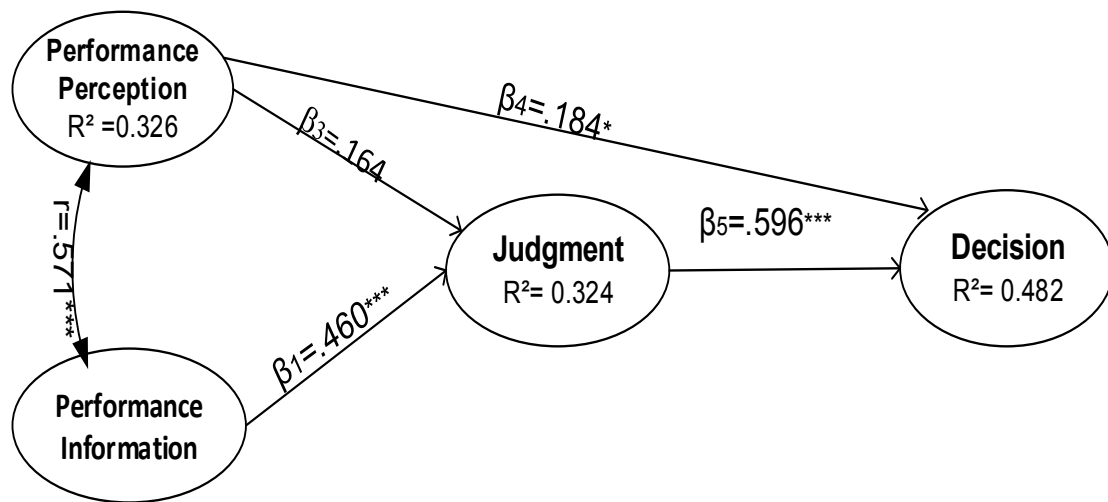
Figure 21 Path coefficients & R-Square

(Source:Author), Note that *** significant at level 0.01, **significant at level 0.05, * significant at level 0.1

Table 37 Path Coefficient, t-value & P-value

Hypothesis / path	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	TStatistics (|O/STERR|)	P Values
Judgement to Decision	0.596	0.583	0.121	4.937	0.000
Performance Information to Judgement	0.460	0.451	0.127	3.619	0.000
Performance Information to Performance Perception	0.571	0.578	0.064	8.969	0.000
Performance Perception to Decision	0.184	0.196	0.104	1.763	0.078
Performance Perception to Judgement	0.164	0.177	0.144	1.135	0.256

(Source: Author) Note: 2-tail test used p value of 0.05

5.5.2. Determination of coefficient ($R^2\ value$)

The determination of coefficient (R^2) value of each endogenous latent variable is the primary evaluation criterion of the structural model, as they provide the percentage of variation in latent variables explained by model (Chin,2010; Hair et al,2013a) . The R^2 value ranges between 0 and 1 where the higher levels represents higher levels of predictive accuracy. According to Chin (1998) R^2 values of 0.19, 0.33 and 0.67 in PLS modelling considered as

weak, moderate and substantial respectively, while (Hair et al,2013a) suggested that R^2 values of 0.75, 0.5 and 0.25 are described as substantial, moderate and weak respectively. These different descriptions of the R^2 values are due to difficulty in providing an acceptable rule of thumb because it depended on the complexity of the model, field and type of study. For examples, 0.20 value of (R^2) are considered high in disciplines such as consumer behaviour (Hair et al,2013a).

Based on the pervious categorisation and the nature of this research the R^2 values presented on Figure 21, Figure 22 and Table 38 indicate that the structural model was able to explain a satisfying or moderate amount of the variance for the dependent latent variable of Decision were R^2 equal 0.482. The latter presents adequate explanatory power of the structural model. The model also provides the R^2 value of the judgement variable that was 0.324 and the R^2 value of 0.326 for the performance perception. All the R^2 in the model display a moderate level of amount of variance so indicates that the structural model possesses considerable predicative powers. However, if only R^2 used as the basis to understand the model's predictive accuracy, then there will be inherent bias toward selecting the model. Thus to avoid bias an adjusted R^2 can be used, where this "criteria is modified according to the number of exogenous constructs relative to the size of the sample used" (Hair et al,2013a, p. 174). Table 38 shows the result of the adjusted R^2 where after adjusting the R^2 the difference is not significant.

	R-Square	Adjusted R-Square
Decision	0.482	0.477
Judgement	0.324	0.318
Performance Perception	0.326	0.323

(Source:Author)
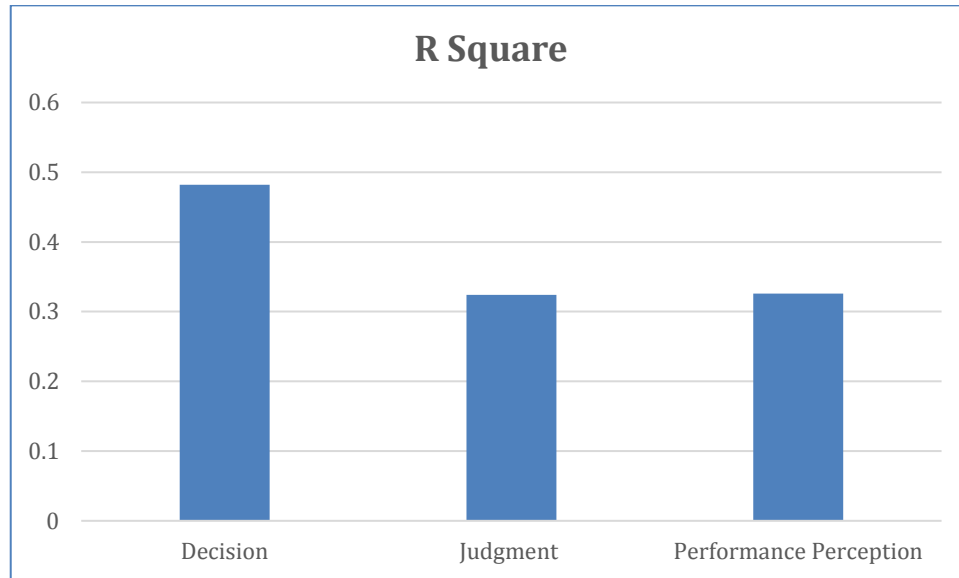
Figure 22 R-square for the latent variables in Model one

 (Source: Author)

5.5.3. Total Effect

Many researchers are interested in evaluating not just the direct effects of a construct on another construct but also the indirect effects via the mediating constructs. The total effect is the sum of the direct and indirect effects. The total effects reflect the indirect effects (i.e. relationship) of all the variables in the relationship between decision variable, which may not be revealed in the direct effects, but rather mediated through the effect on Judgement or Performance Perception, in the case of this study. Therefore, it was important to examine the total effects of these relationships in order to see if the data supports these hypotheses. For example, the performance information is

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linked to the decision via two mediators that are: judgement or performance perception. Smart PLS provide the calculation for this indirect effects that help the researcher to identify these relations.

The total effect in Smart PLS is shown under the Quality criteria (total effect) at the bootstrapping report. The results of the total effect (mean, STDEV, T-value and P value) are shown in Table 39.

Table 39 Total Effect values for model one

Mean, STDEV, T-Values & P-Values

	Original Sample	Sample Mean	Standard Error	T Statistics	P Values
Judgement to Decision	0.596	0.583	0.121	4.937	0.000
Performance Information to Decision	0.435	0.445	0.062	6.964	0.000
Performance Information to Judgement	0.554	0.556	0.073	7.603	0.000
Performance Information to Performance Perception	0.571	0.578	0.064	8.969	0.000
Performance Perception to Decision	0.281	0.292	0.138	2.044	0.041
Performance Perception to Judgement	0.164	0.177	0.144	1.135	0.256

(Source: Author)

As it clears from the table that the total effect of Judgement on Decision doesn't change since there was no mediators. Similarly, with Performance Perception and Performance Information. Yet the results revealed that there was strong total effect between the Performance Information and Decision with a B-value of (0.435), T-value of 6.964 and p-value of 0.000. Meanwhile, the total effect of Performance Information on Judgement moved to 0.554 with a t-value of 7.603 and a p-value of 0.000. In addition, the total effect of

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performance perception on Decision changed from β 0.184 to β 0.281 with t-value 2.044 and p-value of 0.041 that is significant at the level of 5%, which indicates that the total effect of this relations is stronger than the direct effect which was significant at 10% level with a low path coefficient. However, the case of the total effect of the Performance Perception on the Judgement did not change and the relation is therefore still not significant.

5.5.4. Effect size f^2

The measurement of f^2 effect size refers to the measure of the impact of omitting specific exogenous construct from the model on endogenous constructs (i.e. the change in R^2 if certain exogenous is omitted) (Hair et al,2013a). In PLS the change in R^2 value is calculated by estimation is the PLS path twice. The first estimation is the exogenous constructs included and the second estimation is with excluding the exogenous construct. The latter is explained by the following equation:

$$f^2 = \frac{R^2 included - R^2 excluded}{1 - R^2 included}$$

According to Cohen (1988); Hair et al (2013a) f^2 values of 0.02, 0.15 and 0.35 respectively represent weak, moderate and substantial effects of the exogenous latent variable.   Table 40 shows the values of f^2. The highest effect size f^2 value was 0.560 for Judgement toward Decision which is > 0.35 while the effect size f^2 value of Performance Perception toward Decision was only 0.053 which is considered small <0.15. In addition, effect size f^2 value of Performance Information toward Judgement was 0.211 that indicates a moderate relationship since it is > 0.15 but <0.35. Yet the Performance

Perception effect size f^2 value toward Judgement was just 0.027, which is described as small. Thus we conclude that Performance Perception had small effect size on both Judgement and Decision. In addition, the effect size f^2 value of performance information on performance perception was 0.484, which according to the rule of thumb can be considered as substantial.

Table 40 f-square

	Decision	Judgement	Performance Information	Performance Perception
Decision				
Judgement	0.560			
Performance Information		0.211		0.484
Performance Perception	0.053	0.027		

(Source:Author)

5.5.5. Predictive Relevance Q^2

In addition to the evaluation of the predictive accuracy R^2, Q^2 is the assessment of the model's predicative relevance. This criteria is calculated using the Stone-Geisser criterion (Hair et al,2013a) suggesting that the model must be able to accurately predict the dependent variable's measuring items. The Q^2 values must be larger than zero in order for the model to have predicative relevance otherwise the model lacks predictive relevance. The blindfolding procedure used in smart PLS is to calculate the Q^2 values. The blindfolding procedure is an iterative process that repeats until the model re-estimated when each of the data point omitted. Hair et al (2013a, p. 178) defined the blindfolding as "sample reuse technique that omits every d[th] (D = omission distance) data point in the endogenous construct's indicators and estimates the parameters with the remaining data points". It was

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recommended by Chin (1998) that omission distance should be between 5 to 10 .

This criterion Predictive Relevance Q^2 is applicable to only reflective measurement model or models with endogenous single-item constructs. In this study D=7 was chosen, as the division of the total observations in the study and the distance is not an integer; otherwise it will result in deletion of full observations (i.e., entire rows of the data matrix). The result as it appears in Table 41 and Figure 23 summaries the total outcomes of the blindfolding rounds. As it clear the results presents the sum of the squared observations (SSO), and the sum of the squared predication errors (SSE) and 1-SSE/SSQ which is the Predictive Relevance Q^2. The result of Predictive Relevance Q^2 were 0.293, 0.153 and 0.163 for Decision, Judgement and Performance Perception respectively that indicates that the model has predictive relevance for these construct. According to Hair et al (2013a) if the Q^2 is larger than zero the model is then considered to have predictive relevance regarding the endogenous latent variables.
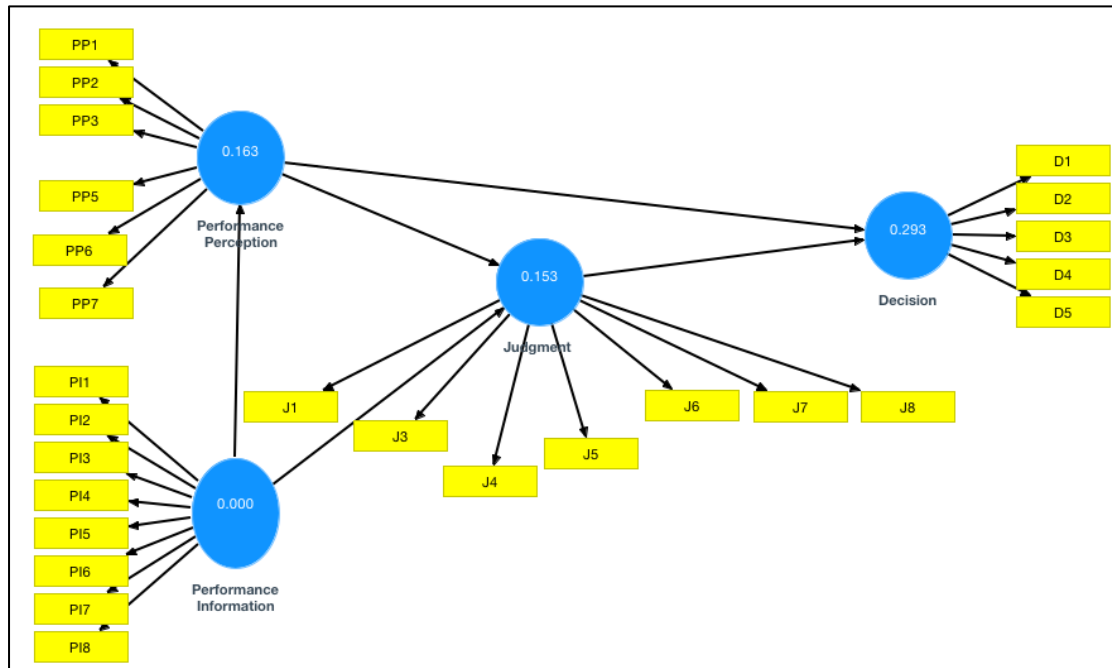
Figure 23 screen shot of smart PLS result of Blindfolding Process

(Source:Author)

Table 41 Construct cross validated Redundancy

	SSO	SSE	$Q^2 \leq$ (=1-SSE/SSO)
Decision	1,020.000	721.085	0.293
Judgement	1,428.000	1,209.066	0.153
Performance Information	1,632.000	1,632.000	
Performance Perception	1,224.000	1,024.322	0.163

(Source:Author)

5.5.6. Importance – Performance Matrix Analysis (IPMA)

The IPMA extends the findings of the PLS-SEM basic analysis using latent variables scores. According to Hair et al (2013a, p. 206) this "extension builds on PLS-SEM estimates of the path model relationships and adds additional dimension to the analysis which considers the average values of the latent variables". In IPMA the importance represented by the structural model total effects and the Performance emphasised by the average values of the latent

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variables scores that draw the attention to the significant areas for the improvement on the specific focus of the model. In order to execute an IPMA in Smart PLS it is required to define a key target construct. Decision is selected as target construct in this thesis. The results of IPMA are shown in Figures 24 and 25 and Table 42. The number inside the constructs is the performance of each latent variable on a scale from 0 to 100 where the higher is the number the higher is the performance of that construct. Meanwhile the numbers beside each of the arrows are the standardized path coefficients that indicate how strong the relationships between the constructs are.

Table 42 IPMA results

Index values and Total Effects of the IPMA of Decision		
Construct	Construct Total Effects for [Decision] i.e. Importance	Construct Performances for [Decision
Judgement	0.618	79.423
Performance Perception	0.245	68.538
Performance Information	0.426	69.825

(Source: Author)

To represent IPMA results of the key target construct (Decision), Figure 38 and 39 in the Appendix shows both criteria of importance and performance. The x-axis represents the total effects of Performance Perception, Judgement and Performance Information on the target construct, Decision. The y-axis displays the rescale average construct scores of Performance Perception, Judgement and Performance Information. The finding indicated that Judgement was most important constructs to explain the Decision construct. An increase of one point in the performance of Judgement is expected to increase the performance of Decision by the value of the total effect, which is 0.618. Although, the performance of Performance Perception and

Performance Information are close to each other (68.5 and 69.8) but the importance of performance Perception is lower than Performance Information with a value of 0.245 and 0.426 respectively.
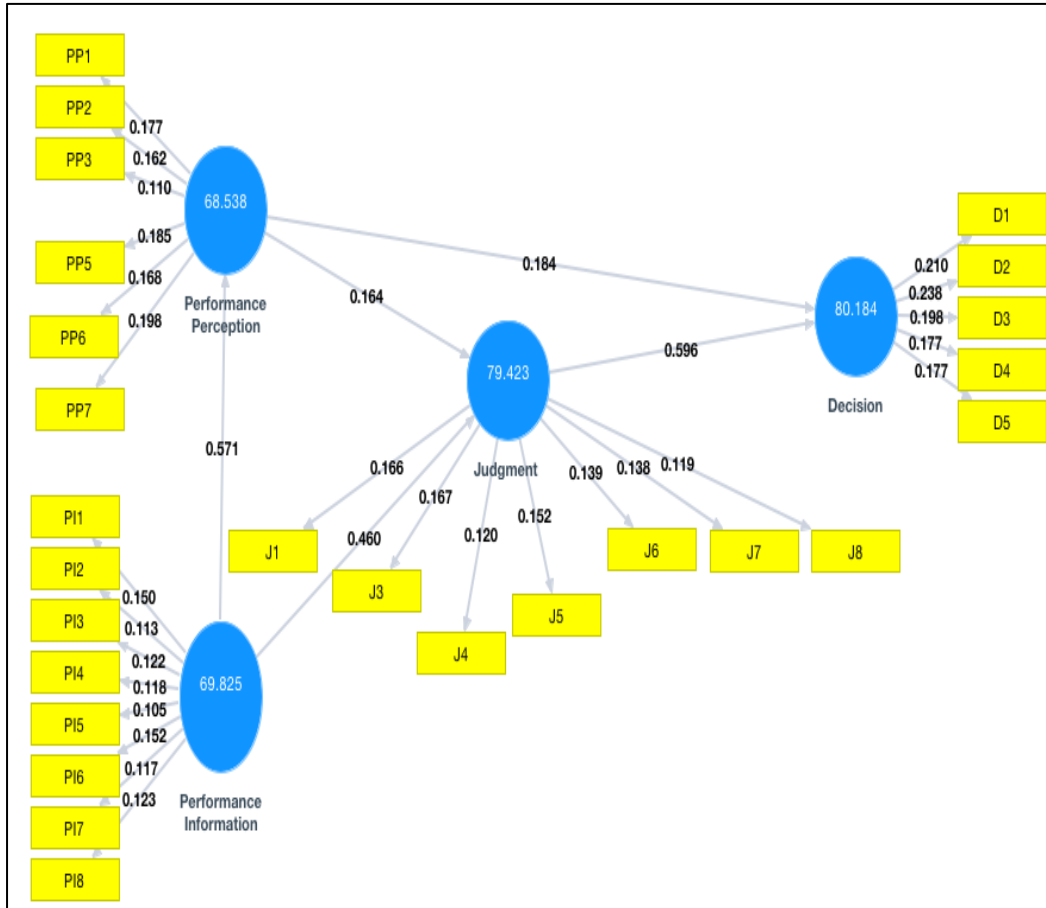
Figure 24 screen shot of IPMA results

(Source: Author)
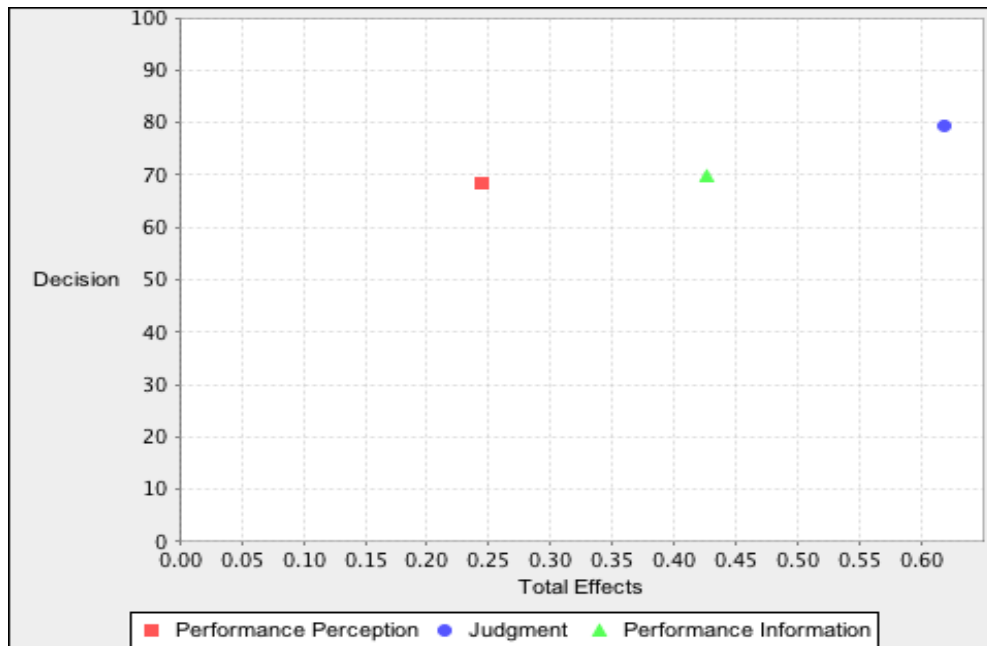
Figure 25 IPMA representation of Decision construct

(Source: Author)

5.6. Testing Moderating Impact/Effect

The direction or the strength of a relationship between the dependent and independent variable can be influence by a moderator. Normally researchers are interested to test the moderating effect, which they prefer to do after examining the direct path relationships within the model of the study. According to Hair et al (2013a), heterogeneity appears when a group of two or more respondents of a study reveal significant differences in their model relationships. Thus it is important to compare between groups of respondents from both theoretical and practical perspectives. So the researcher tested four demographic variables: gender, age, educational level and experience. A Moderator can be a qualitative or a quantitative variable. There are two different ways to examine the moderating effect in the structural models. The first method is using the interaction effect while the second is using the Multi-Group Analysis (MGA). In the first approach or method, a new structural

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relationship is represented when a moderating effect is applied in the path model. The second approach is widely used when the moderator or the independent variable are categorical in nature. However, the latter approach required the following specific parameters.

Table 43 Requirements for PLS-MGA

1	The number of observations in each group.
2	Path Coefficients of each group in order to compared.
3	Standard errors of the estimates of each group. (Obtained via bootstrapping procedure)

(Source:Author)

Previously the smart-PLS software does not provide a PLS-MGA tool, therefore the researcher has to run each group analysis separately and calculate this test by hand (i.e. calculate t-value, p-value and df.). Yet the recent Smart PLS versions 3 makes it easy for the researcher since this tool is now available. The researcher can use the same data set without having to run the analysis separately, he/she can specify criteria for the groups only and run the analysis once. The path differences between the groups are compared along with t-test to determine the signification.

The MGA is used in this thesis to investigate the impact of moderators on the model. The main reason that motives the researcher to use the MGA approach instead of the interaction approach is that most of the moderators examined in this research were categorical variables rather than continuous variables. In such cases MGA is recommended (Baron & Kenny,1986; Sauer & Dick,1993). Also, the objective of this analysis it to verify whether the paths

between different groups were significantly different (or not) which helps the researcher to understand if different moderators have an influence on the path strength and direction.

5.6.1. Moderation Effect of Gender

The gender of respondents was a categorical variable (i.e. male or female) in the questionnaire; therefore, it does not require any refinement. 66 out of the 204 of the respondent were female which represent (32%) and 136 (66.67%) were male. It is important to mention here that the number of females in the group is lower than the recommended number or less than the ten rule of thumb were the group should be 10 x 8 (eight here is the largest number of indicators measuring a construct in the measurement model). However, the number of females is a true representation of the population where the female employees in auditing in Oman SAI are less than 50%.

The MGA process results are presented in Table 44 and Table 45. The results indicated as it clears from Table 44, that most of the Path coefficients in bootstrapping in female group were different than in the male group. However, looking at the t-value and p-value, it was clear that most of them are not statistically significant for the female group except for one path, which was Performance Information to Performance Perception. The case was different in the male group where most of the t-value and p-value presents a statistically significance path relationship except for the last two paths: Performance Perception to Decision and Performance Perception to Judgement. In order to conclude if there was a really significance difference between the two group (i.e. male and female), it was necessary to check the

MGP analysis table of difference path coefficient and its p-value. The finding in Table 45 showed that at (5% two tail test) only one path coefficient was statistical significant different between male female which is Judgement to Decision where that difference was equal to 0.383. Therefore we rejected the null hypotheses H0.6c: the path coefficients (Judgement-Decision) are not significantly different between male and female ($e.g.\beta xx^{(1)} = \beta xx^{(2)}$)=0. The hypothesis suggested that the influence of judgement toward decision is moderated for gender. Consequently, the alternative hypothesis was not rejected (H1.6c): the path coefficient (Judgement-Decision) was different between male and female population (i.e. $\left|\beta J > D^{(1)} - \beta J > D^{(2)}\right| > 0$). The case was different with all other path coefficients as none of them were statistically significant. Therefore, for all other path relations there were no statistical evidence of differences between male and female groups. The finding presented in Table 46 reveal the reliability (e.g. Composite and Cronbach's alpha), AVE and R square of both groups. All of the AVE values for constructs in both groups (i.e. male and female) were higher than the threshold so satisfied the criterion of convergent validity, except for Performance Perception for the female group. Meanwhile, Cronbach's Alpha and composite reliability were larger than 0.7 and 0.8 respectively thus satisfied the internal consistency of the measurement model of both groups. Additionally, Decision had the highest R^2 in both groups (57% male and 46%female). Whereas, R^2 of other constructs in both groups did not differed much even though the male group was the slightly higher. Table 84 shows the interval confidence of the groups in the Appendix.

Table 44 Path coefficients, bootstrapping results of male and female group

	Path Coefficients Mean (female)	Path Coefficients Mean (male)	STERR (female)	STERR (male)	t-Values (female)	t-Values (male)	p-Values (female)	p-Values (male)
Judgement -> Decision	0.359	0.669	0.190	0.115	1.608	5.972	0.108	0.000
Performance Information -> Judgement	0.247	0.541	0.174	0.135	1.167	4.148	0.244	0.000
Performance Information -> Performance Perception	0.600	0.591	0.112	0.076	5.104	7.610	0.000	0.000
Performance Perception -> Decision	0.382	0.143	0.197	0.093	2.164	1.333	0.031	0.183
Performance Perception -> Judgement	0.392	0.099	0.236	0.161	1.771	0.374	0.077	0.709

(Source:Author)

Table 45 PLS MGA (Multi-Group Analysis)

	Path Coefficients-diff (| male - female |)	p-Value (male vs female)
Judgement -> Decision	0.383	0.050
Performance Information -> Judgement	0.359	0.061
Performance Information -> Performance Perception	0.006	0.501
Performance Perception -> Decision	0.302	0.901
Performance Perception -> Judgement	0.358	0.884

(Source:Author)

Table 46 Moderators Reliability and Quality Criteria

Reliability and Quality criteria of Male Group				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.907	0.666	0.871	0.567
Judgement	0.878	0.516	0.837	0.393
Performance Perception	0.898	0.530	0.870	0.355
Performance Information	0.858	0.508	0.805	

Reliability and Quality criteria of Female Group				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.830	0.511	0.748	0.467
Judgement	0.875	0.514	0.834	0.385
Performance Perception	0.832	0.413	0.783	0.373
Performance Information	0.874	0.547	0.826	

(Source:Author)

Moreover, the values of the parametric test of difference and the Welch-Satterthwaite test, which are presented in Tables 47 and 48 for the male and female groups, suggests that there were no differences between the path coefficient of male and female groups at the 5 % level of significance. Therefore, there was no enough statistical evidence to support the hypothesis of any difference between the gender groups regarding the way they use Information and Perception in PA as well as making their Judgement and Decision chose (i.e. H0.6a, H0.6b, H0.6c, H0.6d and H0.6e).

Table 47 Parametric test for male and female MGA

Hypothesis /paths	Path Coefficients-diff (| male - female |)	t-Value (male vs female)	p-Value (male vs female)
Judgement -> Decision	0.383	1.816	0.071
Performance Information -> Judgement	0.359	1.567	0.119
Performance Information -> Performance Perception	0.006	0.043	0.966
Performance Perception -> Decision	0.302	1.590	0.113
Performance Perception -> Judgement	0.358	1.267	0.207

(Source:Author)

Table 48 Welch-Satterthwaite test

Hypothesis	Total Effects-diff (| male - female |)	t-Value (male vs female)	p-Value (male vs female)
Judgement -> Decision	0.383	1.738	0.086
Performance Information -> Decision	0.103	0.803	0.424
Performance Information -> Judgement	0.154	0.919	0.361
Performance Information -> Performance Perception	0.006	0.042	0.966
Performance Perception -> Decision	0.388	1.908	0.059
Performance Perception -> Judgement	0.358	1.262	0.211

(Source:Author)

5.6.2. Moderation effect of Age

Although the age construct was divided into five categories in the demographic section, due to lower number of respondents in each of these categories, the researcher split them into two groups. Group (1) represent the age up to 35 years (51%, n=104) and group (2) represent the age from 36 & above (49%, n=100). The results of the path coefficient of both age groups in Table 49 indicates that there were differences in path coefficients of all pathways in the model between age groups. While all the path coefficients for the older auditors were significant at a p-value of 5 %, the path coefficients of the younger auditors were all significant except for path of PP to D (i.e. Performance perception toward Judgement and PP to D Performance Perception toward Decision).

Furthermore, results of PLS-MGA for age group shown in Table 49 and 50 confirmed that $\left|\beta^{(1)} - \beta^{(2)}\right| > 0$ for only for two paths. The first one is PI to J (i.e. Performance Information towards Judgement), was statistically significant at 5 % level. The path coefficient difference between age group $\left|\beta^{(1)} - \beta^{(2)}\right| > 0$ in the latter path was 0.420 with p-value of 0.012. In addition, the same finding can be confirmed via the parametric test (see Table 51) where the path coefficients difference was 0.420 with t-value of 2.220 and p-value of 0.028 and in Welch-Satterthwaite (table 52) the results of path coefficients difference for the same path also equal 0.420 of t-value of 2.231 and p-value of 0.028. Therefore we fail to rejected the null hypothesis H0.7b: the path coefficient (PI to J) are significantly different between the younger and older age groups (i.e. $\left|\beta PI > J^{(1)} - \beta PI > J^{(2)}\right| > 0$). As a result, we do reject the

alternative hypothesis H1.7b the path coefficient (PI to J) was not different between the younger and older age groups $(e.g. \beta PI > J^{(1)} = \beta PI > J^{(2)})$ =0. The second path, which its path coefficient difference was statistically significant, is PP>J.

According to the finding in the parametric test and the Welch-Satterthwiat test the path coefficient differences was 0.449 with t-value of 2.008, 2.019 and p-value of 0.046 respectively. Thus the null hypothesis H0.7a: the path coefficient (PP to J) is significantly different between the younger and older age group was not rejected $(i.e. |\beta PP > J^{(1)} - \beta PP > J^{(2)}| > 0)$. On other hand, the alternative hypothesis was rejected (H1.7a): the path coefficient (PP to J) was different between the younger and older age group $(e.g. \beta PP > J^{(1)} = \beta PP > J^{(2)})$=0. All the other path coefficients differences were not statistically significant, thus there was no evidence of differences between the younger and older age groups for those paths (i.e. H0.7c, H0.7d and H0.7e)

Table 49 Path coefficient results of bootstrapping in Multi-Group analysis (Age)

Path	Path Coeffi. Mean (Age group (1)	Path Coeffi. Mean (Age group (2)	STERR (Age group (1)	STERR (Age group (2)	t-Values (Age group(1)	t-Values (Age group(2)	p-Values (Age group(1)	p-Values (Age group(2)
J -> D	0.645	0.483	0.181	0.092	3.740	5.172	0.000	0.000
PI -> J	0.616	0.254	0.149	0.117	4.430	2.049	0.000	0.041
PI -> PP	0.600	0.594	0.097	0.075	6.039	7.580	0.000	0.000
PP -> D	0.150	0.294	0.158	0.087	0.754	3.360	0.451	0.001
PP -> J	0.027	0.398	0.178	0.136	0.212	3.034	0.832	0.003

(Source:Author)

Table 50 PLS Age multi-group analysis

	Path Coefficients-diff (| Age group (1) – Age group(2) |)	p-Value (Age group(1) vs Age group(2))
J -> D	0.205	0.158
PI -> J	**0.420**	**0.012**
PI -> PP	0.013	0.445
PP -> D	0.173	0.832
PP -> J	0.449	0.972

(Source:Author)

Table 51 Parametric test for MGA of age group

	Path Coefficients-diff (| Age group (1) – Age group (2) |)	t-Value (Age group(1) vs. Age group(2)	P-Value (Age group (1) vs. Age group (2)
J -> D	0.205	1.003	0.317
PI -> J	**0.420**	**2.220**	**0.028**
PI -> PP	0.013	0.102	0.919
PP -> D	0.173	0.954	0.341
PP -> J	**0.449**	**2.008**	**0.046**

(Source:Author)

Table 52 Welch-Satterthwiat test of MGA age Group

	Path Coefficients-diff (| Age group (1) -Age group(2.0) |)	t-Value (Age group(1) vs. Age group(2)	P-Value (Age group (1) vs. Age group (2.0)
J -> D	0.205	1.015	0.312
PI -> J	**0.420**	**2.231**	**0.028**
PI -> PP	0.013	0.103	0.918
PP -> D	0.173	0.964	0.337
PP -> J	**0.449**	**2.019**	**0.046**

(Source:Author)

Meanwhile Table 53 presents the convergent validity and discriminant validity of all the constructs for the different age groups. It was clear that the AVE computed for the majority of the constructs in both age groups were higher than the threshold acceptable value of 0.5 except for Performance Perception for the younger age group that had 0.495 yet it is almost 5. Thus the results suggest acceptable level of convergent validity for the measurement model between the items and the latent variables. Moreover, the internal consistency measures Cronbach alpha for all constructs in both group was higher than 0.7

and the composite reliability was higher than 0.8 this satisfied the required level. Consequently, both group measurement models satisfied the reliability requirements. For the younger age group the R^2 values were higher in all the constructs compared to the older age group. The model for the younger group explained the highest shared variance into dependent constructs Decision (R^2 0.552 almost 60%) followed by Judgement ($R^2 = 0.441, 44\%$) and Performance Perception (R^2 =0.369). In comparison, the older age group model explained the highest shared variance into dependent constructs Decision ($R^2 = 0.486, 50\%$) followed by Judgement and Perception ($R^2 = 0.362, 36\%$ and $0.358, 36\%$) respectively.

Table 53 Moderators reliability and Quality Criteria

Reliability and Quality criteria of younger age Group				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.894	0.637	0.851	0.552
Judgement	0.878	0.521	0.836	0.441
Performance Perception	0.883	0.495	0.849	0.369
Performance Information	0.864	0.522	0.814	

Reliability and Quality criteria of Older age Group				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.886	0.614	0.839	0.486
Judgement	0.874	0.503	0.832	0.362
Performance Perception	0.892	0.516	0.861	0.358
Performance Information	0.865	0.522	0.811	

(Source:Author)

5.6.3. Moderation effect of Education/Qualification level

The nature of the qualification moderator was categorical as the categories were high school degree (n=14), bachelor degree (n=123), master degree (n=24), Professional qualification e.g. PhD, ACCA, CMA etc. (n=28) and others (n=15). Due to the low number of respondents, the qualification level moderator was divided into two groups in order to observe the impact. The

first group combined the high school degree with bachelor degrees (n=137) while the second group combined master degree with professional qualification and other degrees (n=67).

It was noticed from the results of that path coefficients for all paths in the model were not statistically different between the two qualification groups, see Tables 54, 55, 56 and 57. All the results were consistent with the PLS MGA, Parametric test and Welch-Satterthwaite tests. Therefore all-null hypotheses were rejected which suggested that there were significant differences between the different qualification level path coefficients in all paths in the model (i.e. $\left|\beta^{(1)} - \beta^{(2)}\right| > 0$). As a result we reject the null hypotheses (i.e. H0.8a, H0.8b, H0.8c, H0.8d and H0.8e) in this multi-group analysis, and the alternative hypothesis were not rejected which suggested that there is no difference between path coefficients in both the qualification levels in all the paths in the model ($e.g. \beta^{(1)} = \beta^{(2)}$) =0.

Table 54 Path coefficient result (bootstrapping for Qualification level groups)

Path/ hypot heses	Path Coeffic ients Mean (Qualif ication Level(1))	Path Coeffic ients Mean (Qualif ication Level(2))	STER R (Quali ficatio n Level(1))	STER R (Qualif ication Level(2))	t- Values (Qualif ication Level(1))	t-Values (Qualifica tion Level(2))	p- Values (Qualif ication Level(1))	p-Values (Qualifica tion Level(2))
J -> D	0.700	0.469	0.131	0.135	5.692	3.310	0.000	0.001
PI -> J	0.521	0.356	0.162	0.178	3.346	1.800	0.001	0.072
PI -> PP	0.582	0.639	0.084	0.056	6.819	10.955	0.000	0.000
PP -> D	0.106	0.324	0.116	0.131	0.525	2.433	0.600	0.015
PP -> J	0.287	-0.074	0.192	0.212	1.343	0.284	0.180	0.776

(Source:Author)

	Path Coefficients-diff (| Qualification Level (1) – Qualification Level (2) |)	p-Value (Qualification level (1) vs. Qualification level (2))
J -> D	0.295	0.070
PI -> J	0.220	0.184
PI -> PP	0.039	0.640
PP -> D	0.258	0.918
PP -> J	0.318	0.137

(Source:Author)

	Path Coefficients-diff (| Qualification Level (1) – Qualification Level (2) |)	t-value (Qualification Level (1) vs. Qualification Level(2))	P-Value (Qualification Level (1) vs. Qualification Level(2))
J -> D	0.295	1.416	0.158
PI -> J	0.220	0.841	0.401
PI -> PP	0.039	0.309	0.757
PP -> D	0.258	1.361	0.175
PP -> J	0.318	1.024	0.307

(Source:Author)

	Path Coefficients-diff (|Qualification Level (1) – Qualification Level (2) |)	t-value (Qualification Level (1) vs. Qualification Level (2))	P-Value (Qualification Level (1) vs. Qualification Level (2.0))
J -> D	0.295	1.579	0.118
PI -> J	0.220	0.920	0.360
PI -> PP	0.039	0.388	0.699
PP -> D	0.258	1.478	0.143
PP -> J	0.318	1.119	0.266

(Source:Author)

Moreover, Table 58 displays the convergent validity and discriminant validity of the constructs in the model in both qualification level groups. According to the finding there were no issue regarding the reliability nor the convergent validity since none of the Composite reliability and Cronbach's alpha values were less than 0.8 and 0.7 respectively. At the same time most of the AVE in both groups were above the acceptable level of 0.5 except for the Performance Perception in qualification level 2, it was 0.487 which is almost 0.5.

Furthermore, at the qualification level (1) R^2 value of Decision and Judgement constructs were higher compared to the qualification level (2). The model for the qualification level (1) explain highest shared variance into dependent constructs decision ($R^2 = 0.614, 61.4\%$) followed by Judgement (R^2=0.559, 60%) and Performance Perception ($R^2 = 0.346$, 35%). In comparison the qualification level 2 group model explained highest shared variance into Performance Perception ($R^2 = 0.411, 41.1\%$) followed by Decision (R^2=0.399, 40%) then Judgement ($R^2 = 0.149, 15\%$).

Table 58 Reliability and Quality criteria for the qualification level group

Reliability and Quality of Qualification level (1)				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.883	0.608	0.833	0.614
Judgement	0.882	0.522	0.842	0.559
Performance Perception	0.893	0.517	0.862	0.346
Performance Information	0.866	0.523	0.815	

Reliability and Quality of Qualification level (2)				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.905	0.662	0.870	**0.399**
Judgement	0.867	0.502	0.823	0.149
Performance Perception	0.878	**0.487**	0.840	0.411
Performance Information	0.857	0.508	0.808	

(Source:Author)

5.6.4. Moderation Effect of Experience

Like all other moderators, experience is categorical variable. Due to the lower respondents in each category, this moderator was subdivided into two groups; experience level (1), which includes respondents who had less than 9 year of experience, and experience level 2 which includes respondents who had experience above 10, representing 43% and 57% respectively.

The bootstrapping process of the two groups results presented at Table 59 indicated that all of the path coefficients in experience level 1 were different from experience level 2. However, looking at the t-value and p-value, there were two paths in the experience level (1) which were not statistically significant (i.e. Performance Perception to Decision and Performance Perception to Judgement). Whereas, all other paths coefficient in level 2 are statistically significant.

In addition, Table 60 of the PLS-MGA test revealed that there was only One-path coefficient (i.e. Performance Information to Judgement) that was significant difference between the two groups of experience level in the model, (i.e. Path coefficients-diff=0.436 and p-value of 0.008). Meanwhile, the parametric test and Welch-Satterthwaite test for experience level groups shown in Tables 61 and 62 showed that there were two pathways with significant different in the path coefficients which are; Performance Information to Judgement with (t=2.501, P-value 0.013) and (t=2.452, P-value 0.016) and Performance Perception to Judgement (t=2.394, P-value 0.018) and (t=2.319, P-value 0.023) respectively. The pervious results suggest that hypotheses like H0.9a: the path coefficients of Performance Information to Judgement are significantly different between the experience level (1) and (2). So $(\text{i.e.} \left| \beta PI > J^{(1)} - \beta PI > J^{(2)} \right| > 0)$ was not rejected. Instead the alternative hypothesis was rejected H1.9a: the path coefficient of Performance Information to Judgement was not different between experience level (1) and level (2) population $(e.g. \beta PI > J^{(1)} = \beta PI > J^{(2)})$ =0. Similarly the hypothesis H0.9b: the path coefficients of Performance Perception to Judgement are significantly different between the experience level (1) and Level (2)

$\left(\text{i. e.} \left|\beta PP > J^{(1)} - \beta PP > J^{(2)}\right| > 0\right)$ was not rejected. Thus the alternative hypothesis was rejected H1.9b (i.e. the path coefficients of Performance Perception > Judgement) was not significantly different between the two experience level $\left(e.\,g.\,\beta PP > J^{(1)} = \beta PP > J^{(2)}\right)$ = 0. Since all other path coefficients at the other path/hypotheses were not significant we had insufficient evidence to support the difference between the two groups of experience level in those pathways (i.e. H0.9c, H0.9d and H0.9e).

Table 59 Path coefficients results in bootstrapping for experience level.

	Path Coefficients Mean (Experience level (1))	Path Coefficients Mean (Experience level (2))	STERR (Experience level (1))	STERR (Experience level (2))	t-Values (Experience level(1))	t-Values (Experience level(2))	p-value(Experience level(1))	p-Values (Experience level(2))
J -> D	0.594	0.542	0.217	0.111	2.924	4.958	0.004	0.000
PI -> J	0.661	0.261	0.143	0.107	4.799	2.330	0.000	0.020
PI -> PP	0.557	0.633	0.109	0.070	4.897	8.823	0.000	0.000
PP -> D	0.163	0.256	0.182	0.105	0.621	2.352	**0.535**	0.019
PP -> J	-0.044	0.413	0.187	0.129	0.559	3.243	**0.576**	0.001

(Source:Author)

Table 60 MGA PLS for the experience level groups

	Path Coefficients-diff (| Experience level(1) – Experience level(2) |)	p-Value (Experience level(1) vs _ Experience level(2))
J -> D	0.088	0.322
PI -> J	**0.436**	**0.008**
PI -> PP	0.081	0.733
PP -> D	0.134	0.745
PP -> J	0.524	0.982

(Source:Author)

Table 61 Parametric test for experience level groups

	Path Coefficients-diff (| Experience level(1) – Experience level(2) |)	t-Value (Experience level(1) vs. Experience level(2))	p-Value (Experience level(1) vs. Experience level(2.0))
J -> D	0.088	0.388	0.698
PI -> J	**0.436**	**2.501**	**0.013**
PI -> PP	0.081	0.658	0.511
PP -> D	0.134	0.679	0.498
PP -> J	**0.524**	**2.394**	**0.018**

(Source:Author)

Table 62 Welch-Satterthwaite test for experience level groups

	Path Coefficients-diff (| Experience level(1) – Experience level(2) |)	t-Value (Experience level(1) vs. Experience e level(2))	p-Value (Experience level(1) vs. Experience level(2))
J -> D	0.088	0.361	0.719
PI -> J	**0.436**	**2.452**	**0.016**
PI -> PP	0.081	0.630	0.530
PP -> D	0.134	0.642	0.523
PP -> J	**0.524**	**2.319**	**0.023**

(Source:Author)

To check the model quality criteria for both groups of experience, Table 63 summaries some of the points. The findings present reliability (e.g. composite and Cronbach's alpha) as well AVE value plus R^2. The composite reliability and cronbach's alpha values were all higher than the acceptable level of 0.8 and 0.7 respectively for all the constructs in both models. Therefore, the internal consistency of the model of both groups satisfied. Moreover, the AVE of the constructs in experience level 2 was above 5 (i.e. the threshold value) but for experience level 1, there were almost 5 for all the constructs except for Decision, which was 0.585. Thus we can conclude the results suggest acceptable levels for the measurement model of both groups. The model for experience level1 explained highest shared variance into dependent constructs Decision (R^2=0.500) followed by Judgement ($R^2 = 0.499$) and then Performance Perception (R^2=0.322). In comparison for experience level 2 model explained highest shared variance into dependent constructs Decision

$(R^2 = 0.533)$ followed by Performance Perception $(R^2 = 0.406)$ then Judgement $(R^2 = 0.391)$

Reliability and Quality criteria of experience level 1				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.866	0.585	0.809	0.500
Judgement	0.864	0.496	0.812	0.449
Performance Perception	0.872	0.476	0.834	0.322
Performance Information	0.842	0.489	0.799	

Reliability and Quality criteria of experience level 2				
Constructs	Comp: Reliability	AVE	Cronbach's Alpha	R square
Decision	0.901	0.649	0.862	0.533
Judgement	0.887	0.534	0.851	0.391
Performance Perception	0.896	0.524	0.866	0.406
Performance Information	0.872	0.537	0.824	

(Source:Author)

5.7. Overall Model Assessment

According to Rigdon (2012), PLS-SEM is considered as a prediction-oriented approach to SEM therefore should be treated with its own suitable set of evaluation criteria. However, others like Sarstedt et al (2014) believe that the latter should not make the methodological researcher stop seeking for solutions to the limitations of the method, like its inability to detect model misspecification. Those researchers should focus more on answering the question such as whether the path model is able to explain the observed correlations between constructs adequately which helps avoid model misspecification.

The fit term itself has different meaning in the context of CB-SEM and PLS-SEM, while in CB-SEM it refer to the distance between the observed covariance matrix and an implied covariance, in PLS-SEM it refer to the

degree to which the correlations or covariance–based criterion is being maximized (Sarstedt et al,2014). The R-square based goodness of fit indices (GoF) was proposed by Tenenhaus et al (2005, p. 173) for PLS path modelling. It is defined as "geometric mean over the average variance explained of the outer model and average variance explained of the inner model". It is important to bring to attention that several articles clearly advise against the use of the GoF indices to validate PLS path models globally such as (Hair, Hult, Ringle, & Sarstedt, 2014; Hair, Ringle, & Sarstedt, 2013; Hair, Sarstedt, Pieper, et al., 2012; Hair, Sarstedt, Ringle, et al., 2012)

Moreover, standardized root mean square residual (SRMR) a measure of approximate fit proposed as global model assessment that now is provided in Smart PLS (3). SRMR is the Euclidean distance between the empirical correlation matrix and the model implied correlation matrix yet the developed guidelines of it is use and the threshold criteria still not discussed in depth in the literature. The researcher as well agreed with Sarstedt et al (2014) point of view; that evaluation criteria can help detect misspecification yet they are not adequate to avoid them. Thus researcher should establish theoretically grounded model that have high predicative power instead of relying on model fit.

5.7.1.1 Goodness of fit index (GOF)

The last criterion to be examined is the overall fit of the model, as mentioned in the previous section that Tenenhaus et al (2005) introduced a global criterion of goodness of fit (GoF) index, calculated as following :

$$GoF = \sqrt{(\emptyset R^2 \left(X_{jh} \right) \ X \ \emptyset R^2 \left(\eta_j \right))}$$

Where the first part is the average communality (i.e. outer model assessment) and the average R^2 of the endogenous latent variables (i.e. inner model assessment) .The GoF is the range between 0 to 1, the higher value present better path model estimation (Henseler et al,2009b). The GoF of this study model was $= \sqrt{0.5425 * 0.377} = 0.4522$ (45%) which is considered as moderate level.

5.7.1.2 SRMR

The second criterion recommended to examine for model validation purposes was standardized root mean square residual SRMR that it known as a measure of approximate fit. It is defined as the root mean square discrepancy between the empirical correlations matrix and the model-implied correlations matrix (Henseler et al,2014). According to Henseler et al (2014) the use of SRMR in PLS can help to detect model misspecification as long as a composite factor model is assumed. The recommended threshold value is 0.08 (Hu & Bentler,1998; Hu & Bentler,1999). The SRMT of model in this study is 0.06 that is consistent with the GoF results confirming the validation of the proposed model.

5.8. Measurement Model Results for Second Model

5.8.1. Reliability of the measurement

Following the same criteria in Table 29 in the reliability of the measurement section where the first model is discussed earlier in this chapter, the following needs to be examined (standardised outer loadings, Composite reliability and Cronbach's Alpha). It is clear from the finding in Table 64 that the standardized outer loadings value for items used in the model range from 0.636 to 0.842 which were satisfy the requirements of the minimum criterion 0.4 which were discussed earlier (Churchill Jr,1979; Hair et al,2013a). What is noticed in this model is that only one item was deleted in order to improve the value of the AVE (i.e. J2) and there was no need to delete PP4 here since the performance perception was divided in to two parts (democratic and responsive) and the AVE for each is above 0.5 as we can see from Table 64 and Figures 26 & 27. Moreover, the composite reliabilities and Cronbach's alpha values for all indicators were all above the cut-off point of 0.8 and 0.7 respectively. Thus this model fulfils the requirement of construct reliability.

Table 64 AVE, Composite reliability and Cronbach's Alpha for second model

Items & Latent variables	Factor loading Smart PLS	AVE	Composite reliability	Cronbach's Alpha smart PLS	Cronbach's Alpha SPSS
Performance Information					
PI1	0.711				
PI2	0.700				
PI3	0.786				
PI4	0.695	0.502	0.88917324	0.857371415	0.857
PI5	0.636				
PI6	0.774				
PI7	0.641				
PI8	0.710				
Responsive Performance Perception					
PP1	0.750				
PP2	0.831	0.581	0.84697486	0.759764753	0.759
PP3	0.758				
PP4	0.705				
Democratic Performance Perception					
PP5	0.815	0.640	0.84180468	0.717959845	0.714
PP6	0.761				
PP7	0.823				
Judgement					
J1	0.689				
J3	0.756				
J4	0.688				
J5	0.739	0.519	0.88292756	0.845175779	0.842
J6	0.740				
J7	0.745				
J8	0.683				
Decision					
D1	0.791				
D2	0.842				
D3	0.833	0.632	0.895328379	0.853527482	0.851
D4	0.751				
D5	0.751				

(Source:Author)
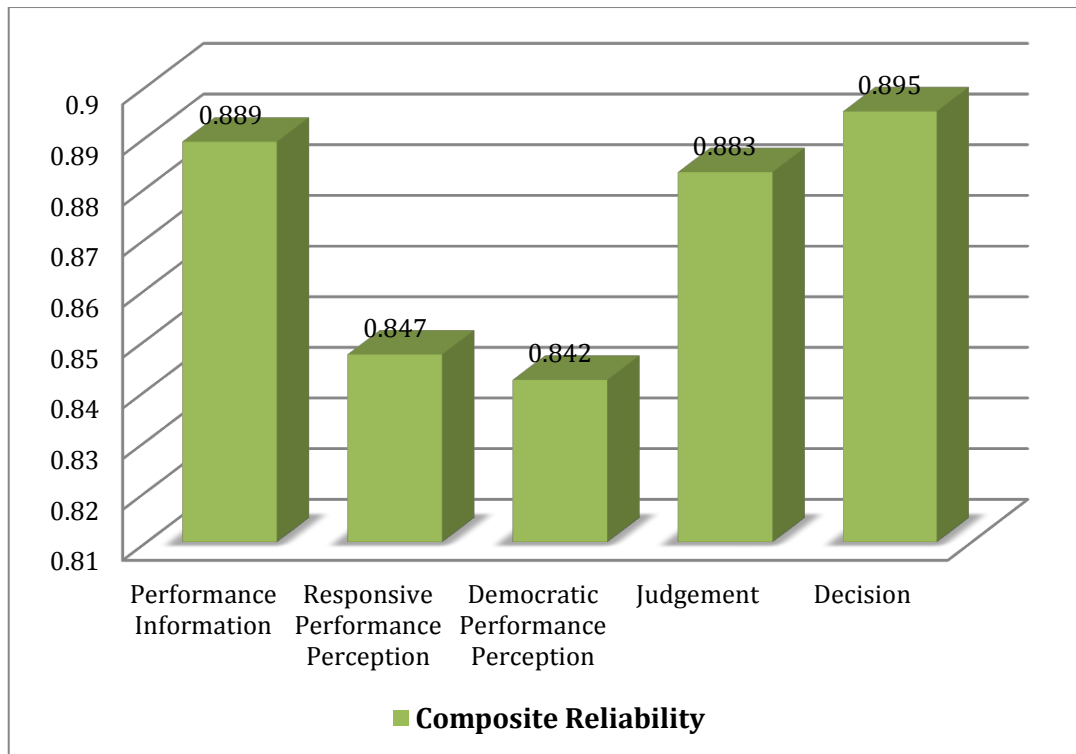
(Source: Author)

(Source: Author)

5.8.2. Convergent validity

To verify the convergent validity, we needed to check the value of the AVE for each construct in the model, which should score above the cut-off point of 0.5. Looking at the summary of the result in Table 64, it was noticed that all the construct AVE value were above 0.5 were no items needed to be deleted expect for J2 to meet the criterion.

5.8.3. Discriminant validity

The discriminant validity in second model was examined first by using Fornell and Larcker criterion for construct level. Then comparison was made between the loading of the constructs indicators and it's cross loading with other constructs for verifying discriminant validity at item level. Table 65 show the results of the square root of AVE values of each constructs and the correlation with other constructs. The finding suggested that the square root of AVE values range between 0.709 and 0.800 were none of the correlations were higher than the square root AVE of the constructs itself. Thus the latter concluded that the constructs in this model share more variance with their associated items than with any other construct, therefore satisfying the discriminant validity criteria. Also, Table 66 present the cross loading value of all the items. The results showed that all indicators' outer loadings on their associated constructs were higher than all of their loadings with other constructs.

Table 65 Fornell-Larcker criteria

Constructs	Decision	Democratic Performance Perception	Judgement	Performance Information	Responsive Performance Perception
Decision	0.795				
Democratic Performance Perception	0.397	0.800			
Judgement	0.674	0.406	0.720		
Performance Information	0.561	0.543	0.552	0.709	
Responsive Performance Perception	0.402	0.641	0.381	0.480	0.762

(Source:Author)

Table 66 Cross Loading for second Model

Items	Decision	Judgement	Performance Information	Responsive Performance Perception	Democratic Performance Perception
D1	**0.791**	0.518	0.430	0.349	0.405
D2	**0.842**	0.583	0.456	0.396	0.388
D3	**0.833**	0.543	0.472	0.269	0.264
D4	**0.751**	0.499	0.442	0.270	0.225
D5	**0.751**	0.529	0.431	0.301	0.279
J1	0.431	**0.689**	0.444	0.293	0.297
J3	0.506	**0.756**	0.472	0.378	0.327
J4	0.440	**0.688**	0.370	0.182	0.250
J5	0.503	**0.739**	0.423	0.162	0.274
J6	0.526	**0.740**	0.377	0.299	0.310
J7	0.451	**0.745**	0.415	0.286	0.330
J8	0.538	**0.683**	0.271	0.305	0.251
PI1	0.496	0.476	**0.711**	0.314	0.324
PI2	0.390	0.369	**0.700**	0.302	0.296
PI3	0.450	0.452	**0.786**	0.326	0.423
PI4	0.448	0.369	**0.695**	0.315	0.357
PI5	0.225	0.239	**0.636**	0.372	0.399
PI6	0.406	0.452	**0.774**	0.397	0.477
PI7	0.325	0.340	**0.641**	0.259	0.358
PI8	0.417	0.401	**0.710**	0.417	0.414
PP1	0.360	0.295	0.431	**0.750**	0.475
PP2	0.341	0.316	0.389	**0.831**	0.526
PP3	0.211	0.242	0.331	**0.758**	0.458
PP4	0.287	0.300	0.293	**0.705**	0.492
PP5	0.334	0.376	0.434	0.587	**0.815**
PP6	0.311	0.304	0.410	0.513	**0.761**
PP7	0.305	0.290	0.457	0.433	**0.823**

(Source:Author)

5.8.4. Heterotriat-Monotriat ratio (HTMT)

This new discriminant validity criterion suggested by Henseler et al (2015) help researchers to gain confidence about their measurement model. The result in Table 67 show the HTMT ratio values for all the constructs are less than 0.85 except for democratic performance perception but not higher than 0.9. The exact threshold value of the HTMT is still debatable as some suggest 0.85 as the threshold (Clark & Watson,1995), while others suggest 0.9 (Teo et al,2008).The results confirm no violation since none of the values is greater than 0.9. Thus the data in this study do not indicate any discriminate validity issue.

Table 67 Heterotrait-Monotriat ratio (HTMT)

	Decision	Judgement	Performance Information	Democratic Performance Perception	Responsive Performance Perception
Decision					
Judgement	0.792				
Performance Information	0.653	0.641			
Democratic Performance Perception	0.502	0.518	0.687		
Responsive Performance Perception	0.485	0.468	0.583	0.864	

(Source:Author)

5.9. The Structural Model Results for Second Model

A similar procedure as in section 5.4 was applied in order to assess the second model structural model results. In other word all the criteria summarized in Figure 28. The starting point is to assess the collinearity issue among the predictor constructs in the structural model; here the researcher used the VIF values calculated in smart PLS. Tables 68 and 69 show that

none of the VIF value is higher than 5, therefore the collinearity problem is not an issue in this study.

Constructs	Decision	Democratic Performance Perception	Judgement	Performance Information	Responsive Performance Perception
Decision					
Democratic Performance Perception	1.790		1.932		
Judgement	1.234				
Performance Information		1.000	1.480		1.000
Responsive Performance Perception	1.748		1.771		

(Source:Author)

Indicators	VIF
D1	1.848
D2	2.278
D3	2.230
D4	1.713
D5	1.620
J1	1.525
J3	1.765
J4	1.591
J5	1.709
J6	1.706
J7	1.744
J8	1.572
PI1	1.632
PI2	1.663
PI3	2.097
PI4	1.698
PI5	1.440
PI6	1.856
PI7	1.507
PI8	1.788
PP1	1.334
PP2	1.901
PP3	1.700
PP4	1.376
PP5	1.442
PP6	1.321
PP7	1.525

(Source:Author)

5.9.1. Path coefficients

It was noticed that after the changes made, when splitting the Performance Perception, there was slight change in the path coefficients in almost all the pathways. The significance of regression coefficient is tested via t-values, which are obtained via using the PLS bootstrapping process. A samples of 5,000 were applied in the Bootstrap test with cases of 204 equal to the total observation in the study as recommended by Hair et al (2013a).

While Table 70 presents the path coefficients value for individual constructs toward D and J (dependent variables), Table 71 shows the path coefficients for all the hypotheses along with t-values, p-values and to determine the significant level of path coefficients and identify if the theoretical suggested hypotheses are supported or not.

Table 70 Path Coefficients for second model

Constructs	Decision	Judgement	Responsive Performance Perception	Democratic Performance Perception
Decision				
Judgement	0.595			
Responsive Performance Perception	0.129	0.103		
Democratic Performance Perception	0.073	0.095		
Performance Information		0.451	0.480	0.543

(Source:Author)

Table 71 Path Coefficients, t-vale and P-value for second model

Pathways / Hypothesis	Original Sample	Sample Mean	Standard Error	T Statistics	P Values
Judgement -> Decision	0.591	0.577	0.126	4.674	0.000
Performance Information -> Democratic Performance Perception	0.543	0.552	0.054	10.024	0.000
Performance Information -> Judgement	0.446	0.439	0.121	3.673	0.000
Performance Information -> Responsive Performance Perception	0.480	0.491	0.078	6.165	0.000
Responsive Performance Perception -> Decision	**0.135**	**0.148**	**0.092**	**1.468**	**0.071**
Responsive Performance Perception -> Judgement	0.096	0.107	0.128	0.747	0.228
Democratic Performance Perception -> Decision	0.068	0.071	0.077	0.884	0.188
Democratic Performance Perception -> Judgement	0.107	0.112	0.084	1.267	0.103

(Source:Author) Note: one tail test, 5%

According to results from the bootstrapping in Table 71, about half of the pathways are not significant as the p-value is not less than 0.05.

The result show that the highest significant path in this model was between Judgement and Decision $(\beta = 0.591 \; or \; 59.1\%)$ with t = 4.464 followed by Performance Information to Democratic Performance Perception path where $(\beta = 0.543 \; or \; 54\%)$ with t = 10.024. Meanwhile it was founded that the path of Performance Information to Judgement was also highly significant $(\beta = 0.446 \; or \; 45\%)$ with t = 3.673. These results mean that the Decision by the performance auditors was predominantly influenced by their Judgement. Also, the Judgement itself was highly influenced by the Performance Information, while the Performance Information influences the Democratic Performance Perception. Thus these hypotheses (H5 and H1) were supported. The path of Responsive Performance Perception to Judgement and Democratic

Performance Perception to Judgement were not significant ($\beta = 0.096\ or\ 9.6\%$) with t= 0.747 and ($\beta = 0.107$ or 10.7%) with t=1.267 respectively. Which make us not to supporting the hypothesis (H10 & H11) of those path. The latter suggests that Judgement by performance auditors was not really influenced by neither Responsive nor Democratic Performance Perception.

Similarly, paths of Responsive Performance Perception to Decision and Democratic Performance Perception to Decision were not significant and their hypotheses (H12 & H13) could not be supported. As it can be seen from Table 71 they had very low path Coefficients values of ($\beta = 0.135\ or\ 13.5\%$) t value = 1.468 and ($\beta = 0.068\ or\ 6.8\%$) t value =0.188 respectively. Thus that suggested the un-influence of Responsive and Democratic Performance Perception over the Decision and the reporting by auditors at a level of 5%, but also it seems that Responsive Perception had an influence over the Decision at the10% of significant level. Please check Figure 29 below.
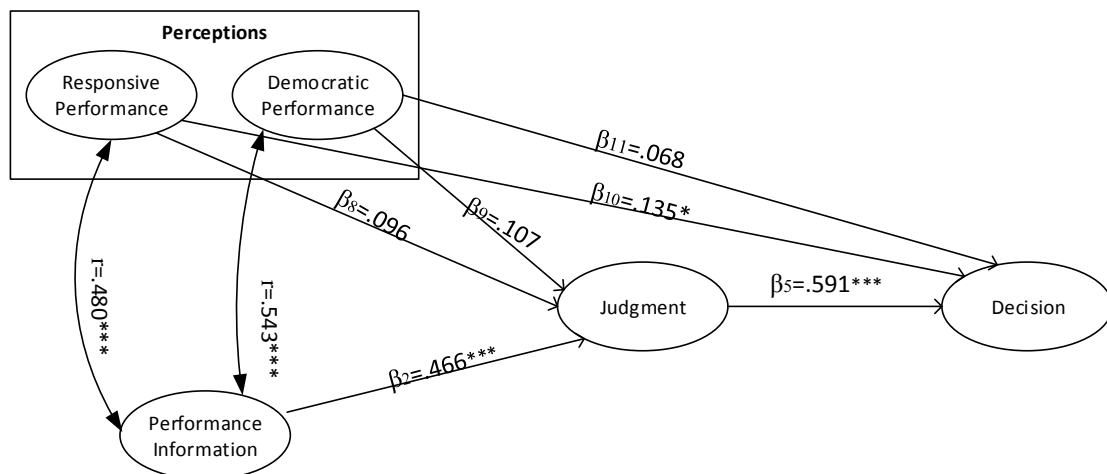
Figure 28: Path coefficient & R-square for modal two

(Source:Author)

5.9.2. Determination of coefficient ($R^2\ value$)

The meaning and the accepted level of R^2 was discussed earlier in Section 5.4.2 therefore this section focuses on presenting the results directly. Based on the nature of this research the R^2 values presented on Table 72 indicated that the structural for the second model is able to explain a moderate amount of the variance for the dependent latent variable of Decision where R^2 equal 0.482 which is similar to the result in model one. The latter presents adequate explanatory power of the structural model. The model also provided the R^2 value of Judgement that was 0.327, which is slightly higher than model one. In addition, R^2 value of Responsive Performance Perception was 0.231 while R^2 value of Democratic Performance Perception was 0.294. All the R^2 in the model display moderate level of amount of variance deemed that the structural model possesses considerable predicative powers. However to avoid bias adjusted R^2 should be used, where this "criteria is modified according to the number of exogenous constructs relative to the size of the sample used" (Hair et al,2013a, p. 176). Table 72 show the result of adjusted R^2 where after adjusting the R^2, the difference is not significant.

Table 72 R-Square and Adjusted R-Square value in second model

Constructs	R Square	Adjusted R Square
Decision	0.482	0.474
Judgement	0.327	0.317
Responsive Performance Perception	0.231	0.227
Democratic Performance Perception	0.294	0.291

(Source:Author)

5.9.3. Total Effect

The total effects in this model reflects the indirect effects/relationship of all the variables on the relationship between Decision which may not be revealed in the direct effects, but rather mediated through the effect on Judgement or both parts of Performance Perception. The objective here is to see if there is any difference in this model from the previous model. Table 72 present the total effect for each path in the model along with t-value and p-value. Since there was no mediator between Judgement and Decision the total effect value was not different from the direct effect the path of Performance Information toward Judgement increased to 0.550. Meanwhile the total effect of the Performance Information over Democratic Performance Perception and Responsive Performance Perception is not different from the direct effect.

The finding suggest that in comparison to the first model this model had a lower total effect between Performance Information toward Decision yet it was highly significant with β value of 0.426 and p-value of 0.000. In addition, the total effect of responsive performance perception on Decision moved the β value from 0.135 to 0.191 with a t-value of 1.665 and p-value of 0.048 that is significant at 5% level. Similarly, the total effects of Democratic Performance Perception on Decision become significant too with t-value of 1.666. However, both Responsive and Democratic Performance Perception total effect on Judgement were still not significant and the total effect not adding any different in this case.

Table 73 Total Effect values in second model

Pathways	Original Sample	Sample Mean	Standard Error	T Statistics	P Values
Judgement -> Decision	0.591	0.577	0.126	4.674	0.000
Performance Information -> Decision	0.426	0.440	0.061	6.950	0.000
Performance Information -> Democratic Performance Perception	0.543	0.552	0.054	10.024	0.000
Performance Information -> Judgement	0.550	0.554	0.071	7.768	0.000
Performance Information -> Responsive Performance Perception	0.480	0.491	0.078	6.165	0.000
Responsive Performance Perception -> Decision	**0.191**	**0.204**	**0.115**	**1.665**	**0.048**
Responsive Performance Perception -> Judgement	0.096	0.107	0.128	0.747	0.228
Democratic Performance Perception -> Decision	**0.131**	**0.132**	**0.079**	**1.666**	**0.048**
Democratic Performance Perception -> Judgement	0.107	0.112	0.084	1.267	0.103

(Source:Author) Note: one tail test, 5%

5.9.4. Effect Size f^2

The results in Table 74 show that Judgement had the highest effect size f^2 value of 0.555 toward Decision, which also greater than 0.35 thus that is consider a substantial effects of the exogenous latent variable according to Cohen (1988); Hair et al (2013a). Moreover, Performance Information has a substantial effect toward Democratic performance perception with f^2 value of 0.417 but a moderate effect size toward both Responsive Performance Perception and Judgement with as f^2 value of 0.300 and 0.204. Meanwhile and as expected the Responsive Performance Perception had really weak effect size on both Decision and Judgement as with f^2 value of 0.018 and 0.009 respectively. Similarly, but even worst, the Democratic Performance Perception had the weakest effect size on Decision and Judgement with f^2 value of 0.006 and 0.007 respectively.

Table 74: Effect size f-square

Constructs	Decision	Judgement	Responsive Performance Perception	Democratic Performance Perception
Decision				
Judgement	0.555			
Performance Information		0.204	0.300	0.417
Responsive Performance Perception	0.018	0.009		
Democratic Performance Perception	0.006	0.007		

(Source:Author)

5.9.5. Predictive Relevance Q^2

The details of what and how Predicative Relevance has been discussed earlier in Section 5.4.5, thus this section focuses on clarifying results of the blindfolding process of the second model. Similar to blindfolding process in the first model D=7 is chosen as the division of the total observations in the study and the distance is not an integer number otherwise it will result in deleting the full observations. Table 75 illustrate the finding of the blindfolding rounds, where (SSO) is the sum of the squared observations, SSE is the Squared Predication errors (SSE) and 1-SSE/SSO is the Predictive Relevance Q^2.

The results in Table 75 show that Predictive Relevance Q^2 were 0.288, 0.184, 0.146 and 0.129 for Decision, Democratic Performance Perception, Judgement, Performance Information and Responsive Performance Perception respectively. The latter indicates that the model has predictive relevance for these constructs. According to Hair et al (2013a), if the Q^2 is larger than zero the model is then considered to have predictive relevance regarding the endogenous latent variables.

	SSO	SSE	Q¬≤ (=1-SSE/SSO)
Decision	1,020.000	725.938	0.288
Democratic Performance Perception	612.000	499.647	0.184
Judgement	1,632.000	1,394.505	0.146
Performance Information	1,632.000	1,632.000	
Responsive Performance Perception	816.000	710.880	0.129

(Source:Author)
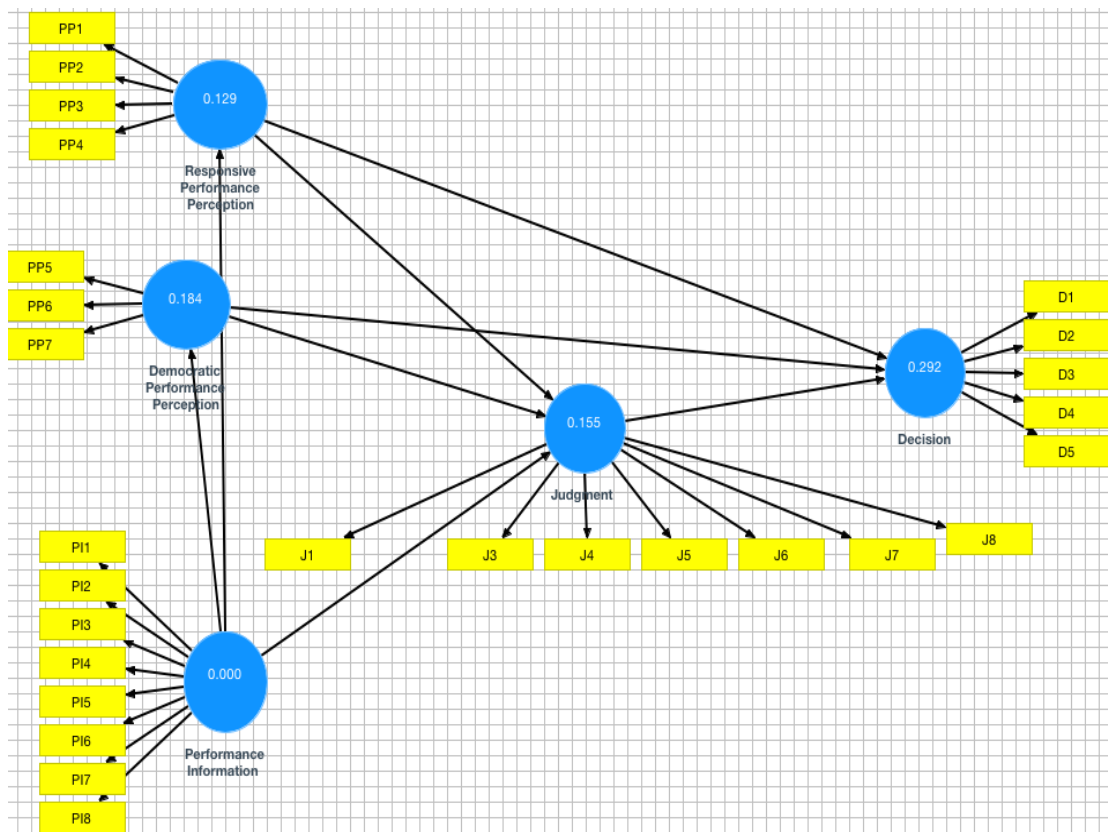
Figure 29 Screen shot of Blindfolding results in Smart PLS for second model

(Source:Author)

5.9.6. Importance – Performance Matrix Analyses (IPMA)

The Decision construct was selected as the key target constructs in order to perform the IPMA. The results are shown the Table 77 and Figures 30 & 31 below. The number inside the constructs circle in Figure 30 is the performance of the constructs on a scale from zero to 100 where the higher

the number indicates higher performance. It was clear from Figure 31 and Table 77 that Judgement is the most important constructs to explain the decision. The latter is similar to model one findings. An increase of one point in judgement is expected to increase the performance of the Decision by the value of the total effect, which was 0.618. Although the performance of both the Responsive Performance Perception and Democratic Performance Perception are higher than the Performance of Performance Information (71 and 76) compared to 70, but their importance were lower than Performance Information with value of 0.147 and 0.106 verse 0.42. The result is quite similar to model one where the Performance Perception is the area need to focus upon in order to enhance Decision value.
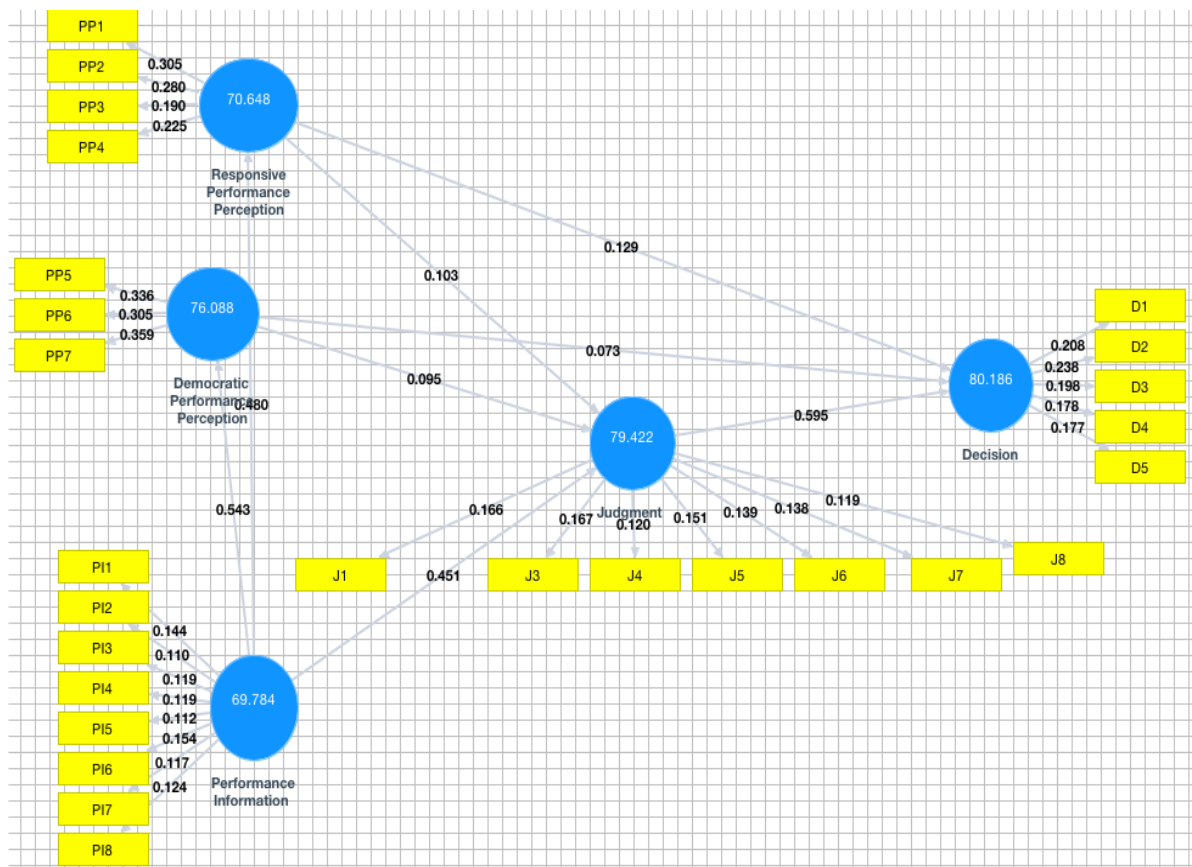
Figure 30 Screen shot for IPMA analysis results

(Source:Author)

Importance and Performance matrix analysis of Decision		
Construct	**Construct Total Effects for [Decision] i.e. Importance**	**Construct Performances for [Decision]**
Judgement	0.618	79.422
Performance Information	0.421	69.784
Responsive Performance Perception	0.147	70.648
Democratic Performance Perception	0.106	76.088

(Source:Author)

(Source:Author)

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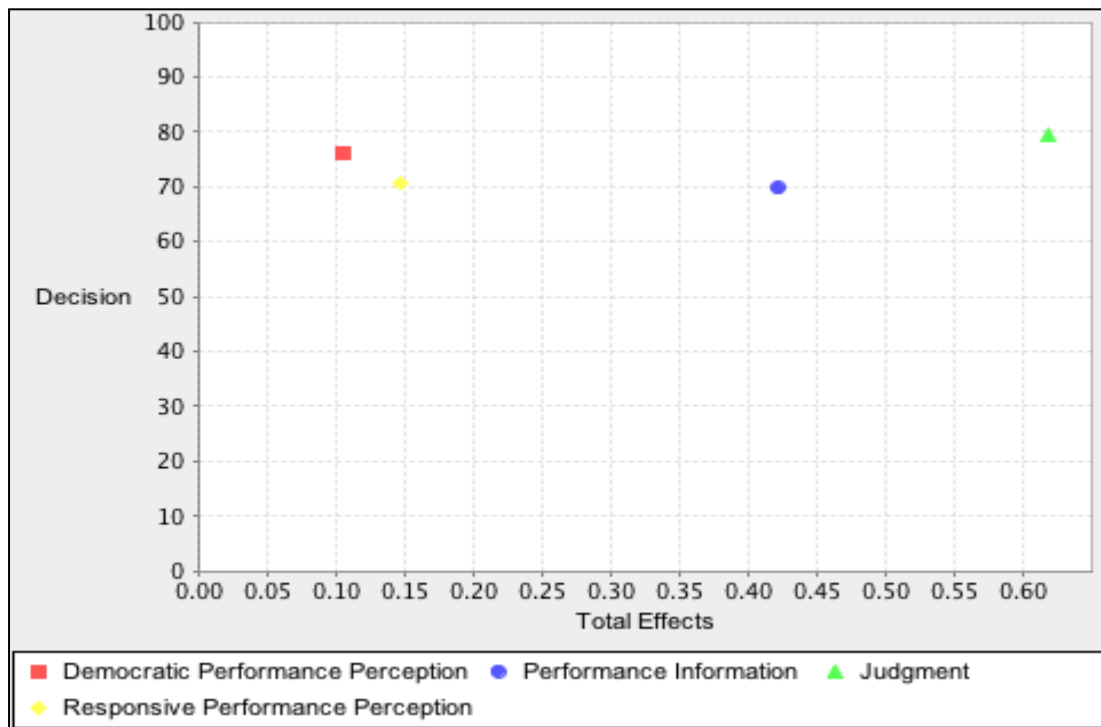
5.10.Overall Model Assessment

This research uses the two model assessment that were previously used to assess the first model, which are the Goodness of fit index and SRMR.

5.10.1.1 Goodness of fit index (GOF)

The arguments of using GoF index were discussed earlier in section 5.5.5. The criterion of goodness of fit (GoF) index is calculated as follows:

$$GoF = \sqrt{(\emptyset R^2 \left(X_{jh} \right) \ X \ \emptyset R^2 \left(\eta_j \right))}$$

Where the first part is the average communality (i.e. outer model assessment) and the average R^2 of the endogenous latent variables (i.e. inner model assessment). The GoF of this model was $= \sqrt{0.5748 * 0.3335} = 0.4388$ (44%) which is considered as moderate level and slightly less than GoF in first model.

5.10.1.2 SRMR

The SRMT of this model is 0.06, which is also consistent with GOF results confirming the validation of the proposed model.

5.11.Extra Data Analysis (Publishing, Tools Usage and Challenges in Oman SAIs)

In this section, there will be a demonstration for additional data analysis that is not part of PLS, yet is it emphasis on the three topic regarding the SAI context in Oman and there are as follow; the usage of different auditing tools used by the auditors in SAIs, Publishing and interaction of SAI with the public and challenges faced by auditors in SAI in Oman.

5.11.1. Collecting Evidence of Application in Oman's SAI

According to the descriptive analysis in SPSS for the second question in Section E of the survey, it was found that documents review is the first highest method applied by auditors in SAIs as we can see from the Table 78 below. Where 42% of the auditors indicate that they use this method all the time and 32.4% say they usually used it. At the same time inspection and direct observation is considered as highly applied since it score 26.5, 24.5 and 16.2 percent for frequently, usually and all the time description of usage respectively. Next comes the interview and oral enquiry where its highest score found to range between occasionally and frequently with percentage of 17, 23 and 22 respectively. In contrast, it seems that auditors never and rarely use survey and questionnaire since it scores 30% and 40 % respectively. Case study is not that different from the survey and questionnaire where its highest score ranging between never and occasionally with the following percentage respectively 16%, 25% and 25%. Graph shown on Figure 32, shows the result of the pervious discussion more clearly.

Table 77 Methods used by auditors in their PA in Percentage

Methods used by performance auditors to collect evidence/How Often	Never	Rarely 10%	Occasionally 30%	Sometimes 50%	Frequently 70%	Usually 90%	All the Time
Document Review			3.9	6.9	14.7	32.4	42.2
Inspection and direct observation		1.5	14.2	17.2	26.5	24.5	16.2
Survey or questionnaire	29.9	39.7	13.2	10.3	5.4	1.5	
Case study	15.7	24.5	25.0	16.7	15.2	2.9	
Interviews and oral enquiry	1.0	9.3	17.2	23.0	21.6	13.7	14.2

(Source:Author)

Figure 32 Application of auditing tools in SAI in Oman

(Source:Author)

5.11.2. Publishing and Interactive Activities of SAI with the Public in Oman

The descriptive analyses for this part show that 80% of the auditors reported that PA reports are not available to the public. Moreover, only 47% say that, SAI do promote their activities and roles in the media such as newspapers, magazines, radio and TV. Also, 78% claim that SAI had specific telephone contacts number and website links designed to help the public to raise queries and report their concerns regarding the performance of public sector entities. In addition, only 59% indicate that SAI participate in local conference and exhibitions. The graph in Figure 33 shows the presentation of the pervious discussion.

Table 78 Publication of audit report and interactive actives of SAI in Oman

Questions	Yes	No
Performance audit report of public sector available to public	19.6	80.4
The state of Audit Institution (SAI) publish or participate in newspapers , magazine or in radio and TV programs to promote their aims and clarify their roles	46.6	53.4
The state of Audit Institution (SAI) have specific telephone contacts or website links designed to help public raise queries or report their concerns about performance of public sector entities.	77.9	22.1
The state of audit institution (SAI) participate in local conference or exhibitions	59.3	40.7

(Source:Author)
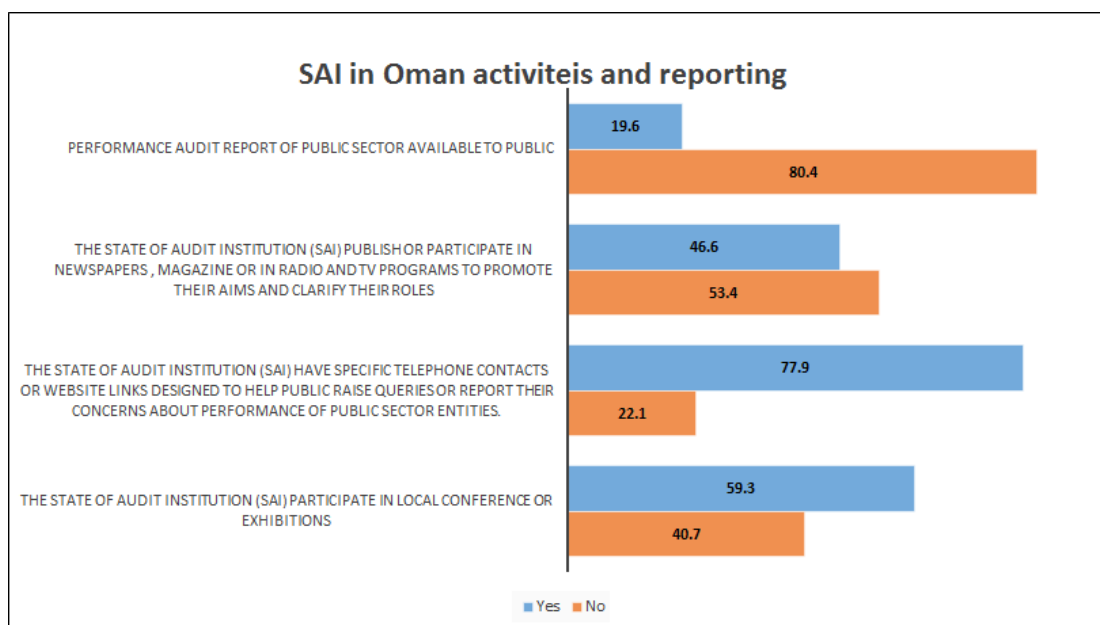
Figure 33 Omani SAI reporting

(Source:Author)

5.11.3. Challenges Faced by Performance auditors

The results show that the absent of a clear guide in undertaking performance audit is seen as a challenge since it counted for 23% and 19% for agree and strongly agree and only 2% for strongly disagree. Meanwhile almost 29 % slightly agree and 22% for both agree and strongly agree compare to only 0.5 % strongly disagree that auditors' lack of knowledge of scientific methods consider as a challenge. In fact, only 23% and 19% slightly agree and Agree to the statement that there is inadequacy of funds and provision necessary for performance compared to 15% and 10% who slightly disagree and disagree respectively.

Interestingly, it is found that absence of standards and measurement for PA as a challenge constitutes of 26%, 19% and 18% of the agreement opinion range from (slightly agree to strongly agree respectively). Similarly, resistance

of some employees to modern methods because of their inability to adapt to change is considered as a challenge with an agreement percentage of 31%, 21% and 18% range from (slightly agree to strongly agree respectively). See Table 80 along with Figure 34 for a clearer picture of the results.

Table 79 Challenges faced by Auditors in PA

Challenges Faced by Performance Auditors	Strongly disagree	Disagree	Slightly disagree	Neither agree/disagree	Slightly agree	Agree	Strongly Agree
Absence of a guide in undertaking performance audit	2.0	5.9	11.8	18.1	20.6	23.0	18.6
Auditors' lack of knowledge and scientific methods	.5	4.4	10.3	12.3	28.9	22.1	21.6
Inadequacy of funds and provisions necessary for performance audit	5.4	10.3	14.7	19.1	22.5	19.6	8.3
Absence of standards and measurement for performance audit	5.4	5.9	9.8	16.2	25.5	19.1	18.1
Resistance of some employees to modern methods because of their disability to adapt to change	2.9	7.4	8.8	11.3	30.9	21.1	17.6

(Source:·Author)

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Challenges Faced by Performance Auditors

Absence of a guide in undertaking performance audit
- 2.0
- 5.9
- 11.8
- 18.1
- 20.6
- 23.0
- 18.6

Auditors' lack of knowledge and scientific methods
- .5
- 4.4
- 10.3
- 12.3
- 28.9
- 22.1
- 21.6

Inadequacy of funds and provisions necessary for performance audit
- 5.4
- 10.3
- 14.7
- 19.1
- 22.5
- 19.6
- 8.3

Absence of standards and measurement for performance audit
- 5.4
- 5.9
- 9.8
- 16.2
- 25.5
- 19.1
- 18.1

Resistance of some employees to modern methods because of their disability to adapt to change
- 2.9
- 7.4
- 8.8
- 11.3
- 30.9
- 21.1
- 17.6

Legend: ■ Strongly disagree ■ Disagree ■ Slightly disagree ■ Neither agree/disagree ■ Slightly agree ■ Agree ■ Strongly Agree

Figure 34 Challanges in PA

(Source:Author)

5.12. **Conclusion**

This chapter reports the empirical analysis and results of this research. The chapter started with the primary data preparation, which involve data editing and coding, screening out though statistical technique missing data, detecting outliners and testing normality. Also, a statistical descriptive of the demographic profile of respondents was reported. Due to some techniques applied in the online-questionnaire the missing data was minimized where only 12 cases of partial completion found and deleted. The z-scores via SPSS showed that 13 cases were recognized as outliers whereas 14 Mahalanobis D square showed 14 cases of multivariate outliers. Furthermore, Kolomogorov-Smirnov and Shapiro-Wilk (K-S) statistics values for all the variables were presented in Table 19 and the result reveal that all the variables were significant, which indicate the violation of the normality assumption. As a result, instead of using the CB-SEM analysis approach which perform best with multivariate normal data, PLS-SEM is selected for modelling analysis approach which do not rely upon the normality assumptions.

Next explanatory factor analysis (EFA) was applied to all the items and all the items loaded into their underlying constructs except for J8. Yet when applying the PLS analysis the same variable was perfectly loading onto its underlying constructs with a loading of 0.679. Moreover, the result of Harman's single factor test, correlation matrix and correlation matrix with maker variable test in PLS verify no common method bias issue exists in the data.

Furthermore, SEM two stages approach assessment was applied to the proposed models. In the first stage the measurement model assessment was performed. The results of all reliability, convergent validity and discriminant validity revealed that almost all of the items within the models fitted well with underlying constructs, thus only J2 and PP 4 was deleted in mode one and only J2 deleted in the second model.

The second stage was the structural model assessment, which examined the hypothetical relations proposed in the theoretical framework. Different criterions were applied includes path coefficient, determinate coefficient (i.e. R-Square values, total effect, effect size F-square and predictive relevance Q-square) which all suggested validation of the models. After identifying the total effect of the model and the importance performance matrix analysis results, the moderating effect of the demographic variables (e.g. gender, age, educational level and experience level) were tested. The latter were applied the using multi-group analysis (MGA) method or application in smart PLS which also provide parametric test and Welch-Satterthwaite test. Interestingly the gender groups and educational level groups' path coefficient showed no significant differences. Then the chapter discussed the result of some questions not involving the PLS modelling as extra data analysis. In the proceeding chapter a discussion of all the results will be presented.

6. Chapter Six: Discussion of the Findings

6.1. Introduction

This chapter aims to discuss the empirical results obtained in the previous chapter based on the findings from the online questionnaire used in the study.

Since the last chapter presented a rigorous analysis of the empirical findings of the thesis, the current chapter provides a deeper discussion of these results in relation to Agency Theory and Throughput model. It also provides possible justification for the significant and insignificant relationships proposed earlier in the theoretical framework in Chapter Three. Hence this chapter is organized into eight sections, starting with this introduction.

Section Two discusses the direct effect of performance information on judgement. Performance information that focuses more on the quantifiable measures of organizational performance highly influenced the judgement of the auditors. The third section identifies the nature of the relation between performance perception and judgement. Unlike the performance information, performance perception does not maintain a significant relation with judgement due to many reasons, such as difficulty measuring it in monetary terms and its relation to stakeholders other than the central Government. The chapter next extends the discussion to include the role of judgement in direct relation to decision choice in performance audit and its important influence. Interestingly, Section Five reveals the nature of weak but significant relations between performance perception and decision choices which indicate an

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awareness of the impact of such principals in making responsive audit reports. Later, the chapter debates the value of the indirect effect and total effect on the model reflected in the literature. This is followed by discussion of the moderation effect and how it was found that age and experience level moderators were the only characteristics affecting some pathways. Meanwhile discussion is provided on the additional questions related to important aspects like the methods applied by the Omani SAI, its publications and interactive activities and the challenges faced by the auditors in this area of audit. Finally, a summary of the chapter is presented.

6.2. The Direct Effect of Performance Information on Judgement

Performance information (PI), which is the information that is collected, used and verified by performance auditors during their evaluation process before drafting their reports, was found in this study to be the one of most important constructs which positively and directly influences judgement (H0.1). The latter suggests that performance auditors depend heavily on performance information, which is based on pre-defined items/elements that are used as indicators to form the performance information (PI1, PI2, PI3, PI4, PI5, PI6, PI7 &PI8), in order to help the auditors, make their judgement and evaluation about the public sector unit, programme or activities. These information elements are as following: economic aspects; quantity of output; cost per unit of production or service; achievement of goals and objectives of audited entity; effectiveness in achieving the output of the programmes, activities or projects; meeting the time schedule for providing the services or project

completion; legitimacy and legality of management of purchase tenders; supply agreement and contract; and quality of output. According to Barzelay (1997), auditing consists of collecting information about transactions or processes to define whether they follow the applicable standards. He also claims that performance audit can be characterized as an inspection process that may involve straightforward exercise of instrumental judgement. Thus, it is common to relate such information to the judgement process in an audit, but that leads us to question what type of information, standards and measurement elements the performance auditors are focusing on or emphasising during their data collection and evaluation process.

It is clear that the PI elements or measurement items developed in this study take the form of the three Es' model and Input Output Outcome model. The above findings are similar to those of previous studies. For example Gendron et al (2007b) argue that the office of the auditor general is interested in measurement of performance of board entities like ministries, and they deal with hard data, unlike evaluators, who focus on satisfaction surveys or interviews. They (i.e. the auditors) look at what the inputs are to the programme, and then what the outputs are. A division manager who was interviewed in the study stated:

"When they (i.e. the office auditors) come around as they always have, rather than just looking at the books they are going to look at our efficiency and effectiveness measures. 'Now you said that you are going to reduce the […] costs from $1.20 to $1. Now did you do that, if not why? And what is the plan for doing that?'"

Moreover, Power (1997) earlier claimed that performance auditors emphasise the measurement of quantifiable inputs and outputs, while Smith (1993) declared that auditors are one of the external parties who might be interested on outcome-related performance indicators data in order to supply external users (e.g. central Government or the public) with information regarding the outcomes of an organization's activities, and are able to make informed judgements about their performance. Daujotait & Mačerinskien (2008) made a similar suggestion in their study's conclusion:

"Auditors should identify potential risks to achieving economy, efficiency and effectiveness and thereby develop audit questions. Each concept is basically of equal importance and where the specific priority lies will be decided on a case-by-case basis" (p.184).

In addition, it was observed that performance audit emphasises effectiveness and good management, and raises concerns about the use of 'best practice' performance accountability frameworks as audit criteria (English,2007; Pollitt et al,1999b; 1999d), while concepts such inputs, processes, outputs, outcomes economy, efficiency and effectiveness and their interaction with pre-mentioned goals and objectives are common tools for performance auditors and public managers (Daujotait & Mačerinskien,2008).

However, according to other studies, PA tends to focus more on economy and efficiency rather than effectiveness (English,2007; Hatherly & Parker,1988), which is seen as a contentious and technically demanding activity (Pollitt et al,1999b). Moreover, Schwartz & Mayne (2005) highlight some scholars' doubts regarding the credibility of evaluative information found in performance

audit reports, which were developed to measure programme effectiveness. In a study on the quality of audit effectiveness evaluation in six countries, it was found that 6 out of 13 audit reports investigating outcome effectiveness were deficient in dealing with causality, thus failing to employ standard social science techniques in order to measure change and to attribute it to programme interventions, rather than to intervening variables (Schwartz & Mayne,2005). One Australian study found that performance audit focused more on economy and efficiency than effectiveness (Hatherly & Parker,1988).

Meanwhile, poor performance is sometimes justified by a lack of resources, if the process of transferring inputs to outputs is not properly understood by the public officers, i.e. they could claim that resources allocated in the budgetary process are not adequate to secure equality or satisfactory results (Smith,1993). If, as previously suggested, the effect of environment on performance is not always understood; as a result, there is little basis for challenging the assertion that poor performance is beyond management control. While this point is not raised in this research, it is hard to tell whether the outcome or effectiveness have been challenged effectively by the auditors. However, what the research aims to consider is whether or not this important element is taken into consideration by the auditors themselves during the data collection and information selection process.

While, to the researcher's knowledge, no research on performance audit has been conducted in Oman, it is important to point to the findings of studies done in an area that is close to this research context. For example, in a Saudi study performed in 1970, it was found that only 28% of government organizations were subject to efficiency and economy audits, while 18% had

experienced effectiveness audit of the programme results, which were self-initiated rather than performed by an outside agency (Jadallah,1978). Another study confirmed those results, highlighting the shortcomings of the economy, efficiency and effectiveness auditing in the Saudi public sector (Almohalmeed,2000). The latter study indicated that high importance was given by the audit agency to the economy and efficiency areas of performance audit over the effectiveness, even though the percentage of all were considered to be very low.

Another study regarding the development of auditing in the public sector in UAE in 1995 declared that SAI still focused on financial /compliance auditing, while there had been little effort to embrace the new auditing trends in terms of economy, efficiency and effectiveness, despite numerous calls and recommendations via international conferences and organizations such as INTOSAI (Shahinurad,1995).

To avoid repetition, the discussion of the second model is embedded together with the main model, and not discussed separately, since in fact it shares the same measurement items, the main aim being to divide performance perception into responsive performance perception (RPP) and democratic performance perception (DPP). Thus the discussion will be on the latter's effect on judgement and decision-making.

From the researcher perspective, most studies agree that the economy, input, output and efficiency elements to some extant are highly investigated by the entity of performance audit, which is compatible with the findings in this study.

Controversy still exists regarding other elements, such as effectiveness of outcomes and effective application.

6.3. The Direct Effect of Performance Perception on Judgement

Perception could be defined as the process of recognition and interpretation of sensory information, or the process of framing the decision-making (Rodgers,2006). Therefore, the performance perception in this study is related to recognition and interpretation of organizational performance through predefined performance standards and indicators. Not enough evidence was found to support the relation between PP and judgement or evaluation processes (H0.3). Which in another words, means that PP had either no influence, or insignificant influence on the judgement or evaluation process of the auditors. The latter suggests that the performance auditor does not necessarily rely much on performance perception in their assessment. Their perception is based on predefined items/elements used as indicators to form the performance perception from a public perspective; which are (PP1, PP2, PP3, PP5, PP6& PP7), in order to help the auditors to make their judgement and evaluation of the public sector unit, programme or performance activities. These perception elements are as follows: overall impact of the entity's activities or their service provision has on society, local community or environment; user satisfaction with the service provided; employee satisfaction; accountability of governmental officers; user feedback and their perspective on the service provided; and probity of staff. The above finding could possibly be explained as following.

First those perceptions cover different dimensions of performance that take into account the variety of stakeholder perspectives compared with those of the central Government. These perceptions have a social value point of view regarding performance. The National Association for Voluntary and Community Action (NAVCA) defines social value as "wider non-financial impacts of programmes, organizations and interventions, including the wellbeing of individuals and communities, social capital and the environment. These are typically described as 'soft' outcomes, mainly because they are difficult to quantify and measure" NAVCA (2012, p. 1) . Thus, social value looks at how scarce resources are allocated and used, not in terms of the price/money, but in terms of the collective benefit to the community. Social value is now recognized in legislation through the Public Service (Social Value) Act 2010.

Performance auditors have the responsibility of recognizing the weaknesses and vulnerabilities in a government programme or activities affecting social value or public perspective. These results are used by the Government entity to revise practice, policy, or even strategy.

According to Andrews et al (2011) whether or not the measures (e.g. Performance measures/indicators) cover all the different dimension depends on the priorities of the powerful group or stakeholders that reflects them. The importance of stakeholder groups may vary due to the amount of power, legitimacy and urgency that they confer. As is clear from the previously listed items of PP, most of them reflect the public perspective. Referring back to the Agency Theory in the literature, the theory focuses on the principal-agent relationship, and justifies why the performance auditors focus more on

performance information that concerns the input, output, economy and efficiency of the programme or service. The previous quantifiable elements of performance are normally more relevant to the central Government for strategies such as saving or cutting down on expenses, etc. Both SAI auditors and public sector managers or administrators are agents of central Government, despite the fact that SAI enjoys independence from the public sector, since it is considered as an external auditing body. However, the SAI reports to central Government, which is clearly the principal in this relationship, especially if the SAI does not publish its report to the public. This is the case in Oman and many other developing countries. However, Streim (1994) suggests that SAIs act as a special bonding/monitoring device to eliminate agency problems, (e.g. between the Government and the administration in Ministries), and that without the existence of this agency problem, the SAI would be a superfluous cost for the Government.

The power, legitimacy and urgency of central Government compared to the public make the performance auditor give greater weight, importance and emphasis to its interests and preferences than to those of the second group (i.e. the public). However, some might argue that the SAI reports are accessible to the Parliament /Council of Ministers, so could also be considered as principal. At the same time, the Parliament/Council of Ministers, or the Shura members, as in the case of Oman, should be representative of the public interest. According to Ashworth et al (2001), Parliament wants to know what the Government does, and what the consequences of government policy are, in order to use this information in their election campaigns. This may be true, yet we are unsure that auditors will consider this group's

preferences in their reporting, and even if so, the problem remains, which is how to make sure that the politicians really read and use the auditor's reports (Streim,1994).

There is a lack of motive to look at the public interest or social value elements in performance audits, since they are not direct principals. The auditors should look at public sector organizations as agents for multiple principals within and outside their boundaries, and not only to central Government (Lonsdale et al,2011). The problem of motivation to create a better quality audit was discussed in detail by Streim (1994), who suggested an urgent need to develop better technology to measure both efficiency and effectiveness.

 Moreover, coverage may also vary across nations and over time. According to Morin (2003); Power (2000), the PA approach is affected by the culture and philosophical attitude of the organization they belong to. For example, statutory performance indicators for local authorities in the UK shifted their focus from service inputs to outputs and outcomes during the 1990s (Andrews et al,2011). Furthermore, the focus on consumer satisfaction in recent years reflects a new public management (NPM) concept, where the service should be responsive to public preferences instead of bureaucratic preferences, as well as other wider social outcomes that capture the citizen's perception (Andrews et al,2011).

 It is acknowledged that Parliament and its committees in developing countries, if they exist, have less power compared with the executives, and that even the media is controlled by the Government (Ghartey,1985). In this

case, the Government can hide bad news from the public, or focus only on particular dimensions of performance. In supporting the latter argument, (Khan,1994) confirmed that performance audit started in Western societies as a response to the increased demand for accountability of public managers, where this demand stemmed from the legislature. Public mangers are obliged to respond to this demand. Consequently, auditors demonstrated their willingness to help the legislature in getting more information regarding public funds. However, in societies where democratic traditions do not exist, such auditing is surely going to take much longer to take root (p. 23). Introducing aspects of Western patterns of auditing and accountability into developing societies, whose processes and mechanisms may not support and complement these systems of auditing and accountability, sheds the light onto the limitations in its possible success. Hence we may conclude that the achievement of performance audit objectives indeed depends on the circumstances and environment within which the audit is applied.

In fact, the results here are parallel with findings that examined other studies on performance measures and their impact on management. Multiple dimensions of performance were combined, including the following measures: effectiveness, efficiency, equity, output quality, output quantity, responsiveness and satisfaction. It was found that the focus on certain performance dimensions reflected the priorities of different stakeholders, where the central, state and local government, regulators and experts were all sources of administrative performance data (i.e. effectiveness, efficiency, equity, output quality, output quantity), while the survey data were sourced from citizens, clients, managers, employees (i.e. responsiveness, satisfaction

and trust). The study showed that administrative performance data were highly used, with little emphasis on survey data (Andrews et al,2011). This means that to collect and measure those elements concerned with public opinion, prospective auditors should either talk directly to citizens (i.e. in interview), or via a survey that is also applied to employees and managers in the audited entity.

In fact, (Jackson,2011) argued that VFM audit usually focuses on technical efficiency and nothing is said about allocative efficiency. Allocative efficiency requires judgement over the output of the service, as to whether it is overstated or understated. For example is the service provided targeted at the right group of users, and is it of appropriate quality for the users?

According to Irawan & McIntyre-Mills (2015), auditors should expend their time on executing this audit to provide better learning outcomes. Otherwise the audit will run as a routine activity on the basis of 'doing the wrong thing right'. That will not be successful in addressing the many problems related to social, economic and environmental deterioration. Thus performance audit needs to extend the range of indicators in order to address such complex problems.

In our study on performance audit experienced by the SAI in Oman, was found that their main source of the data was purely administrative, which somehow reflected the auditors' preferences for specific performance dimensions over others. The latter refers to the extra data analysis finding in the second question in Section E in the online questionnaire.

Another reason to explain this finding is that the practice of the current PA does not fully capture all the values of the audited organizations, because some of them were difficult to measure using monetary terms, especially the social dimension (Lapsley & Pong,2000; Power,2000). It was found that this practice (i.e. PA) was not fully clear, due to different interpretations of what constituted the best VFM audit among auditors, some interviewees declaring that ambiguity surrounded the process of performance audit (Alwardat et al,2015). Moreover, Radcliffe (1998, p. 406) commented, "It is still unclear how auditors come to know what efficiency is and how they establish categories of what is or is not efficient". Similarly, Wilding (1994) suggested that quality itself is a contestable concept, because its definition depends on values and roles. According to Lapsley & Pong (2000 P.559), quality is different for different members:

"One perspective was that the impacts on the local economy (increasing local employment, local environmental benefits, or improved facilities); another focused on internal working practices (reducing overtime, managing sickness absence); yet another perspective was that of the recipients' perception of the quality of the services (the customer focus)".

In order to overcome some of these difficulties in measuring attributes such as quality, auditors use comparable benchmark comparisons (e.g. similar schools or hospitals) of the targets and objectives, with the results obtained in the current year compared with previous years (Lapsley & Pong,2000).

The findings as well may look surprising. For example, it is logically and rationally acknowledged that PA should emphasise some of its primary factors, such as accountability of managers and the probity of staff. However,

the findings in our case indicate that these were part of a perception that has not been considered. Yet this is not so different from the Raudla et al (2015) study, which revealed that less than 10% of their respondents considered PA to have held the audited entity accountable for their actions, despite the view in the literature which considers accountability to be one of the primary functions of PA, not to mention the fact that accountability is part of the PA definition and main purpose. Conversely, other studies have suggested that performance audit is used as a tool to hold Ministries and Government accountable for government spending and results to a certain extent, but not exclusively, as it competes with the media, political opponents and control committees (Reichborn-Kjennerud,2013).

The performance improvement is associated with accountability, or, more precisely, improved accountability leads to improved performance (Furubo,2011). Furthermore, Funkhouser (2011) clarified that governments can use mechanisms like public dialogue and organizational learning in order to improve performance through improving accountability first. He explained this by referring to how leaders in the public sector face pressure from different accountability levels, namely elected representatives and their superiors, and that if such mechanisms are used, this may lead to more efficient government. In another study defending the view of accountability concerns in PA, the auditors themselves state:

"We conduct independent audits and examinations that provide objective information, advice and assurance to Parliament. We promote accountability and best practices in government operations." (Brodtrick,2004, p. P.228)

Moreover, the finding in the second model does not suggest a different result, as neither responsive performance nor democratic performance perceptions significantly influenced judgement. This means that even if democratic elements in perception, such as accountability of governmental officers, probity of staff and user feedback and perspective on the services provided are tested separately, this still does not significantly affect the judgement or the assessment of the auditors.

6.4. The Direct Effect of Judgement on Decision

Judgement consists of the process whereby individuals implement the analysis of incoming information, as well the influences from the perception stage (Rodgers et al,2014). Judgements are typically synthesized from many separate pieces of information, which could be performance indicators, documents, interviews, expenditure data, or even verbal accounts of events (Keen,1999). Based on the PLS results in the previous chapter, it was found that judgement is positively and directly related to decision choice (H0.5). That is, the performance auditors depend heavily upon their analytical analysis or judgement to make their final decisions and recommendations in their final audit reports. In another words, the auditors use their analytical tools, skills, knowledge, and training for interpretation of PA and PP in the first stage to help them to make proper decisions in the second stage.

The latter was confirmed by Keen (1999) when he stated that judgment and analytical skills used by performance auditor teams influence the way they view the evidence required, data collection and analysis strategies they follow. However, performance audit teams may react in different ways to the

availability and different types of data. Since the decision choice by auditors here is to select the best alternative solution, recommendation or even course of action to be included in the final report, then this process may be influenced at an earlier stage where the related information collected and perceptual framing has already been reviewed and evaluated.

Such findings are consistent with Rodgers & Housel (1987), who demonstrated a significant association between the judgement and representation process in analysing financial information before making the decision choice. Furthermore, Nutley et al (2012) found that audit committee members' prior experience and opinions normally influence their decisions regarding what to question, what evidence to collect and what to emphasize in their final reports. They explained that when it comes to judge final overall performance, it is not enough to relay an analysis of the combined data, but it is necessary to draw on collective experience and intuition to make sense of all the information in front of them. They emphasised the importance of the judgement process in making the final decision, and how the auditors' experience levels and skills affect it. Also, it was suggested that the process of choosing and operationalizing the audit criteria affects the evidence gathering (Reichborn-Kjennerud & Johnsen,2011), together with the way the auditors frame their conclusion. On the other hand, errors by auditors in the judgement process may lead to poor and indefensible decisions (Mautz & Sharaf,1961).

Moreover, it is important to draw attention to the fact that the judgement itself may be affected by custom and practice, as well as the service under examination, and the geographical territory of operation, where they operate

alongside analysis, explicit knowledge and formal methods (Nutley et al,2012).

The empirical results of the judgement section confirmed the importance of elements such as correspondence (i.e. empirical accuracy) and coherence (i.e. rationality) in making decision choices in PA. This is consistent with other studies such Keen (1999); Kells (2010); Kells & Hodge (2010).

According to Keen (1999), performance auditors review different pieces of information previously derived and assembled from different sources, such as documents or interviews, in order to judge whether or not an audited entity complies with rules and regulations, guidance in the tendering process, etc. This alerts us to how the filtering of what to look at is decided upon by the auditors in the judgement process. It has also been suggested that the auditor should continually update the way the judgement is performed. The way PA is performed is no longer the same as it was a few years ago. For example, Reichborn-Kjennerud & Johnsen (2011) drew attention to the benefit of involving the auditees in the PA process. That may sound unacceptable from a traditional audit point of view, which promotes the idea of strict evaluator independence and procedural distance. However, involving the auditees may result in reducing the risk that auditors will address questions of less interest to the evaluations' users, or, as some scholars have described, their audit feedback attempts may be naive and somewhat mechanistic (Khakee,2003; Leeuw,1996). It was noticeable that the degree to which performance auditors consult with auditees has changed greatly from what it used to be, and that they realized they needed to engage more closely (Lonsdale,2008; Pollitt,2003; Skærbæk,2009). Meanwhile audit results and findings are

actually influenced by several factors, such as the audit scope, team composition and methodological process (Nalewaik,2013).

In addition, Radcliffe (1999) observed that, despite the fact that auditors should be at the centre of the performance audit process, they should seek advice from different experts in the field, including engineering, economics, statistics, human resource management, etc. in their audit. This represents a change in the auditing process, and in evaluation and judgement in particular.

6.5. Direct Effect of Performance Perception on Decision Choice

As is clear from the results of the findings in the last chapter, PP's association with decision choice only showed a 10% level of significance. This means that the hypothesis (H0.4) is supported at only 10% level of significance. Thus auditors may consider the impact of performance perception in their decision choice during the audit, even with the need for analytical function, which is the judgement in this case. This reminds us to think about the nature of this relationship. Performance perception here consists of perceptions regarding public perspective and social value, which may differ in the way it is given weight from person to person, and it may also be viewed as difficult to assess compared with monetary performance elements like expenditure, productivity, etc. Similarly, the responsive performance in the second model had an association with decision choice at 10% level of significance. However, no evidence was found to support the influence of democratic performance perception over decision choice.

Due to the complex nature of the public sector, since it serves multiple objectives, has a diversity of clients, supplies a wide range of polices and services that exist within complex, uncertain socio-political or socio-economic environments (Jackson,2009), it should be taken into consideration that decision choices will be complex too. Often the more easily measured dimensions of organizational performance are recorded, while the deeper, more valued aspects are ignored. However, it was discussed in Section 2.7.2 in Chapter Two how different SAIs or divisions of SAIs in different countries, including but not exclusive The Netherlands, US, UK and Norway, had shifted the way in which performance audit was traditionally performed, in order to involve the public perspective and make their audit reports more responsive. Thus we may conclude that auditors are aware of the importance of public perspective and social value, and that the overall satisfaction of stakeholders should be included in the performance evaluation criteria, being a key indicator of project success (Bryde & Brown,2004; Pinto & Slevin,1988).

6.6. Indirect Effect of Performance Information and Performance Perception

We have already discussed the direct effect of performance information and performance perception on judgement. However, Smart-PLS also provided total effect results, which show the indirect effect of the PI on D via a mediator in this case is J or even PP, and the indirect effect of PI on J via a mediator, which in this case is PP. It also provided the indirect effect of PP on D mediated by J. It was found that performance information was indirectly associated with decision choices made by performance auditors. Similarly, based on the total effect, it was found that performance perception was also associated with decision choices made by auditors, this time being significant at 5% level. Therefore, both PI and PP contribute indirectly to decision-making. From the latter, we can conclude that both PI and PP elements need to be taken into consideration, and that performance auditors need to invest a considerable amount of time on those elements, while paying equal attention to improving their final report.

Furthermore, the results of Importance-Performance Matrix Analysis (IPMA) (see Table 42 and Figures 24 & 25 in Chapter 5) confirmed the importance of both PI and PP to decision choice. The IPMA results helped the researcher to locate the importance value for each construct towards the endogenous construct, which is D in our case (i.e. the structural model total effect) and performance value (i.e. the average value of the construct scores), which draws the attention to the area of improvement in the model. Based on IMPA results, it was found that J was the most important construct to explain D,

followed by PI and PP respectively. Similarly, J was found to have the highest performance value, followed by PI and then PP. What was observed was that the PP and PI values of performance were very close (68.54 and 69.83) respectively, and yet their importance value was not (0.245 and 0.426) respectively. Therefore, the finding pointed to an area of focus to improve the D value in the model, which was both PI and PP. The importance value points to a critical fact, that performance perception was not that important to the auditors, or at least not as important as J and PI.

It seems that most legislators are not interested in discussing bad results of the economy, efficiency and effectiveness audit, because they do not want to blame the Government, which is in the end made up from members of their own party (Im & Lee,2011; Streim,1994). This is the case in Oman. For now, we are not sure how different it is for the legislators in Oman in dealing with PA reports, but the findings show that focus was mostly on particular interest in PA. This would be an interesting area for future research. Some countries did not make the audit report by the SAI available to the public, Oman being one of them. However, it is questionable if the current complex performance audit reports would attract public interest. This argument is supported by the fact that the PA report did not contain information relevant to the public, but was rather directed in the first place towards the central Government with little intention to be accessible to the public. One proposed solution would be to improve the quality of the audit by improving the available information set (Jensen & Payne,2005), for example including social value and other public perspective values in the audit process and recommendations. This would contribute to better resource allocation and service improvement, as it could

be claimed that performance audit findings and reports can have significant input in the political process of resource allocation (Pei et al,1992).

Maybe it is the time for governments to shift from a top-down perspective to a bottom-up perspective, and to place emphasis on users' preferences by including the public voice in their auditing reports. The following is the quote by Percy (2001), past chairman of the Accounts Commission in Scotland, clarifying the benefits of performance auditing in the public sector:

"It is not the job of the auditor to act as consultant to the organisation on how to achieve best value, nor is it the job of the audit to interfere in the management of the organisation when things go wrong. It is however, the job of the auditor in my view to point out weaknesses in the management arrangements in governance structure of the organisation that is being audited and point to improved methods for management to consider in the development of best value. The quality auditor is therefore not just a person who reports on the presentation of information but who reports on the regularity and probity of the organisation and one who acts as a catalyst to change for improvement" (Percy,2001 P.359)

Also, as suggested by Blume & Voigt (2011), SAIs could have far-reaching consequences if they worked more effectively. For example, they could affect:

- The fiscal policy of the Government, since its objective is to lower expenditure, which in turn influences the revenue and deficit levels;
- Government effectiveness, due to monitoring and evaluation and recommendations for improvement, as well as lowering corruption levels;

- Enhancing government productivity of resources used in the economy by improving both national labour and total factor productivity.

On the other hand, there are some limitations that current performance audit is still struggling with. Radcliffe (2008) described how performance auditors saw the audit process:

"Auditors said what they thought their audiences were ready to hear, both in terms of a willingness to act, in terms of political possibility, and in terms of an ability to act, given auditees financial knowledge and ability to appreciate the issues raised". (p.100-101)

This means that some scholars see PA filter the kind of information that should be exposed and published, and link the consequences of such release on the policy and the ability of implementation by the auditees. This also drew attention to the difficulty of applying the audit to areas that are ultimately under political control. According to (Radcliffe,1999), this way of self-editing of the findings applied by auditors was presented in terms of its role in making performance audit tractable. In this sense, whether the audit recommendations would be acceptable to the auditors themselves first "depends on the context" and awareness of the reality (Radcliffe,1999). It thus advisable for auditors to develop awareness and knowledge of social reality, be aware of the current local legislative debates, review the news at different media outlets and be exposed to the inner workings of governments (Radcliffe,2008). In essence, the above was an explanation of audit limitations that may not be completely forgivable, even if 'strategically wise'.

However, Radcliffe's (1999 & 2000) views and arguments have been criticized, since they would extend the mandate of SAIs to include in PA the nature of the relationship of the auditors and the executive in the public sector, has high degrees of independences where auditors move from a questioning gaze to matters of policy implementation. Auditors might provide latitude when dealing with public secrets, yet this must be conducted within a restricted mandate, which would provide public sector auditors with a high degree of independence (Funnell,2011). Without strong independence, the SAIs could not guarantee that accountability measures would have any value, and the interest of the public to some extent would not be served, since the influence of higher power might limit the monitoring process itself.

6.7. Moderation Effect Discussion

Much literature on auditing suggests that demographic characteristics, such as gender, education and amount of experience are associated with attributes relevant to auditors' judgement and decision-making (Francis,2004; Nelson,2009). This motivates the researcher to test these demographic values in a different auditing context such as performance audit.

Looking at the multi-group analysis (MGA) results, it is clear that there is no evidence supporting the assumption of the differences between the gender group path coefficients in the model, despite the fact that it was found that both genders responded differently to problem-solving, risk preference and cognitive style (Hardies et al (2010). Therefore, the moderating effect of gender is not supported. The case is similar with education group analysis, as

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it suggests no moderating effect or difference in the education group path coefficients in the model.

However, the result of the MGA parametric test for group analysis and Welch-Satterthwaite test suggested that there is difference between age groups in two pathways, which are PI>J and PP>J, (i.e. these pathways are moderated by age). This suggests that age group moderates and influences of these pathways. The type of difference is not revealed in such analysis, yet it does exist. Similarly, it was found that the experience group moderated the same pathways (i.e. PI>J and PP>J), which proves the importance of the effect of individual characteristics, such as age and experience level in the audit quality (Abdolmohammadi & Wright,1987; Gul et al,2013). The finding suggests that age group and experience level groups view performance information and performance perception differently in their judgement and assessment. The latter opens the door for further research in this area.

 In order to improve the current performance audit position of SAI in Oman, the auditors should be more responsive to what auditees and other stakeholders have to say about the audit questions and their relevance, and the immediate findings. Auditors should continuously be aware of the changes in stakeholders' perspectives, beliefs and preferences. Moreover, responsive performance audit does not necessarily mean that the auditors should abandon their traditional criteria for judgement and assessment methods, but, instead, enhance them by adding deliberate consideration of more flexible audit procedures, methods and standards that serve the dynamic, complex nature of the public sector. The more responsive way of doing performance audit increasingly acknowledges the guidelines of the INTOSAI, consisting of

auditing the actual impact, compared with the intended impact as part of performance audit (Lonsdale et al,2011).

6.8. The Extra Analysis Discussion

6.8.1. Methods applied by SAI in Oman for their audit data collection

According to Lonsdale et al (2011), the selection of audit methods should be considered within the context of how an overall audit investigation is developed, and tied to the objectives of the investigation. It was found that the method most commonly applied by auditors to obtain audit data is document reviews followed by inspection and direct observation. If the findings are rearranged in terms of the number of participants, we can see how often a method is applied in performance audit ranging from 50% up to 100%. In another words, we add together the number of participants stating that a certain method is applied sometimes as 50%, frequently as 70%, usually as 90% and all the time as 100%. The result then reveals the order of the methods most preferred or applied by the performance auditors, or auditors in general in SAI in Oman. They are, in order: document review, inspection and direct observation, interview and oral enquiry, case study and survey or questionnaire.

The findings reveal that auditors still prefer traditional methods of auditing, and this is linked to the information they normally focus on in their analysis. However, from the researcher's point of view, the variety of methods applied in performance audit in SAIs are still evolving worldwide. Lonsdale (2000a) investigated the development of value for money audit methods in the NAO in

the UK. The study found that in the period 1988 to 1989, document examination and interviews were the methods most commonly used for evidence collection, while in the period 1993 to 1995, there was a noticeable increase in the application of surveys. Later, in the period 1997 to 1998, focus groups and panels of experts were introduced as new methods to be used along with other previous methods, and in the period of 2003 to 2005, yet more new methods were applied, such as case studies and forms of international comparison (Lonsdale,2008).

6.8.2. Publication and interaction activities of Omani SAI

The findings in this section shed light on the nature of the communications strategy of the Omani SAI towards the public and the mass media. In order to increase the transparency level, it is advisable that SAI publish and provide access to their audit reports results to the mass media and the public. In addition, the international state of audit institution (INTOSAI) should encourage all SAIs to make their audit results accessible to the general public, since such an act would increase the credibility of the audit function, unless prohibited by legislation (Intosai,1992).

It is known that Omani SAI still does not currently publish its audit results, which is the case with many other SAIs globally, especially in developing countries. In fact, only 45% of the respondents thought that Omani SAI promotes its activities and roles in the mass media, while 78% of them confirmed that SAI had specific contact 'phone number and website links to help people raise queries and report any concerns such as fraud, misuse of public resources, etc. Around 60% said that SAI was involved with local

conferences and exhibitions. It is clear the Omani SAI maintains a limited communication strategy with the public and mass media.

To boost the quality of audit reporting in Omani performance auditing, SAI should consider the public as their ultimate principal, and give them the right to view the audit results.

6.8.3. Challenges faced by the Omani SAI performance auditors

The challenges facing the performance auditors in this study were many. The highest agreement level (ranging from slightly agree to strongly agree), which was about 73%, saw auditors' lack of knowledge and scientific methods as a challenge, followed by 69% agreeing that resistance of employees to modern methods was a problem. Next, both the absence of guidance and standards and measurement for PA equality were considered as a challenge, with 63% agreement. Finally, inadequacy of funds allocated for PA showed 50% level of agreement. The absence of standards and the appropriateness of adopting external standards was regarded as a challenge by many SAIs, auditors generally stating that in other countries, like Australia. Auditing should be adjusted to reflect local contexts (Lonsdale et al,2011). The findings promote the need for possible training and development of auditors' skills and updating the current the standards of PA in Oman.

6.9. **Conclusion**

This chapter has discussed the results based on the model and hypotheses built in this thesis, and compared it with the existing literature. It is identified that auditors mostly focus on performance information based on IOO model and 3 Es model elements. Thus judgement is mostly influenced by performance information, while performance perception is not associated with judgement. Moreover, the chapter explained how strongly the judgement and assessment are essential to the decision choice. Above all, the discussion of the total effect reveals some areas that needed more focus by the auditors to improve the quality of their audit and performance perception. Additionally, the moderation effect on results was discussed in brief. This was followed by the clarifying of additional analysis related to the methods applied by SAI in Oman, the publication and interaction activities of the Omani SAI and the challenge factors facing the auditors of this type of audit. The next chapter summarize the thesis, presenting the major contributions and implications, and highlighting the research limitations and recommendations for future studies.

7. Chapter Seven: Conclusion

7.1. Introduction

This research has developed two models explaining the relation between decision choice and reporting in performance audit with performance perception, performance information and judgement, which have been empirically analysed, the results having been discussed in the previous chapters. This final chapter sums up the key findings of the research. Additionally, it provides the research contributions and implications divided into three main areas: contributions to the literature review, contributions to measurement, and methodology and practical implications. Since no research is without limitations, the chapter also presents the identified limitations of this study, and possible recommendations for future studies.

7.2. Overview and Key Finding

The last decades have experienced a lot of developments and evolution in performance audit in different national audit institutions. Despite many achievements, some criticism has come too, the prime focus being on the objectives and indicators that debatably limit our understanding of reality (Lonsdale,2008). While the view of using different controls to enhance the economy, effectiveness, efficiency and accountability of the public sector is still dominant, other aspects of performance have started to gain more attention, such as the overall impact of the entity's activities or service provision on society, the local community or environment, user satisfaction with the service provided, employee satisfaction, accountability of

governmental officers, user feedback and perspective on the service provided, and probity of staff. The latter type of performance is more related to social value and public perspective measures that contribute to the direct success of organizations (Boyne,2003; Boyne,2002; Pollitt,1988).

Although these were described as more subjective, being hard to have monetary value measures, unlike economy and efficiency measures, this should not deter the auditors from using them. Interestingly, many national states of audit have recently recognized the need for the performance audit to be more responsive, which makes them provide a good example for others to follow, such as The Netherlands' Court of Audit. Moreover, performance audit should expand the range of indicators or measurement in order to be able to address more complex problems in the public sector related to social, economic and environmental deterioration (Irawan & McIntyre-Mills,2015).

The key finding of this research is that audit reporting, which is their decision choice in the model heavily depends on the judgement or evaluation process of the auditors. The latter however, depends on the performance information, that is mainly focused on the 3 Es (i.e. economy, efficiency and effectiveness) and IOO model (i.e. input, output and outcome) measures and concerns. Simultaneously, others, such as performance perceptions, place emphasis on social value and public perspectives measures, which do not have any relation with the judgement process in PA. Conversely, this performance perception was found to maintain a weak relation with decision-making, which suggests that auditors are directly, influenced by it, while it is not actually part of the judgement process.

In addition, the total effect reveals that performance perception maintains a partial (i.e. at p-value of 5%) relationship with decision-making. Meanwhile the second model, which split performance perception into responsive and democratic elements, identified that only the responsive performance perception maintained a relation with decision-making. This means that the auditors pay less attention to factors or measures concerned with accountability and probity of staff and user feedback on the services provided.

The evaluation of Importance-Performance Matrix analysis (IPMA) reveals that judgement is the most important latent variable towards decision choice, followed by performance information and performance perception respectively. Hence the quality of performance audit will be enhanced if the auditors consider improving the relation between performance perception (PP) and judgement. This involves enhancing the audit methods of evaluation, and being more responsive and dynamic to change performance audit, particularly in the public sector and society at large.

7.3. Research Contributions and Implications

The contributions of this thesis can be divided into three main groups, which are: contribution to the literature review, contribution to measurement and methodology and practical implications, and which are discussed below.

7.3.1. Contributions of the literature review

This thesis contributes to the literature of performance audit in a number of ways: first by defining the different relations of several stakeholders in the public sector with the SAI in the lens of Agency Theory. The complex nature

of the public sector makes the performance audit mission in verifying the ultimate principal quite difficult, and it is advised by Lonsdale et al (2011) that performance auditors should use caution when positioning themselves, as public sector organizations are considered to be agents for multiple principals within and outside their boundaries, and not only to central government.

Additionally, the study provides an explanation for the responsive approach in PA, and its role and potential influence in improving performance audit practice, as well as the process of learning and improvement in the public sector in general. While modern society problems are complex, and change is the only thing that remains constant, being responsive and responsible is about being able to track the changes and being dynamic - what van der Knaap (2011, p. 335) described as "responsive performance auditing". The auditors are not expected to abandon their traditional way of performing the audit, but instead are expected to be more responsive when it comes to reporting the performance of the organization, by not just focusing on the immediate results and ignoring the long-term effects and those being affected.

Furthermore, the theoretical framework expands the knowledge about the process of decision choice by auditors in PA, describing the different pathways and the four main elements, which are: performance perception, performance information, and judgement and decision choice. The Throughput model conceptualizes assessments or decisions as outcomes of the interaction between perception which is (problem framing, information encoding and biases), available information and judgement, which form the analysis process (Foss & Rodgers,2011).

The framework helps us to understand how the auditors may process the filtering of certain information and select particular perceptions about the organization performance, and whether or not it affects the audit assessment and judgement. It also verifies how judgement can heavily influence the reporting decision. While performance information is normally obtained by auditors to evaluate overall performance of the entity, yet this information is not always responsive to the needs of all stakeholders, as argued in this thesis. Moreover, the results suggest the latter was statistically significant in influencing the auditors' judgement. Unlike performance perception based on public perspective, and social value, performance indicators or measurement did not significantly affect the auditors' judgement. The pervious indicated the pathways followed by auditors in their reporting. Taking the most appropriate pathways can lead to more effective and responsive reporting decisions. Moreover, the literature extends our understanding of the moderating effect of some demographic factors such as age, gender, educational level and experience level, and how they may affect the pathways in the model.

Finally, since little has been written about performance audit and the SAI in Omani, the literature about Omani SAI will contribute to the practice and experience of performance audit in the Middle East generally, and in Oman in particular. The findings of the thesis answer the research question relating to the current condition of performance audit in Oman. Consequently, the literature will be valuable for future research in this area, especially in studying the development effect of the recent reforms of SAI in Oman, and should open the door for further investigation.

7.3.2. Contributions related to the measurement and methodology

The study provides a valid and reliable measurement for the following latent variables: Performance Information (PI), Performance Perception (PP), Judgement (J), Decision Choice (D), Responsive Performance Perception (RPP) and Democratic Performance Perception (DPP). The items for each latent variable have been tested via rigorous statistical methodology consisting of factor analysis and PLS reliability, and convergent and discriminant validity tests, such as AVE, items loading and composite reliability and Cronbach's Alpha. Only those shown to meet the requirements for reliability and validity are used in the model, and thus it can be used for further research in PA, where more constructs may be added to enhance the model further.

Meanwhile the application of the partial least square (PLS) in this study contributes to methodology development in the performance audit research field, which is dominated by qualitative type research, opening the potential for PLS modelling in this field. While the first generation analysis method, such as factor analysis and regression, provides one layer of a relationship at a time between the independent and dependent variables, the SEM-PLS enables modelling of multiple layers of relationship, simultaneously answering research questions in one model in a systematic and comprehensive manner (Chin,1998; Gefen et al,2000). The two-step analysis (i.e. measurement and structural analysis) presented in this research provides step-by-step guidance for future studies. For example, the study provides details of conducting different reliability and validity tests, path coefficients, determination of

coefficient (R-square), total effect, F Square, predicative relevance Q-square and Importance-Performance matrix analysis. The thesis also provides detailed analysis of Multi-Group Analysis (MGA) that can now be performed automatically in Smart PLS, as well as a new test to check the common method bias in PLS which used Marker variable that is unrelated to the model (Chin et al,2013).

7.3.3. Practical implications

This research provides several practical implications that can benefit audit institutions in general and the auditors in performance audit more precisely. The results point to an important fact regarding reporting decision in performance audit, and how it is predominantly affected by the previous selection of information and perception that are processed in the judgement or assessment before arriving at decision choices. The findings suggest that close attention should be paid when it comes to assessing the performance of organizations is not to ignore the social value and public perspective elements. Although the results showed that decision-making in reporting is influenced by performance perception that focuses on social value and public perspective, judgement is not influenced by performance perception. One of our main contributions in this study is that auditors, depending upon their viewpoint and their objectives, may weight specific pathways heavier than others. The auditors and decision-makers can benefit from understanding that certain pathways may improve or modify the audit report and produce more responsive audit reporting.

To improve responsive reporting in PA, higher consideration and effort should be placed on the latter element of organizational performance. The research does not suggest that the focus should be shifted from quantifiable organizational performance. Whilst performance information is essentially based on the 3 Es and IOO model, equal attention should be paid to both IP and PP.

In addition, the research identifies the importance of being more responsive in PA, and updating the evaluation methods in PA, as well as the methods of collecting the information. Involving other stakeholders' perspectives in data collection for PA, and including other experts' views (e.g. lawyers and engineers) in the evaluation process will enhance the PA findings and make their reports more responsive.

The research findings may draw the attention of decision-makers in the public sector, such as ministers, official managers and even the politicians, to the value of PA in the process of public sector improvements. For example, auditors should investigate the effects of public sector policies before, during and after implementation, in order to avoid late adjustments. Meanwhile, the cooperation and health dialogue between auditors and public sector administrators could help the administration to make the best use of the audit report recommendations. Realizing the benefits of the performance report may motivate more politicians to use the report in parliamentary meetings and sessions.

Finally, SAI in Oman could benefit from the findings and results in this study, since they highlight some important aspects in the practice of performance

audit and draw attention to the challenges and the publication of interactive policy, as well the methods applied by performance auditors. The latter shed light on some weakness and areas of improvement. It will be beneficial for the SAI in Oman to relate this study's findings to the recent reforms that have taken place in SAI, and to compare and analyse their development as well seeing the potential for further improvements. The SAI in Oman should consider the possibility of publishing their audit report on their website and making it accessible to all if they are serious about improving the quality of the reporting system.

7.4. Research Limitations and Recommendations for Future Research

While this research has made some significant contributions, both theoretical and practical, it has some limitations that should be noted when interpreting its findings. One of the limitations that needs to be acknowledged is the predictive power of the model, i.e. the R-square value, or for more unbiased results, the adjusted R-square. The first model proposed only 0.477% of variance and the second model suggested 0.474% of variance, which is considered as moderate. Almost 50% unexplained variance in the model is still relevant, and this may be due to the insignificant effect of the path relations such as PP to J. Alternatively, it may possibly be due to omission of certain items to measure some constructs included in this study. Nevertheless, the present variance could be the best in the current study settings, and there could be some additional factors affecting the model that were situation specific. Where it was impossible to include each and every

potential construct in the models, the researcher had to make decisions regarding which was the most significant construct to investigate and which might be left for future studies. The decision was based on previous literature and research.

It is unknown if the current study's models and empirical findings could be generalized beyond the scope of the study context. Thus the results of the findings may only be applicable in the context of this study. However, future research that duplicates the same models and uses its measurement items to be tested in different contexts could establish an additional and external validity to this study, and enhance the level of confidence in its robustness. Although the nature of the sample may affect the generalizability of the findings, yet they may offer case study observations of data at a micro level, which is SAI in Oman, in order to explore the performance audit experience there. It is clarified by Yin (1994) that case study result generalisations stem from theory rather than populations. Moreover, due to the limited number of participants, testing the moderation effect of all the groups with one moderate variable was insufficient. Therefore, it was necessary for the researcher to split each moderator into only two groups.

Additionally, the research method in this thesis was limited to a cross-sectional survey, the latter being criticized for its attribute to common method variance. The participants may have been inclined to answer the questions in the survey in a socially desirable way (Dillman,2000). While the researcher was aware of this issue, and tried to limit its effect by procedural controlling applied in the questionnaire design, this by no means removed the possibility of common method bias completely. In fact, there was no evidence for the

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existence of common method bias in this study, which was confirmed using different techniques to detect it, such as Harman's single factor test, examining the correlation matrix and another advanced method, examining the correlation matrix of all the constructs with a marker variable that was not related to the model. However, it was not possible to confirm that common method bias was not entirely present.

From the researcher perspective, adding another theoretical lens (e.g. stakeholder theory or institutional theory), along with Throughput model and Agency Theory, would enrich the explanation of the complex nature of the relations between the different stakeholders in the public sector, and how they could affect performance audit reporting.

Since the research was based on one technique for data collection, which was the questionnaire, the nature of the findings was limited to the questions asked. According to studies in the performance audit area that focus on document based (e.g. audit reports) research technique involving participative observation or in-depth interviews with all ranks in the SAI, there are better and more valuable approaches to get behind the 'formal front' (Lonsdale et al,2011). Hence there is a potential role for ethnography in informing and critiquing the practice of the performance audit. Alternatively, it would also be useful to expand the survey with a more longitudinal approach.

7.5. **Chapter Conclusions**

In brief, this final chapter has summed up the key findings of the research, and the main contributions and implications presented, based on the literature review, measurement and methodology and practical implications perspectives. The researcher also indicated areas of improvement for future studies, by referring to the limitations of the research and suggesting some recommendations and directions.

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9. Appendix

9.1.1. Outliers test
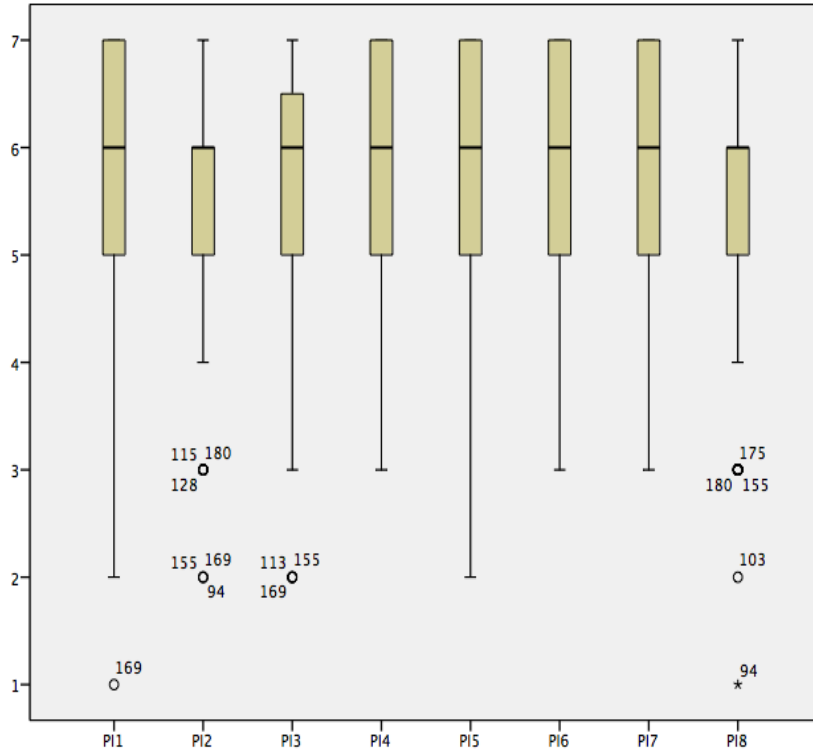
Figure 35 Performance Information outliners
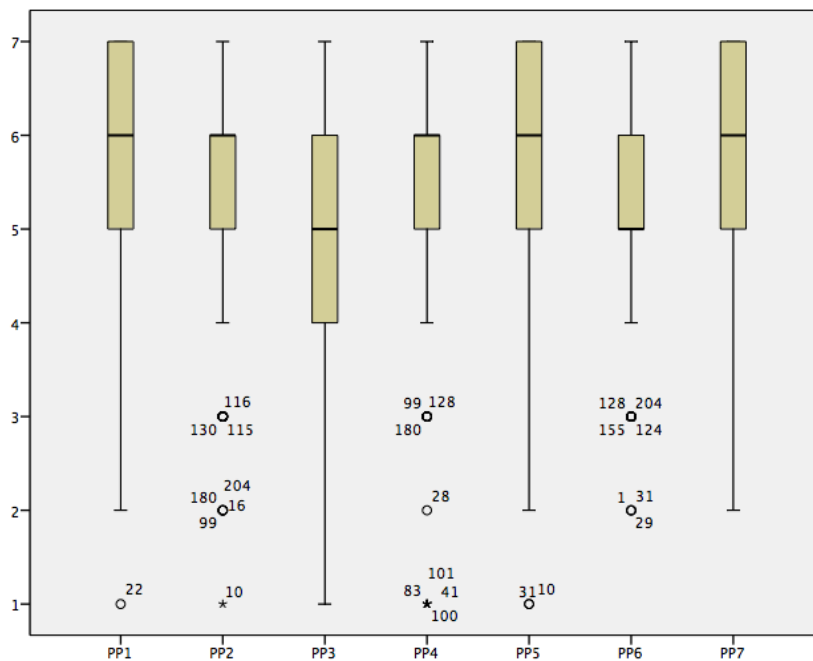
(Source: Author)

Figure 36 Outliers in Performance Perception construct

(Source:Author)
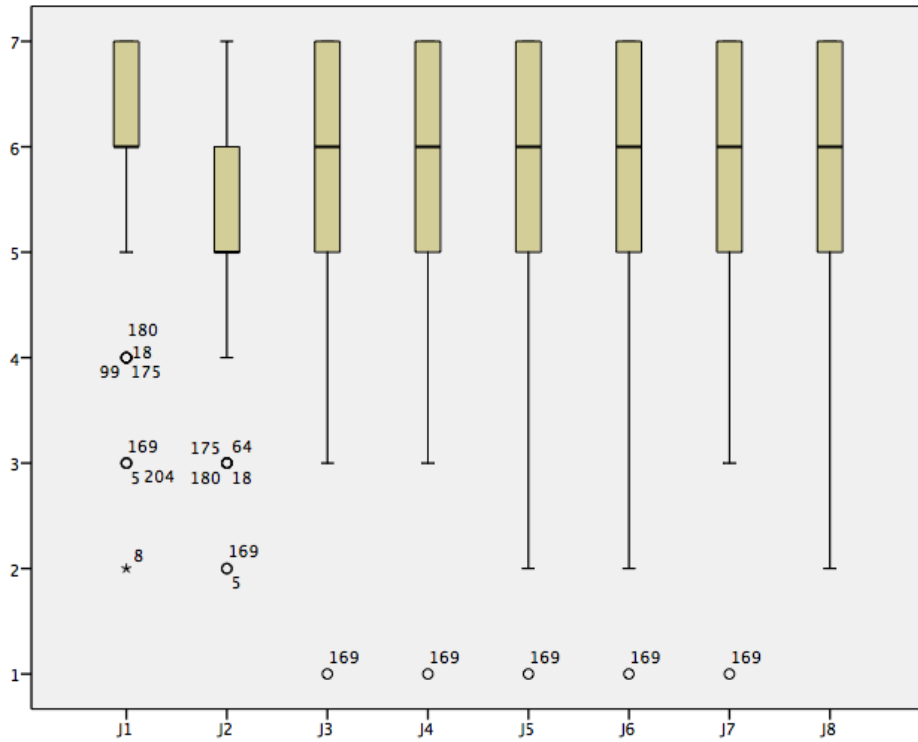
Figure 37Outliners in Judgement construct

(Source:Author)
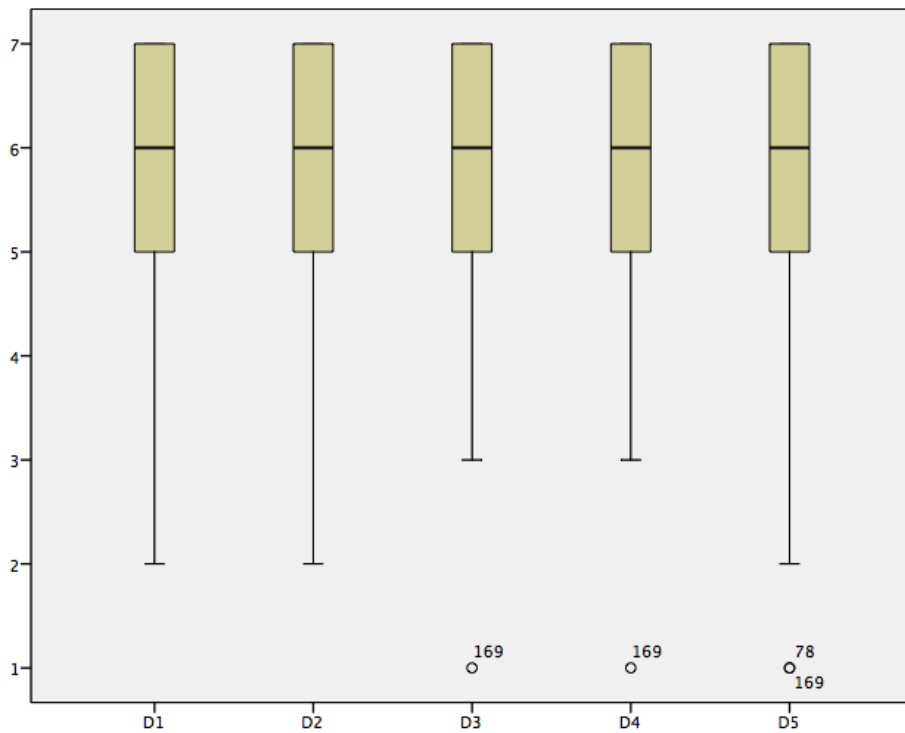
Figure 38 Outliners in Decision Construct

(Source:Author)

9.1.2. Common method biased test: Harman's single factor test

Table 80 Harman's single factor test

		Total Variance Explained				
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.551	34.109	34.109	9.551	34.109	34.109
2	2.477	8.848	42.957			
3	1.763	6.297	49.255			
4	1.293	4.617	53.872			
5	1.063	3.797	57.668			
6	.950	3.395	61.063			
7	.842	3.007	64.070			
8	.832	2.970	67.040			
9	.820	2.930	69.970			
10	.724	2.587	72.557			
11	.695	2.483	75.039			
12	.664	2.373	77.412			
13	.634	2.265	79.677			
14	.581	2.074	81.751			
15	.551	1.966	83.717			
16	.533	1.905	85.622			
17	.488	1.743	87.366			
18	.450	1.607	88.973			
19	.420	1.500	90.473			
20	.397	1.419	91.892			
21	.376	1.343	93.235			
22	.343	1.225	94.460			
23	.309	1.105	95.565			
24	.285	1.019	96.584			
25	.280	1.002	97.586			
26	.247	.881	98.467			
27	.226	.807	99.275			
28	.203	.725	100.000			
Extraction Method: Principal Component Analysis.						

(Source:Author)

Continue Harman's single factor test, Communalities		
	Initial	Extraction
PI1 Economic aspect (e.g. expenditure and the utilization of public funds)	1.000	.419
PI2 Quality of output (e.g. compare between the quality of service provided to the standards and norms)	1.000	.325
PI3 Cost per unit of production/service.	1.000	.444
PI4 Achievement of goals and objectives of the audited entity.	1.000	.355
PI5 Effectiveness in achieving the output of the programmes, activities or projects.	1.000	.225
PI6 Meeting the time schedule of providing the services or projects completion in the audited entity	1.000	.439
PI7 Legitimacy and Legality of management of purchase tenders, supply agreements and contract	1.000	.265
PI8 Quantity of output (e.g. ratio of the services provided per day/ month etc.)	1.000	.385
PP1 Overall impact of the entity's activities or their service provision has on society, local community or environment	1.000	.281
PP2 Users satisfaction of the service provided	1.000	.289
PP3 Employee satisfaction	1.000	.194
PP4 Equality or fairness of service provision (e.g. distribution of service by gender, age, race, income and geographical area)	1.000	.212
PP5 Accountability of governmental officers (i.e. how answerable of their actions)	1.000	.331
PP6 User feedback and their perspective on the services provided	1.000	.268
PP7 Probity of staff (fraud absent and proper use of public funds)	1.000	.274
J1 Using external experts increase the credibility of performance audit report	1.000	.358
J2 Auditors have sufficient knowledge	1.000	.218
J3 Auditors are professional in their approach	1.000	.452
J4Auditors conclusion are based on appropriate sufficient evidences	1.000	.306
J5 Audit team always discuss the objectives and agenda of audit before starting their audit procedures.	1.000	.356
J6 Consensus among teams is important due to its influence on the team views about evidence , data collection and analysis strategy pursued	1.000	.376
J7 At the end of audit, the team presents their report to the highest authorities in the audited entity to ensure that they agrees that individual facts and judgements made in the report were all correct and fair	1.000	.373
J8 Continue dialogue and understanding between auditors and audited entity personnel is essential in order to again acceptance for audit report recommendations	1.000	.306
D1 Performance audit reports help policy makers to assess the overall performance of the government administration	1.000	.429
D2 Recommendations in the reports are of good value to citizens and public service users	1.000	.491
D3 Performance audit report presents evidence and well-founded conclusions that contribute to the central governments considerations of change and improvement in public services	1.000	.426
D4 Audit recommendations are constructive and feasible	1.000	.370
D5 Hold managers and administrative executive accountable and monitor their activities	1.000	.385
Extraction Method: Principal Component Analysis.		

(Source:Author)

9.1.3. Factor analysis test

Rotated Factor Matrix

	Factor			
	1	2	3	4
PI1		.518		
PI2		.548		
PI3		.603		
PI4		.531		
PI5		.479		
PI6		.561		
PI7		.507		
PI8		.493		
PP1			.485	
PP2			.657	
PP3			.625	
PP4			.526	
PP5			.581	
PP6			.498	
PP7			.465	
J1	.485			
J2	.480			
J3	.572			
J4	.545			
J5	.573			
J6	.536			
J7	.568			
J8	.487			
D1				.504
D2				.610
D3				.646
D4				.478
D5				.452

Extraction Method: Image Factoring.
 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations. (Source:Author)

Continue image factoring

Communalities

	Initial	Extraction
PI1	.504	.434
PI2	.450	.385
PI3	.587	.507
PI4	.513	.403
PI5	.395	.329
PI6	.547	.475
PI7	.450	.323
PI8	.514	.402
PP1	.418	.341
PP2	.565	.489
PP3	.526	.413
PP4	.391	.323
PP5	.532	.442
PP6	.449	.340
PP7	.483	.342
J1	.436	.360
J2	.368	.271
J3	.558	.475
J4	.441	.374
J5	.528	.439
J6	.505	.425
J7	.514	.425
J8	.508	.422
D1	.544	.463
D2	.657	.597
D3	.654	.589
D4	.512	.423
D5	.454	.413

Extraction Method: Image Factoring.
(Source:Author)

9.1.4. Extra PLS analysis

Table 82 descriptive analyses for all items

items	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics (|O/STERR|)	P Values	Confidence Intervals	Significance level
D1	0.791	0.789	0.037	21.111	0.000	(0.704,0.851)	***
D2	0.842	0.842	0.026	31.979	0.000	(0.784,0.886)	***
D3	0.833	0.829	0.038	22.043	0.000	(0.740,0.888)	***
D4	0.751	0.745	0.054	13.845	0.000	(0.618,0.833)	***
D5	0.751	0.747	0.045	16.517	0.000	(0.646,0.824)	***
J1	0.689	0.685	0.063	10.946	0.000	(0.536,0.785)	***
J3	0.756	0.752	0.049	15.352	0.000	(0.644,0.835)	***
J4	0.688	0.683	0.057	11.975	0.000	(0.556,0.781)	***
J5	0.740	0.734	0.052	14.293	0.000	(0.621,0.820)	***
J6	0.740	0.739	0.042	17.608	0.000	(0.647,0.812)	***
J7	0.745	0.741	0.045	16.422	0.000	(0.645,0.822)	***
J8	0.682	0.683	0.059	11.520	0.000	(0.553,0.785)	***
PI1	0.716	0.713	0.051	14.055	0.000	(0.601,0.800)	***
PI2	0.704	0.699	0.058	12.185	0.000	(0.570,0.794)	***
PI3	0.788	0.786	0.033	24.104	0.000	(0.716,0.843)	***
PI4	0.694	0.693	0.047	14.877	0.000	(0.591,0.774)	***
PI5	0.629	0.628	0.069	9.065	0.000	(0.473,0.744)	***
PI6	0.772	0.771	0.028	27.780	0.000	(0.711,0.820)	***
PI7	0.642	0.637	0.055	11.606	0.000	(0.517,0.730)	***
PI8	0.709	0.708	0.039	18.183	0.000	(0.624,0.777)	***
PP1	0.698	0.697	0.051	13.762	0.000	(0.587,0.785)	***
PP2	0.752	0.749	0.041	18.447	0.000	(0.657,0.816)	***
PP3	0.695	0.692	0.052	13.415	0.000	(0.574,0.780)	***
PP5	0.759	0.759	0.033	23.291	0.000	(0.689,0.816)	***
PP6	0.718	0.719	0.045	15.787	0.000	(0.619,0.797)	***
PP7	0.693	0.692	0.051	13.663	0.000	(0.582,0.779)	***

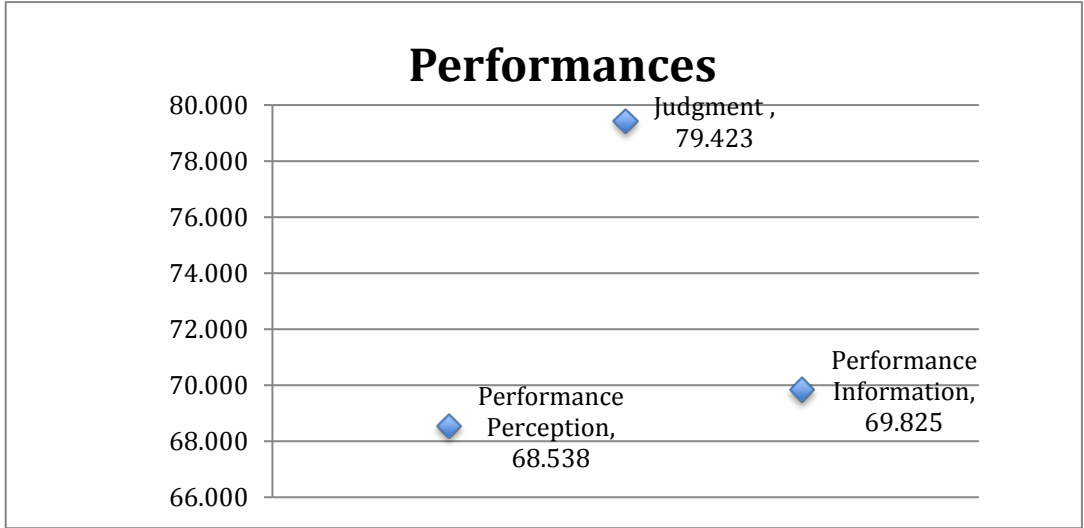Note *** P<0.01(Source:Author)

Performances

Figure 39 IPMA (Performances) form model 1

(Source:Author)

Improtance
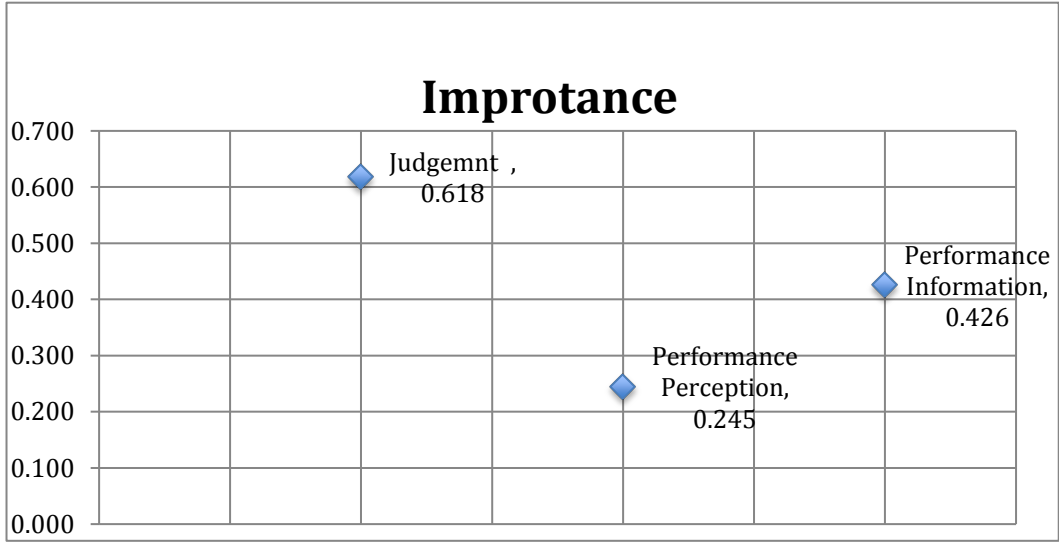
Figure 40 IPMA (Importance) for model 1

(Source:Author)

Table 83 Confidence Intervals (bias corrected)

	Path Coefficients (female)	Path Coefficients (male)	CI Low (female)	CI Low (male)	CI High (female)	CI High (male)
Judgement -> Decision	0.305	0.688	0.071	0.430	0.773	0.845
Performance Information -> Judgement	0.203	0.562	-0.012	0.267	0.678	0.748
Performance Information -> Performance Perception	0.572	0.578	0.449	0.482	0.812	0.736
Performance Perception -> Decision	0.426	0.124	-0.040	-0.002	0.684	0.361
Performance Perception -> Judgement	0.418	0.060	-0.076	-0.144	0.760	0.455

(Source:Author)

Correlations Matrix

Indicator	PI1	PI2	PI3	PI4	PI5	PI6	PI7	PI9	PP1	PP4	PP5	PP6	PP7	PP8	PP10	J4	J5	J6	J7	J8	J9	J10	J11	D1	D3	D4	D5	D10
PI1	1																											
PI2	.455**	1																										
PI3	.458**	.521**	1																									
PI4	.487**	.469**	.433**	1																								
PI5	.346**	.332*	.401**	.453**	1																							
PI6	.465**	.407**	.525**	.487**	.446**	1																						
PI7	.440**	.416**	.442**	.338**	.284**	.481**	1																					
PI9	.386**	.442**	.614**	.317**	.388**	.477**	.302**	1																				
PP1	.324**	.318**	.254**	.291**	.354**	.243**	.389**	.302**	1																			
PP4	.210**	.268**	.300**	.261**	.294**	.314**	.224**	.320**	.389**	1																		
PP5	.215**	.177*	.188**	.294**	.316**	.257**	.299**	.320**	.436**	.414**	1																	
PP6	.191**	0.126	.162	.247**	.233**	.268**	.170*	.131	.299**	.354**	.489**	1																
PP7	.196**	.264**	.379**	.274**	.298**	.288**	.248**	.373**	.392**	.296**	.496**	.506**	1															
PP8	.331**	.180*	.292**	.270*	.339**	.189**	.333**	.450**	.399**	.392**	.409**	.311**	.400**	1														
PP10	.258**	.264**	.339**	.312**	.325**	.424**	.379**	.301**	.369**	.399**	.489**	.353**	.522**	.454**	1													
J4	.392*	.277**	.322**	.401**	.208*	.338**	.240**	.322**	.238**	.257**	.177*	.219**	.227**	.269**	.380**	1												
J5	.277**	.168*	.289**	.237**	.095	.242**	.207**	.148*	.162	.13	.145*	.193**	.190**	.380**	.495**	.483**	1											
J6	.467**	.362**	.361**	.326**	.199**	.385**	.250**	.289**	.295**	.285**	.282**	.305**	.196**	.427**	.495**	.540**	.483**	1										
J7	.315**	.279**	.226**	.158*	.207**	.247**	.288**	.161	.177	.095	.161	.213**	.227**	.159*	.434**	.301**	.427**	.447**	1									
J8	.324**	.276**	.337**	.287**	.207**	.356**	.365**	.244**	.151*	.11	.188**	.245**	.187**	.223**	.375**	.452**	.301**	.497**	.447**	1								
J9	.341*	.237*	.323**	.167*	.117	.388**	.226**	.271**	.242**	.150*	.229**	.246**	.218**	.279**	.423**	.431**	.381**	.536**	.459**	.497**	1							
J10	.337**	.243**	.383**	.239**	.233**	.292**	.259**	.284**	.271**	.202**	.219**	.382**	.246**	.251**	.431**	.312**	.401**	.412**	.459**	.490**	.497**	1						
J11	.204**	.175*	.190**	.210**	.079	.254**	.162*	.199**	.150*	.116	.229**	.245**	.213**	.251**	.423**	.304**	.401**	.536**	.490**	.459**	.490**	.355**	1					
D1	.403**	.303**	.358**	.334**	.179*	.264**	.259**	.204**	.236**	.254**	.267**	.279**	.305**	.345**	.323**	.304**	.313**	.443**	.405**	.412**	.518**	.490**	.355**	1				
D3	.412*	.335**	.349**	.372*	.191*	.332**	.287**	.300**	.283**	.224**	.246**	.297**	.322**	.364**	.358**	.366**	.344**	.450**	.393**	.385**	.443**	.405**	.504**	.559**	1			
D4	.394**	.295**	.356**	.411**	.241**	.388**	.172*	.273**	.208*	.106	.207**	.212**	.226**	.196**	.320**	.216**	.374**	.352**	.443**	.382**	.450**	.368**	.480**	.558**	.687**	1		
D5	.388**	.341**	.361**	.371**	.115	.283**	.268**	.363**	.249**	.223**	.170*	.164*	.212**	.251**	.321**	.316**	.343**	.417**	.351**	.337**	.443**	.356**	.392**	.579*	.476*	.537**	1	
D10	.375**	.278**	.369**	.294**	.161*	.346**	.305**	.293**	.299**	.222**	.166*	.212**	.260**	.205**	.201**	.347**	.273**	.430**	.307**	.408**	.432**	.335**	.399**	.449**	.572*	.521**	.444**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Figure 41 Correlation Matrixes

9.1.5. Questionnaire

UNIVERSITY OF Hull

Dear Respondent,

I am a PhD candidate at Hull Business School in University of Hull, under the supervision of Professor Waymond Rodgers, Head of Accounting Department, University of Hull, Hull UK.

This research is entitled as: *Performance auditing practice by State of Audit institutions, the need for responsive audit.*

This questionnaire is part of a PhD research project aiming to develop a model to assess the understanding of decision choice process by performance auditors. The study will help to identify the approaches, tools or evaluation methods applied by the auditors. Also the model will give insight on the main information and perception used by the auditors.

This study will require you to complete the survey questionnaire which takes approximately 15 to 20 minutes. Your participation is voluntary, and if you do not wish to participate please discards the questionnaire. All information you provide will be kept strictly confidential and will not be attributed to the individual or organisation. Completed questionnaire response will be stored in secure environment, and the results of research would be used for academic purpose only.

If you have any question or concern about this study, please contact me, Sheikha Al Subhi, PhD Student at Hull Business School, University of Hull or my supervisor Professor Waymond Rodgers. My e-mail:s.s.al-subhi@2012.hull.ac.uk, or my supervisor e-mail: w.rodgers@hull.ac.uk

Your help would be greatly appreciated, thank you very much for your time and cooperation.

Consent:

I have read the above information and I agree to participate in this study (Please Tick)

Date: 20/05/2014

Best Regards,

Sheikha Al Subhi.

Section A: Information required in performance auditing

This section investigates the extent to which the performance auditors consider the following aspects during their audit.

	1	2	3	4	5	6	7
Economic aspect (e.g. expenditure and the utilization of public funds)	❍	❍	❍	❍	❍	❍	❍
Quality of output (e.g. compare between the quality of service provided to the standards and norms)	❍	❍	❍	❍	❍	❍	❍
Cost per unit of production/service	❍	❍	❍	❍	❍	❍	❍
Achievement of goals and objectives of the audited entity	❍	❍	❍	❍	❍	❍	❍
Effectiveness in achieving the output of the programs, activities or projects.	❍	❍	❍	❍	❍	❍	❍
Meeting the time schedule of providing the services or projects completion in the audited entity	❍	❍	❍	❍	❍	❍	❍
The Legitimacy and Legality of management of purchase tenders, supply agreements and contract	❍	❍	❍	❍	❍	❍	❍
Quantity of output (e.g. ratio of the services provided per day/ month etc.)	❍	❍	❍	❍	❍	❍	❍

Please click on the circles that indicate appropriate response to each sentence

below where: 1=Strongly Disagree 2= Disagree, 3=Slightly Disagree, 4=Neither

Agree or Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree

Section B: Other considerations in performance audit

As auditor, to what extent did you agree with the importance of the following issues?

Please click on the circles that indicate appropriate response to each sentence below where:

1=Strongly Disagree 2=Disagree, 3=Slightly Disagree, 4= Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree.

	1	2	3	4	5	6	7
Overall impact of the entity's activities or their service provision has on society, local community or environment (e.g. how providing a free meal to students at local school may affect the students, parents and society)	❍	❍	❍	❍	❍	❍	❍
Users satisfaction of the service provided	❍	❍	❍	❍	❍	❍	❍
Employee satisfaction	❍	❍	❍	❍	❍	❍	❍
Equity or fairness of service provision (e.g. distribution of service by gender, age, race, income and geographical area)	❍	❍	❍	❍	❍	❍	❍
Accountability of governmental officers (i.e. how	❍	❍	❍	❍	❍	❍	❍

answerable of their actions)							
User feedback and their perspective on the services provided	❍	❍	❍	❍	❍	❍	❍
Probity of staff (fraud absent and proper use of public funds)	❍	❍	❍	❍	❍	❍	❍

Section C: Techniques tools and procedures followed by performance audit

As an auditor, to what extent do you agree with the following analysis techniques used to assess the performance of the audited organization?

Please click on the circles that indicate appropriate response to each sentence below where:

1=Strongly Disagree 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree.

	1	2	3	4	5	6	7
Using external experts increase the credibility of performance audit report	○	○	○	○	○	○	○
The auditors have sufficient knowledge and do not need to be trained	○	○	○	○	○	○	○
The auditors are professional in their approach	○	○	○	○	○	○	○
Auditors conclusion are based on appropriate & sufficient evidences	○	○	○	○	○	○	○

Section D: Teamwork procedure

As auditor to what extent did you agree with the following sentences?

Please click on the circles that indicate appropriate response to each sentence below where:

1=Strongly Disagree 2=Disagree, 3=Slightly Disagree, 4=Neither Agree or Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree.

	1	2	3	4	5	6	7
The audit team always discuss the objectives and agenda of audit before starting their audit procedures	❍	❍	❍	❍	❍	❍	❍
Consensus among teams is important due to its influence on the team views about evidence, data collection and analysis strategy pursued	❍	❍	❍	❍	❍	❍	❍
At the end of audit, the team presents their report to the highest authorities in the audited entity to ensure that they agrees that individual facts and judgements made in the report were all correct and fair	❍	❍	❍	❍	❍	❍	❍
Continue dialogue and understanding between auditors and audited entity personnel is essential in order to again acceptance for audit report recommendations	❍	❍	❍	❍	❍	❍	❍

Section E: Decision choice

As an auditor, to what extent did you agree with the following statements regarding the auditors' final report?

Please click on the circles that indicate appropriate response to each sentence below where:

1=Strongly Disagree 2=Disagree, 3=Slightly Disagree, 4=Neither Agree nor Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree.

	1	2	3	4	5	6	7
Audit recommendations are constructive and feasible	❍	❍	❍	❍	❍	❍	❍
Performance audit reports help policy makers to assess the overall performance of the government administration	❍	❍	❍	❍	❍	❍	❍
The recommendations in the reports are of good value to citizens and public service users	❍	❍	❍	❍	❍	❍	❍
Performance audit report presents evidence and well-founded conclusions that contribute to the central governments considerations of change and improvement in public services	❍	❍	❍	❍	❍	❍	❍
Hold managers and administrative executive accountable and monitor their activities	❍	❍	❍	❍	❍	❍	❍

How often the following methods used by performance auditors to collect evidence

Please select the appropriate respond from the drop down list

	never	Rarely 10%	Occasionally 30%	sometimes 50%	Frequently 70%	usually 90%	all the Time
Document review	❍	❍	❍	❍	❍	❍	❍
Inspection and direct observation	❍	❍	❍	❍	❍	❍	❍
Interviews and oral enquiry	❍	❍	❍	❍	❍	❍	❍
survey or questionnaire	❍	❍	❍	❍	❍	❍	❍
Case study	❍	❍	❍	❍	❍	❍	❍

Section F: Communications

In the following questions, select the most appropriate response to each

	Yes	No
Performance audit report of public sector available to public	❍	❍
The state of Audit Institution (SAI) publish or participate in newspapers, magazine or in radio and TV programs to promote their aims and clarify their roles	❍	❍
The state of Audit Institution (SAI) have specific telephone contacts or website links designed to help public raise queries or report their concerns about performance of public sector entities.	❍	❍
The state of audit institution (SAI) participate in local conference or exhibitions	❍	❍

item below.

Section G: possible internal obstacles or challenges

To what extent to you agree that the following can be consider as internal obstacles or even challenges

Please click on the circles that indicate appropriate response to each sentence below where:

1=Strongly Disagree 2=Disagree, 3=Slightly Disagree, 4=Neither Agree or Disagree, 5=Slightly Agree, 6=Agree and 7=Strongly Agree.

	1	2	3	4	5	6	7
Absence of a guide in undertaking performance audit	❍	❍	❍	❍	❍	❍	❍
Absence of standards and measurement for performance audit	❍	❍	❍	❍	❍	❍	❍
Auditors lack of knowledge and scientific methods	❍	❍	❍	❍	❍	❍	❍
Resistance of some employees to modern methods because of their disability to adapt to change.	❍	❍	❍	❍	❍	❍	❍
Inadequacy of funds and provisions necessary for performance audit	❍	❍	❍	❍	❍	❍	❍

Section H: Background information

For each item, please click on the appropriate response.

What is your gender?

❍ Male
❍ Female

How old are you in years?

_____

 What is your qualification level?

❍ High school certificate
❍ Bachelor
❍ Master
❍ Higher professional qualification e.g. ACCA, CMA,CPA,CPT, PhD
❍ Other _____

How many years of experience do you have in auditing?

❍ Under 5
❍ 5-9
❍ 10-14
❍ 15-19
❍ 20-24
❍ 25-29
❍ 30 or over _____

What is the country of your auditing institution?

- ○ Afghanistan
- ○ Albania
- ○ Algeria
- ○ Andorra
- ○ Angola
- ○ Antigua and Barbuda
- ○ Argentina
- ○ Armenia
- ○ Australia
- ○ Austria
- ○ Azerbaijan
- ○ Bahamas
- ○ Bahrain
- ○ Bangladesh
- ○ Barbados
- ○ Belarus
- ○ Belgium
- ○ Belize
- ○ Benin
- ○ Bhutan
- ○ Bolivia
- ○ Bosnia and Herzegovina
- ○ Botswana
- ○ Brazil
- ○ Brunei Darussalam
- ○ Bulgaria
- ○ Burkina Faso
- ○ Burundi
- ○ Cambodia
- ○ Cameroon
- ○ Canada
- ○ Cape Verde
- ○ Central African Republic
- ○ Chad
- ○ Chile
- ○ China
- ○ Colombia
- ○ Comoros
- ○ Congo, Republic of the...
- ○ Costa Rica
- ○ Côte d'Ivoire

- Croatia
- Cuba
- Cyprus
- Czech Republic
- Democratic People's Republic of Korea
- Democratic Republic of the Congo
- Denmark
- Djibouti
- Dominica
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Equatorial Guinea
- Eritrea
- Estonia
- Ethiopia
- Fiji
- Finland
- France
- Gabon
- Gambia
- Georgia
- Germany
- Ghana
- Greece
- Grenada
- Guatemala
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Honduras
- Hong Kong (S.A.R.)
- Hungary
- Iceland
- India
- Indonesia
- Iran, Islamic Republic of...
- Iraq
- Ireland
- Israel
- Italy
- Jamaica

- ○ Japan
- ○ Jordan
- ○ Kazakhstan
- ○ Kenya
- ○ Kiribati
- ○ Kuwait
- ○ Kyrgyzstan
- ○ Lao People's Democratic Republic
- ○ Latvia
- ○ Lebanon
- ○ Lesotho
- ○ Liberia
- ○ Libyan Arab Jamahiriya
- ○ Liechtenstein
- ○ Lithuania
- ○ Luxembourg
- ○ Madagascar
- ○ Malawi
- ○ Malaysia
- ○ Maldives
- ○ Mali
- ○ Malta
- ○ Marshall Islands
- ○ Mauritania
- ○ Mauritius
- ○ Mexico
- ○ Micronesia, Federated States of...
- ○ Monaco
- ○ Mongolia
- ○ Montenegro
- ○ Morocco
- ○ Mozambique
- ○ Myanmar
- ○ Namibia
- ○ Nauru
- ○ Nepal
- ○ Netherlands
- ○ New Zealand
- ○ Nicaragua
- ○ Niger
- ○ Nigeria
- ○ North Korea
- ○ Norway
- ○ Oman

- ❍ Pakistan
- ❍ Palau
- ❍ Panama
- ❍ Papua New Guinea
- ❍ Paraguay
- ❍ Peru
- ❍ Philippines
- ❍ Poland
- ❍ Portugal
- ❍ Qatar
- ❍ Republic of Korea
- ❍ Republic of Moldova
- ❍ Romania
- ❍ Russian Federation
- ❍ Rwanda
- ❍ Saint Kitts and Nevis
- ❍ Saint Lucia
- ❍ Saint Vincent and the Grenadines
- ❍ Samoa
- ❍ San Marino
- ❍ Sao Tome and Principe
- ❍ Saudi Arabia
- ❍ Senegal
- ❍ Serbia
- ❍ Seychelles
- ❍ Sierra Leone
- ❍ Singapore
- ❍ Slovakia
- ❍ Slovenia
- ❍ Solomon Islands
- ❍ Somalia
- ❍ South Africa
- ❍ South Korea
- ❍ Spain
- ❍ Sri Lanka
- ❍ Sudan
- ❍ Suriname
- ❍ Swaziland
- ❍ Sweden
- ❍ Switzerland
- ❍ Syrian Arab Republic
- ❍ Tajikistan
- ❍ Thailand
- ❍ The former Yugoslav Republic of Macedonia

- ❍ Timor-Leste
- ❍ Togo
- ❍ Tonga
- ❍ Trinidad and Tobago
- ❍ Tunisia
- ❍ Turkey
- ❍ Turkmenistan
- ❍ Tuvalu
- ❍ Uganda
- ❍ Ukraine
- ❍ United Arab Emirates
- ❍ United Kingdom of Great Britain and Northern Ireland
- ❍ United Republic of Tanzania
- ❍ United States of America
- ❍ Uruguay
- ❍ Uzbekistan
- ❍ Vanuatu
- ❍ Venezuela, Bolivarian Republic of...
- ❍ Viet Nam
- ❍ Yemen
- ❍ Zambia
- ❍ Zimbabwe

Thank you for your time and valuable contribution to study

عزيزي المجيب لموضوع الإستبانة /

أنا طالبة دكتوراه في قسم التجارة بجامعة هول، تحت إشراف البروفيسور وايموند رودجرز، رئيس قسم المحاسبة في جامعة هول، المملكة المتحدة. هذه الإستبانة جزءاً من اطروحة لنيل شهادة الدكتوراه التي أسعى للحصول عليها والهادفة إلى تطوير نموذج لتقييم فهم عملية اختيار القرار من قبل مراقبي الأداء. تساعد الدراسة على تحديد النهج، الأدوات ووسائل التقييم التي يطبقها المدققين. علاوةً على ذلك، سيعطي النموذج فكرة عن المعلومات الرئيسة والمعلومات التي يستعملها المدققين. ستتطلب هذه الدراسة منكم إتمام أسئلة الإستبانة، علماً أن إتمام هذا الإستبيان سيستغرق وقت يتراوح ما بين 30 - 20 دقيقة. ونحيطكم علماً أن مشاركتكم طوعية. يُشار إلى أن المعلومات التي ستقدمونها ستبقى سريةً و في شكلٍ حصري ولن تُعزى إلى افراد أومنظمات. وستُحفظ الأجوبة الواردة في الإستبيان بعد ملئه في مكان آمن، و سيكون استخدامها لأغراض أكاديمية بحتة. للمزيد من التفاصيل حول هذه الدراسة، الرجاء الاتصال بي، شيخة الصبحي، تلميذة دكتوراه في كلية هول للتجارة، جامعة هول، على بريدي الإلكتروني

التالي : s.s.al-subhi@2012.hull.ac.uk أو بالمشرف على عملي البروفيسور وايموند رودجرز على بريده الإلكتروني

w.rodgers@hull.ac.uk:نقدر لكم تعاونكم معنا ،و لكم منا خالص الشكر و التقدير عن حسن تعاونكم

التاريخ : 20/05/2014

تقبلوا منا فائق الاحترام

شيخة الصبحي

لقد قرأت المعلومات المقدمة عن محتوى الدراسة أعلاه وأوافق على المشاركه في هذه الدراسة

○ نعم
○ لا

القسم أ :المعلومات المطلوبة في تدقيق الأداء

يناقش هذا القسم ، إلى أي مدى يأخذ مدققو الأداء العوامل التالية بعين الاعتبار أثناء التدقيق.   رجاءً اضغط على الدائرة

التي تحتوي على الإجابة المناسبه لكل من العبارات التاليه بحيث أن 1 = غير هام على الإطلاق، 2 = غير مهم جدا، 3

=إلى حد ما غير مهم، 4 = لا هام ولا غير مهم، 5 = مهم إلى حد ما، 6 = مهم جدا و 7=هام للغاية.

7	6	5	4	3	2	1	
O	O	O	O	O	O	O	العامل الاقتصادي مثال: الإنفاق واستعمال الأموال العامة
O	O	O	O	O	O	O	نوعية الإنتاج مثال: المقارنة بين نوعية الخدمة المقدمة وفقا للمعايير والنماذج المقترحة.
O	O	O	O	O	O	O	كلفة وحدة الإنتاج أو الخدمة
O	O	O	O	O	O	O	إنجاز أهداف المؤسسة الخاضعة للتدقيق وغاياتها
O	O	O	O	O	O	O	الفعالية في إنجازالنتائج من البرامج، الأنشطة أو المشاريع .
O	O	O	O	O	O	O	تلبية الجدول الزمني لتقديم الخدمات أو إنجاز المشاريع في الجهة الخاضعة للرقابة
O	O	O	O	O	O	O	شرعية ومشروعية إدارة مناقصات الشراء، واتفاقات التوريد و العقود
O	O	O	O	O	O	O	كمية الإنتاج مثال :معدل الخدمات المقدمة في ساعة، يوم، أسبوع، شهر

القسم ب :اعتبارات أخرى في تدقيق الأداء

كمدقق، إعطي الانطباع الخاص بك على أهمية الجوانب التالية خلال عملية التدقيق.حيث؛ 1 = غير هام على الإطلاق،
2 =غير مهم جدا، 3 = إلى حد ما غير مهم، 4 = لا هام ولا غير مهم، 5 = مهم إلى حد ما، 6 = مهم جدا و 7=هام
للغاية.

7	6	5	4	3	2	1	
◯	◯	◯	◯	◯	◯	◯	التأثير العام لأنشطة المؤسسة أو الخدمات التي تقدمها على المجتمع، المجتمع المحلي أو البيئة(على سبيل المثال مدى تأثير تقديم وجبة مجانية للطلاب في مدرسة محلية على الطلاب أنفسهم وأولياء الأمور والمجتمع)
◯	◯	◯	◯	◯	◯	◯	رضا المستخدم عن الخدمة التي تقدمها المؤسسة الخاضعه للتدقيق
◯	◯	◯	◯	◯	◯	◯	رضا الموظف في المؤسسة الخاضعة للتدقيق
◯	◯	◯	◯	◯	◯	◯	العدالة في تقديم الخدمات(مثال توزيع الإنتاج او الخدمة وفقاً للجنس والعمر والعرق والمدخول والمنطقة الجغرافية)
◯	◯	◯	◯	◯	◯	◯	مُساءلة موظفي الحكومة(مثال :مدى مسؤولية الموظفين عن أعمالهم)
◯	◯	◯	◯	◯	◯	◯	ردود فعل المستخدمين و وجهة نظرهم على الخدمات المقدمة
◯	◯	◯	◯	◯	◯	◯	نزاهة الموظفين(كتغيب الاحتيال والاستخدام السليم للأموال العامة)

القسم ج ، التحليل والإجراءات المتبعة في عملية تدقيق الأداء

إلى أي مدى تتفق مع الجمل التاليةحيث؛ 1=أرفض بشد 2= أرفض 3=أرفض قليلاً 4= لا أوافق ولا أرفض 5=أوافق قليلاً 6= أوافق 7= أوافق بشدة

7	6	5	4	3	2	1	
❍	❍	❍	❍	❍	❍	❍	إستخدام الخبراء الخارجيين يزيد من مصداقية تقرير مراجعة الأداء
❍	❍	❍	❍	❍	❍	❍	المدققين لديهم معرفة كافية وليسوا في حاجة إلى تدريب
❍	❍	❍	❍	❍	❍	❍	المدققين محترفون في نهجهم
❍	❍	❍	❍	❍	❍	❍	تعتمد استنتاجات مدققي الحسابات على الأدلة الملائمة والكافية

القسم ه :إجراءات فريق العمل

كمدقق إلى أي مدى تتفق مع الجمل التالية حيث؛ 1 = لا أوافق بشدة، 2 = غير موافق، 3 = لا أوافق قليلا، 4 = لا

نتفق أو نختلف، 5 = أوافق قليلا، 6 = أوافق و 7 = أوافق بشدة .

7	6	5	4	3	2	1	
❍	❍	❍	❍	❍	❍	❍	دائماً ما يناقش فريق عمل التدقيق الاهداف وجدول عمل التدقيق قبل البدء باجراءات التدقيق.
❍	❍	❍	❍	❍	❍	❍	إن التوافق بين فريق العمل ضروري لأنه يؤثر على الآراء حول الادلة و البراهين وبالتالي جمع البيانات واستراتيجية التحليل المعتمدة
❍	❍	❍	❍	❍	❍	❍	في نهاية فترة التدقيق، يقدم فريق العمل تقرير التدقيق إلى أعلى السلطات في مؤسسة التدقيق لضمان موافقة المؤسسة الخاضعة للتدقيق على صحة الحقائق والأحكام الفردية المتخذة في تقرير التدقيق وعدالتها
❍	❍	❍	❍	❍	❍	❍	مواصلة الحوار والتفاهم بين المدققين وموظفي المؤسسة الخاضعة للتدقيق أمر ضروري من أجل الحصول على قبول لتوصيات تقرير التدقيق

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القسم ه :اختيار القرار

كمدقق، إلى أي مدى توافق على البيانات التالية؟   الرجاء النقر على الدوائر التي تدل على الجواب المناسب لكلّ جملة

أدناه =1 :أرفض بشد =2 أرفض =3 أرفض قليلاً =4 لا أوافق ولا أرفض =5 أوافق قليلاً =6 أوافق =7 أوافق

بشدة

7	6	5	4	3	2	1	
❍	❍	❍	❍	❍	❍	❍	توصيات تقريرالتدقيق بناءة ومجدية
❍	❍	❍	❍	❍	❍	❍	تساعد تقارير تدقيق الأداء صانعي القرار على تقييم الأداء العام للإدارة الحكومية .
❍	❍	❍	❍	❍	❍	❍	تُحدد تقارير تدقيق الأداء، الأسباب التي يمكن أن تؤدي إلى فشل إنجاز النتائج المتوقعة من البرامج أو الأنشطة في المؤسسة وتقوم بتقديم توصيات دقيقة ومفصلة .
❍	❍	❍	❍	❍	❍	❍	إن التوصيات الواردة في التقارير هي توصيات ذات قيمة جيدة للمواطنين ومستخدمي الخدمات العامة .
❍	❍	❍	❍	❍	❍	❍	يقدم تقرير تدقيق الأداء الادلة، استنتاجات وقرارات مبنية على أسس ممتازة تساهم في التغيير والتحسين في الخدمات العامة و التي تُؤخذ بعين الاعتبار من قبل الحكومة المركزية .

ما مدى استخدم الطرق التالية من قبل مدققي الأداء لجمع الأدلة الرجاء اختيار الرد المناسبة من القائمة المنسدلة

	كل الوقت 100%	عادة90 ٪	كثيرا70 ٪	أحيانا50 ٪	مرات قليلة 30%	نادرا 10%	أبداً 0%
مراجعة المستندات	⭘	⭘	⭘	⭘	⭘	⭘	⭘
التفتيش والمراقبة المباشرة	⭘	⭘	⭘	⭘	⭘	⭘	⭘
المقابلات الشفهية مع الإدارة والموظفين	⭘	⭘	⭘	⭘	⭘	⭘	⭘
استطلاع رأي أو إستبيان	⭘	⭘	⭘	⭘	⭘	⭘	⭘
دراسة حالة	⭘	⭘	⭘	⭘	⭘	⭘	⭘

القسم و: الاتصالات

في الأسئلة التالية، اختر الإجابة الأنسب .

لا	نعم	
◯	◯	هل يتوفر تقرير تدقيق الأداء في القطاع العام أمام العامة و المواطنين؟
◯	◯	هل تنشر مؤسسة التدقيق أو تشارك في التقرير الصحافية، مجلة أو برامج تلفزيونية أو إذاعية لغايات الترويج لأهدافها وتوضيح أدوارها؟
◯	◯	هل تضع مؤسسة التدقيق في الخدمة هاتف خاص أو وصلات موقع إلكترونية لمساعدة العامة على القيام بالابلاغ عن أو طرح أسئلة حول أداء المؤسسة الحكومية ؟
◯	◯	هل تشارك مؤسسة التدقيق في المؤتمرات المحلية أو المعارض؟

القسم ز :العوائق أو التحديات الداخلية المحتملة

إلى أي مدى توافق على أن الأمور التالية يمكن أن تُعتبر عوائق داخلية أو حتى تحديات   .

الرجاء النقر على الدوائر التي تدل على الجواب المناسب لكلّ جملة أدناه 1= :أرفض بشد 2= أرفض 3= أرفض قليلاً

4=لا أوافق ولا أرفض 5= أوافق قليلاً 6= أوافق 7= أوافق بشدة

7	6	5	4	3	2	1	
❍	❍	❍	❍	❍	❍	❍	غياب دليل أوأداة التوجيه حول كيفية القيام بتدقيق الأداء
❍	❍	❍	❍	❍	❍	❍	غياب معايير ومقاييس تحكم تدقيق الأداء
❍	❍	❍	❍	❍	❍	❍	افتقار المدققون إلى المعرفة والوسائل العملية
❍	❍	❍	❍	❍	❍	❍	مقاومة بعض المدققون للطرق الجديده بسبب عدم مقدرتهم على التكيف مع المتغيرات
❍	❍	❍	❍	❍	❍	❍	عدم كفاية الأموال والمخصصات اللازمة لتدقيق الأداء

القسم ح :معلومات عامة   الرجاء اختر الجواب المناسب لكلّ سؤال من الأسئلة الواردة أدناه   .

ما هو جنسك؟

O   ذكر
O   أنثى

ما عمرك؟

_____

ما هو مستوى مؤهلكم العلمي؟

O   شهادة الثانوية العامة
O   بكالوريوس
O   ماجستير
O   تأهيل مهني عالي(شهادة جمعية المحاسبين القانونين المعتمدين، المحاسب القانوني المعتمد، المحاسب الإداري
المعتمد، شهادة فني حسابات معتمد, دكتوراه)
O   اخرى_____

ما عدد سنوات الخبرة التي تمتلكها في مجال التدقيق؟

O   اقل من 5 سنوات
O   5-9
O   10-14
O   15-19
O   20-24
O   25-29
O   اكثر من 30_____

في أي بلد تقع مؤسسة التدقيق التي تمارس الدقيق فيها حالياً؟

Afghanistan (1) ❍
Albania (2) ❍
Algeria (3) ❍
Andorra (4) ❍
Angola (5) ❍
Antigua and Barbuda (6) ❍
Argentina (7) ❍
Armenia (8) ❍
Australia (9) ❍
Austria (10) ❍
Azerbaijan (11) ❍
Bahamas (12) ❍
Bahrain (13) ❍
Bangladesh (14) ❍
Barbados (15) ❍
Belarus (16) ❍
Belgium (17) ❍
Belize (18) ❍
Benin (19) ❍
Bhutan (20) ❍
Bolivia (21) ❍
Bosnia and Herzegovina (22) ❍
Botswana (23) ❍
Brazil (24) ❍
Brunei Darussalam (25) ❍
Bulgaria (26) ❍
Burkina Faso (27) ❍
Burundi (28) ❍
Cambodia (29) ❍
Cameroon (30) ❍
Canada (31) ❍
Cape Verde (32) ❍
Central African Republic (33) ❍
Chad (34) ❍
Chile (35) ❍
China (36) ❍
Colombia (37) ❍
Comoros (38) ❍
Congo, Republic of the... (39) ❍
Costa Rica (40) ❍
Côte d'Ivoire (41) ❍
Croatia (42) ❍

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Cuba (43) ○
Cyprus (44) ○
Czech Republic (45) ○
Democratic People's Republic of Korea (46) ○
Democratic Republic of the Congo (47) ○
Denmark (48) ○
Djibouti (49) ○
Dominica (50) ○
Dominican Republic (51) ○
Ecuador (52) ○
Egypt (53) ○
El Salvador (54) ○
Equatorial Guinea (55) ○
Eritrea (56) ○
Estonia (57) ○
Ethiopia (58) ○
Fiji (59) ○
Finland (60) ○
France (61) ○
Gabon (62) ○
Gambia (63) ○
Georgia (64) ○
Germany (65) ○
Ghana (66) ○
Greece (67) ○
Grenada (68) ○
Guatemala (69) ○
Guinea (70) ○
Guinea-Bissau (71) ○
Guyana (72) ○
Haiti (73) ○
Honduras (74) ○
Hong Kong (S.A.R.) (75) ○
Hungary (76) ○
Iceland (77) ○
India (78) ○
Indonesia (79) ○
Iran, Islamic Republic of... (80) ○
Iraq (81) ○
Ireland (82) ○
Israel (83) ○
Italy (84) ○
Jamaica (85) ○
Japan (86) ○

Jordan (87) ○
Kazakhstan (88) ○
Kenya (89) ○
Kiribati (90) ○
Kuwait (91) ○
Kyrgyzstan (92) ○
Lao People's Democratic Republic (93) ○
Latvia (94) ○
Lebanon (95) ○
Lesotho (96) ○
Liberia (97) ○
Libyan Arab Jamahiriya (98) ○
Liechtenstein (99) ○
Lithuania (100) ○
Luxembourg (101) ○
Madagascar (102) ○
Malawi (103) ○
Malaysia (104) ○
Maldives (105) ○
Mali (106) ○
Malta (107) ○
Marshall Islands (108) ○
Mauritania (109) ○
Mauritius (110) ○
Mexico (111) ○
Micronesia, Federated States of... (112) ○
Monaco (113) ○
Mongolia (114) ○
Montenegro (115) ○
Morocco (116) ○
Mozambique (117) ○
Myanmar (118) ○
Namibia (119) ○
Nauru (120) ○
Nepal (121) ○
Netherlands (122) ○
New Zealand (123) ○
Nicaragua (124) ○
Niger (125) ○
Nigeria (126) ○
North Korea (127) ○
Norway (128) ○
Oman (129) ○
Pakistan (130) ○

Palau (131) ○
Panama (132) ○
Papua New Guinea (133) ○
Paraguay (134) ○
Peru (135) ○
Philippines (136) ○
Poland (137) ○
Portugal (138) ○
Qatar (139) ○
Republic of Korea (140) ○
Republic of Moldova (141) ○
Romania (142) ○
Russian Federation (143) ○
Rwanda (144) ○
Saint Kitts and Nevis (145) ○
Saint Lucia (146) ○
Saint Vincent and the Grenadines (147) ○
Samoa (148) ○
San Marino (149) ○
Sao Tome and Principe (150) ○
Saudi Arabia (151) ○
Senegal (152) ○
Serbia (153) ○
Seychelles (154) ○
Sierra Leone (155) ○
Singapore (156) ○
Slovakia (157) ○
Slovenia (158) ○
Solomon Islands (159) ○
Somalia (160) ○
South Africa (161) ○
South Korea (162) ○
Spain (163) ○
Sri Lanka (164) ○
Sudan (165) ○
Suriname (166) ○
Swaziland (167) ○
Sweden (168) ○
Switzerland (169) ○
Syrian Arab Republic (170) ○
Tajikistan (171) ○
Thailand (172) ○
The former Yugoslav Republic of Macedonia (173) ○
Timor-Leste (174) ○

Togo (175) ○

Tonga (176) ○

Trinidad and Tobago (177) ○

Tunisia (178) ○

Turkey (179) ○

Turkmenistan (180) ○

Tuvalu (181) ○

Uganda (182) ○

Ukraine (183) ○

United Arab Emirates (184) ○

United Kingdom of Great Britain and Northern Ireland (185) ○

United Republic of Tanzania (186) ○

United States of America (187) ○

Uruguay (188) ○

Uzbekistan (189) ○

Vanuatu (190) ○

Venezuela, Bolivarian Republic of... (191) ○

Viet Nam (192) ○

Yemen (193) ○

Zambia (580) ○

Zimbabwe (1357) ○

نشكر تعاونكم لما قدمتم من مساهمة قيّمة لغرض إتمام هذه الدراسة.

9.1.6. Ethical approval

☥ ۞ ♔ ⚜ 🦅 **UNIVERSITY OF Hull**

Business School

A PROFORMA FOR

STAFF AND STUDENTS BEGINNING A RESEARCH PROJECT

This proforma should be completed by all staff and research students undertaking any research project and by taught students undertaking a research project as part of a taught module.

Part A (compulsory)

Research Proposer(s): _Sheikha Said Alsubhi_

Student number (if applicable): _20120938_

University of Hull email address:): _S.S.al-Subhi@2012.hull.ac.uk_

Programme of Study _PhD Accounting_

Research (Working Dissertation/Thesis) Title: _Performance Audit Practice and the need for Responsive approach._

Research (brief): _The Research look at the practice of Performance Audit by the state of Audit and Recommend a Model help to understand how the Auditors made their Decision during their practice._

Proforma Completion Date: _January 2016_

Tick and sign by one of the following statements:

☐ 1) I confirm that _human participants are not involved in my research_ and _in addition_ no _other_ ethical considerations are envisaged.

Signature of researcher...

☑ 2) Human participants are involved in my research and/or there are other ethical considerations in my research.

Signature of researcher..._Shikhu_.............................

If statement 1 is ticked and signed, there is no need to proceed further with this proforma, and research may proceed now.

If statement 2 is ticked and signed the researcher should complete part B of this proforma.

Part B

*This proforma should be read in conjunction with the Ethical Principles for Researchers and the HUBS flow chart of **research** ethics procedures. It should be completed by the researchers. It should be sent on completion, together with a brief (maximum one page) summary of the issues/problems in the research (and how they are proposed to be dealt with), for approval to the Chair of the HUBS Research Ethics Committee (or nominated Committee member) or in the case of research being completed as part of a taught module to the student's supervisor or module leader prior to the beginning of any research.*

NOTE

If this research has a research population of those under 18 years of age it requires specific authorisation, including that from authorities outside the University. It should not proceed until such authorisation has been obtained in writing.

1. Will you obtain written informed consent from the participants?　　　　　Y/N
   If yes, please include a copy of the information letter requesting consent. In the case of electronic surveys it is acceptable to advise participants that completion of the survey constitutes consent. Please provide a printout of the survey template.
   If no, the research should not proceed unless you can specifically satisfy the Research Ethics Committee with the measures you will take to deal with this matter.

2. Has there been any withholding of disclosure of information regarding
   the research/teaching to the participants?　　　　　Y/N
   If yes, please describe the measures you have taken to deal with this.

   But Introduction
   of Research purpose and aim is ~~restricted~~ Provided to the Participant.

3. Issues for participants. *Please answer the following and state how you will manage perceived risks if any answer is YES:*

   a) Do any aspects of the study pose a possible risk to participants' physical well-being (e.g. use of substances such as alcohol or extreme situations such as sleep deprivation)?　　YES　　NO

   b) Are there any aspects of the study that participants might find humiliating, embarrassing, ego-threatening, in conflict with their values, or be otherwise emotionally upsetting?*　　YES　　NO

   c) Are there any aspects of the study that might threaten participants' privacy (e.g. questions of a very personal nature; observation of individuals in situations which are not obviously 'public')?*　　YES　　NO

   d) Does the study require access to confidential sources of information (e.g. medical records)?　　YES　　NO

   e) Could the intended participants for the study be expected to be more than usually emotionally vulnerable (e.g. medical patients, bereaved individuals)?　　YES　　NO

   f) Will the study take place in a setting other than the University campus or residential buildings?　　YES　　NO　　It is online and mainly target State of Audit employee In Oman

   g) Will the intended participants of the study be individuals who are not members of the University community?　　YES　　NO　　& UAE & UK

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*Note: if the intended participants are of a different social, racial, cultural, age or sex group to the researcher(s) and there is **any** doubt about the possible impact of the planned procedures, then opinion should be sought from members of the relevant group.

4.

Might conducting the study expose the researcher to any risks (e.g. collecting data in potentially dangerous environments)? Explain your method of dealing with this. YES NO

5. Is the research being conducted on a group culturally different from the researcher/student/supervisors? Y/N
   If yes, are sensitivities and problems likely to arise? Y/N?
   If yes, please *describe how you have addressed/will address them.*

6. Does the research conflict with any of the HUBS's research ethics principles? Y/N
   If YES do not proceed Describe for the Research Ethics Committee what action you have taken to address this?

7. If the research requires the consent of any organisation, have you obtained it? Y/N
   If NO do not proceed Describe for the Research Ethics Committee what action you have taken to overcome this problem.

8. Did you have to discuss the likelihood of ethical problems with this research with an informed colleague? Y/N
   If yes, please *name the colleague and provide the date and results of the discussion.*

Thank you for completing this proforma. If you are a research student/member of staff this form must be signed by you, your supervisor/colleague and the HUBS Research Ethics Committee representative for your area.In the case of students undertaking research as part of a taught module, it must be signed by you and your supervisor or module leader. Once signed, staff and research students should send copies of this form, and the proposal must be sent to the Secretary of the Research Ethics Committee, Hull University Business School (see flow chart), including where possible examples of letters describing the purposes and implications of the research, and any Consent Forms (see appendices).

Name of Researcher/Student ......Sheikha Saied ALSubhi

Signature ......Shitlu...................... Date ...20/5/2014

Name of Supervisor/Colleague/Module leader ......WMmund RoDGers

Signature......................... Date ....

For proformas completed by staff and research students only:

3

Name of Research Ethics Committee member .... JON SIMONI

Signature .... Date ....27/5/14.

For proformas relating to research funded by grants, please complete the following:

pFact no: ....

RAR no: ....

Funder/sponsor...

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9.1.7. Conference proceeding article

Performance Audit: Do Auditors Desire the Balance Between Being Responsive and Independent?

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Abstract

Performance audit provides governments with a self-analysis considered as a basis for more informed and publicly defensible decision-making. Thus an important role is reserved to performance external audit executed by external state of audit institutions, sometimes known as national audit offices. This paper examines whether performance audit practices and reporting consider the public perspective and social value. Moreover, it emphasises understanding the process of decision-making by performance auditors during their assessment and evaluation of the public sector performance.

Auditors from the State of Audit Institution in Oman participated in this study by responding to an online questionnaire. The data was analysed using Throughput modelling, illustrating the effect of using performance information and perception regarding public perspective and social value in Judgment and decision.

The findings show that auditors in performance audit rely heavily on performance information of the audited entity in their assessment, with no influence from their perception of social value and public perspective. Meanwhile, there was a direct relationship between the performance perception regarding the public perspective and social value and decision and a strong relationship between the judgment and decision choice in performance audit. These findings located some areas of weakness in current performance audit practice and are of great value in their empirical contributions to government decision makers, auditors in state of audit institutions and public sector managers.

1.Introduction

Performance audit has become increasingly indispensable in the rapidly changing and increasingly complex and uncertain modern global economy. The need for performance audit is significantly increased as a result of widespread government reforms to track and measure state objectives, strategies and achievements (Brudney et al,1999; Moynihan,2008).

This study tests whether Performance Audit (PA) in the public sector considers public needs (i.e. the public perspective) and social value in their audit, which should help the government to improve public sector services and target their citizens' needs. The users of the service may experience and view service delivery differently from providers, including in their perspective on input in performance audit report (or practice); the audit could thus be misaligned from consumer (citizen) needs, which we argue are the ultimate principal. Therefore, the Supreme Audit Institutions (SAIs) could directly improve the quality of the public sector by analysing the consumer perspective and communicate their needs and concern to the central government and parliament or the council of ministers who in turn will take action.

Despite the several methods that are used to collect evidence about public sector performance, consumer perspective or satisfaction is still ignored by performance auditors in most supreme audit institutions. (Keen,1998) commented that methods are what you can use to uncover the truth about what is going on; this research encourages consumer involvement in PA as a method to improve the accountability and performance of the public sector itself.

The paper illustrates the process of PA judgment and decision choice through the use of decision-making model, also known as Throughput model. The most recent application of Throughput model was conducted in financial auditing and financial decision making contexts (Rodgers et al,2013; Rodgers et al,2014) and internal audits (Foss & Rodgers,2011). However, the decision making and environment of PA significantly different from that financial audit or even internal audit (Pei et al,1992). Since as we know the objective of the financial audit is to attest to the company management assertions in the financial statements, the PA objective is to provide a clear picture about the entity's economic efficiency and effectiveness evaluation.

Another important difference between the financial and performance audit context is the consequences of the decision made by these two audits. The financial audit is subject to legal penalties for failure to detect and amend misrepresentation in financial statements, which is not applicable in PA (Pei et al,1992). The relative legal impunity of PA contributed to the difference in perception of the decision consequences, which alter judgments in both audits (Hogarth,1987). Therefore, applying the Throughput model in this study diversifies its application and enriches the literature on PA.

PA is usually executed by independent governmental bodies referred to as supreme audit institutions (SAIs), such as the National Audit Office in the UK or the Office of Audit General in the US. According to Pollitt et al (1999a), PA started as practice within SAIs in the late 1970s and early 1980s. PA is defined as audit of the *economy* of administrative activities in accordance with administrative principles, practices and management policies; audit of *efficiency* of utilization or usage of resources provided to the audited entity such as human, financial and other resources, and examination of information systems, performance measures and monitoring arrangements and any process by audited entities for remedying any identified deficiencies; and audit of *effectiveness* of performance regarding the achievement of objectives allocated to the entity subject to audit and audit of actual effect of these activities in relation with the intended impact (Intosai,1992).

It is widely practiced throughout the world (often known as "value for money auditing"), and numerous public audit offices spend the majority of their time conducting performance audits (Barzelay,1997; Lapsley & Pong,2000; McGee,2002). PA mandates typically encompass aspects of organizational efficiency, effectiveness, output quantity and quality, financial prudence and probity, compliance with applicable laws, identification of fraud and misconduct, and other aspects of integrity and organizational performance like fairness and responsiveness to service need, trust, equity and citizen satisfaction (Everett,2003; Pallot,2003; Percy,2001; Tillema & ter Bogt,2010). Similarly, Barzelay (1997) stated that when the "performance auditing domain becomes institutionalized, the level of activity will increase, perhaps accompanied by the elaboration of distinct subtypes or product line

extensions"; thus it is not strange to see the performance audit practice being divided into several activities.

Although definitions of PA are rich and apparently straightforward, PA is often said to be a vague concept that is difficult to define (Barzelay,1997; Kells & Hodge,2010). The concept itself is sometimes uncertain and debated, at its most acute comprising a continually unfolding drama among academicians (Kells & Hodge,2010). Some authors sidestep the whole quagmire, proceeding with their analyses without considering the definition of PA due to the difficulties associated with defining it (Lindeberg,2007).

The following sections of this paper are organized as follows. First we begin with background and hypothesis development, then PA and the decision-making model introduced in order to understand how performance auditors are influence by different information available and certain type of perception they make in their decision. After that we move to the methodology section, followed by the empirical results of both the measurement and structural model. Finally, the paper concludes by presenting the important discussion of the findings and drawing empirical implications from the study.

2. Background and hypothesis development

Despite the significant increase in accounting research over recent decades, research in auditing is relatively scarce (Kinney,2005; Nash,1973; Schwartz & Mayne,2005). According to Kinney (2005), little research have being done on how audits are contacted, especially the performance of audit task or how it might be improved. This study will add to the literature of local government

accounting where there is a frequent cry about the lack of research (Colquhoun,2013; Funkhouser,2011; Reichborn-Kjennerud & Johnsen,2011; Sargiacomo & Gomes,2011). Moreover, there are even fewer studies examining how the performance audit affects public sector organizations in particular (Morin,2003; 2014; Raudla et al,2015).The research in performance audit remains formative, and the need for research in this area is far from being satisfied.

2.1.1. Public sector performance concept

Public sector performance may incorporate several aspects such as effectiveness, efficiency, quality, compliance, implementation, meeting standards of good governance, sustainability and so on (Overman & van Thiel,2015). Most studies rely on input, output, outcome model and the three Es (economy, efficiency and effectiveness) to explain performance in the public sector. Both provide clear specification of performance constituents for further information see Boyne (2002). They have been used as guides for many empirical studies in public sector performance (Boyne,2003; Talbot,1999). In general, the public sector is supposed to perform well when its outputs and outcome are high and attained with low expenses, in which case it can be described as efficient and yield value for money. However, these models do not help to explain the relation between effectiveness and service outcomes to end-user and performance measurement of the entity. Also, the of the factors influencing organizational performance for individual public sector organizations are abundant (Rainey & Steinbauer,1999).

An interesting area of debate in PA literature concerns whether PA must involve a substantive review of the audited entity or activity. While the substantive review emphasizes the impact and outcomes of the audited entity, program or project, a non-substantive review only considers the adequacy of audited entity management and reporting systems (Glynn,1985; Parker,1986). The first approach was studied differently by some scholars; for example, (Moynihan & Pandey,2010) claim that feedback from the public and outreach may generate some pressure on managers to justify their decisions, legitimate programs and look for further support from stakeholders, yet there are other reasons to suggest a negative relationship. Additionally, a new study by (Gao,2012) examined the effect of using the citizen satisfaction survey in assessing the performance of Chinese local government. The study concluded that survey was useful for indicating the public concerns and alerting the government to continue making efforts to resolve these issues, and it was helpful to local officials in making decisions of resource allocation and service improvements.

(Yang & Hsieh,2007) found that stakeholder participation is a positive predictor of the perceived effectiveness of performance measures. (Ho,2006) found that citizen participation in performance measurement practices increase the perceived value or usefulness of the data in the eyes of elected officials. Performance auditors tend to consider the public as their ultimate client due to built in professional insistence on audit independence and objectivity (Norton & Smith,2008; Wheat,1991). (Schultz & Brown,2003) observed increased prioritization of customer service satisfaction within the auditing profession, and (Norton & Smith,2008) stated that "Performance

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auditing has become so successful with government management that the majority of engagements have manifest shifted from mandates of the legislature to individual client requests."

Figure 1 illustrates how the user perspective is related to the effectiveness component of the performance audit, whereby the users' perspective is somehow ignored in PA. However, we do not know more regarding the best ways of citizen participation, like customer surveys, citizen phone calls or even e-mails that would improve public sector accountability, transparency and enhance the performance of public sector. Moreover, it was pointed out by Brodtrick (2004) that the way in which performance auditors see themselves affects their approach of being more responsive/substantive or not:

> "The auditors' self-image as facilitators for creating positive contributions to program operations led to a collaborative, solution-oriented approach, with emphasis on the practical needs of users, rather than on theoretical models of what users ought to have. The power of self-images tends to inform the values auditors use in designing and carrying out their work."

However, this approach itself can lead to discord between the audit office and the central government or the society due to its weaknesses when the values and interpretations of the office are at odds with the values of society and government.

<mark>Insert Figure 1 Here</mark>

Others criticize the fundamental ability of PA to adequately reflect performance, particularly the effectiveness of the audited entity (see for

example Barzelay,1997; Bowerman,1994; Bowerman,1995; Boyne,2000; Boyne,2002). Bowerman (1994) argued that PA has lost its way; it needs to rediscover its "accountability roots". According to her, there is lack of clarity regarding the role of PA, and it is questionable whether it is there to guide or blame the administrators. There is confusion about who the real clients of this audit are; the central government, parliament or the public?

Clearly these issues declare areas of deficiencies in PA standards and its accountabilities framework. Meanwhile, Boyne (2002) drew attention to the weakness of performance indictors to link the spending with the service outcomes, which is important in order to provide good judgment on value for money or the performance of the entity as a whole, based on an examination of local government indicators for the period of 1993/94 to 2001/02 in the UK. This absence of indicators that capture the service outcomes to reflect the value of money was also noticed by others (Marshall et al,2000; Winstanley & Stuart-Smith,1996).

2.1.2. PA, public responsiveness and agency theory

It is not new to know that governments around the globe focus on providing their citizens and public with the services they required. What is more important is that the feedback regarding the services provided is somehow ignored. Being attentive to user feedback about public services aligns public services with users' perceptions, which is a way of giving the public a say in matters affecting them. Citizen feedback regarding the service provided can be used as useful elements in PA, as it indicated the outcomes of public service.

The information can then be used in the audit report in order to inform the government about possible improvements in the public service, or to be aware of the public needs and opinions rather than merely measuring efficiency, effectiveness and economy of the government program. While the Government Audit Standards of the United States (GAO, 2007) has pointed to the challenges of balancing the needs of different stakeholders, Bernstein et al (2002) suggested that it is important for audit institutions to maintain their independence and objectivity in relationship with different stakeholders such as the Congress as a key user of audit reports.

Meanwhile, the academic literature increasingly focuses on the importance of involving central stakeholders (Vanlandingham,2011). The question here is who the direct stakeholders in SAIs are, and which ones must be considered most carefully. The key users of SAI reports are normally parliamentary committees (e.g. in some European countries), Congress (as in the US), or even the central government in other countries. However, there are other users such as the media, academia, professional bodies and individual users who should also be considered as central stakeholders (Sloan,1996).

The agency theory seams to present the problem of the different relationships between different stakeholders. The relationship between the principal and the agent is manifest whenever one party (the principal) depends on the actions of another (the agent), according to Pratt & Zeckhauser (1985). The SAIs themselves and the administrative managers in public sector ministries are agents of the central government principal, itself an agent of citizenry (i.e. the public) in most theories of the state.

According to many studies (Jensen & Meckling, 1976; Fama (1980); Fama & Jensen (1983); Jensen & Meckling (1976)the external audit can play vital role in protecting the owners' interest due to the separation of the management and the ownership, as the theory suggest that the owner (principals) needs protection since the managers (agent) could act in their interest not considering the interest of the principal. Therefore, to minimize agent-principal problems the external auditors assume the oversight role, which includes monitoring the performance of the managers, evaluating the internal control system and ensure that the financial statements of the audited entity are accurate and according to the rules and regulations (Hoque,2006; Williamson,1975).

Figure 2 illustrates the group of different stakeholders and the type of their relation to SAIs, although others see the relationship between accountability and the performance auditing as being more complicated for a number of reasons (Everett,2003; Glynn,1996). For instance, while the performance audit provides the elected politician and citizens with information regarding the organizations' programmes or activities input, outputs and efficiency, it is difficult for them to understand it and they may have negligible interest in such particulars (Tillema & ter Bogt,2010).

Many have commented on the complexity due to the comprehensive view of this audit, since it is not exclusive to organization's performance where it measures efficiency and effectiveness, but also includes non-economic issues such as equity, responsiveness, impartiality, social justice, legality and legitimacy (Everett,2003; Pallot,2003; Tillema & ter Bogt,2010). Similarly, public sector accountability has its complex nature "due to two types of

mandate which are delegated down the hierarchy of principal –agent, which ranges from the voting citizens and the elected body that represent them, via the executive to the organization's managers" (Tillema & ter Bogt,2010).

According to Power (1997), the types of principal-agent can be filled out in many different ways; for example, principals can include shareholders, local residents, taxpayers and future generations. There is no clear difference between the client, consumer, shareholder, beneficiary of audit, users of audit report, or even the audience, to all of which must be addressed by the external auditor in the public sector.

Insert Figure 2 Here

2.1.3. PA and their evidence collection methods

So far few studies have been conducted to test how the involvement of the users' opinions regarding the service or product in the process of the performance audit would affect the findings and the quality of the audit, which in turn influences the improvement of public sector services. However, stakeholders' perspectives are not universally ignored by SAIs in PA. In fact, the choice of the method to collect evidence in PA is guided by the SAIs own (self) standards that converge around internationally agreed conventions; the perceive choice reflects what the SAI auditors and managers see as appropriate to collect evidence.

For example, one former senior official suggested that empirical evidence through different surveys like mail, telephone or face to face provide an insufficient foundation for judgmental audit, thus the analysis and conclusion heavily relies on documentary evidence (Leeuw,1996). Therefore, it is

important to note that SAIs can play an important role in encouraging a degree of conservatism, which inhibits innovations. For example, in their exploratory research, Stephen & Lonsdale (2000) mentioned that number of SAIs use non-traditional methods of collecting performance information, like the use of surveys and interviews. For instance, the NAO in the UK used survey in order to get the view of users of the National Library of Scotland, and the Swedish National Audit Bureau Office in 1998 selected a random representative sample of 3000 people aged 18-74 to perform telephone interviews. Although the purposes of data collection may have differed, they all fundamentally involved the users' perspective of the service.

In addition, it was suggested by Arthur et al. (2012) that a triangulation method of data collection could be used by auditors whereby the traditional PA approach can by combined with a user-centred approach (utilising information from users themselves), which will provide the auditor with valuable information about public service quality. It must be considered whether using such information adds value to the PA report. Arthur et al. (2012) noted that:

> "Greater efforts have been made to involve stakeholders in examinations, although not to the extent that 'constructivists' would (Stephen & Lonsdale,2000). There is, however, recognition that different parties have different views, which need to be accommodated or acknowledged in their reports".

<mark>Insert Figure 2 here</mark>

3. Throughput Model

There are few empirical studies demonstrating how personal auditors perceive different dimensions regarding the performance aspect (i.e. whether it is social/ public responsive or based on other organizational performance information already reported by internal auditors in the audited entity). We use the Throughput Model (Rodgers,1991; 1997; 1999; 2006) in this study to capture different pathways and stages that affect decision-makers (in our case, the performance auditors). The Throughput Model assumes that parallel processing provides interpretative cognitive assessments, and there are several pathways that lead to decisions or assessments. Therefore, it provides a conceptual framework for the arguments built in the earlier section to be tested. This proposed model incorporates the constructs of information, perception, judgment (i.e. analysis and evaluation) and decision choice (Foss & Rodgers,2011). Despite the fact that the previous stages are always present in any context of decision-making, their predominance and ordering influences decision outcome. The Throughput Model is shown in Figure 3, where the hypothesized casual relationships are indicated by the arrows pointing from one construct to another, explaining the two stages of decision-making.

The framework helps to address how auditors could be influenced by different perceptions toward public/ social performance value in their assessment and decision. More details regarding these perceptions are discussed in subsequent sections. In addition, the model focuses on the effect on information available (i.e. organizational performance information) to auditors in judgment or evaluation process and decision-choice at the time of

reporting. In the second stage the model illustrates how the judgment and evaluation process impacts on the decision choice of the auditors. Therefore, it is essential to study the decision processes by breaking all the pathways.

Information includes the set of the organizational performance measures based on the technical three Es and Input Output Outcome model (IOO). It covers the economy, quantity and quality of output, cost per production, effectiveness in achieving the output, meeting the time schedule in service providing or activities/projects and the legitimacy and legality of managing tenders, supplies etc. Table 1 summarises all items used in this study. The performance perceptions involve the auditor's perspective regarding social value /public responsive measures of performance, with the items of Overall impact of the entity's activities or their service provision in society, local community and environment; users satisfaction with the service provided; employee satisfaction; equity or fairness of service provision; accountability of governmental officers; user feedback and their perspective on the services; and the probity of staff.

Perception relates to expertise in classifying and categorising information and not necessarily changing the actual information. Thus it could influence the type or magnitude of information an individual selects for further processing (Foss & Rodgers,2011). Therefore, performance information (PI) together with performance perception (PP) affects the auditors' judgement (J) and evaluation of the audited entity performance, and consequently their decision (D) (see Figure 4 and Table 1 for more details).

PI and PP are mutually dependent. The measured J items are drawn from (Foss & Rodgers,2011), and some items were developed by Keen (1999), whose framework discussed the basic judgment criteria applied in PA. In the second stage the model presented the influence of J on decision choice depending on the first stage outcomes. The decision choice items measure how the audit performance reporting reflects the organizational performance overall, and its responsiveness to the public. Based on the previous section and the literature, the following hypotheses are posited:

H1   Performance information used at performance audit is associated with judgment or the evaluation by performance auditors.

H2   Performance information used at performance audit is associated with performance perception made by auditors.

H3 Performance perception regarding public perspective and social value influences the judgment and evaluation by made by auditors.

H4 Performance perception made by the performance auditors is associated with responsive audit reporting.

H5 Evaluation and judgment is associated to the responsive reporting in performance auditors

Insert Table 1 here
Insert Figure 4 here

4. Methods

4.1.1. Sample nature and size

The link to the online questionnaire was disseminated via the SAI in Oman, which employs almost 500 auditors. The sample size should be equal to or greater than the recommended 10 times rule (Barclay et al,1995). According

to the table Cohen the study needs 88 observations to achieve a statistical power of 80% for detecting R square value of at least 0.25 (with a 5 % probability of error).

Of the total of 231 respondents, 27 were excluded due to partial completion, thus 204 responses were used for data analysis. The instruments used in the study contained number of questions related to each of the constructs in the model (see Table 1 and Figure 4), whereby the participants were asked to indicate their response on seven-point Likert-type scale (ranging from (1) strongly disagree to (7) strongly agree) to positive statements used to capture the construct variables.

This section presents the demographic profile of the participants in this study. Sample data description is reported regarding their gender, age, educational level and experience. Table 2 shows the frequency and percentage of the data of the latter categories. Out of the 204 respondents who participant in the survey, 138 were male (67.6%) and 66 (32.4%) female, reflecting the skewed gender distribution of the SAI staff in Oman. Table 3 provides the descriptive statistics of the items used in the study.

Insert Table 2 here

Insert Table 3 here

4.1.2. Analysis method applied

According to Hair Jr et al (2013), the application of first generation statistical methods dominated the research landscape until the 1990s, when the second generation methods expanded widely to comprise almost 50% of the

statistical tools used in empirical research in some disciplines today. Although the first generation techniques have been widely applied in social researches, over the last 20 years many researchers have been turning to second-generation techniques to overcome the limitations of the first-generation methods. The most commonly used methods and variants are structural equation modelling (SEM), casual modelling, causal analysis, simultaneous equation modelling, path analysis and analysis for covariance structure (Tabachnick & Fidell,2007).

The SEM allows the researcher to examine the structure of interrelationships expressed in a series of equations similar to series of multiple regression equations (Hair et al,2006). One of the reasons why the researcher prefers SEM analysis approach is that it effectively evaluates the structural path and measurement models, especially when the structural path includes multi-dependent variables; the measurements models involve multiple indictors to measure the latent variables; and the structural path includes multiple stages or levels of constructs (Astrachan et al,2014). It is not unusual in social science research to use a complex model where the latent constructs cannot be observed or measured directly, especially during theory development and testing, which may consist of multiple constructs and interactive effects (Astrachan et al,2014), which is the case in our model.

It is the researchers' responsibility to find out the best method adequate for their "research objective, data characteristics and model setup" (Hair Jr et al,2013). After careful study of both covariance based and PLS, the researcher chose to use PLS-SEM for data analysis in this study because PLS-SEM was previously successfully implemented in testing such structural

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models (Guiral et al,2010; Rodgers et al,2013; Rodgers & Guiral,2011), and the purpose of adapting PLS is based on its appropriateness to characterise the data of this current study. It is known that CB-SEM has restricted requirements regarding the distribution of the multivariate data.

Therefore, examining the structural modelling via applying the CB-SEM would not be suitable because it could threaten model failure to converge according to requirements (Hair et al,2006; Tabachnick & Fidell,2007). Furthermore, while PLS does not make assumptions about a specific multivariate normality and interval-scaled data, it is a good technique for theory building, not only predicting the path relations, without the prerequisites of sample size and multivariate distribution of data (Chin & Newsted,1999). PLS is a more applicable approach for exploratory purposes when there is little prior knowledge on how the variables are inter-related (Hair Jr et al,2013). Compared to CB-SEM, PLS-SEM is more useful in coping with highly complex models with a large number of latent variables/ constructs and observed variables/ indicators (Hair Jr et al,2013).

Additionally, according to Astrachan et al (2014), PLS is recommended "because of its ability to handle small sample size, complex models with numerous endogenous and exogenous constructs and indicator variables, or non-normal data distributions….while still producing viable results". Before conducting any empirical analysis, the researcher first test for common method bias, for which Harman's single factor test was applied with SPSS version 23 in order to extract one factor (un-rotated) to check whether a single factor emerges for the majority of the variance. All the items were entered into

an un-rotated exploratory factor analysis, and the first factor accounted for only 34% of the overall variance.

Therefore, the common method variance likely does not affect the results, since it is less than 50% (Podsakoff & Organ,1986). Although this approach is one of the most widely used by researchers to address the common method bias issue, it has been criticized by many researchers due to various limitations (Kemery & Dunlap,1986; Podsakoff et al,2003). Consequently, the correlation matrix is examined; usually any highly correlated variables (value of r>.90) are evidence of common method bias (Bagozzi et al,1991a). The result of the correction matrix in this study does not include such values, thus common method bias is not a problem. Moreover, more advanced approaches were applied to test common methods bias even further.

A leading approach with PLS is to create a marker variable in the data collection that is unrelated to the theoretical model or the paths to be tested in the model. Later, a researcher would correlate the data to the marker variable, and if the correlations are high, then common methods bias probably exists (Lowry & Gaskin,2014). In this study a maker variable of three indicators (difficulties and challenges in PA) was used to check if there is any high correlation between the marker variable and other constructs. In our case there was a very low correlation, whereby the highest was 0.264 (Table 12).

5. Empirical results

5.1.1. Measurement validation

The measurement model provides evaluation for the relationship between indicators used in the study and the constructs variables via assessing the reliability and the validity of the scales measures. In this study the reliability of the measurement model was evaluated by examining each indicator factor loading (outer loading in Smart PLS) on its respective latent variable, and evaluating the internal consistency (i.e. varying Cronbach's alpha, composite reliability and AVE). In addition, the construct validity was assessed through convergent validity and discriminant validity.

Table 4 present the results of the former tests. It is clear that standardised outer loadings ranged from 0.636 to 0.841, which satisfies the requirements of the minimum criterion of 0.4 (Churchill Jr,1979; Hair et al,2014). Furthermore, the researcher followed the condition suggested by Hair Jr et al (2013) for deleting the items that had outer loading between 0.4 to 0.7 only if that deletion will result for a better value in AVE and composite reliability. Two items were deleted in order to improve the value of the AVE (PP4 and J2).

The construct reliability was examined by composite reliability and Cronbach's alpha values. As shown in Table 4, these values were higher than recommended, therefore this study data fulfilled the reliability criteria.

Convergent validity signifies that a set of indicators should represent one and the same underlying constructs that can be demonstrated through their un-dimensionality. In fact, for convergent validity Fornell & Larcker (1981) proposed AVE to measure the amount of variance that a construct captures

from its measuring items relative to the amount assigned to measurement error. AVE is calculated by adding the square factor loadings divided by the number of factors of the underlying construct. The results in Table 4 show that AVE is higher than 0.5 (the cut-off point), which means that each construct has the capability to explain more than the half of the variance on its measuring items on average. In this study the discriminant validity was examined using the Fornell and Larcket criterion for the construct level, while at the items level comparison between the loading of the construct indicators and its cross loadings with other constructs was used.

Table 5 shows the results of the square root of the AVE values of each construct and its correlation with other constructs. It was clear that the square root of AVE values of all the constructs in this study range between 0.709 and 0.795, greater than any correlation of the constructs with each other. Thus constructs in the study share more variance with their associated indicators than with any other construct, satisfying discriminant validity requirements. Moreover, to check the discriminant validity at items level, Table 6 presents the cross loadings of all the indicators. The results demonstrate that all the indicators' outer loadings on their associated constructs were higher than all of their loadings on other constructs (i.e. the cross loadings). Therefore, there was no problem regarding the discriminant validity in this study.

Insert Table 4 here

Insert Table 5 here

Insert Table 6 here

According to Henseler et al (2015), researchers should apply different construct validity subtypes to confirm their results. Therefore, the researcher used the Heterotriat-Monotriat ratio (HTMT) of correlations, an alternative approach derived from the multitrait-multimethod matrix to examine the discriminate validity (Henseler et al,2015). The HTMT is the average of the heterotriat-heteromethod correlations relative to the average of the montotrait-heteromethod correlations (Henseler et al,2015). The exact threshold level /value of the HTMT is still debatable; some suggest 0.85 as a threshold (Clark & Watson,1995), while others suggest 0.9 (Teo et al,2008). Table 7 shows the HTMT ratio finding whereby 0.85 is used as a cut-off point. The results confirm no violation, since none of the values is greater than 0.85. Thus the data in this study does not indicate any discriminate validity issue.

<mark>Insert Table 7 here</mark>

5.1.2. The structural model results

The PLS results of path coefficients for our model are shown in Table 8. The significance of regression coefficient is tested via t-value, which is obtained via using PLS bootstrapping process (Table 9). A samples of 5000 were applied in the bootstrap test with 204 cases (equal to the total observations in the study). The results in Table 8 and 9 show a highly significant path between J and D ($\beta = .596\ or\ 59.6\%$) with t =4.937 followed by PI -> J path where ($\beta = .460\ or\ 46\ \%$) with t=3.619. Meanwhile, it was found that the path of PI -> PP was highly significant ($\beta = 0.571 or\ 57.1\%$) with t = 8.969.

These results mean that the D by the performance auditors was predominantly influenced by their J, which J itself was influenced highly by the

PI. Thus hypotheses H1, H2 and H5 are supported. The path of PP -> D was not significant at level 5%, yet it was significant at level 10% ($\beta = 0.184\ or\ 18.4\%$) with t=1.763 (H4). However, the path of PP -> J was not significant ($\beta = 0.164\ or\ 16.4\%$) with t= 1.135, which suggests that the hypothesis of that path is not supporting H3. The latter suggested that J by the performance auditors was not really influenced by the PPs.

<mark>Insert Table 8 here</mark>

<mark>Insert Figure 4 here</mark>

<mark>Insert Table 9 here</mark>

The R^2 values presented in Table 10 indicate that the structural model is able to explain a satisfying or moderate amount of the variance for the dependent latent variable of D where R^2 is equal to 0.482. The latter presents adequate explanatory power of the structural model. The model also provided the R^2 values of 0.324 and 0.326 for J and PP, respectively. All the R^2 values in the model display moderate levels of variance, indicating that the structural model possesses considerable predicative power.

However, if only R^2 is used as the basis to understand the model's predictive accuracy, then there will be inherent of bias toward selecting the model. Thus adjusted R^2 was used, whereby "criteria are modified according to the number of exogenous constructs relative to the size of the sample used" (Hair Jr et al,2013). Table 10 shows the results of adjusted R^2 whereby after adjusting R^2 we did not find really big difference.

<mark>Insert Table 10</mark>

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5.1.3. Total effect

As is clear from Table 11, the total effect of J on D does not change, since there are no mediators, similar to the case of PP and PI. However, the results revealed that there was a strong total effect between the PI and D of β value of (0.435), T-value of 6.964 and p value of 0.000. Meanwhile, the total effect of PI on J moved to 0.554 with T value of 7.603, and p-value of 0.000. In addition, the total effect of PP on D changed from β 0.184 to β 0.281, with t-value 2.044 and p-value of 0.041, which was significant at level 5%, indicating that the total effect of this relationship is stronger than the direct effect, which was significant at 10% level with low path coefficient. However, the case of the total effect of the PP on the J did not change much, and the relation is still insignificant.

Insert Table 11

6. Discussion and conclusion

PI, which is the information collected, used and verified by performance auditors during their evaluation process before drafting their reports, was found in this study to be the most important construct positively and directly influencing J (H1). This suggests performance auditors depend heavily on PI, which is based on predefined items/elements used as indicators. According to Barzelay (1997), auditing consists of collecting information about transactions or processes to define whether they follow the applicable standards. He also claims that PA can be characterized as an inspection process that may involve straightforward exercise of instrumental J. Thus, it common to relate information to the J process in PA, but that leads us to question what type of

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information, standards and measurement elements the performance auditors focus on or emphasise during their data collection and evaluation process.

The PI elements or measurement items developed in this study are derived from the three Es' and input, output outcome models. The findings confirm those of previous studies, for example Gendron et al (2007a) argue that the office of the auditor general interested in measurement of performance of board entities like ministries, and they deal with hard data, unlike evaluators that focus on satisfaction survey or interviews. They (i.e. the auditors) look at the inputs and outputs of the program. The division manager interviewed by Gendron et al (2007a) stated that:

> "When they (i.e. the office auditors) come around as they always have, rather than just looking at the books they are going to look at our efficiency and effectiveness measures… Now you said that you are going to reduce the […] costs from $1.20 to $1. Now did you do that, if not why? And what is the plan for doing that?"

Moreover, Power (1997) claimed that performance auditors emphasise the measurement of quantifiable inputs and outputs, while Smith (1993) declared that auditors are one of the external parties who might be interested in outcome-related performance indicators data in order to supply external users (e.g. the central government or public) with information regarding the outcomes of the organizations' activities and being able to make informed judgments about their performance. Daujotait & Mačerinskien (2008) made a similar suggestion:

> "Auditors should identify potential risks to achieving economy, efficiency and effectiveness and thereby develop audit questions.

> Each concept is basically of equal importance and where the specific priority lies will be decided on a case-by-case basis".

In addition, it was observed that performance auditors emphasise good management and effectiveness, raising concern about the use of 'best practice' performance accountability frameworks as audit criteria (English,2007; Pollitt et al,1999b). In a study conducted in Saudi Arabia in the 1970s, only 28 % of the government organizations were subject to efficiency and economy audits, while 18 % had experienced effectiveness audit of program results, and they were self-initiated rather than being performed by an outside agency (Jadallah,1978). Another study confirmed those results and asserted shortcomings in economy, efficiency and effectiveness of audit in the Saudi public sector (Almohalmeed,2000); the study also indicated that high importance was given to the economy and efficiency part of PA rather than effectiveness, even though the percentages of concern about all of these dimensions were considered to be low.

Most of the studies agreed that the economy, input, output and allocative efficiency elements to some extent are highly investigated by PA entities, and this was corroborated by the findings of the current study, but controversy still exists regarding other elements like the effectiveness of the outcomes and effective application. For example, a study in Australia found that PA concentrated on economy and efficiency more than effectiveness (Hatherly & Parker,1988).

It was found that there was insufficient evidence to support the relationship between PP and J or evaluation process (H3), which in other words means that PP had no influence or insignificant influence on the J or evaluation

process by auditors. First those perceptions cover different dimensions of performance that take into account a variety of stakeholder perspectives other than that of the central government. According to Andrews et al (2011), whether the measures (e.g. performance measures/indicators) cover all different dimensions depends on the priorities of the powerful group or stakeholders that reflect them. The importance of the stakeholder groups may vary due to their power, legitimacy and urgency.

The previously listed items of PP reflect the public perspective and they are related to outcomes indictors tied to the end users in the audited entity. Moreover, the coverage may also vary across the nations and over time. According to Morin (2003); Power (2000), PA approach is affected by the culture and philosophical attitude of the organization. For example, statutory performance indicators for local authorities in the UK shifted their focus from service inputs to outputs and outcomes during the 1990s (Andrews et al,2011). Furthermore, the focus on consumer satisfaction in recent years reflects the New Public Management (NPM) concept, whereby the service should be responsive to public instead of bureaucratic preferences, as well other wider social outcomes that capture citizens' perceptions (Andrews et al,2011).

In fact, the results here confirm the findings of a review of studies examining performance measures and their impact on management that combined multiple dimensions of performance including effectiveness, efficiency, equity, output quality, output quantity, responsiveness and satisfaction. It was found that the focus on certain performance dimensions reflect the priorities of different stakeholders, whereby the central, state and local government,

regulators and experts are all sources of administrative performance data (i.e. effectiveness, efficiency, equity, output quality, output quantity), while the survey data are sourced from citizens, clients, managers and employees (i.e. responsiveness, satisfaction and trust). The study showed that administrative performance data are heavily used, with little substantive weight being ascribed to survey data (Andrews et al,2011). This indicates that to collect and measure those elements of concern to the public, prospective auditors should either talk to (i.e. interview) or survey citizens, employees and managers in the audited entity.

Jackson (1988) argued that VFM audit usual focuses on technical efficiency and nothing said about allocative efficiency. Allocative efficiency requires that the judgment prioritise the output of the service, whether overstated or understated (for example, is the service provided targeted to the right group of users, and of appropriate quality?), to users which is another issue explaining why H3 is not supported. In our study on the PA experienced by the SAI in Oman it was found that the main source of the data was only administrative, which reflects the auditors' preference for a specific performance dimension (Figure 5).

Another justification for the previous finding is that the practice of the current PA does not fully capture all the values of the audited organizations, because some of them are difficult to measure using monetary terms, especially those pertaining to the social dimension (Lapsley & Pong,2000; Power,2000). It was found that this practice (i.e. PA) is not fully clear due to different interpretations of what constitutes the best VFM audit among auditors, and

interviewees in one study cited ambiguity surrounding the process of VFM audit (Alwardat et al,2015).

Based on the PLS results, it was found that J is positively and directly related to D choice (H5). That is, the performance auditors depend heavily upon their analytical analysis or J to make their final D and recommendation in the final audit reports. In other words, the auditors use their analytical tools, skills, knowledge and training to interpret PA and PP in the first stage to help them to make the proper D in the second stage. Since the D choice by auditors selects the best alternative solution or recommendation to be reported in the final report, this process exerts a large influence from earlier stages during which the information is collected and the perceptual framing is established for later review and evaluation.

Such findings are consistent with those of Rodgers & Housel (1987), demonstrating a significant association between J representation process in analysing financial information before making the D choice. Furthermore, Nutley et al (2012) found that audit committee members' prior experience and opinions normally influences their Ds regarding what to question, and what evidence to collect and emphasize in their final reports. They explained as well that when it comes to judging the final overall performance it is not enough to rely on analysis of combined data, but to draw on collective experience and intuition to make sense of all the information in front of them.

The latter emphasises the importance of the J process to make the final D. Similarly, (Reichborn-Kjennerud & Johnsen,2011) found that the process of choosing and operationalizing the audit criteria affects the evidence gathering

process and the way the conclusion is framed. On the other hand, errors by auditors during the J process may lead to poor and indefensible D (Mautz & Sharaf,1961). Although the direct relationship between PP and D is significant at level 10% p (H4), based on the total effect it was found that PP is also associated with D choice made by auditors, even though it is not direct, at level 5%. Therefore both PI and PP contribute indirectly to decision-making. From the latter we can conclude that both PI and PP elements need to be taken into consideration, and performance auditors need to invest considerable time in those elements and pay equal attention to fully compile their final report and improve public sector evaluations.

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Appendix: Tables and Figures

Resources (input)	$\Rightarrow$	Product/service (output)	$\Rightarrow$	User feedback (consumer perspective)
$\Downarrow$		$\Downarrow$		$\Downarrow$
Economy + Efficiency				Effectiveness
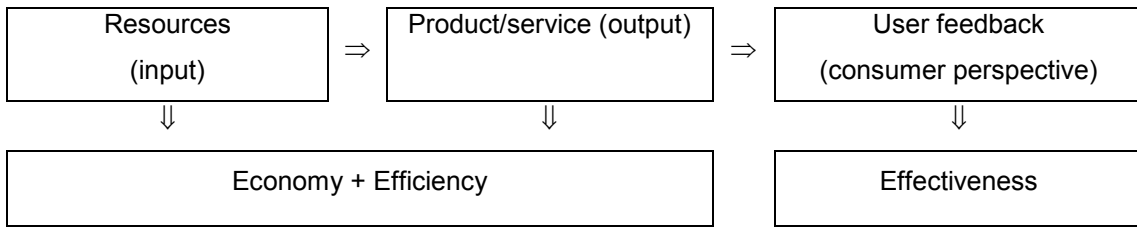
Figure 42: Interrelation between the IOO and 3Es

SAIs (Agent)

-Media
-Academia
-Professional body

-Administrative managers in Public sector
-Ministers
(Agent)

-Parliament / ministries council
-Central government
(Principal)

-Public (Service users
-Public at large/
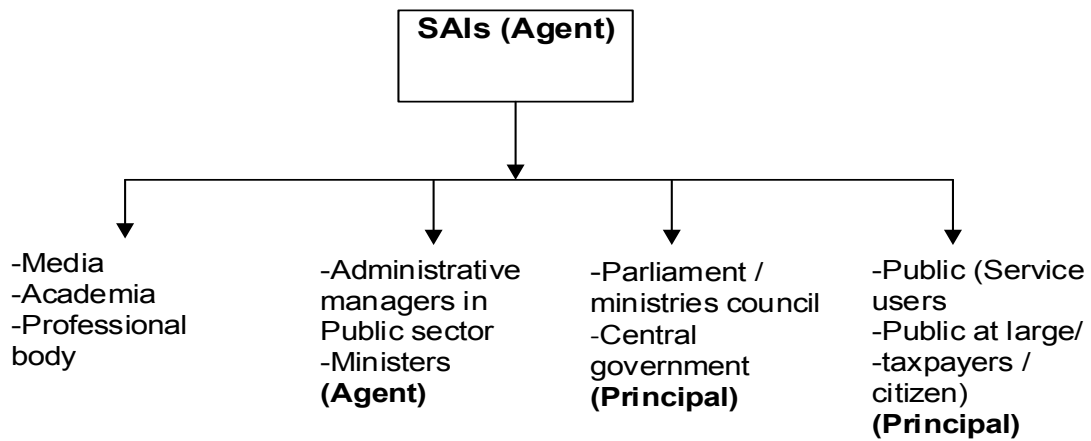-taxpayers /
citizen)
(Principal)

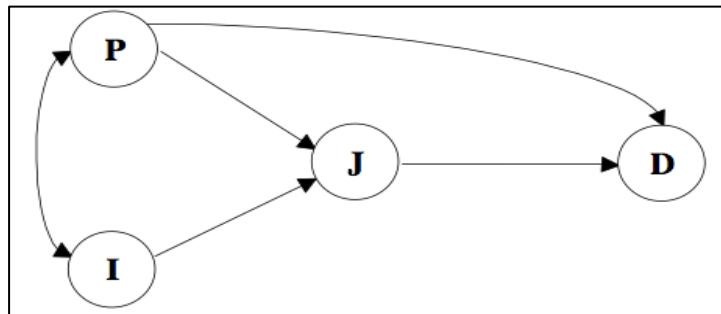**Figure 43: The relationship between the SAIs and other stakeholders**

Figure 44: The Throughput Model

Where I=Information, P=Perception, J=Judgment and D=Decision (adapted from Rodgers, 2006)

Table 84: items used in the study

Summer of Items

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Performance Information

PI1 Economic aspect
(e.g. expenditure and the utilization of public funds)
PI2 Quality of output
(e.g. compare between the quality of service provided to the standards and norms)
PI3 Cost per unit of production/service
PI4 Achievement of goals and objectives of the audited entity
PI5 Effectiveness in achieving the output of the programmes, activities or projects
PI6 Meeting the time schedule of providing the services or projects completion in the audited entity
PI7 The Legitimacy and Legality of management of purchase tenders, supply agreements and contract, etc.
PI8 Quantity of output (e.g. ratio of the services provided per day/ month etc.)

Performance Perception

PP1 Overall impact of the entity's activities or their service provision has on society, local community & environment
PP2 Users satisfaction of the service provided
PP3 Employee satisfaction
PP4 Equity or fairness of service provision (e.g. distribution of service by gender, age, race, income and geographical area)
PP5 Accountability of governmental officers; (i.e. how answerable of their actions)
PP6 User feedback and their perspective on the services provided
PP7 Probity of staff (fraud absent and proper use of public funds)

Judgment

J1 Using external experts increase the credibility of performance audit report
J2 The auditors have sufficient knowledge and do not need to be trained
J3 The auditors are professional in their approach
J4 Auditors conclusion are based on appropriate & sufficient evidences
J5 The audit team always discuss the objectives and agenda of audit before starting their audit procedures
J6 Consensus among teams is important due to its influence on the team views about evidence , data collection and analysis strategy pursued
J7 At the end of audit, the team presents their report to the highest authorities
in the audited entity to ensure that they agrees that individual facts and judgments
made in the report were all correct and fair
J8 Continue dialogue and understanding between auditors and audited entity personnel is essential in order to again acceptance for audit report recommendations

Decision

D1 Performance audit reports help policy makers to assess the overall
performance of the government administration
D2 The recommendations in the reports are of good value to citizens and public service users
D3 Performance audit report presents evidence and well-founded conclusions
that contribute to the central government's considerations of change and improvement in public services
D4 Audit recommendations are constructive and feasible
D5 Hold managers and administrative executive accountable and monitor their activities
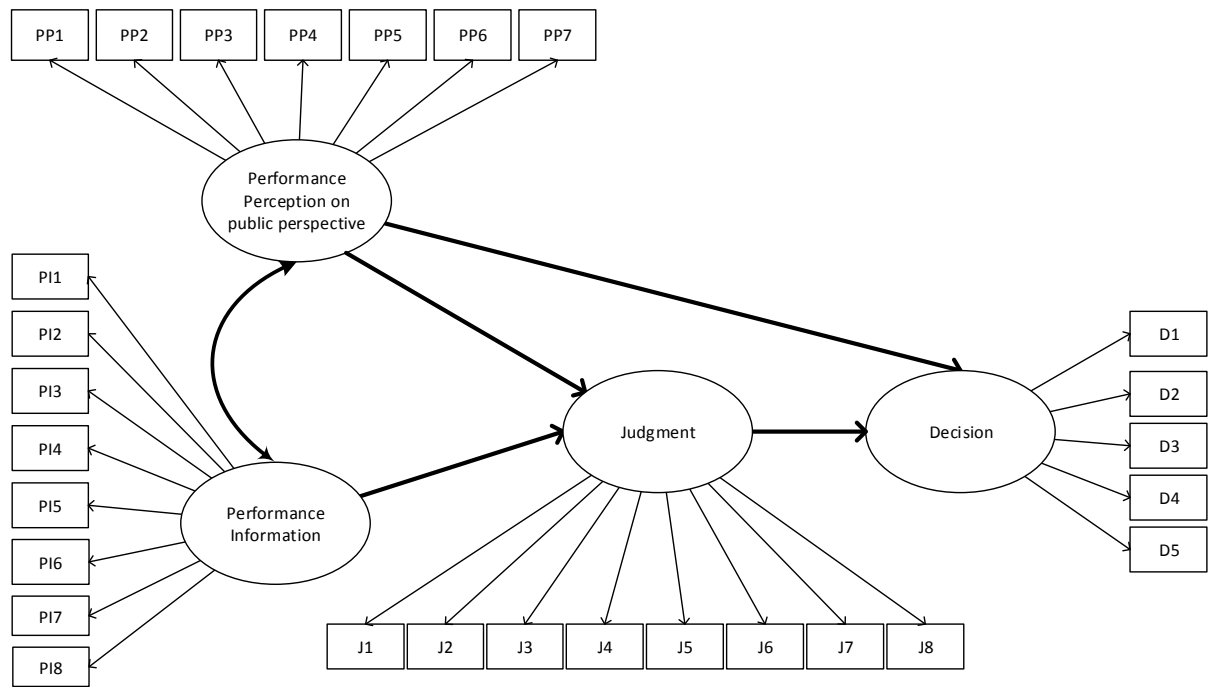
Figure 45: The conceptual framework for decision-choice in PA

Table 85: Demographic information about the participants.

Description	Categories	Frequency	Percent
Gender	Male	138	67.6
	Female	66	32.4
Educational qualification	High school certificate	14	6.9
	Bachelor	123	60.3
	Master	24	11.8
	Professional qualification (e.g. ACCA, CMA, CPA, CPT & PhD)	28	13.7
	Other	15	7.4
Years of experience	Under 5	33	16.2
	5 to 9	54	26.5
	10 to14	40	19.6
	15 to 19	32	15.7
	20 to 24	19	9.3
	25 to 29	13	6.4
	30& above	13	6.4
Age	UP to 25	21	10.3

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Description	Categories	Frequency	Percent
	25-35	83	40.7
	36-45	59	28.9
	46-55	29	14.2
	56-60 & above	12	5.9

Table 86: Descriptive statistics of the items used in the study

Indicator	Mean	Std. Deviation	Minimum	Maximum
PI1	5.90	1.000	1	7
PI2	5.49	1.138	2	7
PI3	5.49	1.304	2	7
PI4	5.88	1.127	3	7
PI5	5.67	1.155	2	7
PI6	5.77	1.115	3	7
PI7	5.87	1.057	3	7
PI8	5.37	1.274	1	7
PP1	5.54	1.268	1	7
PP2	5.41	1.327	1	7
PP3	4.78	1.476	1	7
PP4	5.39	1.376	1	7
PP5	5.78	1.268	1	7
PP6	5.27	1.260	2	7
PP7	6.05	1.111	2	7
J1	5.97	.895	2	7
J2	5.29	.927	2	7
J3	5.85	1.011	1	7
J4	5.72	1.143	1	7
J5	5.97	1.024	1	7
J6	5.66	1.140	1	7
J7	6.02	1.087	1	7
J8	5.76	1.230	2	7
D1	5.95	.963	2	7
D2	5.88	.939	2	7
D3	5.99	.997	1	7
D4	5.85	1.027	1	7
D5	5.82	1.106	1	7

Table 87: Reliability and validity values/ measures for the measurement model

Items & latent variables	Factor loading smart PLS	AVE	Composite reliability	Cronbach's alpha smart PLS	Cronbach's alpha SPSS
Performance Information		0.501	0.889	0.857	0.857
PI1	0.716				
PI2	0.704				
PI3	0.788				
PI4	0.694				
PI5	0.629				
PI6	0.772				
PI7	0.642				
PI8	0.709				
Performance Perception		0.518	0.866	0.814	0.814
PP1	0.702				
PP2	0.749				
PP3	0.693				
PP5	0.754				
PP6	0.719				
PP7	0.696				
Judgment		0.519	0.883	0.845	0.842
J1	0.689				
J3	0.756				
J4	0.691				
J5	0.742				
J6	0.738				
J7	0.744				
J8	0.679				
Decision		0.632	0.895	0.854	0.851
D1	0.792				
D2	0.842				
D3	0.833				
D4	0.752				
D5	0.751				

Table 88: Fornell-Larcker Criterion

	Decision	Judgment	Performance Information	Performance Perception
Decision	0.795			
Judgment	0.673	0.720		
Performance Information	0.562	0.554	0.709	
Performance Perception	0.438	0.425	0.572	0.720

Items	Decision	Judgment	Performance Information	Performance Perception
D1	**0.792**	0.519	0.432	0.417
D2	**0.842**	0.582	0.457	0.426
D3	**0.833**	0.542	0.472	0.289
D4	**0.752**	0.499	0.444	0.275
D5	**0.751**	0.529	0.432	0.318
J1	0.431	**0.689**	0.445	0.324
J3	0.506	**0.756**	0.474	0.382
J4	0.440	**0.691**	0.372	0.232
J5	0.503	**0.742**	0.424	0.229
J6	0.526	**0.738**	0.378	0.332
J7	0.451	**0.744**	0.416	0.334
J8	0.538	**0.679**	0.272	0.303
PI1	0.497	0.476	**0.716**	0.358
PI2	0.390	0.369	**0.704**	0.346
PI3	0.450	0.452	**0.788**	0.427
PI4	0.448	0.369	**0.694**	0.366
PI5	0.225	0.239	**0.629**	0.430
PI6	0.406	0.452	**0.772**	0.486
PI7	0.325	0.341	**0.642**	0.346
PI8	0.417	0.401	**0.709**	0.466
PP1	0.360	0.294	0.430	**0.702**
PP2	0.341	0.315	0.388	**0.749**
PP3	0.211	0.240	0.330	**0.693**
PP5	0.335	0.375	0.433	**0.754**
PP6	0.312	0.304	0.409	**0.719**
PP7	0.305	0.290	0.456	**0.696**

	Decision	Judgment	Performance Information	Performance Perception
Decision				
Judgment	0.792			
Performance Information	0.653	0.641		
Performance Perception	0.513	0.506	0.675	

Table 91: PLS Results

Pathways (regression weights)	Model 1
Performance Information -> Judgment (β_1)	0.460***
Performance Information -> Performance Perception (β_2)	0.571***
Performance Perception -> Judgment (β_3)	0.164
Performance Perception -> Decision (β_4)	0.184*
Judgment -> Decision (β_5)	0.596***

*significant at P <.10;**significant at P< .05;*** significant at P<.01
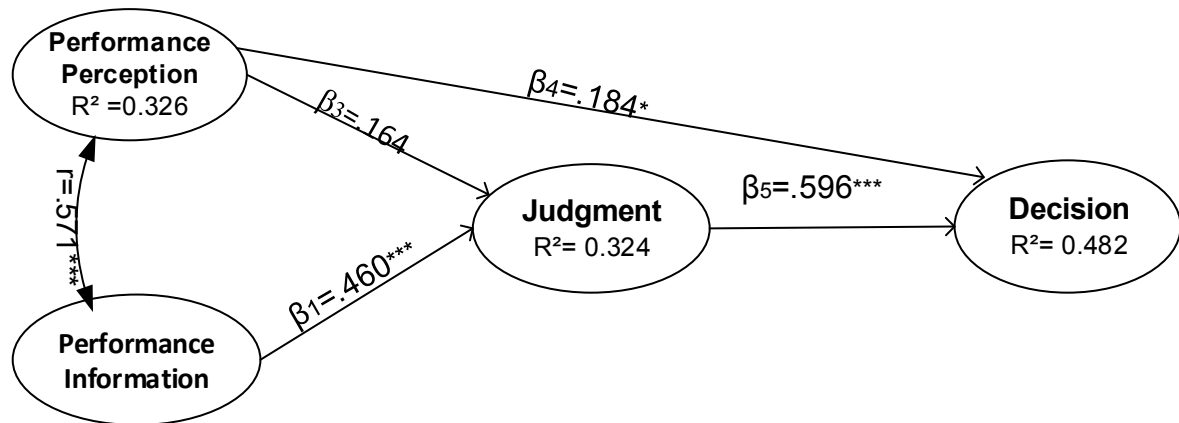
Figure 46: PLS results for the structural model

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Hypothesis / path	Original Sample (O)	Sample Mean (M)	Standard Error (STERR)	T Statistics (|O/STERR|)	P Values
Judgment -> Decision	0.596	0.583	0.121	4.937	0.000
Performance Information -> Judgment	0.460	0.451	0.127	3.619	0.000
Performance Information -> Performance Perception	0.571	0.578	0.064	8.969	0.000
Performance Perception -> Decision	0.184	0.196	0.104	1.763	0.078
Performance Perception -> Judgment	0.164	0.177	0.144	1.135	0.256

Note: 2-tail test used p value of 0.05

Table 93: Quality criteria R square

	R Square	Adjusted R Square
Decision	0.482	0.477
Judgment	0.324	0.318
Performance Perception	0.326	0.323

Table 94: Total effect

Mean, STDEV, T-Values, P-
Values

	Original Sample	Sample Mean	Standard Error	T Statistics	P Values
Judgment -> Decision	0.596	0.583	0.121	4.937	0.000
Performance Information -> Decision	0.435	0.445	0.062	6.964	0.000
Performance Information -> Judgment	0.554	0.556	0.073	7.603	0.000
Performance Information -> Performance Perception	0.571	0.578	0.064	8.969	0.000
Performance Perception -> Decision	0.281	0.292	0.138	2.044	0.041
Performance Perception -> Judgment	0.164	0.177	0.144	1.135	0.256
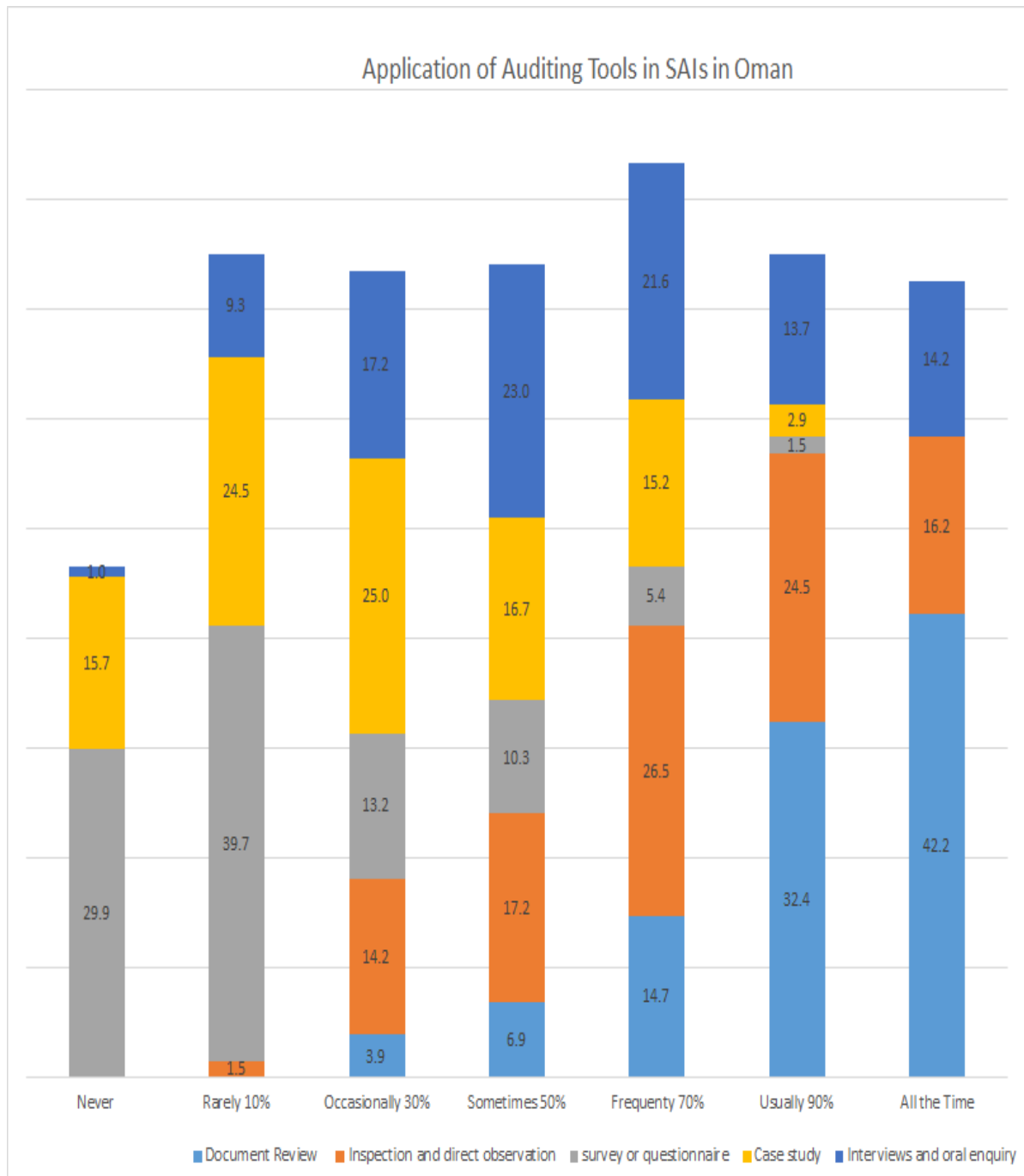
Figure 47: Auditing tools in Oman

Table 95: Marker variable correlations with other variables

	PA	J	D	PP	Marker V
PA	1.000				
J	0.559	1.000			
D	0.566	0.674	1.000		
PP	0.555	0.434	0.440	1.000	
Marker Variable	0.264	0.052	0.097	0.241	1.000

Correlations Matrix

Indicator	PI1	PI2	PI3	PI4	PI5	PI6	PI7	PI9	PP1	PP4	PP5	PP6	PP7	PP8	PP10	J4	J5	J6	J7	J8	J9	J10	J11	D1	D3	D4	D5	D10
PI1	1																											
PI2	.455**	1																										
PI3	.458**	.521**	1																									
PI4	.487**	.469**	.433**	1																								
PI5	.346**	.332**	.401**	.453**	1																							
PI6	.465**	.407**	.525**	.487**	.446**	1																						
PI7	.440**	.416**	.442**	.338**	.284**	.481**	1																					
PI9	.386**	.442**	.614**	.317**	.388**	.477**	.302**	1																				
PP1	.324**	.318**	.254**	.254**	.291**	.354**	.243**	.389**	1																			
PP4	.210**	.268**	.300**	.261**	.294**	.314**	.224**	.320**	.414**	1																		
PP5	.215**	.177*	.270**	.188**	.316**	.257**	0.131	.299**	.436**	.609**	1																	
PP6	.191**	0.126	.162*	.247**	.233**	.268**	.170*	.248**	.354**	.496**	.340**	1																
PP7	.196**	.264**	.379**	.274**	.298**	.362**	.288**	.373**	.392**	.489**	.409**	.506**	1															
PP8	.331**	.180*	.292**	.270**	.339**	.360**	.189**	.333**	.450**	.399**	.392**	.311**	.400**	1														
PP10	.258**	.264**	.339**	.312**	.325**	.424**	.379**	.285**	.301**	.369**	.296**	.353**	.522**	.454**	1													
J4	.392**	.277**	.322**	.401**	.208**	.338**	.240**	.322**	.238**	.257**	.177*	.211**	.219**	.227**	.269**	1												
J5	.277**	.168*	.289**	.237**	0.095	.242**	0.059	.207**	.148*	0.13	.162*	.145*	.226**	.193**	.190**	.380**	1											
J6	.467**	.362**	.361**	.326**	.199**	.385**	.250**	.306**	.289**	.295**	.285**	.282**	.305**	.283**	.196**	.495**	.483**	1										
J7	.315**	.279**	.359**	.226**	.158*	.247**	.207**	.288**	0.116	.177*	0.095	.161*	.213**	.227**	.159*	.434**	.427**	.540**	1									
J8	.324**	.276**	.337**	.287**	.207**	.356**	.365**	.244**	.151*	0.11	0.031	.188**	.245**	.187**	.223**	.375**	.301**	.452**	.447**	1								
J9	.341**	.237**	.323**	.167*	0.117	.388**	.226**	.284**	.271**	.242**	.150*	.229**	.246**	.218**	.279**	.423**	.323**	.431**	.381**	.497**	1							
J10	.337**	.243**	.383**	.239**	.233**	.292**	.259**	.343**	.199**	.250**	.202**	.219**	.382**	.251**	.150*	.431**	.312**	.446**	.401**	.536**	.459**	1						
J11	.204**	.175*	.190*	.210**	0.079	.254**	.162*	.236**	.204**	.254**	.267**	.213**	.279**	0.134	.183**	.323**	.304**	.399**	.313**	.412**	.518**	.490**	1					
D1	.403**	.303**	.358**	.334**	.179*	.264**	.259**	.329**	.298**	.283**	.224**	.246**	.305**	.345**	.325**	.358**	.283**	.366**	.344**	.443**	.405**	.340**	.355**	1				
D3	.412**	.335**	.349**	.372**	.191**	.332**	.287**	.300**	.306**	.399**	.173*	.299**	.297**	.322**	.313**	.364**	.266**	.459**	.382**	.385**	.450**	.393**	.504**	.559**	1			
D4	.394**	.295**	.356**	.411**	.241**	.388**	.172*	.379**	.273**	.208**	0.106	.207**	.212**	.226**	.196**	.320**	.216**	.404**	.374**	.352**	.443**	.368**	.480**	.558**	.687**	1		
D5	.388**	.341**	.361**	.371**	0.115	.283**	.268**	.363**	.249**	.223**	.170*	.164*	.251**	0.119	.163*	.321**	.316**	.343**	.337**	.417**	.351**	.356**	.392**	.579**	.476**	.537**	1	
D10	.375**	.278**	.369**	.294**	.161*	.346**	.305**	.293**	.299**	.222**	.166*	.212**	.260**	.205**	.201**	.347**	.273**	.430**	.307**	.408**	.432**	.335**	.399**	.449**	.572**	.521**	.444**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 96: Correlation matrix for all the items

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