

**The Impact of International Standards on Auditing Adoption on
Audit Quality and Earnings Management in Saudi Arabia**

By

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Abstract

Globalization has increased the need for harmonization of reporting in order to understand financial information. As a result, most countries in recent years, including Saudi Arabia, have adopted a uniform set of standards such as International Standards on Auditing (ISA) and International Financial Reporting Standards (IFRS). However, unlike research on IFRS, little research has been undertaken in ISA. Therefore, one significant question that needs to be addressed is, “to what extent have audit quality and REM practices been influenced post ISA implementation?”. Furthermore, the adoption of ISA by developing countries has been the motivation to focus on the impact of ISA. Hence, this study examines audit quality and REM practices post-ISA adoption and the effects of audit quality dimensions on REM in Saudi Arabia. The study has four objectives: firstly, to investigate whether the adoption of ISA has improved the contents of the audit report and reduced REM; secondly, to investigate whether the contents of the audit report reduces REM post ISA adoption; thirdly, to examine the impact of external audit attributes (Big4, audit firm rotation and specialised industry auditors) and internal audit characteristics (size, meetings, independence, experience, multiple directorships, rotation, stock ownership, diversity of audit committee (AC) and internal audit function (IAF)); and finally, to examine the incremental effect of ISA adoption on the relationship between REM and audit characteristics.

To achieve this a quantitative approach was used to collect and analyse data from the annual reports of 96 non-financial listed companies from 2014 to 2019 (576 observations). Since ISA was adopted in 2017 in Saudi Arabia, this study considers the three years pre- and post-2017. The study’s hypotheses were formulated using agency theory with agency, institutional and stakeholder theory adopted for interpretation. REM was estimated using Roychowdhury’s (2006) models (abnormal inventory cost, discretionary costs, and operating cash flow). To measure the level of content improvement in audit reports post ISA adoption, the study used content analysis and a disclosure index. To measure the impact of audit quality dimensions on REM, four regression models were constructed, testing: the relationship between ISA and REM (Model 1); the contents of audit reports and REM post ISA (Model 2); audit factors and REM (Model 3); and Model 4 tested the interaction effect of ISA with audit factors.

ISA adoption has resulted in an improvement of the content of audit reports. Also, post ISA adoption, the contents of audit reports, Big 4 firms and Audit Committee stock ownership has resulted in a reduction of managing real earnings. This outcome is also evident when, all factors of the three indexes for internal and external audit are considered. On the other hand, when some individual factors for internal audit (i.e., expertise, multiple directorships of AC and IAF) are considered there is evidence of managing real earnings. The remaining audit factors did not affect REM practices. The findings suggest that analysing each element of audit factors individually is not effective and/or useful in managing real earnings in Saudi Arabia. Therefore, both internal and external audit factors should be analysed cumulatively and simultaneously since they are complementary.

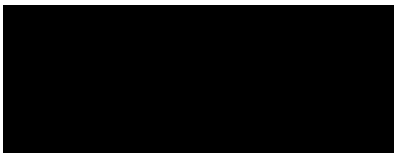
This study is one of the first to examine whether ISA adoption has improved audit quality and reduced REM practice in one of the emerging countries. It should be noted that this study makes a theoretical contribution to determining how ISA implementation affects the contents of audit reports and examines its impact on REM post ISA adoption. Accordingly, this study contributes timely and relevant information to governing bodies, investors, audit professionals and regulatory authorities (SOCPA and CMA).

Declaration of Authorship

“I, Abeer Salman Alfaifi, declare that the PhD thesis entitled “The Impact of International Standards on Auditing Adoption on Audit Quality and Earnings Management in Saudi Arabia” is no more than 80,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

“I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University’s Higher Degree by Research Policy and Procedures.

Signature of Candidate:

A solid black rectangular box used to redact the candidate's signature.

Abeer Alfaifi

Date: 8/11/2022

Dedication

To Mom and Dad,

who taught me to think, understand, express, and trust myself, and who always picked me up on time and encouraged me to go on every adventure?

To my husband,

who nursed me with affection, love, and his dedicated partnership for success in this journey.

To my brothers and sisters,

who encouraged me always and were proud of my achievements.

To my daughter

who made my life beautiful and happy.

To my relatives and friends,

who encouraged me on the road to success.

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List of Abbreviations

AC	Audit Committee
ACadd	Audit Committee directorships
ACDiv	Audit Committee Diversity
ACExpt	Audit Committee Expertise
ACFO	Abnormal Cash Flow from Operation
ACInd	Audit Committee Independence
ACMeet	Audit Committee Meetings
ACSize	Audit Committee Size
ACStock	Audit Committee Share Ownership
ACSwh	Audit Committee Switching
ADISEXP	Abnormal Discretionary Expenses
ADV	Advertising Expenses
AEM	Accrual Earnings Management
APRODCOST	Abnormal Production Costs
AQ	Audit Quality
AR	Audit Report
ARL	Audit Reporting Lag
AudSpec	Industry Specialist auditors
BExpt	Board Eexpert
Big 4	Auditor brand name (audit firm)
BMeet	Board Meeting
CD	Contents Disclosed
CE	Actual level of Content Elements obtained for a firm
CFO	Cash Flow from Operation
CG	Corporate Governance
CMA	Capital Market Authority of Saudi Arabia
COGS	Cost of Goods Sold
ContentAR	Contents of Audit Report
DISEXP	Discretionary Expenses
EM	Earnings Management
EXAQ	Index score of External Audit Factors
EXINAQ	Index score of Internal and External Audit Factors
FE	Fixed Effect
FGLS	Feasible Generalized Least Square
FiSwh	Audit firm rotation
FRQ	Financial Reporting Quality
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
IAASB	International Auditing and Assurance Standards Board
IAF	Internal Audit Function
IAS	International Accounting Standards
IFAC	International Federation of Accountants
IFRS	International Financial Reporting Standard
INAQ	Index score of Internal Audit Factors
INV	Annual Change of Inventories
ISA	International Standards on Auditing
KSA	Kingdom of Saudi Arabia

LEV	Leverage
LM	Breusch and Pagan Lagrange Multiplier
MB	Market to Book Value
MC	Market Capitalisation
OLS	Ordinary Least Square
PCSEs	Panel Corrected Standard Errors
PRODCOST	Production Costs
R&D	Research and Development Expenses
RE	Random Effect
REM	Real Earning Management
ROA	Return on Assets (firm performance)
SG&A	Selling, General and Administrative Expenses
Si	Total Sales
SIC	Standard Industrial Classification
SOCPA	Saudi Organization for Certified Public Accountants
SOX	Sarbanes-Oxley Act
SPSS	Statistical Package for the Social Sciences
TA	Total Assets

Chapter 1: Introduction

Globalization has increased the need for harmonization of reporting in order to present financial information uniformly (Fraser 2010b). A uniform set of standards such as International Standards on Auditing (ISA) (Simunic, Ye & Zhang 2017) and International Financial Reporting Standards (IFRS) has been adopted by many countries in recent years. The ISA provides an entry point for modernization and can help to create an environment in which there are globally harmonized guidelines for the preparation and securitization of financial information, that is, auditing standards play a significant role in enhancing the quality of the audit process (Garcia-Benau & Zorio 2004). According to Humphrey, Loft and Woods (2009), transparency is increased for global investors through the use of IFRS in preparing financial statements and ISA for auditing.

There have been financial irregularities worldwide including the US, Canada, the European Union, Asia, and the Middle East and North African economies (MENA) (CSR 2010; Glaum, Lichtblau & Lindemann 2004; Gul & Leung 2004; Ho & Wong 2001; Mitton 2002). These irregularities have increased awareness about the need to enact policies to reassure the public, increase the credibility of the financial sector, and create greater transparency to protect shareholders and stakeholders (Fearnley & Beattie 2004; Glaum, Lichtblau & Lindemann 2004). Earnings Management (EM) is a concept that was created due to the fallout from previous scandals (Goncharov 2005) and this concept has attracted greater attention (Glaum, Lichtblau & Lindemann 2004). EM can be manipulated so that companies can hide their true performance, reduce the quality of accounting information provided to the public (Orazalin & Akhmetzhanov 2019) and effectively, reduce the quality of their earnings (Jaggi & Tsui 2007).

According to Inaam and Khamoussi (2016), the higher the quality and effectiveness of an audit, should result in lower agency problems and financial irregularities. Accordingly, taken together, internal and external auditing as a method of internal and external monitoring play a significant role in increasing the quality of both auditing and financial reporting, which impacts EM practice (Gras-Gil, Marin-Hernandez & Garcia-Perez de Lema 2012). Several studies have investigated EM in developed countries, but limited empirical studies have investigated EM in emerging economies (Orazalin & Akhmetzhanov 2019). Overall, few studies have been conducted on EM, ISA, and audit quality (internal and external audits) in developing countries such as (Alsultan 2017; Augustine et al. 2014; Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008; Habbash & Alghamdi 2017; Imen & Anis 2020). This study provides evidence from Saudi Arabia about these three areas and, to my knowledge, is one of only a few studies conducted in a developing country with an emerging market.

1.1 Background, problem, and motivation for study

Since 2006, the Saudi business environment has changed dramatically through the evolution of stricter rules and adoption of new standards to control and improve the Saudi Stock Exchange. The Capital Market Authority (CMA) introduced corporate governance mechanisms at the end of 2006. Additionally, the governance code was amended and applied to all Saudi Arabia-listed companies from 2009. This new code was created to harmonize accounting and auditing practice. In 2017, Saudi Arabia adopted international standards, namely IFRS and ISA (SOCPA 2018). The adoption of international standards is not just about streamlining accounting regulation, but also a worthy addition for the auditing profession (BooLaky, Soobaroyen & Quick 2018; Leuz & Wysocki 2016; SOCPA 2018). The implementation of standards and new reforms is intended to promote audit and financial reporting quality (FRQ) (Needles Jr, Ramamoorti & Shelton 2002), decrease information asymmetry (Turki, Wali & Boujelbene 2016), and, ideally, diminish EM (Alhadab & Clacher 2018).

According to the Saudi Organization for Certified Public Accountants (SOCPA) (2018), major differences exist between Saudi national standards on auditing and ISA. One of the most important differences is their coherence and complementarity; the standards are now more comprehensive and modern which improves the quality of auditing performance by increasing its efficiency and effectiveness. The ISA adoption is expected to create a significant transitional period in the auditing profession, especially in external auditing. Also, existing differences between ISA and national standards are robust motivations to measure the extent of the impact of such standards and their effectiveness.

However, the auditing and accounting profession still face significant barriers in Saudi Arabia including the monopoly of services, low competence, and reduction of audit fees (Habbash & Alghamdi 2017). Moreover, as indicated by Al-Ghamdi (2005); Habbash and Alghamdi (2017); Herath and Alsulmi (2017); Zerban (2017), the professional environment does not maintain high standards in Saudi Arabia, since there have been violations in regard to the requirements of the quality review program and some problems in implementing the program in audit firms. Also, due to the challenges facing this profession, audit committees that relate to external audits have limited power and effectiveness (Habbash & Alghamdi 2017). These problems impact the auditing profession and reduce audit quality in the country (Habbash & Alghamdi 2017).

Besides the existence of strong motivation for EM in Kingdom of Saudi Arabia (KSA), previous studies (Ho, Liao & Taylor 2015; Sohn 2016) state that IFRS adoption decreases the amount of accrual-based earnings management. Firms, however, have started to adjust to IFRS by manipulating other activities as a replacement for EM. Strict regulatory (Cohen, Dey & Lys 2008a) and legal guidelines (Choi, Choi & Sohn 2018) have provided firms with more motivation to manage earnings. Choi, Choi and Sohn

(2018); Sohn (2016); Zang (2007) have stated that this type of attitude has led firms to move from accrual earnings management (AEM) to real earnings management (REM). This move from AEM to REM can be hindered when the firm's information environment is better, maintaining a high-quality audit process (Choi, Choi & Sohn 2018; Sohn 2016). The expected increase of REM raises the importance of investigating the role of ISA adoption in limiting managers' opportunistic behavior, since Saudi Arabia adopted both IFRS and ISA in 2017.

Empirical studies about EM in emerging economies are relatively scarce when compared with developed countries (Orazalin & Akhmetzhanov 2019). Saudi Arabia is of interest for several reasons. Like most developing countries, especially MENA countries, Saudi Arabia has a less developed stock market(s), weak investor protection, and concentrated ownership that has a high level of EM (Leuz, Nanda & Wysocki 2003). Also, Saudi Arabia is an emerging Arab country that shares similar social and political systems and traditions with many other emerging economies. Moreover, the socio-cultural environment based on Islamic religious principles has a significant impact on Saudi Arabia's local laws (Nurunnabi 2017).

Saudi Arabia is one of the largest oil producers in the world and possesses a lot of influence, especially in the Middle East (Niblock 2013). Despite its success and influence, Saudi Arabia has not been the subject of a study on EM and audit quality in conjunction with ISA. There is also limited research on REM in this country. Therefore, an examination into the role of audit quality attributes post ISA adoption on the one hand and real earnings management on the other will contribute to the present literature, especially given Saudi Arabia is a developing country with various cultural aspects and regulations. Overall, developing countries have been studied less extensively than developed countries.

1.2 Questions and objectives

The main research aim of this study is to investigate whether the adoption of International Standards on Auditing (ISA) improve audit quality and reduce REM activities by KSA firms. The research builds on previous academic work by incorporating audit quality and earnings management, particularly Alhadab and Clacher (2018); Alzoubi (2019)); Chi, Lisic and Pevzner (2011); Reid et al. (2019); Skaife and Gassen (2009). By introducing ISA, the International Federation of Accountants (IFAC) and the International Auditing and Assurance Standards Board (IAASB) are expected to improve audit quality to strengthen public confidence in the global auditing profession. One way to improve audit quality is to control EM initiatives by a corporation which should result in more reliable financial information in annual reports.

In keeping with the main aim of this study, specific objectives, and research questions (Table 1.1) will be achieved.

Specific Objectives	Research Questions
1. Investigate whether ISA adoption has improved audit quality and reduced real earnings management in listed companies in Saudi Arabia.	<p>A. Do the contents of audit reports improve post ISA adoption?</p> <p>B. Do REM measurements (abnormal cash from operation, abnormal discretionary expenses, and abnormal production costs) decrease post ISA adoption?</p>
2. Investigate whether the contents of audit reports reduce REM post ISA adoption in Saudi Arabia.	<p>A. Does the contents of audit reports reduce REM post ISA adoption?</p>
3. Examine whether external and internal audit factors reduce REM in listed companies in Saudi Arabia by comparing the period pre and post ISA adoption.	<p>A. Do external audit quality attributes (auditor brand name, audit firm rotation and industry specialist auditors) decrease REM proxy?</p> <p>B. Do internal audit characteristics (activity, size and frequency of meetings, independence, experience, multiple directorships, rotation, stock ownership, diversity of audit committee and internal audit function IAF) decrease REM proxy?</p>
4. Evaluate the interaction effect of ISA adoption on the relationship between REM (proxy) and audit factors (index score of 4 external and 9 internal audit factors).	<p>A. Does the interaction effect of ISA impact the relationship between REM proxy and external audit factors (index score is 4)? (Individual impact)</p> <p>B. Does the interaction effect of ISA impact the relationship between REM proxy and internal audit factors (index score is 9)? (Individual impact)</p> <p>C. Does the interaction effect of ISA impact the relationship between REM proxy and both audit factors (index score is 13)? (Combined effect).</p>

Table 1.1: Specific objectives and research questions

1.3 Research methodology

This study aims to investigate the impact of ISA on audit quality and REM; hence the data was collected from audit and directors' reports. The study uses a sample of all companies listed on the Saudi Stock Exchange, except for the financial and insurance sectors, which have different policies, or appropriate data is unavailable. Further, if the industry-year grouping contains less than 15 observations, those firms were removed from the sample in order to meet conditions for examining EM (Roychowdhury 2006). This study is undertaken in two phases: (1) ISA and audit quality, which is measured using content analysis of audit reports; and (2) ISA and REM, which is measured using REM measurements and audit factors.

To measure the level of content improvement in audit reports after ISA adoption, the study uses content analysis and a disclosure index. Several processes are followed: 1) identifying the extent of the content development (CD) based on auditing standards, generally accepted auditing standards (GAAs) and International Standards on Auditing (ISA), 2) selecting auditing standards (GAAS/ISA), 3) developing

an index for content development, 4) applying the approach to calculate the CD index, 5) ensuring reliability and validity, and 6) using statistical analysis to analyse the extent of the CD index.

Real earnings management (REM) is estimated using Roychowdhury's (2006) model. The audit factors were organized into two categories: 1) external audit factors; 2) internal audit factors (audit committee characteristics and IAF). Four models were constructed, and a set of hypotheses was formulated to obtain an overview of the role of ISA adoption and audit factors in reducing REM. Model 1 tests the relationship between ISA and REM, model 2 tests the relationship between the contents of audit reports and REM post ISA adoption. Model 3 tests the relationship between audit factors and REM for the whole period and for two periods (pre and post ISA adoption) and Model 4 tests the interaction effect of ISA adoption with audit factors. These models were examined by multivariate regression after several tests to arrive at the most appropriate regression model. The study then used modified REM measurements devised by Gunny (2010) and Vorst (2016) for additional analysis (robustness tests) to ensure main results were reliable and credible.

1.4 Contribution

The move towards international harmonization of financial reporting has enhanced the need for harmonizing auditing practices worldwide. As a result, most countries, including Saudi Arabia, have adopted ISA (SOCPA 2018). However, unlike research in IFRS (BooLaky, Soobaroyen & Quick 2018), little research has been undertaken in ISA. Evidence suggests that ISA is just as important as IFRS, since it must ensure available information in financial reports are a true and fair reflection of the operational activities and financial position of the business (BooLaky & Omoteso 2016a; BooLaky & Soobaroyen 2017). This study contributes to knowledge by providing empirical evidence on how the ISA adoption improves audit quality, subsequently reducing EM initiatives by the firms' managers. This will ensure that government organizations and regulators such as SOCPA and CMA are aware of any pitfalls and will create legislation to limit the damage caused by EM. Moreover, this study will examine the extent to which annual reports are now more reliable and credible for stakeholders and investors, so they can depend on their authenticity.

1.4.1 Contribution to knowledge

The research to date has tended to relate agency theory with CG mechanisms which examine the relationship between CG and agency problems and costs. However, the current study is different, since it focuses on this relationship using the ISA adoption perspective. This study will develop a theoretical perspective by creating a unique theoretical framework related to ISA in a developing country and will add to the value of the established body of agency theory knowledge. Although the study's hypotheses are built on agency theory, the findings are interpreted using agency, institutional and stakeholder

theory. Theoretically, monitoring mechanisms should reduce agency costs and problems. Hence, this study investigates whether adopting ISA as a monitoring tool will minimize agency problems and reduce costs, especially in KSA, a country that has a different legal system and more importantly due to its use of Sharia law. Furthermore, Saudi Arabia is still in the early transitional phase of implementing ISA, which started in 2017.

This study is one of the first to consider the implementation of ISA empirically in developing countries. And significantly, Saudi Arabia has not to date been the focus of any study regarding REM practice or the role of ISA adoption and audit factors. Accordingly, the study will investigate to what extent ISA adoption impacts audit quality by examining the contents of audit reports, and the effect of both internal and external audit quality dimensions on REM pre and post ISA adoption. Therefore, the current research could potentially provide new primary evidence from a country with a unique business environment and rules that are thought to be indicative of Middle Eastern and Arabic countries. Overall, this study will contribute to the literature about accounting and auditing in KSA – two areas with limited research, especially in the fields of EM and audit quality.

Thus, the current study will contribute to the existing literature for ISA, internal and external audit quality, and earnings management in the following ways:

1. ISA: Although ISA form the foundation of many financial systems, there are few studies that have investigated the ISA adoption. Some recent comprehensive literature reviews provide evidence of the lack of research about international auditing and, in particular, the International Standards on Auditing (Haapamäki & Sihvonen 2019; Simnett, Carson & Vanstraelen 2016). However, these limited studies have solely focused on ISA adoption amongst multiple countries and applied qualitative research methods only (see Appendix 1 that highlights some of these studies). In addition, a limited number of studies have used an empirical approach to investigate ISA adoption in one country, with restricted data to test or measure the extent of this adoption and how ISA impacts firms. Therefore, Haapamäki and Sihvonen (2019) suggest further examination as to whether ISA implementation has increased audit efficiency and quality. Moreover, due to the lack of empirical research on the impact of ISA on audit quality (BooLaky, Soobaroyen & Quick 2018; Christensen, Glover & Wolfe 2014), this study will shift the focus and use more data for developing countries. Accordingly, this study is important, since it will be the first to investigate the impact of ISA on audit quality and REM in Saudi Arabia listed firms using a quantitative approach.

2. REM: There is extensive evidence on the impact of audit quality on EM. Nevertheless, Alhadab and Clacher (2018); Chi, Lisic and Pevzner (2011) observe that prior research has often focused on AEM and excluded REM (see Appendix 2). In other words, the significance of corporate governance in

reducing accrual-based earnings management is widely documented in the literature, but there is no firm and/or clear evidence that it can restrain real earnings management (Malik 2015). However, there is one notable study by Chi et al. (2011) that examines the relationship between high-quality auditors and REM. In support of this viewpoint, Zehri and Zgarni (2020) suggest further research that includes REM as a proxy for earnings quality. Also, they suppose that the new studies work to estimate moderating functions that other variables play in exploring the relationship of internal and external CG with EM such as implementing change in governance regulation (Zehri & Zgarni 2020). Also, some research has been conducted on the impact of audit committee attributes (Abbas 2020) and external auditing factors on EM, but none have looked into the moderating effect of ISA adoption on external audit factors and audit committee attributes on EM. Accordingly, the current study redresses a gap in the literature by not only examining whether internal and external audit factors play any role in reducing REM but also focusing on the relationship between REM and audit quality factors in the light of ISA adoption in Saudi Arabia. Thus, this study examines (1) the direct impact for two periods (pre and post ISA adoption), and (2) the moderating (interaction) effect of ISA on the impact of external audit factors, audit committee attributes and IAF on REM of listed companies in KSA.

3. Audit quality factors: The most common models used to test audit quality are audit fees, Big 4 membership, audit opinions, and discretionary accruals (DeFond & Zhang 2014). However, little research (about 8 sources) examines the harmonization of audit reports (Haapamäki & Sihvonen 2019), defined as a process that aims to reduce the diversity of audit practices and ensures their convergence in terms of audit communicative means (Fakhfakh & Fakhfakh 2010). Although the significance of harmonization can be sourced in the form and contents of audit reports according to ISA (Fakhfakh & Fakhfakh 2010; Haapamäki & Sihvonen 2019), the literature has explained how new auditing standards improve the contents of audit reports. Accordingly, first, this study will contribute to the literature by using content analysis to check how ISA adoption influences the contents of audit reports. And second, content analysis is not only used to examine the quality of audit reports, but also to measure how their content has influenced REM post ISA adoption. These two investigations constitute major theoretical contributions to the current study.

According to the literature review, most research with a focus on the relationship between audit factors and earnings management tend to limit measures to one or two audit characteristics. They believe that their measurements are reflective of overall audit quality of a company and then generalize their findings without considering the fact that audit quality is an integrated system. This viewpoint is supported by DeFond and Zhang (2014) evaluation, that there is no single proxy that can provide an integrated picture of audit quality. Thus, the researcher realizes that it is important to use more than one tool to measure audit quality by covering multiple attributes of internal and external auditing. However, using this method (evaluating each audit factor independently on EM) resulted in inconsistent and

conflicting results, even within the same country, which is inconsistent with study reliability. Some factors have been included in the literature reviews such as auditor brand name, industry specialist auditors, audit committee characteristics and IAF. To the best of my knowledge, this study will examine a new variable: rotation. This study uses the rotation variable – the rotation of audit firm and audit committee member – as a new measurement of audit quality to examine its effect on REM manipulation pre and post ISA adoption and further, examine its interaction effect on ISA.

1.4.2 Statement of significance (practical contribution)

The practical contribution and benefits of this research are to provide valuable insight for relevant government bodies and regulatory authorities including the Saudi Organization for Certified Public Accountants (SOCPA). This particular group is tasked with leading and promoting the professions of auditing and accounting in Saudi Arabia (Sarhan, Ntim & Al-Najjar 2019). The study will also benefit the Capital Market Authority (CMA), which is concerned with regulating and developing listed firms that are part of the Saudi Arabian CMA. In a broader sense, the findings will be valuable for businesses including internal and external auditors and corporate governance members, especially audit committees. The research can benefit external auditors by allowing them to have more effective audit mechanisms. For internal auditors and audit committees, the research can provide a valuable framework that will guide them through the audit process in a complete, detailed, and high-quality manner. Finally, the study can be made valuable to local and foreign investors and stakeholders, as these individuals are interested in reliability and credibility of financial information in a country. By creating a framework that helps to guarantee high-quality financial information, the study could potentially lead to greater investment in Saudi Arabia, since investors and stakeholders will have more trust in the financial information provided by Saudi companies and hence be more willing to invest.

The research will contribute to the body of theory surrounding auditing and EM in Saudi-listed firms. The study will aid these fields by helping to obtain information about what enhances or restricts audit quality and what can be done to reduce EM practice. In a broad sense, this process will help to create more effective best practice in the auditing field and assist Saudi Arabia in fulfilling the Vision 2030 goal of greater prosperity. The study will look at the first three years pre and post implementation of Saudi Arabia's new auditing standards and should be able to contribute timely and relevant information to all affected parties including governing bodies, investors, and audit professionals and regulators.

While there have been some studies about ISA adoption, auditing, and EM, to my knowledge no study has provided insight into internal and external auditing processes post ISA adoption in the Saudi non-financial sector. By examining the relationship between audit quality and EM post ISA implementation, the researcher should be able to create an integrated assessment for internal and external auditing

processes pre and post ISA adoption. This assessment will build a framework that can be used to improve audit quality and processes for use in the non-financial sector of Saudi Arabia. Moreover, this study will contribute to Middle East and North Africa (MENA) countries, especially, the United Arab Emirates (UAE), which also adopted international standards in conjunction with KSA in 2017.

1.5 Organization of thesis

This thesis has been organized in nine chapters. The first chapter provided an overview of the research.

Chapter Two provides various aspects about KSA such as background (i.e., geography, politics, economics, and the Saudi CMA), the administrative bodies of listed firms, an overview of accounting and auditing professions and an overview of Corporate Governance (CG). Understanding these concepts provides insight into the research background, objectives, research questions, and hypotheses generation.

Chapter Three reviews and discusses the relevant literature on International Standards on Auditing (ISA), audit quality (AQ), and earnings management (EM) and then provides a critical evaluation in identifying the gap in knowledge. For example, the literature provides definitions for ISA, AQ, EM, the development and importance of ISA, an overview of AQ, and motivations and techniques of EM.

Chapter Four sets out the theoretical framework and illustrates different theories that relate to the research questions, covering the literature concerning monitoring factors in relation to EM including internal and external audit factors. This chapter presents the developed hypotheses and identifies the literature gap for each stated attribute, finally discussing how the hypotheses in this study serve to bridge the gap.

Chapter Five discusses the methodology and quantitative methods applied to this thesis. For example, research design, philosophy, strategy, methods, data collection, and sample selection. The approach to contents of the audit report is presented followed by dependent, independent, interaction and control variables, empirical models, and statistical analysis.

Chapters Six and Seven report the findings of secondary data analysis. This study examines the impact of ISA on audit quality and REM for pre and post ISA adoption.

Hence, Chapter Six presents the findings related to the impact of ISA on audit quality measured by contents of an auditor's report (H1). Statistical analysis used such as the Friedman and Wilcoxon tests (non-parametric statistics) is presented and discussed.

Chapter Seven presents the findings regarding the impact of ISA on REM, and the role of internal and external audit factors in reducing EM by using multivariate regression. Also, findings regarding the interaction effect of ISA adoption on the relationship between audit factors and REM practice are presented. Additional analysis to check robustness is presented and discussed.

Chapter Eight provides the conclusion of this thesis including the study's findings, limitations, conclusions, and interpretations, as well as areas for future research.

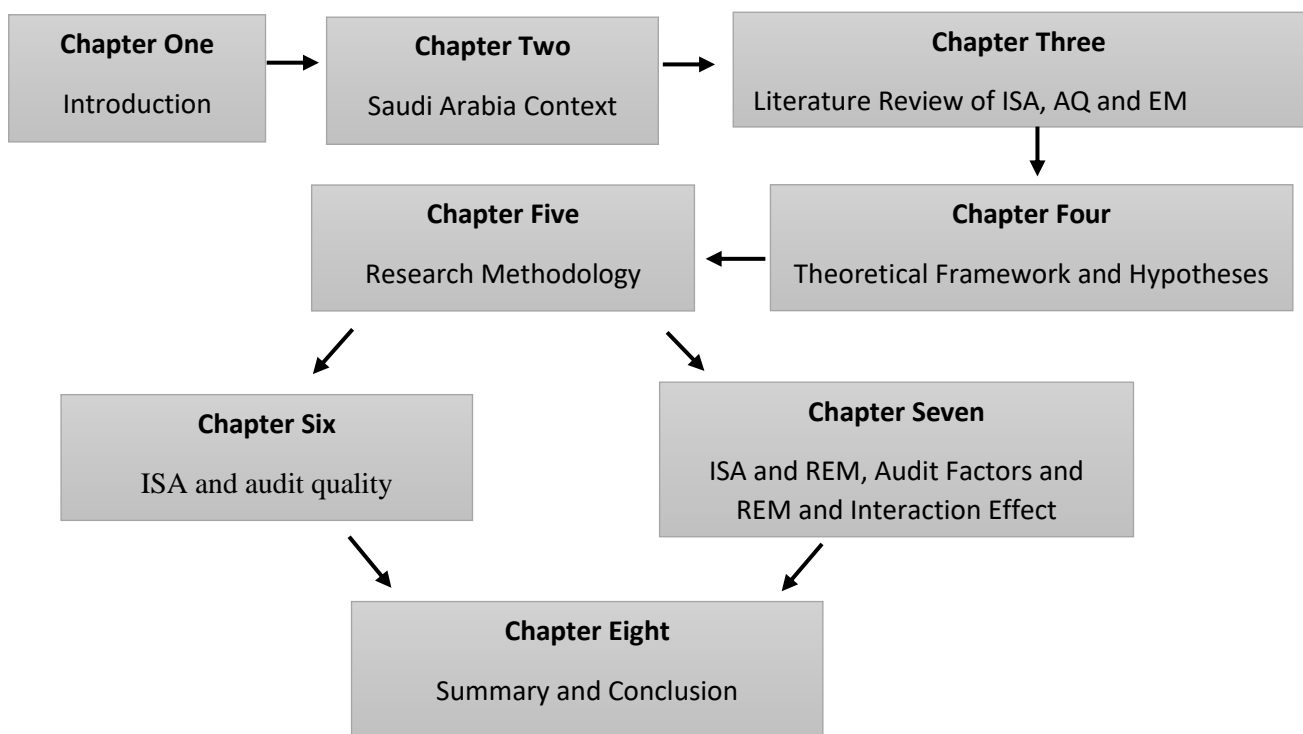


Figure 1.1: Thesis structure

Chapter 2: The Current State of Auditing in Saudi Arabia

2.1 Introduction

The previous chapter presented the introduction which included background to the study, problem, motivation, questions, objectives, methodology and contribution to the study. This chapter provides an overview of Saudi Arabia, regulatory bodies, accounting and auditing professions, and Corporate Governance. Section 2.2 will provide a background (i.e., geography, politics, economics, and the Saudi Capital Market); section 2.3 will discuss the regulatory bodies of firms listed in Saudi Arabia; section 2.4 will provide an overview of the accounting and auditing professions within the country; section 2.5 will present an overview of Corporate Governance in Saudi Arabia. Finally, section 2.6 summarizes this chapter.

2.2 Overview of Saudi Arabia

The modern Kingdom of Saudi Arabia was founded by King Abdul-Aziz Al Saud in 1932. The country is located in southwestern Asia (Al-Turaiqi 2008) in the Arabian Gulf (GOV.SA 2020). It is the largest Middle Eastern country with an area of 2,215,000 square kilometres (GOV.SA 2020) and forms the largest part of the Arabian Peninsula. Its northern neighbours are Jordan, Iraq, and Kuwait; its southern neighbours are Yemen and Oman; its eastern neighbour is Qatar, the United Arab Emirates (UAE), Bahrain, and the Arabian Gulf and it is bordered on the south by the Red Sea (SOCPA 2020). The capital of KSA is Riyadh and some of the country's major cities are Makkah (Mecca), Al-Madinah (Medina), Jeddah, Dammam, and Al-Jubail (GOV.SA 2020). It has administrative divisions in 13 regions with each region being divided into various governorates (GOV.SA 2020). The official language is Arabic (GOV.SA 2020), but English is the universal language used when business is being conducted.

The KSA is the heart of the Islamic world and the indigenous centre for Muslims and Arabs as it is home to Mecca and Medina, the holiest Islamic places (mosques) (GOV.SA 2020; Ménoret 2005; Rhodes 2005). The legal system is based on Islamic law (Shariah; Al Qur'an AL Kareem & Sunna AL Sharifah¹) and the political system is a monarchy, headed by the King (Al-Nodel & Hussainey 2010; Al-Sehali & Spear 2004; Al-Twajiry, Brierley & Gwilliam 2003; GOV.SA 2020). Islam is the source

¹ AL Qur'an AL Kareem: The central religious text of Islam (the most important source of legislation), which Muslims believe to be a gradual evolution from Allah to Muhammad through the angel Gabriel over a period of approximately 23 years.

Sunna AL Sharifah: The verbally transmitted record of the teachings, deeds, and sayings, and silent permissions (or disapprovals) of the Islamic Prophet Mohammad, as well as various reports about Muhammad's companions, is the second source of legislation.

of the Basic Law of Governance (the Saudi Constitution) that supersedes all other legislative sources and establishes the standard for all lower-level laws (Al-Sehali & Spear 2004; GOV.SA 2020). "Islamic Shariah" governs all decision making and aspects of life including social, business operations, and legal practices and disputes (Al-Nodel & Hussainey 2010; Al-Twajry, Brierley & Gwilliam 2003; Alzeban 2015; Idris 2007). As long as other laws and regulations do not contradict "Islamic Shariah", the legal system allows importing regulations and laws (Al-Sehali & Spear 2004) from other systems and countries (GOV.SA 2020) (Bureau of Experts at the Council of (Bureau of Experts at the Council of Ministers 2020) including legislation from the Saudi Laws of Companies issued in 1965 (Hussainey & Al-Nodel 2008; Nurunnabi 2017) and the IFRS and ISA issued in 2017.

2.2.1 Economics and the Saudi capital market

Historically, until 1937 (the year oil was discovered), KSA was considered a poor country, as it lacked natural resources and 80% was desert., since the discovery of oil, Saudi economic, political, and social situations have developed at local, national, regional, and international levels (Matteo 2008). Niblock (2004) noted that KSA has a significant impact on the world due to its ability to price and produce oil and other petrochemicals. The country is not only one of the biggest economies among Gulf Cooperation Council (GCC) countries and other Arab countries, but one of the largest gas and oil producers in the world, wielding great influence (Matteo 2008; Ménoret 2005; Nurunnabi 2017; Rhodes 2005; Seck 2015). Oil and gas are the main sources of Saudi income (Al-Twajry, Brierley & Gwilliam 2003).

As a result of economic growth, the Saudi Capital Market (SCM) has become one of the largest formal markets, initially being an informal market (CMA 2020a). The number of listed companies increased from 5 companies in 1960 to 48 in 1985, to 75 in 2000, to 111 in 2007, to 146 in 2010 (Alzomaia 2014; Tadawul 2020) and to 171 in 2016. In 2020, there were 188 listed firms (MubasherKSA 2020; Tadawul 2020). Also, total market capitalization for SCM has increased significantly. In the last 10 years, it increased from US\$353 (2010), to US\$373 (2012), to US\$484 (2014), to US\$495 billion (2018) and to US\$2,398 trillion dollars (2019) (Statista 2020). Based on market capitalisation, the SCM is the largest market in the Arab world (*Economy and business arrangement* 2020).

A stronger SCM creates a more enticing and potentially profitable investment destination whether for neighboring or distant countries, which can help to achieve the Saudi Vision 2030. One of the strategic objectives of the Saudi Vision 2030 involves growing and diversifying the economy by forming an advanced capital market that can attract local and foreign investment (Vision2030 2020). The country has many strengths including being the heart of the Islamic and Arab world, an investment powerhouse and a hub that connects three continents (Vision2030 2020). These strengths can be used to achieve the following three pillars: create a vibrant society with strong roots, fulfil values, and a solid foundation;

create a thriving economy that provides rewarding opportunities, long-term investments, and a good business environment that leverages the country's unique position; and create an ambitious nation that has a responsible and effective government.

2.3 Regulatory bodies of firms listed in Saudi Arabia

Agencies that regulate, manage, control, monitor, and oversee the capital market are the Ministry of Commerce, Capital Market Authority (CMA), Saudi Stock Exchange (Tadawul), Saudi Arabian Monetary Agency (SAMA), and Saudi Organization for Certified Public Accountants (SOCPA), discussed below.

2.3.1 Ministry of Commerce

The Ministry of Commerce is a government ministry that regulates commerce sectors in the KSA. It was established in 1954 and went through several name changes (i.e., Ministry of Commerce and Industry in 2003, Ministry of Commerce and Investment in 2016) before becoming the Ministry of Commerce in 2020.

This Ministry works to boost commerce and investment and protect its beneficiaries to create a good business environment (Ministry of Commerce 2020). To achieve the goals of the National Transformation Program 2020 and the aspirations of Vision 2030, the Ministry has updated its strategic plan by developing and implementing the most efficient and effective mechanisms and policies. Strategic objectives can be divided in the following ways (Ministry of Commerce 2020):

- Achieve prosperous trade by enhancing sound business practices, improving consumer trust, and enhancing the retail sector
- Obtain good investments by improving the business environment and stimulating e-commerce within the country
- Attain institutional excellence by improving resource utilization and the quality of service provided to clients while also promoting a good work environment that features the highest levels of digital service.

2.3.2 Capital Market Authority (CMA)

The Capital Market Authority of a government organization that has full administrative, legal, and financial independence, and linked directly to the Prime Minister. In the 1950s, the Capital Market opened and began unofficially, continuing to operate successfully through the 1980s when the government instituted a set of basic regulations. In April 2003, the CMA was established by Royal Decree (Al-Bassam et al. 2018). The CMA works to provide a good investment environment, strengthen

confidence, enhance disclosure and transparency in listed firms, and protect the rights of all parties from illegal acts (CMA 2020a). Its duties are summarized below (CMA 2020a):

- Regulate and develop the capital market by promotion appropriate techniques and developing all entities and sectors involved with Securities Trade Operations
- Protect the public and investors from unfair and illegal practices, including fraud and manipulation
- Adhere to efficient, fair, and transparent security transactions and develop procedures to limit risks to transaction security
- Regulate and monitor the issuance of securities and other transactions and the disclosure of information related to securities and issuers.

The CMA board realizes the importance of implementing corporate governance practices (Al-Bassam et al. 2018) and works to implement the best way to conduct supervisory and regulatory functions by increasing the participation and communication of parties and paying particular attention to sensitive (non-routine) issues (CMA 2020a).

2.3.3 Saudi Stock Exchange (Tadawul)

Under the Saudi Capital Market Law, the Saudi Stock Exchange was established as a Joint Stock Company. It is the only authorized entity to conduct the trading of securities in KSA. The Saudi Stock Exchange (Tadawul) was founded in 2003 as a result of reforms (Al-Bassam et al. 2018) and was officially approved in March 2007 by the Council of Ministers (Tadawul 2020). Stock exchange operations occur using the Tadawul (CMA 2020a) and it is the official source of all market information (Tadawul 2020). The Tadawul carries out activities like the listing and trading in securities, depositing, transferring, clearing, settlement, and registry of ownership of securities traded on the Exchange. The Tadawul is an affiliate member of the Arab Federation of Exchanges (AFE), the World Federation of Exchanges (WFE), and the International Organization of Securities Commissions (IOSCO). The Capital Market Law (CML) of June 2003 spells out the responsibilities and duties of the Exchange Depository Centre and market (Tadawul 2020). The Tadawul has experienced rapid growth, recently based on increased trading activities and listings (Al-Bassam et al. 2018).

The vision of the Tadawul is to become a full-fledged financial exchange that continuously develops and supports a security market and provides comprehensive financial services to compete internationally. The mission is to provide attractive, efficient, and appropriate capital market services and products to stakeholders. The strategic objectives of the Tadawul are listed below (Tadawul, 2020):

- Asset classes: enhance the quality of asset classes and improve the commodities markets to better meet investor needs.
- Issuers: enhance the privatization of sectors in the country and motivate both Saudi and GCC companies to be listed on the Tadawul.
- Post-trade: establish the Central Counterparty Clearing House (CCP) for the clearing of securities in the Saudi capital market and improve post-trade products and services.
- Market information and analytics: develop comprehensive services to provide more information and better market analytics.
- Technology & operations: create and operate a regional and comprehensive exchange platform across the value chain.
- Organization enablers: build modern, digitized, effective, and business-oriented organization by collaborating with various parties to reach local, regional, and international stakeholders.

2.3.4 Saudi Arabian Monetary Authority (SAMA)

The Saudi Arabia Monetary Authority (SAMA) is the central bank of the KSA, established by two royal decrees in the Era of King Abdul-Aziz in April 1952. The first Saudi currency law was issued in 1928 and currency Law continued to be issued in July and December of 1957. The most recent currency law was issued in 1959. SAMA's mission is to preserve financial and monetary stability in the KSA, and promote sustainable and balanced economic growth (Al-Bassam et al. 2018; SAMA 2020). The organization has been entrusted with the following legal and regulatory functions (SAMA 2020):

- Perform government banking services
- Mint, print, and reinforce the Saudi Riyal and fix and stabilize its internal and external value
- Manage the Kingdom's foreign exchange reserves
- Control monetary policy to stabilize the price and exchange rate
- Guarantee the soundness of the financial system and enhance overall growth
- Supervise commercial banks, exchange dealers, credit information, finance, insurance, and other professions related to insurance (Al-Nodel & Hussainey 2010).

SAMA conducts an internal audit supported by a fully independent and objective outside service that helps to provide greater confidence in results. The organization has also established risk management and compliance as part of its strategy to create greater awareness and knowledge about what SAMA

does. This helps the organization provide a disciplined approach in how it carries out government processes and risk management practices (SAMA 2020).

SAMA realizes the importance of proper communication and relationships with regional and international partners (SAMA 2020) and issues memoranda of understanding with other central banks and international organizations. It participates in various meetings, working groups, and technical committees with various organizations such as the International Monetary Fund (IMF), World Bank Group (WBG), Group of 20 (G20), Bank for International Settlement (BIS), Middle East & North Africa Financial Action Task Force (MENAFATF), International Association of Insurance Supervisors (IAIS), Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI), Gulf Monetary Council (GMCO), Arab Monetary Fund (AMF), and International Association of Deposit Insurers (IADI). SAMA is committed to implement the best globally relevant practices, retain highly competent human capital, and develop its ability supported by advanced technologies (SAMA 2020).

2.3.5 Saudi Organisation for Certified Public Accountants (SOCPA)

SOCPA is a professional organization that works to supervise and improve accounting and auditing professions in the KSA (Habbash & Alghamdi 2017; Nurunnabi 2017). It was established in 1992 and is supervised by the Ministry of Commerce (Nurunnabi 2017). The organizational structure of SOCPA involves members, a board of directors, the general assembly, the secretariat general, and technical committees (SOCPA 2020). The committees are formed of member and other experts who specialize in areas such as Accounting Standards, Auditing Standards, Professional Ethics, Examinations, Quality Review, Training, Public Relations, and Consulting Services (SOCPA 2020).

SOCPA promotes accounting and auditing professions through the following objectives (Nurunnabi 2017; SOCPA 2020):

- Review and improve accounting and auditing standards
- Set required rules for the fellowship certificate examination (CPA exam)
- Organize continuous education programs
- Establish suitable programs to monitor the performance of Certified Public Accountants to ensure compliance with professional standards
- Research and prepare studies and publish materials related to accounting and auditing
- Participate in local and international symposiums and committees regarding the accounting and auditing profession.

2.4 Accounting and auditing professions in the KSA

2.4.1 History

Accounting and auditing professions in the KSA are still in their early stages, relative to other parts of the world (Falgi 2009; Habbash & Alghamdi 2017). However, accounting and auditing have gone through various stages of transition and development (Habbash & Alghamdi 2017). In 1930, the government began paying attention to these professions and, in 1931, the Commercial Business Regulation issued an order that stated accounting records must be maintained (SOCPA 2020). In 1965, the Company (Act) created regulations for professional accounting and auditing (Al-Twajry, Brierley & Gwilliam 2003; Habbash & Alghamdi 2017; Nurunnabi 2017) that included the following rules: 1) provisions that determine the scope of CPA responsibilities and govern its designation; and 2) requirement that companies prepare financial statements and be audited by a licensed CPA (SOCPA 2020). In 1968, certain requirements were issued to guide the auditing profession. These rules were in place until the CPA Regulations were issued in 1974 (SOCPA 2020). This was the first main tradition in the organization of the profession that was tasked with monitoring, regulating, and supervising itself (SOCPA 2020).

In addition, several organizations worked to develop the accounting profession (Habbash & Alghamdi 2017). In 1981, King Saud University convened symposiums to discuss the methods of accounting development in KSA and determine the best way to resolve obstacles and challenges (Alsaeed 2006; SOCPA 2020). The University also created the “Saudi Accounting Association” (Hashed & Almaqtari 2021) to enhance, share, educate, and consult on ideas and studies that would improve the profession (Alsaeed 2006; SOCPA 2020). In 1994, the Ministry of Commerce required public companies to have their own audit committee to ensure the integrity of their financial reports. The committee must have guidance regarding their size, independence, and expertise (Awad, Murya & Khaled 2019). The governance code issued in 2006 preserved these requirements (Awad, Murya & Khaled 2019).

In line with the establishment of the SOCPA in 1992, the accounting and auditing professions have successfully transitioned over time (Alsaeed 2006; Habbash & Alghamdi 2017; Nurunnabi 2017). This organization is the body responsible for developing accounting standards (Hashed & Almaqtari 2021) and made several notable improvements and has conducted many seminars, workshops, and studies (Habbash & Alghamdi 2017; Hashed & Almaqtari 2021; SOCPA 2020). The organization is still tasked with developing accounting and auditing standards used in the country today (Habbash & Alghamdi 2017; SOCPA 2020).

2.4.2 Development of accounting and auditing standards

The national accounting and auditing standards were issued in KSA in 1986, based on the American standards for these fields (Alghamdi 2012; Alsultan 2017; Fallatah 2017; Hashed & Almaqtari 2021). The national accounting standards comprise 23 standards such as disclosure requirements, income tax, Zakat, revenue, expenses, and inventory standards, among others. The national auditing standards include 17 items such as auditor competence, independence, audit plan, and audit report (Nurunnabi 2017; SOCPA 2020). The standards also contained various accounting and auditing interpretations and professional opinions which were in place until 2017 (Nurunnabi 2017; SOCPA 2020). In 2008, SAMA required that the financial sector (banks and insurance companies) apply international standards (IFRSs) (IFAC 2019; Nurunnabi 2017; SAMA 2019). Non-financial companies continued to use national accounting and auditing standards that were previously in place, pre 2017.

2.4.2.1 Transition to international standards in KSA

Saudi Arabia has recognized that financial information prepared under generally accepted accounting principles (GAAP) and audited by GAAS no longer meets users' needs, focusing on international decisions in the era of globalization of businesses and markets (Manduca 2016). Therefore, KSA has decided to participate in the opportunities offered by globalization by approving an IFRS Convergence Plan by SOCPA (Manduca 2016). Further, a joint of KSA in G20, Group of Twenty Finance Ministers and Central Bank Governors, in 2009 is another motivation to adopt IFRS and ISA in order to achieve future economic development (Manduca 2016).

The application of international standards (IFRS and ISA) is mandatory in the KSA in the following ways (Awad, Murya & Khaled 2019; IFAC 2019; IFRS 2019; Manduca 2016; Nurunnabi 2017; SOCPA 2018):

- Banks and insurance companies: SAMA required these entities to report using the International Standards established in 2008 (Manduca 2016).
- Listed and unlisted companies: SOCPA required these entities to report under International Standards effective in 2017 for listed companies and effective in 2018 for all other companies, unlisted firms, small- and medium-sized enterprises (SMEs) (Hashed & Almaqtari 2021; IFAC 2019; Manduca 2016; Nurunnabi 2017; SOCPA 2018).

Recently, SOCPA has worked to develop and merge national standards with international standards for IFRS and ISA, for example, translating and adjusting IFRS to be in line with the KSA laws. The transition to international standards is occurring through the “SOCPA Project for Transition to International Accounting & Auditing Standards” (IFAC 2019; IFRS 2019; Manduca 2016; Nurunnabi 2017; SOCPA 2018). The goal of the project was to review each international standard and ensure its

compatibility and suitability for the Saudi environment (SOCPA 2018). The project occurred from 2012 through 2016 but its official implementation was in January 2017 (SOCPA 2018).

In February 2012, the SOCPA Board decided to merge and move toward convergence its standards with international standards (Hashed & Almaqtari 2021; Nurunnabi 2017). In the transition period (between 2012 and 2016), SOCPA prepared its auditors and other firms to use the international standards (Hashed & Almaqtari 2021) by providing workshops, meetings, and training programs. The transition plan had four stages and each stage had a set of standards that would be discussed with those who were impacted by the transition (IFRS 2019; Nurunnabi 2017). The transformation plan ensured that the Saudi environment was prepared to fully transition to the new standards in terms of legal provisions, approved regulations, or level of technical readiness (Hashed & Almaqtari 2021; Nurunnabi 2017; SOCPA 2018). Moreover, it was created the convergence timeline for international standards adoption (Hashed & Almaqtari 2021). In 2016, listed firms were required to prepare interim financial statements and annual reports in compliance with international standards (Nurunnabi 2017). This rule would allow firms to have comparative figures for their 2017 financial statements and annual reports (Nurunnabi 2017). Figure 2.1 presents the convergence timeline of international standards adoption in the KSA (Nurunnabi 2017).

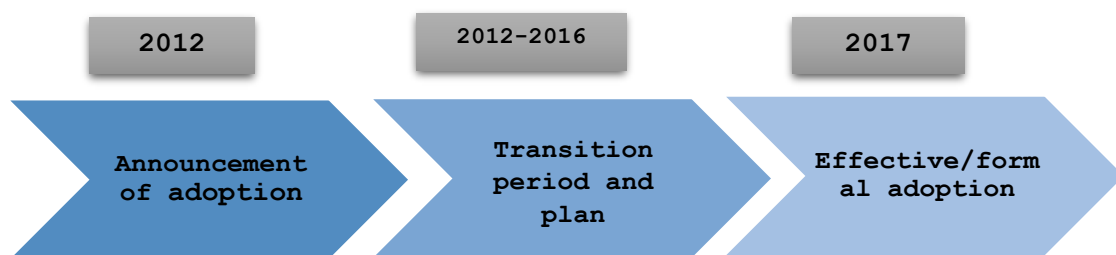


Figure 2.1: Convergence timeline of International Standards Adoption in the KSA

All international standards (including interpretations and latest standards) were adopted without amendment (IFRS 2019; SOCPA 2018). However, some disclosure requirements were added to certain standards to reflect Sharia or local law (Hashed & Almaqtari 2021; IFRS 2019; Manduca 2016; Nurunnabi 2017; SOCPA 2018), removing optional treatments and considering the Kingdom's level of technical and professional preparedness (Hashed & Almaqtari 2021). Other standards were endorsed by SOCPA including the subject of Zakat (religious tax/obligation) (IFRS 2019; Nurunnabi 2017). This was not covered by international standards since international standards do not include religious rules.

The major reasons for the decision to switch to international standards in KSA according to SOCPA (2018) are as follows:

- Inclusiveness, complementarity, and modernity characteristics covered by international standards
- Disclosure requirements that exceed the requirements of Saudi standards
- Creation of a set of rules that better reflect the needs of users
- Achieve the country's future economic development and increase foreign direct investment (Manduca 2016)
- Enhance quality reporting, transparency, and comparability (Manduca 2016).

The implementation of IFRS and ISA is expected to increase disclosure and transparency levels and enhance audit quality through audit plan, audit report, and auditor independence and competence.

2.4.2.2 Major differences between national auditing standards and ISA

The implementation of standards and new reforms is intended to promote audit and financial reporting quality (FRQ) (Needles Jr, Ramamoorti & Shelton 2002). Therefore, SOCPA anticipates that ISA adoption will create a significant transition period in the audit profession, especially for external audits. ISA is more coherent, modern, and complementary compared to past auditing standards (SOCPA 2018). Table 2.1 presents major differences between ISA and Saudi auditing standards.

Table 2.1: Key differences between ISA and Saudi auditing standards

ISA	SOCPA standards / Saudi auditing standards	Explanation (if needed)
1. ISA 200, Overall Objectives of the Independent Auditor, and the Content of an Audit.	There is no corresponding (equivalent) standard in the Saudi auditing standards.	However, there are some paragraphs in the Saudi auditing standards that include some ISA matters, but these items are better described in the ISA.
2. ISA 210, Agreeing the Terms of Audit Engagements.		However, the “Standard for Control and Documentation” (N 5) includes some requirements mentioned in ISA (220).
3. ISA 220, Quality Control for an Audit of Financial Statements.		After comparing the paragraphs of ISA 230 with those of the Saudi standard (5), ISA 230 is more comprehensive and detailed.
4. ISA 230, Audit Documentation	The “Standard for Control and Documentation” (N 5) is a corresponding (equivalent) standard to ISA 230.	This Saudi standard was built using this ISA, but the Saudi standard has a different structure than the ISA.
5. ISA 240, The auditor’s Responsibilities Relating to Fraud in an Audit of Financial Statements.	The "auditor's responsibility standard for fraud when reviewing financial statements" (15) is a similar and corresponding standard to ISA 240.	This provides a strong motivation to adopt the ISA.
6. ISA 250, Consideration of Laws, and Regulations in an Audit of Financial Statements.	There is no corresponding (equivalent) standard in the Saudi auditing standards.	However, the “auditor's responsibility standard for fraud when reviewing financial statements” (15) includes two requirements of the ISA in two paragraphs.
7. ISA 260, Communication with Those Charged with Governance		However, the “internal control standard for the purpose of reviewing financial statements” (11) includes one ISA requirement in one paragraph.
8. ISA 265, Communicating Deficiencies in internal Control to Those Charged with Governance and Management		However, a comparison of ISA 300 with the Saudi standard (4) shows that ISA 300 is more comprehensive and detailed.
9. ISA 300, Planning an audit of financial statements	"Planning standard" (4) is a corresponding (equivalent) standard to ISA 300.	However, there are some paragraphs in the Saudi standards that examine the auditor’s response to the expected and estimated risks, but these items are better explained in the ISA.
10. ISA 315, Identifying and assessing the risks of material misstatement through understanding the entity and its environment	There is no corresponding (equivalent) standard in the Saudi auditing standards.	However, a comparison of ISA 320 to the Saudi standard (10) shows that ISA 320 is more comprehensive and detailed.
11. ISA 320, Materiality in Planning and Performing an audit	The "standard for audit risk and relative importance" (10) is a corresponding (equivalent) standard to ISA 320.	

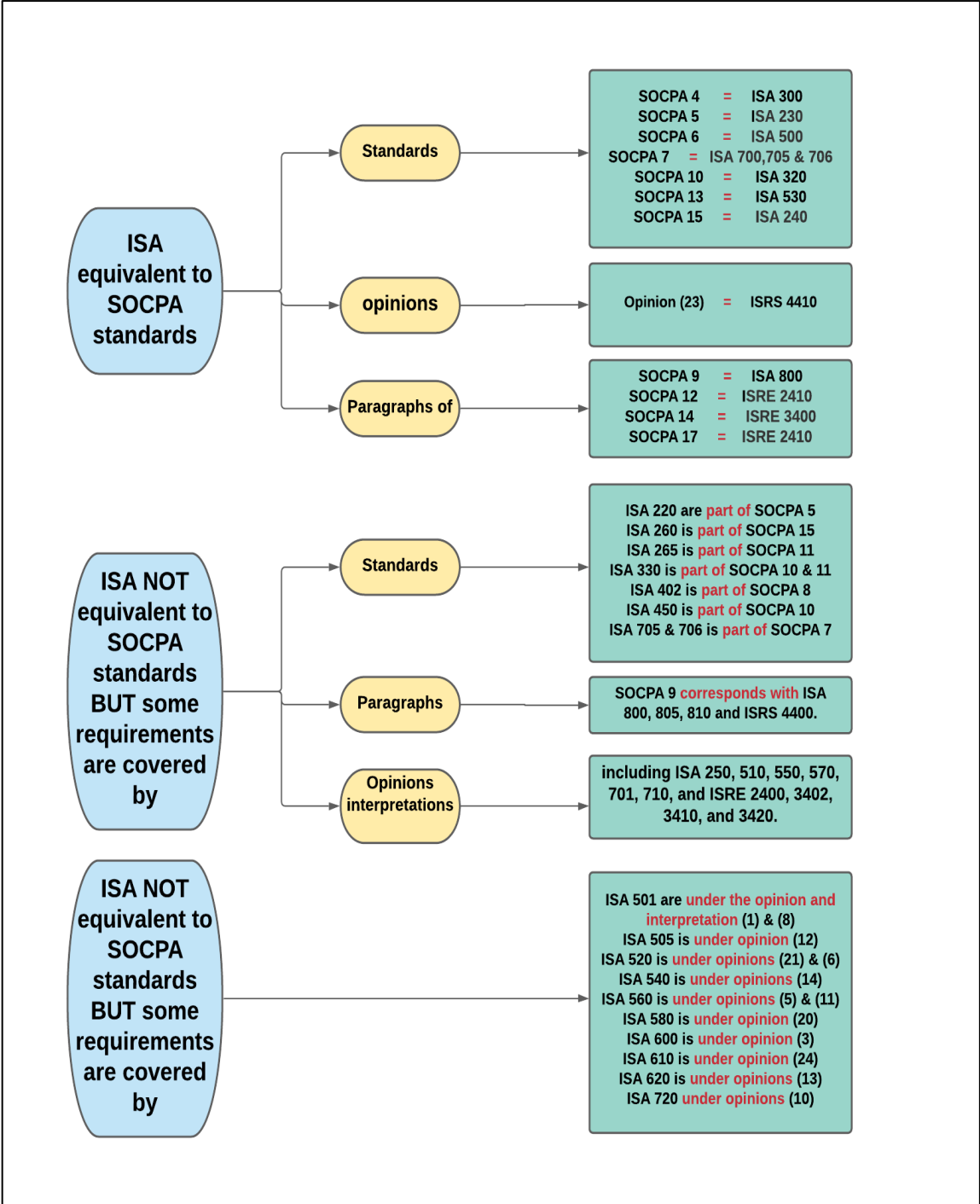
12. ISA 330, The auditor's responses to assessed risks		However, the "standard for audit risk and relative importance" (10) and the "Internal control standard for the purpose of reviewing financial statements" (11) include some requirements in ISA 330.
13. ISA 402, Audit considerations relating to an entity using a service organization	There is no corresponding (equivalent) standard in the Saudi Auditing Standards.	However, the "standard for auditing in facilities that use computers" (8) states that auditors should account for the methods used by facilitating when handling accounting information.
14. ISA 450, Evaluation of misstatements identified during the audit		However, the "standard for audit risk and relative importance" (10) includes some requirements of how to assess risks identified through the audit.
15. ISA 500, Audit Evidence	The "standard audit cohorts and evidence" (6) is a corresponding (equivalent) standard to ISA 500.	A comparison of ISA 500 to Saudi standard (6) shows that ISA 500 is more useful in certain aspects.
16. ISA 501, Audit Evidence – Specific Considerations for Selected Items	There is no corresponding (equivalent) standard in the Saudi auditing standards.	The opinions and interpretations Nos (1) and (8) issued by the Committee of Audit Standards include one of the issues in ISA 501. Therefore, there is concordance between the requirements of ISA 501 and the requirements of Saudi opinion No (8), especially in inventorying activities where auditors need to perform a certain set of procedures.
17. ISA 505, External Confirmations		The opinions and interpretations N (12) issued by the Committee of Audit Standards include several points about “confirmations”.
18. ISA 510, Initial Audit Engagements- Opening Balances	There is no corresponding (equivalent) standard, opinion, or interpretation in the Saudi auditing standards.	This is considered a strong motivation to adopt this ISA.
19. ISA 520, Analytical Procedures	There is no corresponding (equivalent) standard in the Saudi Auditing Standards.	The opinions and interpretations No (21) and (6) issued by the Committee of Audit Standards include a number of points in ISA 520.
20. ISA 530, Audit Sampling	The standard "samples for audit purposes" (13) is a corresponding (equivalent) standard to ISA 530.	There are some differences between Saudi standard (13) and ISA 530.
21. ISA 540, Auditing Accounting Estimates, Including Fair Value Accounting Estimates and Related Disclosures.	There is no corresponding (equivalent) standard in the Saudi auditing standards.	Opinion No (14) issued by the Committee of Audit Standards provides some instructions about auditing accounting estimates.
22. ISA 550, Related Parties	There is no corresponding (equivalent) standard, opinion, or interpretation in the Saudi auditing standards.	This is considered a strong motivation to adopt this ISA.
23. ISA 560, Subsequent Events	There is no corresponding (equivalent) standard in the Saudi auditing standards.	Opinions No (5) and (11) issued by the Committee of Audit Standards include some similarities to ISA 560 requirements.
24. ISA 570, Going Concern	There is no corresponding (equivalent) standard, opinion, or interpretation in the Saudi auditing standards.	This is considered a strong motivation to adopt this ISA.

25. ISA 580, Written Representations.		However, opinion No (20) issued by the committee of audit standards include considerations that the auditor should consider in a public disclosure letter.
26. ISA 600, Special Considerations- Audit of Group Financial Statements (Including the Work of Component Auditors).	There is no corresponding (equivalent) standard in the Saudi auditing standards.	The opinion and interpretation of No (3) issued by the Committee of Audit Standards include a number of points in ISA 600.
27. ISA 610, Using the work of Internal Auditors		There is a noticeable similarity and concordance between ISA 610 and opinion No (24) issued by the Committee of Audit Standards.
28. ISA 620, Using the Work of an Auditor's Expert		There is concordance in some points between ISA 620 and opinion No (13) issued by the Committee of Audit Standards,
29. ISA 700, Forming an Opinion and Reporting on Financial Statements		The standard "reports" (7) is a corresponding (equivalent) standard to ISA 700.
30. ISA 701, Communicating Key Audit Matters in the Independent Auditor's	There is no corresponding (equivalent) standard in Saudi auditing standards.	ISA 701 is one of the latest standards.
31. ISA 705, Modifications to the Opinion in the Auditor's Report Independent.	The standard "reports" (7) included content, which corresponds to ISA 705 and 706.	A comparison of paragraphs of ISA 705 with Saudi standard (7) shows that ISA 705 is more comprehensive and detailed.
32. ISA 706, Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Auditor's Report Independent.		A comparison of ISA 706 with Saudi standard (7) shows that ISA 706 is longer and contains more requirements.
33. ISA 710, Comparative Information- Corresponding Figures and Comparative Financial Statements.	There is no corresponding (equivalent) standard or opinion in the Saudi auditing standards.	This is a strong motivation to adopt this ISA.
34. ISA 720, The auditor's Responsibilities Relating to other Information	Opinion No (10) issued by the Committee of Audit Standards corresponds with (equivalent) ISA 720.	ISA 720 is more comprehensive and detailed.
35. ISA 800, Special Considerations - Audits of Financial statements Prepared in Accordance with Special Purpose Frameworks	<u>Some paragraphs of "Special Reports" (9) standard correspond with (equivalent) ISA 800, 805 and 810.</u>	ISA 800, 805, and 810 are more comprehensive and detailed.
36. ISA 805, Special Considerations – Audits of Single Financial Statements and Specific Elements, Accounts, or Items of Financial Statements		
37. ISA 810, Engagements to Report on Summary Financial Statements.		

38. ISRE 2400, Engagements to Review Historical Financial Statements	There is no corresponding (equivalent) standard or opinion in the Saudi auditing standards.	This is considered a motivation to adopt this ISA.
39. ISRE 2410, Review of Interim Financial Information Performed by the Independent Auditor of the Entity	The "standard for examining initial financial reports" (12) is like ISRE 2410 in many ways.	ISRE 2410 is more comprehensive and detailed.
40. ISAE 3000, Assurance Engagements Other than Audits or Reviews of Historical Financial Information	"Confirmation's examination Standard" (17) is corresponding (equivalent) standard to ISRE 2410.	Although the Saudi standard is like ISRE 3000 in some requirements, ISRE 3000 is more comprehensive and detailed.
41. ISAE 3400, The Examination of Prospective Financial Information	The "standard for future financial statements" (14) is corresponding (equivalent) standard to ISRE 3400.	Although the Saudi standard is like ISRE 3400 in some requirements, ISRE 3400 is more comprehensive and detailed.
42. ISAE 3402, Assurance Reports on Controls at a Service Organization	There is no corresponding (equivalent) standard or opinion in the Saudi auditing standards.	This is considered a motivation to adopt this ISA.
43. ISAE 3410, Assurance Engagements on Greenhouse Gas Statements		
44. ISAE 3420, Assurance Engagements to Report on The Compilation Of Pro Forma Financial Information Included in A Prospectus		
45. ISRS 4400, Engagements to Perform Agreed-Upon Procedures Regarding Financial Information.	Some paragraphs of "Special Reports" (9) standard correspond with (equivalent) ISRS 4400.	ISAE 3402 and 4410 are more comprehensive and detailed.
46. ISRS 4410, Compilation Engagements.	Opinion No (23) issued by the Committee of Audit Standards corresponds with (equivalent) ISRS 4410.	

Source: SOCPA, 2020 (designed by researcher).

Further, Figure 2.1 presents and summarizes Table 2.1 by presenting ISA against Saudi auditing standards. In short, although there are parts of the Saudi auditing standards that correspond with ISA, the latter is more comprehensive. ISA covers various items and details that are not covered in the Saudi auditing standards. This is a strong motivation to adopt ISA. Due to these differences, one of the motivations of this study is to measure the extent of the standards' impact and effectiveness on the Saudi context.



Sources: SOCPA, 2020 (designed by researcher)

Figure 2.2: ISA versus Saudi auditing standards

2.5. Corporate governance in KSA

2.5.1 History

The CMA (2019, p. 7) of Saudi Arabia defines corporate governance as:

“Rules to lead and guide the company, that include mechanisms to regulate the various relationships between the Board, Executive Directors, shareholders, and Stakeholders by establishing rules and procedures to facilitate the decision-making process and add transparency and credibility to it with the objective of protecting the rights of shareholders and stakeholders, and achieving fairness, competitiveness, and transparency on the Exchange and [in] the business environment”.

In the KSA, there was no unified CG regulation prior to 2006 (Hussainey & Al-Nodel 2008). Until the beginning of the 1980s, the stock market and its regulations were thought of as weak and the stock market was not able to attract or protect shareholders or investors (Al-Nodel & Hussainey 2010; Hussainey & Al-Nodel 2008). Despite this supposed deficiency, public corporations were prevalent, since public corporations started trading in the 1930s (Al-Bassam et al. 2018). In the 1970s and ‘80s, there were significant developments in banks, organizations, and businesses that developed because of rapid economic growth and oil production in the KSA (Al-Bassam et al. 2018; Al-Rehaily 1992; Hussainey & Al-Nodel 2008).

In 1985, the Saudi government formed SAMA which was responsible for developing and regulating the stock market. SAMA was in place until July 2003 (Al-Bassam et al. 2018; Al-Nodel & Hussainey 2010; SAMA 2020) when the CMA took over these responsibilities (Al-Bassam et al. 2018; CMA 2020a; SAMA 2020). Moreover, the Saudi Companies Act issued in 1965 was designed to monitor and regulate corporate practices and was used by the CMA when it issued its CG guidance in 2006 (Al-Bassam et al. 2018; Al-Nodel & Hussainey 2010; Amina, Allam & Qasim 2017; Hussainey & Al-Nodel 2008; Nurunnabi 2017). However, the Act does not have a specific provision that addresses CG mechanisms.

According to an assessment conducted by the World Bank in 2009, Saudi-listed companies had restrictive and weak governance mechanisms that influenced transparency and disclosure (Al-Janadi, Rahman & Alazzani 2016). The World Bank (2009) concluded that the adoption and development of CG in KSA would help to improve the capital market and increase investor confidence. Global bodies such as the Organization for Economic Co-operation and Development (OECD), World Bank, and International Monetary Fund (IMF) have called for the introduction of CG codes in rising nations, especially the KSA (Clarke 2004; ROSC 2009). As a result of these calls, CG reforms were enacted that established new authorities like the Tadawul (Al-Bassam et al. 2018), the Ministry of Investment, and the Supreme Economic Council (SEC).

2.5.2 Development of CG in KSA

Significant changes and CG reforms started in 2003 when the CMA was established and put in charge of CG and stock market regulation (Al-Bassam et al. 2018; Al-Janadi, Rahman & Alazzani 2016; Al-Nodel & Hussainey 2010; CMA 2020b; Ramady 2010). The CMA issued Saudi Corporate Governance regulations (SCGRs), Capital Market Laws 2003, and Listing Rules 2004. There were also significant changes in market value and number of listed companies during this period (Al-Nodel & Hussainey 2010; Hussainey & Al-Nodel 2008). However, when the Saudi stock market decreased sharply in 2006, the CMA introduced new CG mechanisms at the end of 2006 entitled ‘Corporate Governance Regulations in the Kingdom of Saudi Arabia’ (Almaqtari et al. 2020; Hashed & Almaqtari 2021) and recommended the disclosure of certain CG information (Al-Bassam et al. 2018; Al-Janadi, Rahman & Alazzani 2016; Al-Nodel & Hussainey 2010; Amina, Allam & Qasim 2017; Awad, Murya & Khaled 2019; Hussainey & Al-Nodel 2008). It was revised in 2009 (until early 2009, the Saudi Corporate Governance Regulations (SCGRs) were voluntary) (Almaqtari et al. 2020; Hashed & Almaqtari 2021).

From 2010 CG has become mandatory, and all KSA-listed companies amended and applied governance codes on a “comply or explain” basis in 2010 (Al-Janadi, Rahman & Alazzani 2016; Amina, Allam & Qasim 2017; Awad, Murya & Khaled 2019; Hashed & Almaqtari 2021). This governance code recommended that all listed companies should disclose their CG information. For example, the code entitled "disclosure and transparency" demonstrates disclosure policies and procedures, as well as disclosure in the board of directors' report such as classifications of and compensations paid to board directors etc. (Awad, Murya & Khaled 2019). Those companies that were not compliant with the code were asked to provide reasons to the CMA as to why they were not compliant (Al-Nodel & Hussainey 2010; Hashed & Almaqtari 2021; Hussainey & Al-Nodel 2008).

Regarding the audit committee, in 1994, the Saudi Ministry of Commerce issued a resolution requiring all public companies to establish audit committees with specific characteristics, such as size, independence and expertise, to ensure the integrity of financial reporting (Awad, Murya & Khaled 2019). Following on from that resolution, the 2006 Saudi Governance Code maintains the same requirement for companies to form an audit committee to oversee financial reporting integrity (Awad, Murya & Khaled 2019). The CMA (2020b) indicates that introducing CG practice is supposed to limit the way that rumors work in the stock market and should help to reduce fraud. The Saudi stock market has undergone significant development and the number of firms listed on the exchange has increased from 2005 to 2010 (Al-Bassam et al. 2018; Amina, Allam & Qasim 2017; Habbash 2016)

In 2012, the CMA ruled that listed companies must have clear policies and procedures for their board members and improve their CG code to correspond with Saudi CG rules (CMA 2012, 2019). That year, SAMA also issued a code that applied to financial institutions and banks called the “Principles of Corporate Governance for Banks Operating in KSA”. This code was updated at the start of 2014 as part

of the first update of CG principles for financial institutions. SAMA reported that the objective of these principles was to assist banks in enhancing their CG framework and provide board members and senior managers with greater oversight tasks and operations (SAMA 2014). Following these major changes, Corporate Governance Regulations have continued to be amended by the CMA in line with amendments made to the corporate system. Recently, a revised CG regulation was enacted, and it has been in effect, since 2017 (Almaqtari et al. 2020; Hashed & Almaqtari 2021).

As mentioned by Hussainey and Al-Nodel (2008), corporate governance in KSA covers some of the key mechanisms named by the Organization for Economic Co-operation and Development (OECD)², namely, the role of stakeholders in CG, fair treatment of shareholders, protection of shareholder rights, responsibility of the board of directors, and disclosure and transparency requirements. In short, the CG regulations in the KSA involve the following 12 topics: Preliminary Provisions, Rights of Shareholders, The Board of Directors, Company Committees, Internal Control, The Company's External Auditor, Shareholders, Professional and Ethical Standards, Disclosure and Transparency, Implementation of Corporate Governance, Retaining of Documents and Closing Provisions (CMA 2019).

2.6 Summary

Although the KSA has certain weaknesses regarding accounting, auditing, and corporate governance, it also has certain strengths such as being the heart of the Islamic and Arab world and the hub that connects three continents. It is also becoming an economic and investment powerhouse and is a country working diligently to keep pace with development, improving its infrastructure through ambitious projects like Vision 2030. The KSA is, at its core, an Islamic country and follows "Islamic Shariah" and will only implement CG, IFRS, and ISA regulations that are in line with these Islamic beliefs.

This chapter discussed the Saudi context by providing an overview of the country and its current status regarding administrative bodies, accounting and auditing professions, and CG regulations. The next chapter will discuss the relevant literature on International Standards on Auditing (ISA), audit quality (AQ), and earnings management (EM). Also, a critical evaluation to identify the gap in our knowledge on this subject will be presented.

² The Organization for Economic Cooperation and Development (OECD) is an international economic organisation that promotes policies that will improve the economic and social well-being of people worldwide. The OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems.

Chapter 3: Literature Review

3.1. Introduction

The previous chapter presented an overview of the current status of regulatory bodies, accounting and auditing professions, and Corporate Governance regulations in Saudi Arabia. As noted previously, the objective of the current study is to investigate whether ISA adoption has improved the quality of auditing and curtailed Real Earnings Management (REM) in listed companies in Saudi Arabia from 2014 to 2020. This chapter reviews and discusses the relevant literature on International Standards on Auditing (ISA), audit quality (AQ), and earnings management (EM) and then provides a critical evaluation to identify the gap in our knowledge on this subject. This chapter is structured as follows. Section 3.2 focuses on ISA definitions, development and describes its importance, while section 3.3 offers definitions and an overview of AQ including external and internal AQ. EM definitions, motivations and techniques are discussed in sections 3.4 and 3.5 and section 3.6 reviews the literature on ISA regarding audit quality and audit reports and provides critical evaluation. Sections 3.7 and 3.8 present and critically evaluate the literature on ISA, FRQ and REM. Section 3.9 identifies pioneering literature on the adjustment of REM measurements. Section 3.10 illustrates the effectiveness of ISA implementation with IFRS and the effectiveness of audit quality post ISA implementation. Finally, section 3.11 provides a summary of this chapter.

3.2 International Standards on Auditing (ISA)

The International Federation of Accountants (IFAC) and the International Auditing and Assurance Standards Board (IAASB)

ISA is defined as “professional standards for the performance of financial audits of financial information” (Haapamäki & Sihvonen 2019). The International Federation of Accountants (IFAC)³ is responsible for developing and introducing ISA through the International Auditing and Assurance Standards Board (IAASB)⁴ (Fakhfakh 2016; Needles Jr, Ramamoorti & Shelton 2002; Unerman et al. 2006). IFAC is the global organization for the accountancy profession, founded in 1977 in Germany, with its headquarters in New York (IFAC 2020; Unerman et al. 2006). The organization comprises more than 175 member and associate organizations in more than 130 countries and jurisdictions, representing nearly 3 million professional accountants (IFAC 2020). In the twenty-first century, IFAC has appeared as "an international authority for the global accounting profession" (Unerman et al. 2006). IFAC's purpose is to strengthen and refine the relevance, reputation, and value of the global accountancy

³ See <https://www.ifac.org/>.

⁴ The International Auditing and Assurance Standards Board (IAASB) sets high-quality international standards for auditing, assurance, and quality control that strengthen public confidence in the global profession. See <https://www.iaasb.org/>.

profession with harmonized standards so that the public interest is served (IFAC 2020; Unerman et al. 2006).

The internationalization of the audit standard-setting process was completed in 2002 and resulted in the formation of the IAASB (Simnett, Carson & Vanstraelen 2016). This organization is responsible for setting and developing high-quality international auditing standards (Habib 2013). Its mission is to devise standards that are in the best interests of the public (IAASB 2018). The IAASB creates policies that enhance both the uniformity and quality of auditing worldwide and public confidence in the global auditing and assurance profession (Simnett, Carson & Vanstraelen 2016). The last set of clarified standards included the introduction of 36 ISA (Haapamäki & Sihvonen 2019).

3.2.1 ISA development and adoption

The International Auditing Practices Committee (IAPC) began publishing ISA in 1991 (Fraser 2010a; Observers & Observer 2007), reconstituted in 2002 as IAASB (IAASB 2021b). Awareness of the importance of ISA to achieve international harmonization is not recent, and thus discussed in early research. Roussey (1992) stated that the development and harmonization of auditing and accounting standards began in 1973. Roussey (1996) discussed significant changes to ISA in the 1990s, which completed the basic body of standards required for auditing financial statements. These changes have wielded a profound impact on both the accountancy profession and relevant bodies, as it has created a useful set of standards (ISA) accepted by national accountancy bodies in recent decades (Roussey 1996). In 2006, a joint initiative was commenced by the IAASB and the Auditing Standards Board (ASB) of the American Institute of Certified Public Accountants (AICPA) to commission academic research to identify, provide insights and information about users' perceptions about the audit report and financial statement audit among various classes of users (Habib 2013). Also, Unerman et al. (2006) examined changing governance and accountability structures at IFAC and concluded that large, multinational accounting firms and increasing reliance on governance by experts is the norm. Also, that governance structures were being reconfigured because governance of auditors (who apply ISA) has become a matter of global importance (Unerman et al. 2006). In 2009, updated ISA gave auditors a clearer picture of what was required in order to comply with the standards (Fraser 2010a). Fraser (2010a) discussed the case for convergence on a single set of worldwide high-quality auditing standards and predicted that this set of standards could serve the global public interest. This is done by encouraging national regulators and others involved in the legislative and standard-setting process to take suitable action in support of ISA convergence and harmonization (Fraser 2010a). In 2011, on the topic of auditor communications, IAASB issued a consultation paper: "Enhancing the value of auditor reporting: exploring options for change". The paper included views about enhancing the quality, relevance, and value of auditor reporting, and a number of recommendations from the auditor reporting task force were considered by IAASB (Habib 2013).

Moreover, the increasing attention paid to ISA has often been attributed to the role of auditing standards and their impact on the quality of financial statements post the Asian economic crisis in the late 1990s and more recently, the Global Financial Crisis (GFC), characterized by criminal or negligent behavior, thus new and more meaningful relationships in the global audit arena had to be devised (Boolaky & Omoteso 2016a; Humphrey, Loft & Woods 2009; Mennicken 2008; Needles Jr, Ramamoorti & Shelton 2002; Simunic, Ye & Zhang 2017). In the wake of the financial crisis, there have been calls⁵ for greater alignment between accounting and auditing practice, and greater harmonization and development of auditing standards in various national and international contexts (Boolaky & Omoteso 2016a; Boolaky & Soobaroyen 2017; Humphrey, Loft & Woods 2009; Needles Jr, Ramamoorti & Shelton 2002). There is public agreement about the need for global harmonization of auditing standards (Needles Jr, Ramamoorti & Shelton 2002); yet at the national level, the continued differences in commitment to ISA harmonization remain problematic (Boolaky & Soobaroyen 2017). For example, some countries have not harmonized local auditing standards in line with ISA while other countries' laws that require ISA have not fully complied with those standards (Boolaky & Soobaroyen 2017). Table 3.1 below shows the modus operandi of ISA adoption by country.

Factors that limit harmonization and non-adoption (Fakhfakh & Fakhfakh 2010) can be due to the following, regarding developing auditing standards and operation of standardization process in an international context: (1) require the need for investment, high budgets, particular tools, and necessary energy, (2) meet several factors to ensure and achieve more reliable normative realization (e.g. expert consultations and revision of draft standards, etc.), which need significant financing to enhance the process of issuing normative books, and from an economic perspective, (3) some countries, in particular developing ones, do not have adequate financial resources (e.g. technical infrastructure, good material, and scientific staff) to make the process of standardization work successfully, or even to establish their own normative references or frameworks for auditing. In contrast, that adoption can result in reducing their resources allocated to the standardization process and incur additional financial means for the financing of development projects and strategic investments.

In addition, the extent of ISA commitment may depend on how auditing and accounting professions are 'bedded' to the relevant jurisdiction, and how government and professional self-regulation manage compliance and enforcement (Needles Jr, Ramamoorti & Shelton 2002). Also, the level of commitment and adoption of any professional standards are affected by the institutional environment. Institutional pressures can lead to imitating other countries, which corresponds with institutional theory, where it is

⁵ The World Bank, International Monetary Fund, the United States' Securities and Exchange Commission (SEC) and investors have criticized large accounting firms for their apparent and uncritical acceptance of local GAAP when preparing financial statements (Needles Jr et al., 2002; Boolaky and Soobaroyen, 2017; Boolaky and Omoteso, 2016).

contended that coercive, mimetic, and normative pressures can influence the acceptance of ISA (BooLaky & Soobaroyen 2017).

Table 3.1: Modus operandi of ISA adoption by country

ISA Adoption			ISA Partial Adoption		Not Adopted
Albania	Ireland	Panama	Argentina	Latvia	Brunei
Australia	Ivory Coast	Papua New Guinea	Armenia	Lithuania	Haiti
Austria	Jamaica	Philippines	Azerbaijan	Macedonia, The former Yugoslav Republic of	
Bahamas	Jordan	Portugal	Bolivia	Mongolia	
Bangladesh	Kenya	Romania	Bosnia and Herzegovina	Montenegro	
Barbados	Korea	Rwanda	Cayman Islands	Morocco	
Belgium	Kosovo	Saudi Arabia	China	Mozambique	
Benin	Kyrgyz Republic	Senegal	Chinese Taiwan	Nepal	
Botswana	Lao PDR	Sierra Leone	Colombia	Paraguay	
Brazil	Lebanon	Slovakia	Cyprus	Peru	
Bulgaria	Lesotho	Slovenia	Dominican Republic	Poland	
Burkina Faso	Liberia	South Africa	Ecuador	Russian Federation	
Cambodia	Luxembourg	Spain	Egypt	Serbia, Republic of	
Cameroon	Madagascar	Suriname	El Salvador	Singapore	
Canada	Malawi	Swaziland	Fiji	Sri Lanka	
Chile	Malaysia	Sweden	France	Switzerland	
Costa Rica	Malta	Tanzania, United Republic of	Germany	Ukraine	
Croatia	Mauritius	Thailand	Greece	United States of America	
Czech Republic	Mexico	Togo	Guatemala	Uruguay	
Denmark	Moldova	Trinidad And Tobago	Honduras	Uzbekistan	
Estonia	Namibia	Tunisia	Iceland	Vietnam	
Finland	Netherlands	Turkey	India		
Georgia	New Zealand	Uganda	Iraq		
Ghana	Nicaragua	United Kingdom	Israel		
Guyana	Nigeria	Zambia	Italy		
Hong Kong, Special Administrative Region of China	Norway	Zimbabwe	Japan		
Hungary	Pakistan		Kazakhstan		
Indonesia	Palestine		Kuwait		

Source: <https://www.ifac.org/what-we-do/global-impact-map/country-profiles>

The move to prepare international harmonized reporting needs to harmonize auditing, which seems to affect national auditing standards (Combarros 2000). Early studies began to investigate ISA implementation in different countries. For example, in the Netherlands, Wallage (2006) examined audit approaches compared with ISA and identified factors that could also impact ISA adoption in other European countries. In Poland, Brody, Moscove and Wnek (2005) discussed the current state of auditing standards, the significance of education, improved ISA implementation, and challenges facing successful implementation. In Slovenia, Duhovnik (2011) determined the advantages of implementing ISA for the European market and emerging market economies and emphasized the importance of a unified audit approach throughout Europe. Moreover, Lin and Chan (2000) discussed motivations for developing auditing standards and compared the local standard with ISA in China. Dellaportas, Yapa and Sivanantham (2008) evaluated the internationalization of Australian auditing standards through stakeholder views on that country's strategic directions. In Russia, Mennicken (2008) analyzed use, circulation, and interaction between local practices and international rule-setting in a post-Soviet audit firm while Samsonova-Taddei (2013) reviewed differences in ISA adoption and responses by local audit firms to implement ISA in Russia. In Egypt, an empirical investigation of the use of ISA 520 "analytical procedures" (APs) was conducted by Samaha and Hegazy (2010). In short, to achieve success in the adoption, implementation, and convergence of national auditing standards to ISA, knowledge and education are significant determinants that make this success possible.

3.2.2 ISA significance

A significant step to improve audit efficiency and effectiveness is understanding the economic role of auditing standards (Knechel 2013). This role is dependent on the ability of these standards to improve reliability and usefulness of information contained in financial statements. As explained by (Francis & Wang 2008), the external audit provides assurance on financial reports, which give investors' confidence in financial statements to make significant investment and risk management decisions. Therefore, auditing standards have a pivotal role to play in codifying some aspects such as audit engagement procedures, audit planning, reviewing internal control systems, collecting, analysing, and assessing audit evidence, and finally, formulating and reviewing content of audit reports (Mennicken 2008).

The harmonisation of auditing standards and audit reports is important in the international setting for the following reasons (Fakhfakh & Fakhfakh 2007; Gangolly et al. 2002). First, the issue of alleviating such information asymmetries (Fakhfakh & Fakhfakh 2010; Fakhfakh 2015), since regulatory and business environments (including accounting and auditing) are different from one country to another and users are often more familiar with domestic than foreign reports. Second, reducing information search costs, which means that information asymmetry imposes search costs on all users (investors and preparers) of foreign corporate financial statements (Fakhfakh & Fakhfakh 2010). Third, reducing standard-setting costs refers to developing standards in an international context that are expensive in

terms of establishing them as well as educating the rest of the world on such national standards. Fourth, curtailing accounting standardisation costs, which means developing auditing standards, requires a number of various factors (revision of draft standards, expert consultations, etc.) to be addressed in order to ensure adequate, normative realisation where significant investment and budgets are required (Fakhfakh & Fakhfakh 2010; Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008). In short, this harmonisation process reduces differences between national regulations and diverse audit practices (Fakhfakh & Fakhfakh 2010; Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008; Fakhfakh 2015). ISA is an increasingly important area as more ISA adherence ensures reliability for audited finance, enables the third party to have confidence in the auditor's work (BooLaky & Soobaroyen 2017), and prevents or detects any unethical practices (Yapa, Jalathge & Siriwardhane 2017). Also, in the business sector, ISA adoption has been effective in ensuring accountability, which has become a global trend (Yapa, Jalathge & Siriwardhane 2017). Not only that, but also audit firms offering services according to ISA have premium fees, high profile clients, and reputation and financial benefits (BooLaky & Soobaroyen 2017). The findings documented by Yapa, Jalathge and Siriwardhane (2017) prove that international audit firms have a great opportunity to capture a wider market with the support of national, more than local audit firms. In short, the early work of Wallage (2006) summarized factors affecting ISA implementation: firstly, the need for more harmonization as a result of the internationalization of business; secondly, more efficiency and effectiveness in audit firms; and thirdly, the growing threat of government interference in the audit profession and existence of an expectations gap. Finally, adopting international standards in the context of developing and emerging countries is more important, as their ability to attract foreign investors may be affected due to poor quality financial reporting; thus this adoption is a less costly alternative solution to developing their own standards (Gangolly et al. 2002). In support of this view, ISA adoption is considered a valuable resource for improving accounting and auditing practices in developing countries (Gangolly et al. 2002), especially the KSA.

3.3 Audit Quality (AQ)

According to the IAASB (2018), analysis of audit quality has not yet achieved universal recognition and the topic remains a complex subject. However, a considerable body of literature has created and investigated various definitions of audit quality (Bédard, Johnstone & Smith 2010). Audit quality as defined by the Government Accountability Office (GAO), is cited in the study conducted by Franzel (2004):

Audit quality refers to the auditor conducting the audit in accordance with generally accepted auditing standards (GAAS) to provide reasonable assurance that the audited financial statements and related disclosures are (1) presented in conformity with GAAP and (2) are not materially misstated whether due to errors or fraud.

This definition assumes that material deviation from the standards reflects poor audit quality (Knechel et al. 2013). DeAngelo (1981, p. 186) defines audit quality as: “The market assessed joint probability that a given auditor will both (a) discover a breach in a client’s accounting system, and (b) report the breach.” This definition identified two significant components of audit quality (Knechel et al. 2013). They are: (1) the probability of discovering existing misstatements, which relates to auditor’s competence, level of effort, and using suitable resources effectively in the audit process (i.e., inputs and process); and (2) appropriate acts on discovery. This is linked to professional scepticism, independence, auditor’s objectivity, and taking the right action given the current context at the end of an audit (i.e., output and context).

Carcello et al. (2002, p. 1) described high-quality auditing as involving “greater assurance, which requires more audit work.” This definition directly links audit quality to the amount of audit work (Knechel et al. 2013). However, some researchers have focused on "poor audit quality" definition by judging audit quality in light of adverse audit outcomes (Peecher and Piercey (2008). Definitions of audit quality, taken together, clarify the significance of various aspects of auditing, auditor’s independence, auditor’s effort, and obligation of auditors to adhere to professional standards (Bédard, Johnstone & Smith 2010). In brief, there is currently no unified definition of audit quality (Hussein & MohdHanefah 2013); hence, the best alternative to measuring overall audit quality is developing a framework (Knechel et al. 2013). IAASB (2018) developed a framework that aims to raise awareness of key elements of audit quality. Regardless of audit firms' and entities' nature, size, and complexity, this framework can be applied to all audit entities. Nevertheless, attributes listed in this framework differ in terms of importance and they affect audit quality in various ways (IAASB 2018). Hence, detailed consideration must be given to matters such as timing, nature, and extent of auditing evidence collected in response to the risks of material misstatement in a specific entity, suitability of relevant audit judgments given, and compliance with relevant standards. Figure 3.1 presents the audit quality framework, according to the IAASB, and shows the many attributes that can affect audit quality.

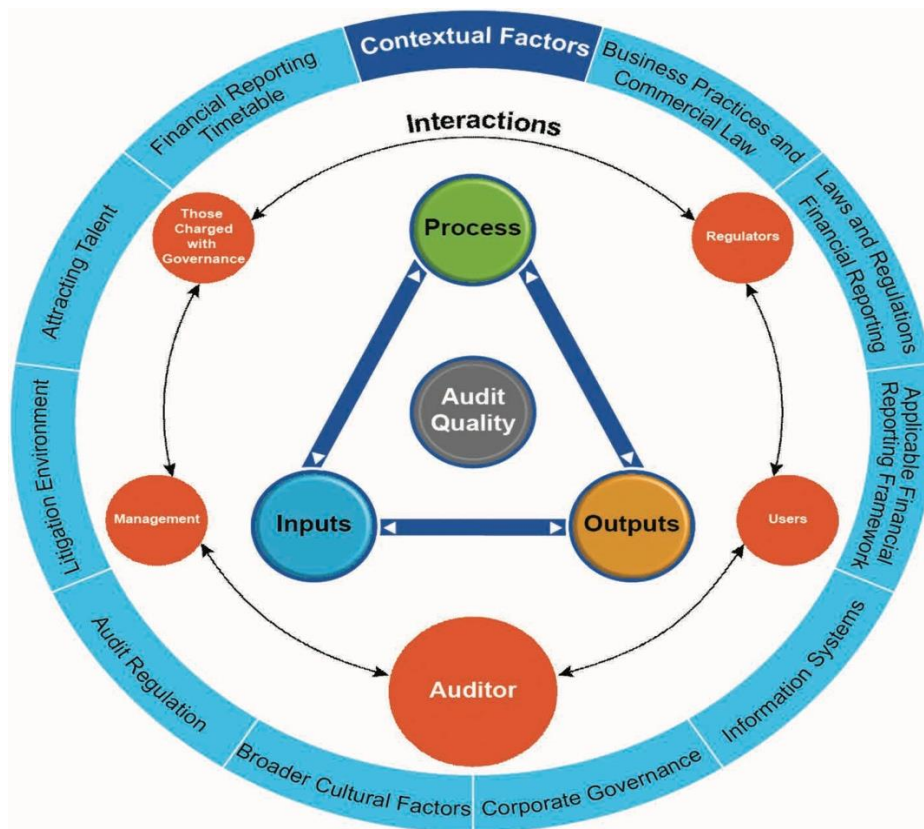


Figure 3.1: International Auditing and Assurance Standards Board: Audit quality framework

Source: International Auditing and Assurance Standards Board (IAASB) 2018, <https://www.iaasb.org/publications/2018-handbook-international-quality-control-auditing-review-other-assurance-and-related-services-26>

The above framework identifies the following elements: (a) inputs, (b) process, (c) outputs, (d) key interactions within the financial reporting supply chain, and (e) contextual factors (IAASB 2018).

- a) Input factors include ethics, attitudes, and values of auditors which can be affected by the culture inside the audit firm and the experience, skills and knowledge of auditors, and time allocated to perform the audit. In addition, interaction with outputs and key stakeholders, the context in which an audit is performed, will influence inputs to audit quality. For instance, context (regulations and laws) can require outputs (reports) that influence inputs (skills) utilized.
- b) Process is audit quality influenced by quality of control procedures and rigor of audit process.
- c) Outputs arise from the auditing process and contain information and reports that are officially prepared and presented by one party to another. In addition, often the context and legislative requirements determine audit outputs, as well as some stakeholders can affect the nature of the outcome while others have less impact, and some (e.g., investors in listed companies) consider the auditor report as the primary output.
- d) Interactions within the financial reporting supply chain means that each separate stakeholder has a significant role in enhancing high-quality financial reporting; thus, interaction among stakeholders can affect audit quality. Also, the context the audit is performed in can affect these

interactions, including both formal and informal communication, which has a dynamic relationship between inputs and outputs. For instance, in listed firms, the utilization of a particular skill (input), and the form and content of the auditor's report to those charged with governance (output), can be influenced by discussions between the audit committee and the external auditor at planning stage. In contrast, in private businesses, during the audit process, close proximity to the owners can result in more informal communication, which impacts audit quality.

- e) Contextual and environmental factors (e.g., corporate governance, regulations, and laws) have the ability to affect the nature and quality of financial reporting and audit quality. As a result, to determine the best options for appropriate and adequate audit evidence, auditors respond to those factors.

In short, there is still ambiguity in the literature about the definition of audit quality, even though there is more than one definition. And this remains a matter of controversy and disagreement. Therefore, in this study, the researcher adopted the following definition:

Audit quality can be achieved by conducting the audit in accordance with generally accepted auditing standards (GAAS) with providing a high level of assurance, as external auditors form an opinion about financial statements and should have appropriate and adequate evidence that the firm's financial reports conform with GAAP in a country, reflect the current economic situation correctly, and represent the financial position fairly (i.e., free from material misstatement).

The above definition is more related to the final auditor report. Thus, audit reform or adoption of new standards influences the final findings of audit reports. Accordingly, the content of external audit reports will be affected, which leads to the issuing of one of the following opinions: qualified, unqualified, adverse, or disclaimer. The above definition is more appropriate to the current study, as it reflects the real meaning of audit quality on both sides: internal and external. More specifically, preparing financial statements according to GAAP, in the first place, requires strength mechanisms of internal governance as well as conducting the audit, according to GAAP, requires strong external audit attributes. Both internal and external governance mechanisms play a significant role in overseeing and preventing management manipulation EM (Inaam & Khamoussi 2016). Therefore, instead of evaluating the separate effects of each mechanism, it is more judicious to integrate various governance mechanisms simultaneously to examine the overall governance system's efficiency (Zgarni, Hlioui & Zehri 2016). Accordingly, evidence reveals insights on the interaction between different internal and external mechanisms of governance (Agrawal & Knoeber 1996; Florackis 2005). High- quality auditing depends on both external and internal mechanisms, as they complement each other. Therefore, it is important to investigate these mechanisms at the same time. They will be briefly discussed below, and in more detail in the next chapter.

3.3.1 External audit quality and audit reports

In response to agency problems (board members are agents for shareholders) and to attest to accountability, stewardship of company management, and to limit the probability of innocent mistakes and material misstatements (e.g. management manipulation and fraud), the need for external auditors has increased (Chandler, Edwards & Anderson 1993). Therefore, a high-quality external audit is required and is significant for companies. Accordingly, academic literature has provided various definitions for external audit quality (Knechel et al. 2013). For instance, Lin et al. (2014) defined it as accurate information reported by the auditor, while others have defined it as the possibility of detecting and reporting material misstatements by auditors' technical capabilities and audit procedures (DeAngelo 1981). In this case, external auditing is a monitoring mechanism (Jensen & Meckling 1976), since external auditors are hired to issue an opinion about the quality of the information presented after doing an independent investigation of businesses' financial reports. External audit quality depends on auditors' professional competence, appropriate training and experience, independence and applying professional standards (Colbert & Murray 1998). For these reasons, external auditors are the first line of defence against accounting manipulation or potential EM as they are the most direct monitors of financial reporting decisions.

The significance of the auditor's report can be described as a mediator between users (who use statements to make decisions) and auditors (who must guarantee the accuracy of financial statements) (Al-Othman 2019). The audit report is a mechanism that reduces information asymmetry and is an important tool for communication (Fakhfakh 2015). It can be defined as a written document that offers a neutral opinion issued by a professional and eligible auditor, which signals to users that financial statements have been checked, according to the auditing standards (either local or global) in the auditing process, and presented in a fair manner (Arens, Elder & Mark 2012). Some scholars believe that the new audit reporting requirements enhance audit quality (KMOG 2015; Li, Hay & Lau 2019; Peecher, Solomon & Trotman 2013; Reid et al. 2019). These changes in the content of audit reports often aim to enhance the perceived value of financial statement audits and provide more relevant information to users (Li, Hay & Lau 2019). To differentiate between a 'low-quality audit' and 'high-quality audit', the literature has measured the external audit quality by using surrogates for quality or investigating attributes perceived to be associated with external audit quality (Hussein & MohdHanefah 2013; Kilgore 2007). The surrogates and attributes used to measure external audit quality in this study will be discussed in detail in the hypothesis development chapter.

3.3.2 Internal audit quality mechanisms (corporate governance)

Internal auditing is just as significant as external auditing as external auditing is only conducted periodically while internal auditing is an ongoing annual activity. External quality, hence, is closely related to internal quality (Inaam & Khamoussi 2016). The stronger the internal quality of the audit, the

more it supports and facilitates external quality. Internal quality resides in corporate governance (CG) mechanisms (Gillan & Starks 2000), so the stronger the CG mechanisms, the higher the internal quality of companies. For example, the firm which has strong and effective internal governance is more likely to provide proper records to external auditors, which ensures the ability to monitor, control and prevent manipulation. Corporate governance is an internal mechanism that governs a company's operations and activities (Gillan & Starks 2000). Auditing is a fundamental element of CG mechanisms and supports the reliability of financial statements (Francis, Khurana & Pereira 2003; Sloan 2001). The global spread of large corporations over the past few decades has resulted in irregularities and financial crises in many economies, including the United States, Canada, the European Union, Malaysia, Australia, Asia, and the Middle East and North Africa (MENA region) (Bouheni, Ammi & Levy 2016; Chhaochharia & Grinstein 2009; CSR 2010; Fearnley & Beattie 2004; Ghosh 2017; Glaum, Lichtblau & Lindemann 2004; Gul & Leung 2004; Ho & Wong 2001; Mitton 2002). Therefore, policy departments, world organizations⁶, and academic literature have set out to understand the role of corporate governance and provide guidelines, resulting in the current CG mechanisms and the development of new ones⁷ (Ghosh 2017)., since CG is also a significant element for investors, creditors, and companies, it has received great attention (Van den Berghe & Levrau 2003). It has a number of definitions depending on corporations' conditions and perspectives.

Corporate governance appears to have been first used by Eells (1960) to indicate “the structure and functioning of the corporate polity” (Bouheni, Ammi & Levy 2016). The Organization for Economic Co-operation and Development⁸ (OECD 2015, p. 9) states a general definition for corporate governance that must be employed in OECD countries (Bouheni, Ammi & Levy 2016):

Corporate governance is a set of relationships between management, board, shareholders, and stakeholders of a company...the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined.

However, Brickley and Zimmerman (2010) found the following general definition to be very useful, in that corporate governance is a set of systems composed of laws, rules, regulations, contracts, and corporate procedures and policies guiding the behavior and actions of top-level decision makers in corporations: the board, key executives, and shareholders. The above definition agrees with Gillan and Starks (2000) definition that corporate governance represents an effective internal mechanism regarding

⁶ World organizations refer to the World Bank, the Organization for Economic Cooperation and Development, the Basel Committee on Banking Supervision, and the Islamic Financial Services Board.

⁷ For example, the Blue-Ribbon Committee (1999) in the United States and the Cadbury Committee (1992) and Higgs Report (2003) in the United Kingdom.

⁸ The Organization for Economic Cooperation and Development (OECD) is an international organization that promotes policies that improve the economic and social well-being of people worldwide. The OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems.

the particular nature of systems, laws, and tools that govern the firm's activities and operations. In short, the narrow definition of CG considers the relationship between company management, the board of directors and shareholders, and could extend to stakeholders and society (Bouheni, Ammi & Levy 2016).

CG has been used to understand the role of agents and develop principles that protect the rights of all parties such as agents and stakeholders. The essence of agency theory is that unless a strong governance practice protects stakeholder interests, managers can act against stakeholder interests (Jensen & Meckling 1976). L'Huillier (2014, p. 306) asserted that the connotative meaning of corporate governance under agency theory is employing policing mechanisms to "keep agents in check". So, agency theory suggests that appointing independent directors assists in monitoring management behaviors and bringing independent judgment to board decisions (Chhaochharia & Grinstein 2009). Also, the effectiveness and success of the board are generally influenced by board committees (John, De Masi & Paci 2016), so the audit committee, appointed by the board, is one of the most important committees. This committee ensures that a control system is in place and that financial data are reported accurately and fairly (Raghunandan & Rama 2007; Sloan 2001). Also, the key governance mechanism concerning audit firm engagement is the audit committee, since it is responsible for controlling audit quality, hiring the external auditor (Lennox & Park 2007; Zgarni, Hlioui & Zehri 2016), and protecting him/her from dismissal if an unfavourable report is presented (Carcello, J. V. & Neal, T. L. 2003). The active audit committee thus enhances financial reporting quality (Dellaportas et al. 2012; Raghunandan & Rama 2007) and audit quality. The AC characteristics used to measure audit quality in this study will be addressed in detail in the hypothesis development chapter.

3.4 Earnings management (EM)

Accounting standards (ISA and IFRS) however are just as significant as auditing standards (ISA) (Glaum & Street 2003). While auditing standards are important in auditing financial statements, accounting standards are more significant in preparing those statements (BooLaky, Soobaroyen & Quick 2018). The more disclosure, compliance and preparation of financial statements, according to ISA or IFRS, the less fraud and manipulation in financial statements, which in turn raises the quality of financial statements (Street & Bryant 2000). An example of potential manipulation in financial statements is Earnings Management (EM). The literature provides many definitions for EM but there are four distinct definitions that have been formulated. Firstly, Schipper (1989, p. 92) contended that "Earnings management is disclosure management in the sense of a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain". Healy and Wahlen (1999, p. 368) stated that "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers". Mulford and Comiskey (2005, p. 3) stated that earnings management is the "active manipulation of earnings toward a predetermined target, which may be set by management,

a forecast made by analysts, or an amount that is consistent with a smoother, more sustainable earnings stream”. The fourth definition by Davidson, Stickney and Weil (1987) cited in Schipper (1989, p. 92), takes a different viewpoint. EM is “a process of taking deliberate steps within the constraints of generally accepted accounting principles to bring about a desired level of reported earnings”.

Schipper (1989) definition is broad and can collect all types of EM cited in a large and growing body of literature, but lacks deeper insight into particular objectives and mechanisms of EM. Healy and Wahlen (1999) definition, however, focuses particularly on the judgment that managers can change financial reporting and manipulation occurs because they want to mislead stakeholders and influence or change contractual outcomes. Mulford and Comiskey (2005) definition provides EM motivation, which is to achieve a predetermined target, meet analysts’ forecasts, or make a smoother, more sustainable earnings stream. Despite the above definitions indicating that EM is a fraudulent activity; EM is different from fraud as managers are able to use EM without violating accounting standards (GAAP) (Schipper 1989). In this regard, there are some differences in the above definitions, but the general view is that they are consistent in that EM is the intervention in the financial reporting process to achieve private objectives (opportunistic practice).

It is expected that EM is systematically related to the strength of internal and external mechanisms, including the board of directors, internal auditing function (IAF), audit committee (AC), and choice of external auditor (Davidson, Goodwin-Stewart & Kent 2005). AC is responsible for supervising financial statements and overseeing the interests of shareholders, so it must be more efficient and provide maximum transparency (Zgarni, Hlioui & Zehri 2016). Yet this organ of control needs the support of other facets of business, such as external auditing bodies, to detect any suspected manipulation (Zgarni, Hlioui & Zehri 2016), especially post ISA implementation. Zgarni, Hlioui and Zehri (2016) examined the role and interaction of AC effectiveness and audit quality on financial reporting quality (EM). The result indicates that prior to the enforcement of laws dealing with financial securities, they found there is a substitute impact between the effective audit committee and presence of the Big 4 auditors to reduce discretionary accruals. Also, they identified a complementary relationship between firstly, auditor industry specialisation and AC effectiveness to constrain EM; and secondly, between audit tenure and AC effectiveness, after the passage of the law. The fact that all AC and external auditor quality components have a positive impact on FRQ has also been reported (Alzeban 2019). This shows that both internal and external auditing quality complemented each other to limit management manipulation (e.g., EM).

3.4.1 EM methods

The auditing task ensures that appropriate accounting standards have been used (Franzel 2004) to measure and present earnings. Apart from that task, the above discussion has mentioned that EM can be conducted within the constraints of GAAP without violating them through taking deliberate steps and tools to hide manipulation of earnings. Consequently, prior studies have classified EM methods in

general into accounting choice which includes firstly, accrual-based earnings management (AEM) (by changing estimates and accounting policies) and classification shifting (shifting the classification of core expenses to special items in the income statement); and secondly, activities manipulation which includes real earnings management (REM), and this has direct cash flow consequences.

3.4.1.1 Accrual-based Earnings Management (AEM)

Accruals are a standard component of a firm's transactions and the difference between earnings and cash flow. For example, a company creates a receivable (is cancelled when the company receives the cash in the future) (McVay 2006) when making a sale on credit, as the sale is identified as earnings, either cash as received or not. In this case, accruals can occur when managers delay recognition of incurred expenses or recognize revenues before they are earned (Ronen & Yaari 2008). Accruals subsequently occur when there is a timing discrepancy between cash flows and accounting recognition of the transaction (Ronen & Yaari 2008). Accruals can originate from discretionary (normal) and non-discretionary (abnormal) scenarios.

There is a difference between discretionary and non-discretionary accruals. Discretionary accruals result from factors over which managers have control (Jones 1991). For instance, to affect current reported expenses, managers can under- or overestimate the rate of bad debts for the allowing of doubtful accounts: any resulting accruals will be discretionary. Discretionary accruals are defined by Ronen and Yaari (2008, p. 372) as "accruals that arise from transactions made or accounting treatments chosen in order to manage earnings". This definition shows that discretionary accruals are reported accruals that deviate from expected normal levels of accruals. However, non-discretionary accruals arise from factors over which managers have no control (Jones 1991). For example, even if the credit policy has not changed, sales growth increases bad debts and the balance of accounts receivable. Ronen and Yaari (2008, p. 372) define non-discretionary (abnormal) accruals as "accruals that arise from transactions made in the current period that are normal for the firm given its performance level and business strategy, industry conventions, macro-economic events, and other economic factors".

AEM occurs under GAAP and by exercising judgment and discretion, as managers have the choice between accounting policies that treat accounting events differently, so they can intervene in the financial reporting process. They do this in order to change reported earnings without any cash flow consequences (Kothari, Mizik & Roychowdhury 2012; Teoh, Welch & Wong 1998). AEM has three types of method, as discussed by Teoh, Welch and Wong (1998), as follows:

1. Accounting method choice: To increase reported income, managers can advance or postpone the recognition of revenue and expenses.
2. Accounting method application/discretionary estimates: Even after the choice of an accounting method, managers can affect reported income via the application of

accounting principles, as accounting standards allow them to exercise their discretion in estimates.

3. Accounting method timing: Managers have discretion over how and when accounting events are recognized.

3.4.1.2 Classification-shifting earnings management

This method is different from others in a number of ways (McVay 2006). First, classification-shifting earnings management involves managers shifting core expenses (e.g., general, and administrative expenses) into special items in the income statement. Despite this movement of expenses, bottom-line earnings do not change, but “core” earnings appear to be inflated (i.e., earnings from the main business activities less all expenses and revenues from non-core activities) (McVay 2006). Despite the bottom-line net income being unaffected, the process of manipulating and shifting earning numbers in the income statement deceives users of financial statements (Fan et al. 2010) who are interested in core earnings. For instance, in order to show better performance, a non-operating item can be shifted to an operating item or shift revenue up (or expenses down) in the income statement to manipulate the earnings. Second, AEM and REM methods affect future earnings, but classification shifting does not need to be “settled up” in the future, so it is less costly compared to AEM and REM (McVay 2006). Third, detection of classification shifting earnings is more difficult, since GAAP net income remains unchanged, which limits auditors' and regulators' scrutiny (McVay 2006). For this reason, this type of EM is excluded from this study, since auditors are less likely to spend time or energy to determine, or compulsory adjustment for these accounts, since bottom-line earnings are not affected.

3.4.1.3 Real activities-based Earning Management (REM)

REM (operational activities) has a direct impact on a company's cash flow and present or future consequences (Cohen & Zarowin 2010; Roychowdhury 2006). Roychowdhury (2006) defines REM as: “Departures from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations” (p. 337). According to Graham, Harvey and Rajgopal (2005), REM extends beyond accrual manipulation and includes real activities,, since managers can change the context of operating policies and decisions to meet financial reporting (earnings) targets. Also, Cohen and Zarowin (2010) consider it as activities conducted by management that deviate from normal business decisions and structure real transactions. For example, in order to achieve target earnings, such manipulation occurs through changing underlying operations of a firm by the strategic timing of making an actual investment, expenditure, sales, or financing decisions. More specifically, to increase sales revenue temporarily, firms can provide more flexible credit terms and price discounts to customers, reducing expenses in the income statement. They can also reduce research and development (R&D) expenditure, and increase reported earnings, and thus delay maintenance expenditure.

REM can be classified into three categories based on type of activities in the cash flow statement: operating, investing, and financing activities manipulation. Operating and investing activities manipulation such as discretionary expenditure including selling, general and administrative expenses (SG&A), R&D, postponing of a new project, marketable securities, production, inventory, sales of long-term assets, and structuring investing transactions can be done to take advantage of alternative accounting choices (Xu, Taylor & Dugan 2007). Financing activities manipulation, for instance, can involve structuring financing transactions and stock repurchases, stock options and financial instruments (Xu, Taylor & Dugan 2007).

3.4.2 Real activities manipulation techniques

3.4.2.1 Operating activities

Manipulation can be practised through operating activities including sales, production, marketing, and administration (Roychowdhury 2006). More specifically, firms can provide aggressive discounts or more convenient credit terms to accelerate sales or use flexibility in spending discretionary expenses (e.g., marketing, employee training, and administration) to manage upward or downward earnings (Gunny 2010; Roychowdhury 2006). This issue has been analysed and produced empirical evidence that found reporting losses and managers' overproduction decreased the cost of goods sold (Gunny 2010; Jackson & Wilcox 2000; Roychowdhury 2006; Thomas & Zhang 2002).

Jackson and Wilcox (2000) have shown that to induce more purchases towards the financial year end and thus avoid losses and declines in sales and earnings, managers reduce sales price in the fourth quarter. Thomas and Zhang (2002) indicated that a possible reason why imminent reversals are masked in reported earnings is the effect of various production levels on fixed manufacturing overheads absorbed in COGS. Roychowdhury (2006) found that overproduction serves to report the lower cost of goods sold, price discounts temporarily increase sales, and reducing discretionary expenditure aims to improve reported margins. Furthermore, managers can reduce discretionary expenses (manipulation of selling, general, and administrative expenses) to meet earnings targets and benchmarks (Gunny 2010). Furthermore they curtail advertising spending to avoid losses and earnings decline, and increase advertising at certain times of the year to meet earnings benchmarks and to beat the previous year's earnings, as advertising boosts sales (Cohen, Mashruwala & Zach 2010).

3.4.2.2 Investing activities

According to accounting rules, due to the uncertainty of future benefits of R&D investing, R&D expenditure is reported as an incurred expense (Gunny 2010). In this case, managers can reduce current R&D expenditure to increase reported earnings (Gunny 2010), so most researchers pay more attention to reductions in R&D (Roychowdhury 2006). Cash flow in the current period is affected by R&D spending decisions, so there is proof (Baber, Fairfield & Haggard 1991; Wahid 2016) that the manager's concern about earnings is relevant to R&D investment. Evidence shows that firms adjust R&D spending to meet certain short-term earnings, goals, and expectations (Bushee 1998; Perry & Grinaker 1994), to

avoid earnings-per-share (EPS) dilution as a result of employee stock option (ESO) exercises (Bens, Nagar & Wong 2002) and if this expenditure endangers reporting a profit or income growth exceeds income objectives (Baber, Fairfield & Haggard 1991).

R&D expenditure has been analyzed in empirical studies. Baber, Fairfield and Haggard (1991) found that R&D expenditure dropped when spending jeopardized the ability to post positive income or augment income in the current period in US industrial firms from 1977 to 1987. To meet earnings benchmarks, Garcia Osma (2008) found that UK listed firms in 1989 and 2002 manipulated reported earnings by cutting R&D expenses. Likewise, for the period 1989--2011, Shon and Yan (2015) found that reduced R&D expenditure was more prevalent in quarter 4 relative to other interim quarters among firms that meet or beat earnings expectations. Dinh, Kang and Schultze (2016) discovered a negative association between market values and capitalized R&D for firms likely to employ capitalization for benchmark beating in Germany for the period 1998--2012. Dechow and Sloan (1991) observed that CEOs, as their tenure draws to an end, tended to spend less on R&D costs for the period 1974--1988 for 405 US manufacturing firms. This proves that management incentive is to enhance performance in the short term. Meanwhile management incentive to reduce R&R spending is mitigated by institutional ownership, in order to avoid earnings decline for the period 1983--1994 in US firms (Bushee 1998). Likewise, CEO stock ownership and large institutional investors reduced opportunistic R&D reductions in 100 US firms from 1977 to 1986 (Bange & De Bondt 1998).

Moreover, the timing of assets sales is the manager's choice, so managers can use their discretion over timing of assets sales (determining the period in which assets are sold) to manipulate reported earnings, according to Gunny (2010). This issue has been analysed in empirical studies. The investigation by Bartov (1993) using a sample of 653 US firm-year observations from 1987 to 1989 found that to smooth earnings volatility and mitigate accounting-based bond restrictions, managers manipulate circumstances by utilizing the timing of income recognition from selling fixed assets and investments. The use of assets and marketable securities sales in Japanese firms for the period 1993--1997 was examined by Herrmann, Inoue and Thomas (2003) who found a negative relationship between gains from assets sales and management forecast error. This outcome indicates that income from the sale of assets and marketable securities increases (decreases) if the current operating income is lower (higher) than management forecast. This is consistent with using assets sales for upward and downward EM. Also, Black, Sellers and Manly (1998) examined the use of fixed assets sales to increase earnings in Australia, New Zealand, and the UK from 1985 to 1995 under different accounting rules. The results suggest that the use of asset revaluation can be associated with a reduction in income smoothing through the timing of asset sales. It appears that EM behavior can be affected by financial reporting standards. In general, the manipulation of asset sales almost occurs in the last quarter of the year (Bartov 1993),, since at this time, managers are more likely to know whether earnings will meet or miss the required threshold, so they determine the timing and volume of sales.

3.4.2.3 Financing activities

Managers can use financing activities to manipulate earnings. To smooth earnings, some use discretionary accruals and derivatives as substitutes (Barton 2001). Also, deviation in the denominator of the earnings-per-share (EPS) formula (i.e., common shares outstanding) is another way of earnings manipulation, for example, to increase earnings-per-share (EPS), so the number of shares outstanding is reduced through stock repurchases. This is consistent with the view of chief financial officers that firms use stock repurchase to improve EPS numbers, but this conflicts with financial economists, as they assert that firms buy back stock to mitigate agency problems or to signal managerial optimism (Hribar, Jenkins & Johnson 2006).

The question of whether the executives' stock repurchase decisions are influenced by their motivations to manage diluted earnings per share (EPS) is examined by Bens et al. (2003). The results indicate that executives' stock repurchases increase when earnings are less than the required level to maintain the required rate of EPS growth and when there is a diluted effect of employee stock options (ESOs) on diluted EPS increases (Bens et al. 2003). Evidence shows that firms use an overstated number of stock repurchases to meet analysts' forecasts (Hribar, Jenkins & Johnson 2006) and others avoid large negative reactions (EPS decrease) by timing share repurchases to boost reported EPS if they otherwise decline (Myers, Myers & Skinner 2007). Share repurchases become a common tool for EM, especially if debt-financing restrictions are present (Farrell, Unlu & Yu 2014). Cash is often required to stock repurchases so there is a negative cash effect, because it is less available to firms with cash limits. Thereby, firms that are constrained financially are less engaged in EM through stock repurchases (Farrell, Unlu & Yu 2014).

Also, other examples of REM type are convertible bond transactions that can serve to manipulate diluted EPS (Marquardt & Wiedman 2005) and the timing of transactions (securitization) can be used for EM (Dechow & Shakespear 2009). Securitization is defined by Dechow and Shakespear (2009, p. 99) as: "a form of financing that has several advantages over traditional bank financing. For example, firm no longer must wait for customers to pay to obtain cash flow, and they often can obtain these cash flow at lower interest rates than required from a traditional bank". Therefore, the finding reported by Dechow and Shakespear (2009) indicates that managers employ late securitization transactions to reach their financial reporting targets. Securitization helps to move from reporting a loss to reporting a profit (Dechow & Shakespear 2009).

3.4.3 Earnings Management motivation

EM motivation, as stated by Healy and Wahlen (1999), can determine: capital market motivation, regulatory and political motivation (Verbruggen, Christaens & Milis 2008), management compensation contract motivation, lending contract motivation (Healy & Wahlen 1999) and REM motivation, explained in more detail below.

Capital market motivation: Reported earnings affect stock prices, so the stock market may motivate managers to engage in earnings manipulation to satisfy the expectations of various markets (Kim & Yi 2006). Accordingly, prior studies determine the main incentives of capital market motivation for EM as follows:

- **Meeting participants' expectations of the stock market:** Stock returns are affected negatively when reporting earnings are less than benchmark earnings (Matsunaga & Park 2001) or do not meet analysts' predictions (Duncan 2001). Therefore, managers use EM to meet earnings benchmarks in order to influence stock prices and their own welfare through reputation (Graham, Harvey & Rajgopal 2005), to: meet analysts' predictions (Bartov & Mohanram 2004; Yang & Krishnan 2005); tempt investors (Koh, Matsumoto & Rajgopal 2008); meet predicted dividend levels (Daniel, Denis & Naveen 2008) and to avoid reporting earnings decreases and losses (Burgstahler & Dichev 1997).
- **Initial Public Offerings (IPOs) and seasoned (secondary) equity offerings (SEOs):** The initial stock price of an IPO relies on pre-IPO financial statements. Therefore, the incentives for using EM by managers of IPO are to maximize proceeds from the initial offering (Aharony, LIN & Loeb 1993; Neill, Pourciau & Schaefer 1995) and inflate assets and income value (Neill, Pourciau & Schaefer 1995). Meanwhile the incentives of managers of SEOs to engage in upwards earnings are to support current shareholders and increase market value (Rangan 1998), inflate offer prices (Kim & Park 2005) and meet investors' expectations (Shivakumar 2000).
- **Acquisitions and mergers:** The stock swap option in acquisitions and mergers motivates managers to use EM before the announcement of a merger (Gong, Louis & Sun 2008; Louis 2004) in order to sustain a high stock price, as it reduces the cost of acquisition or merger transaction and avoids the dilution of voting rights (Erickson & Wang 1999).

Regulatory and political motivation: The political reasons, regulations, interference, and costs imposed by government motivate managers to manage earnings upwards or downwards (Verbruggen, Christaens & Milis 2008; Watts & Zimmerman 1990). The reasons for managing earnings downwards are as follows: manage the political cost (Ramanna & Roychowdhury 2010); take advantage of a new regulation (Jones 1991); or reduce tax expenses (Watts & Zimmerman 1990). This downward trend has occurred in small Greek firms (Baralexis 2004) and Russian companies (Goncharov & Zimmermann 2005).

Management compensation contract motivation: The maximization of managers' own wealth motivates them to become involved in earnings management to enhance a compensation plan, which is an agency contract between a firm and its managers (DeAngelo 1988; Scott 2009). Also, to retain their positions and reputations by showing regularly increasing earnings to persuade shareholders that they are working efficiently (Scott 2009).

Lending contract motivation: Creditors protect their interests from management actions (that may lead to weakening the immunity of existing creditors) by imposing restrictions on long-term lending

contracts (Scott 2009), and using debt covenants and debt agreements (Roberts & Sufi 2009a, 2009b; Watts & Zimmerman 1990). The breach of these agreements may result in direct costs (a higher interest rate), indirect costs (Scott 2009), debt repayments, debt agreement negotiation (Watts & Zimmerman 1990) and technical violation costs (Beneish & Press 1993). Therefore, avoiding debt covenant restrictions (Dechow, Sloan & Sweeney 1996) or avoiding and reducing the costs resulting from a violation of debt covenants and agreements (Beneish 2001; Scott 2009) are reasons for manipulating earnings.

REM motivation: The motivation of REM is to affect reported earnings by beating/meeting a benchmark through business transactions and actions and to achieve other preferences such as increasing firm size and spending on managerial perks. Managers engage in REM in order to meet or beat earnings benchmarks (Graham, Harvey & Rajgopal 2005). Managers may prefer managing earnings through REM manipulation more so than accounting choice for the following reasons. First, accounting choice can be mentioned by auditors' scrutiny (Gunny 2010) and assessed according to accounting standards while REM is less likely to be scrutinized by outsiders as it no violation of GAAP (Commerford et al. 2019). Second, REM manipulation is more likely difficult to detect, since managers are protected against allegations of bad business decisions by the "business judgment rule" (Lo 2008). Furthermore there is no absolute benchmark that can determine what should be done under any particular situation, due to the fact that business environments are inherently uncertain (Lo 2008). Third, distinguishing between normal business activities and manipulated activities is a difficult task for outsiders and auditors (Commerford et al. 2019), as these actions may be fine in some specific economic circumstances (Roychowdhury 2006). Fourth, only dependence on accruals is risky, as it is more likely to draw regulator and auditor scrutiny and has the ability to cover the gap between desirable earnings and unmanaged earnings (Roychowdhury 2006). The flexibility to manage accruals (Gunny 2010) is limited compared to REM. However, apart from REM costs for firms, REM should occur before fiscal year-end while AEM can occur after fiscal year-end (Gunny 2010), which indicates more flexibility in the timing of AEM compared to REM. AEM and REM could be substitutes for each other (Barton 2001), as both are utilized to reach a favourable earnings number.

3.4.4 Earning management consequences

The manipulation of EM causes negative consequences and is not cost-free. Managers cannot engage in income-increasing EM for a long time without being detected. In the long run, accruals will total zero, the reason being that over the life of the business, total earnings should equal total cash flow (Roosenboom, van der Goot & Mertens 2003). As a consequence, abnormal accruals in one period should be offset by lower-than-normal accruals in subsequent periods (Roosenboom, van der Goot & Mertens 2003). Also, despite the fact that aggressive manipulation in AEM can be noticed by external auditors (Lo 2008), it will be more noticed when management teams change, as new managers can blame the old ones, with reducing expected earnings from the new team (Graham, Harvey & Rajgopal 2005). This supports the view that managers cannot maintain inflated earnings numbers, which can

result in poor performance (Roosenboom, van der Goot & Mertens 2003) and this will have fewer degrees of freedom in the later period, as AEM reduces future accounting flexibility (Nam, Park & Arthurs 2014). And besides, when there is false data or omitted information in the purchased registered security, firms can face a lawsuit filed by investors (Nam, Park & Arthurs 2014), which can trigger large litigation costs that threaten the survival of litigated firms (DuCharme, Malatesta & Sefcik 2001). Unlike AEM, the cost of classification-shifting EM is relatively low as future periods will not bear any accruals (McVay 2006), so external auditors may overlook this (Nelson, Elliott & Tarpley 2002).

REM manipulation is value-reducing. For example, providing temporarily aggressive price discounts to boost sales in one year might lead to expecting the same discounts in future (Gunny 2010; Roychowdhury 2006), which can destroy future profitability and affect cash flow once the firm re-establishes old prices (Gunny 2010). Also, upward manipulation of production increases inventory holding costs and generates excess inventories that have to be sold in subsequent periods, which can undermine future cash flow and thus a firm's market value (Roychowdhury 2006). Also, the reduction in operating expenses (e.g. cutting employee-training programs) may not affect the firm in the short term, but could do so in the long term (Gunny 2010). Hence, REM has a negative impact on future performance and cash flow from operations (Leggett, Parsons & Reitenga 2009).

Moreover, performance levels of firms in the future will be lower in high-level REM (Cohen & Zarowin 2010). Evidence shows a negative relationship between all four REM types and subsequent future operating performance (Gunny 2005). This negative impact can support previous studies that assert managers seek to achieve their interests to the detriment of shareholders (Gunny 2010). However, regarding future performance, using REM can return to opportunistic reasons or signal better performance, as follows:

- Regarding the opportunistic argument, even if REM decreased long-term firm value, managers are willing to manipulate earnings to meet analyst expectations (Graham, Harvey & Rajgopal 2005). Zhang (2008) found that firms use REM through discretionary expenditure, production, and sales to inflate earnings to meet analysts' cash flow forecasts, but this leads to deterioration in subsequent operating performance. Likewise, Mizik (2010) identified a negative impact on future stock returns and future financial performance in firms that engage in REM through reducing R&D and marketing spending. Using REM through abnormal cutting in discretionary investments is associated with lower long-term operating performance (Vorst 2016). Real long-term value is being destroyed when numbers are manipulated to meet market expectations (Jensen 2005).
- Regarding signalling better performance, some evidence observes that firms manipulate earnings to meet/beat analysts' forecasts (Bartov, Givoly & Hayn 2002; Koh, Matsumoto & Rajgopal 2008; Roychowdhury 2006) to signal better future performance. However, subsequent

operating performance can decline when manipulation of operating activities leads to reported earnings deviating from normal operational practice (Roychowdhury 2006). Evidence provides different views about the relationship between future operating performance and REM. Gunny (2010), Chen et al. (2010) and Zhao et al. (2012) supported the argument that firms use REM to signal good future operating performance and used-only REM provides positive signalling impacts on future firm performance compared to used-only AEM. However, Cohen and Zarowin (2010) observed that when managers engage in both AEM and REM, operating performance is likely to decline with REM more than AEM.

Apart from future performance, there are other consequences. REM may cause economic problems in the long term (Gunny 2010), an economically significant decline in subsequent earnings (Gunny 2005) and stock price crash in the subsequent period (Li, Francis & Hasan 2011). REM has a negative impact on the information quality of earnings, as it has a positive relationship with the cost of capital (Kim & Sohn 2013). Also, REM negatively affects bond ratings and the market price of new debt offerings (Crabtree, Maher & Wan 2014), and therefore credit rating institutions and bondholders perceive REM as a credit risk factor and thus require high-risk premiums (Ge & Kim 2014). Also, IPO firms that manage upward earnings during the IPO year (either AEM or REM) are more likely to experience IPO failure and poorer survival rates in the future (Alhadab, Clacher & Keasey 2015). Also, firms engaging in income-increasing REM at the time of issuing SEOs have a poor future operating performance (Cohen & Zarowin 2010) and lower future-term stock returns (Mizik & Jacobson 2007) in the post-offering period (Kothari, Mizik & Roychowdhury 2012). REM manipulation is costly to the firm, as it has a negative impact on future cash flow (Leggett, Parsons & Reitenga 2009; Lo 2008; Roychowdhury 2006). Despite the negative consequences and high cost of REM, managers are quite willing to engage in REM instead of other types of EM (Graham, Harvey & Rajgopal 2005). The reason being that AEM can attract auditors' and regulators' scrutiny, unlike REM (Roychowdhury 2006). Therefore, since managers engage in REM and are eager to bear its high costs, this study focuses on REM.

3.5 A review of the literature on ISA and audit quality

Overall, early studies have highlighted the need for robust auditing standards enhancing audit quality. In this regard, early research has included a number of issues (aspects) such as audit risk assessment, audit behavior clarification, audit planning, big data, and group audits (Haapamäki & Sihvonen 2019). The following is an overview of previous investigations that relate ISA with audit quality. (Appendix 1 summarizes previous research and findings related to ISA and audit quality.) Behavior-related research can assist audit firms to implement auditing standards and inform standard setters about auditors' thoughts about fraud (Bédard, Simnett & DeVoe-Talluto 2001). Bédard, Simnett and DeVoe-Talluto (2001) reviewed the behavioral literature regarding auditors' responsibility for fraud according to 4 issues and discussed their significance, and how each is addressed in the proposed revision of 240 ISA

and U.S. auditing standards (SAS 82). Burns and Fogarty (2010) proposed that auditor behavior can be enhanced by high-quality auditing standards, but at the same time, ISA needs auditor assistance. That is achieved by identifying issues and making sound judgments and standard setters helping to promote the sound exercise of professional judgment (Burns & Fogarty 2010).

ISA 240 states that the auditor's responsibility is to have reasonable assurance that financial statements are free from fraud and error. Accordingly, the role of auditors in the 2008 GFC and the EU auditing law has been examined by Kandemir (2013) in order to highlight the significance of professional scepticism. In this respect, the author advises that auditors must audit in light of professional scepticism as ISA confirms that auditors cannot guarantee absolute assurance that financial statements are free from material misstatement. Also, according to ISA 240, McKee (2006) suggested that fraud auditing effectiveness can be improved by including the element of unpredictability in the audit plan, so some audit techniques increase auditor unpredictability. Moreover, ISA 315 requires the audit team to identify and assess the risks of material misstatement (due to error or fraud) by understanding the wider environment as well as ISA 240. In this regard, Trotman, Simnett and Khalifa (2009) investigated the impact of type of audit team discussions on auditors' generation of material fraud by using a pre-mortem technique as a form of interacting group and found that it resulted in much more professional scepticism. In contrast, Colbert (1996) compares two concepts, audit risk and materiality, in planning and performing audit work, and found few differences but many similarities between ISA and US guidance. Those differences, then, need varying levels of audit work, which creates concern for auditors and investors. Fukukawa, Mock and Wright (2011) discussed client risk factors and audit resource allocation decisions in Japanese audit firms. They discovered that extracted client risk factors are consistent with categories presented in contemporary auditing standards and all have a significant impact on auditing decisions.

ISA 200 presents overall objectives of the independent auditor and audit content, including inherent risk. Accordingly, Miller, Cipriano and Ramsay (2012) investigated whether auditors assess inherent risk, as if there are no controls, but found that auditors predict some level of control effectiveness, which can increase the risk of material misstatement as a consequence of internal control defects. This is not consistent with the definition of inherent risk in ISA 200. Also, current standards (ISA and GAAS), often differ regarding the point at which risks are identified (Morrill, Morrill & Kopp 2012). Hence, Morrill, Morrill and Kopp (2012) suggested that more risk identification assists auditors to identify deficiencies in the control system and confirm that audit efficiency and effectiveness depend on the sequence in which internal control evaluation tasks are done. The audit risk model proposes that audit adjustments differ systematically (Ruhnke & Schmidt 2014). Ruhnke and Schmidt (2014) prove that audit adjustments differ systematically with internal risk and control risk factors. Precisely, the number and relative magnitude of audit adjustments are related to the competence and integrity of client management, the internal control system, entity-level control strength, and economic situation.

Furthermore, income-affecting adjustments are strongly linked to inherent and control risk factors. ISA 610 advises external auditors to use the work of internal auditors to access audit evidence and consult them for direct assistance. The research of Lee and Park (2016) in South Korea is driven by ISA 610 and ISA 315, so they discuss how external auditors can use internal auditors' work to improve audit efficiency. They found that the number of external audit hours is associated with the number of internal auditors relative to number of employees and that the more internal auditors, the more efficient the audit.

ISA 600 discusses special considerations of an audit of group financial statements, including the work of component auditors. Stewart and Kinney Jr (2013) and Sunderland and Trompeter (2017) investigate group audits. Stewart and Kinney Jr (2013) state that suitable component materiality amounts are determined and implemented by group auditors. They developed a Bayesian group audit model and suggested that structured subgroups of components and group-level controls are central to efficient group audits. Sunderland and Trompeter (2017) investigated multinational group audits conducted by analysing information and understanding problems related to implementing revised ISA but found that ISA 600 is not well understood or consistently applied. In contrast, Alles (2015) took a different approach to audit efficiency. Alles (2015) discussed the evolution of Big Data in the audit profession in terms of facilitators, obstacles, and drivers. The findings indicate that ISA is either a facilitator or obstacle that will determine the use of Big Data by auditors. Hellman (2011) discussed the influence and involvement of the Chief Financial Officer (CFO) in audit planning, as the CFO assumes a governance rather than management role. This may have implications for ISA 300 (Planning an audit of financial statements).

3.6 A review of the literature on ISA and audit reports

Having discussed literature related to ISA and audit quality, this section addresses literature on audit reports according to ISA. A few studies have covered this area, but only in terms of the degree of harmonization of content and form. Harmonization of auditing reports aims to ensure audit practice convergence and reduce variations (Fakhfakh & Fakhfakh 2010). Accordingly, King (1999) measured the degree of harmonization in form and content of the auditor's report in the European Union. He found that harmonization is evident in three out of five elements: appropriate title, date of the report, and listing the location of the auditor's office.

The declared aim of ISA 13 was to provide auditors with guidance about content and form of audit reports regarding the independent audit of financial statements of any entity (Gangolly et al. 2002). Gangolly et al. (2002) examined whether the issuance of ISA 13 increased harmonization of the audit report in 450 companies in 33 countries and found that harmonization is greater, post ISA 13. ISA 700 discusses the forming of opinion and reporting on financial statements. On this issue, Farrugia and Baldacchino (2005) examined harmonization of audit reports (Qualified audit opinions) in Malta. The findings indicated that companies have a high degree of audit qualifications, but reports audited by non-Big 4 firms are deficient or inconsistent with ISA wording. Moreover, Fakhfakh and Fakhfakh (2007)

and Fakhfakh, Fakhfakh and Consuelo Pucheta-Martínez (2008) investigated the wording and harmonization of Tunisian auditors' reports. The results by Fakhfakh and Fakhfakh (2007) contend that reports have not complied absolutely with IFAC structure and content while Fakhfakh, Fakhfakh and Consuelo Pucheta-Martínez (2008) observed the same outcome with revised IAS 700, as there is no full compliance for all elements reported by IAS 700. Fakhfakh and Fakhfakh (2010) conducted an international empirical comparison in 41 countries for 278 audit reports to investigate the impact of a revised ISA 700 that proposes new wording for auditing opinion. They found a lack of compliance, both in terms of content and/or form, and assumed that the international audit report should reduce transaction costs and informational asymmetry. The characteristics and differences of certain countries' accounting models and auditing environments could explain this lack of conformity in the above studies (Fakhfakh & Fakhfakh 2007).

Furthermore, Sormunen et al. (2013) provided empirical evidence for bankrupt companies in Nordic countries, in which going-concern opinions in auditors' reports are expected. The findings reveal that ISA is not consistently implemented, which supports the concern of IFAC that inconsistent practice cannot improve local ISA implementation. Fakhfakh (2016) assessed linguistic performance and legibility of auditors' reports with modified opinions based on ISA. However, he found that the international standardization of audit reports is not perfect and standardized illustrations of modified reports are not completely obvious to users. In short, prior research has discussed the harmonization of audit reports based on ISA and documented mixed results regarding compliance or lack thereof.

3.6.1 Critical evaluation of the literature on ISA with audit quality and audit reports

In general, based on the above discussion, early research regarding ISA and audit quality focused on auditors' decisions. Despite prior efforts to understand the effects of the ISA mandate on such decisions, this still needs more research. The question as to whether the conditions under which auditing standards may or may not have a desirable effect on audit quality, is still less obvious (Knechel 2013). The ISA obligation has improved efficiency and monitoring of auditor decisions, so the question here is: has ISA adoption raised audit quality remarkably? Nevertheless, in light of the abovementioned studies, the role of ISA in enhancing audit quality remains an obscure issue, as it has not been investigated empirically. In other words, there has not yet been an empirical approach to investigate ISA adoption in one country (BooLaky, Soobaroyen & Quick 2018; Christensen, Glover & Wolfe 2014) with restricted data to test or measure the extent of impacts/changes on firms that adopt ISA.

Moreover, previous evidence presented in audit reports has discussed the degree of compliance or lack thereof regarding ISA. Although there are many models that have been used to test audit quality (DeFond & Zhang 2014), the literature does not stress how new audit standards improve audit reports. Therefore, to date there is no evidence that presents differences or even improvements that could occur

in content of audit reports post ISA implementation in a country context. Accordingly, this study will use content analysis to check how ISA adoption influences and improves content of audit reports. In short, in view of the above discussion, only a few studies have investigated ISA adoption (Simnett, Carson & Vanstraelen 2016) and these have solely focused on ISA adoption in various countries and they have only applied qualitative research methods (Appendix 1). This study applies quantitative research methods. Also, ISA research has not received much attention in emerging and developing countries (Haapamäki & Sihvonen 2019), especially the KSA. To the best of my knowledge, no such study examines ISA in Saudi Arabia since ISA adoption only began in 2017.

3.7 A review of the literature on ISA with FRQ and EM

The auditing and accounting literature supports the belief that adopting ISA will enhance financial reporting quality (FRQ). Favere-Marchesi (2000) investigated audit quality in ASEAN countries and found that bringing audit reporting requirements on par with ISA could enhance audit quality. Needles Jr, Ramamoorti and Shelton (2002) discussed the role of international auditing in improving international financial reporting, suggesting that the critical reason behind high-quality financial reporting is to control and regulate the audit quality process. Hence, financial reporting quality improves with ISA adoption (Needles Jr, Ramamoorti & Shelton 2002). In support of this viewpoint, financial reporting quality was examined after audit reporting standard AUS 702 was revised, which aligned with Australian auditing standards with several ISA concepts (ISA 700) (Carson, Ferguson and Simnett (2006). Those changes have had a significant, positive impact on improving disclosure in financial statements (Carson, Ferguson & Simnett 2006). Moreover, Montoya del Corte, Martínez García and Fernández Laviada (2010) provided evidence from Spain about the effective use of qualitative materiality factors and found that when financial statements have uncorrected misstatements (below materiality levels) but relate to qualitative materiality factors included in ISA 450, most auditors agreed on issuing qualified audit reports. This will have positive consequences for improving practice in both audit and financial reporting quality (Montoya del Corte, Martínez García & Fernández Laviada 2010). Boolaky, Soobaroyen and Quick (2018) concluded that IFRS wields a positive impact on audit and reporting quality, but ISA is only moderately correlated with ARQ in the Asia-Pacific region.

Coram et al. (2011) examined the communicative value of the auditor's report. Although audit reports are significant for analysts and users in indicating the degree of reliability in financial reporting, the focus on content has not increased according to Australian analysts, even after the issuance of longer form auditor's report (ISA 700). Gold, Gronewold and Pott (2012) found similar results with German auditors and financial statement users, as ISA 700 explanations have not resulted in a smaller expectation gap, so the audit opinion alone can be sufficient for users. Noh, Park and Cho (2017) found a positive effect between dependence on the work of other auditors and error in analysts' earnings forecasts in South Korea. This shows that the audit quality of consolidated financial statements declines when dependence on the work of other auditors is evident.

In China, following the implementation of international auditing standards, Zhou (2007) and Sami and Zhou (2008) examined the level of accounting disclosure. The cost of information asymmetry was considerable, but audit regulations can reduce the risk of long-run information asymmetry in capital markets (Zhou 2007), decrease EM, and increase earnings quality (Sami & Zhou 2008). Lento and Yeung (2017) investigated earnings benchmarks, earnings management, and future stock performance of Chinese listed firms. Their findings infer that manager's use earnings management strategies to meet key earnings benchmarks even after IFR and ISA are accepted. However, Reid et al. (2019) investigated the impact of new international reporting requirements on FRQ in the United Kingdom. Their study revealed that new reporting requirements improve FRQ and limit opportunistic EM practice by curtailing absolute abnormal accruals.

Kleinman, Lin and Palmon (2014) investigated audit quality using a cross-national comparison of audit regulatory regimes and analysed the challenges in intra-national audits and cross-national audits, but they were unable to document any impact on audit quality. Simunic, Ye and Zhang (2015) summarized the association between audit quality, auditing standards, and legal regimes and discussed the implications for ISA adoption. They concluded that where national legal systems vary, uniform auditing standards may be less effective, as audit quality depends on the legal system and characteristics of auditing standards under which auditors operate (Simunic, Ye & Zhang 2015). Simunic, Ye and Zhang (2017) investigated the joint effects of multiple legal system characteristics and auditing standards on auditor behavior (audit quality), analysing the determination of optimal auditing standards under different legal regimes, presenting implications for ISA adoption. Therefore, ISA adoption in countries with a high legal liability may be less likely because doing so may not lead to better audit quality. For example, in the USA the legal system makes the recovery of damages from auditors quite difficult, so it does not result in high-level audit quality (Simunic, Ye & Zhang 2017). In this case, key regulatory and professional participants in the global audit arena respond actively to shifts and crises, as they realize the importance of IFRS and ISA in achieving financial stability and transparency for global investors (Humphrey, Loft & Woods 2009).

3.8 Pioneering literature on REM

Pioneering literature on REM can be divided into examining the extent of engaging in REM activities in different contexts or considering the adjustments of REM measurements, as will be discussed later. Regarding the first aim, Oswald and Zarowin (2007) discussed the impact of the attitude of UK firms to R&D expenditure (capitalization of R&D expenditure) on the ability to meet earnings targets and addresses only one type of EM (R&D accounting choice). The test used in the above study is an important feature, as it applies a two-equation system to control for endogeneity of R&D accounting choice (e.g., self-selection). However, suggestions for policymakers and regulators are not provided,

and furthermore the timing and missing data are not considered. The applied tests are restricted to three industries and sample extracting to a three-year period, and the model of capitalization prediction is imperfect (it may not have captured all existing predictability). Similarly, Garcia Osma (2008) focused on the UK but used a reasonable sample size, unlike Oswald and Zarowin (2007). Only one type of REM has been examined: reducing/cutting discretionary expenses (i.e., R&D) to meet last year's earnings benchmarks in an effort to evade reporting losses. Lacking here is the impact of IFRS adoption on REM by extending the sample period. Further, Athanasakou, Strong and Walker (2011) discussed how UK firms use AEM, REM, and classification shifting to meet analysts' expectations and rely on Roychowdhury (2006) and Gunny (2010) models by using four types of REM: cutting SG&A expenses, cutting R&D, sales-based manipulation, and overproducing. However, other incentives of REM have not considered evaluating the firm's (financial) performance (e.g., zero earnings, last year's earnings, and managing earnings upward) and extending the sample period to examine the impact of IFRS on market response.

In the Saudi context, Habbash and Alghamdi (2015) investigated motivation of EM in listed firms and found four main incentives: report a reasonable profit and avoid loss, increase the amount of remuneration, increase the share price and obtain a bank loan. The above findings could assist external auditors, regulators, and legislators in enhancing the quality of monitoring mechanisms to constrain the incidence of EM in KSA (Habbash & Alghamdi 2015). However, there is a lack of EM literature in general, but in the case of examining EM manipulation, if it exists, researchers continue to investigate AEM but exclude REM. For example, Al-Moghawli (2010) provided evidence of deliberate earnings management in listed firms from 2005 to 2007. The findings assert that managers engage in AEM to avoid potential political costs, especially in listed firms that are large and have a high ratio of foreign employees to total employees. In addition, Habbash and Alghamdi (2017) aimed to discover whether there is a significant relationship between audit quality and AEM and provide their differences and shortcomings in non-financial listed firms from 2006 to 2009., since the auditor's opinion is the only one indicating earnings management practice, their findings support the view that auditors could be powerless regarding managerial opportunistic activities (Habbash & Alghamdi 2017).

3.8.1 Critical evaluation of the literature on ISA and EM

The results of the abovementioned studies (either sections 3.5, 3.6 or 3.7, 3.8) are limited to developed countries but not where comparisons were made to other developing countries' contexts, so we do not know the legal framework or environment of specific countries and how they impacted differently on EM manipulation. This view supports the suggestion by Enomoto, Kimura and Yamaguchi (2015) to explore and compare markets to assess each country's level of EM. This leads to a better understanding of the importance of meeting earnings targets, and the extent and long-term effects of REM manipulation. Despite the similarity of developed countries' contexts and environments (e.g., the USA and UK), evidence still varies regarding REM. Therefore, it is worth noting that the examination of

developing countries will enable us to understand their different environments and legal systems. Hence, this study will describe the context in Saudi Arabia – a developing market economy.

Second, although most of the studies reviewed in section 3.7 address questions regarding ISA and FRQ, the discussion of some specific detailed measures of financial reporting and audit quality pays little attention to issues such as earnings management. Hence, it is important to further investigate the ability of ISA adoption to increase earnings quality, especially in emerging countries. Hence, this study will cover two types of earnings management: AEM and REM. The previous studies have not extended the sample to include IFRS, SOX and ISA or how these assess REM manipulation. This study will contribute to the research topic by looking at new reporting adjustments (ISA) in the KSA. Also, in section 3.8 Al-Moghawli (2010) and Habbash and Alghamdi (2017) only focus on one type of EM, which is AEM, from 2005 to 2009; there is a lack of recent studies for the last decade (2010--2020). For this reason, it is necessary to examine EM over the last decade and REM specifically. In other words, we do not thoroughly understand whether KSA firms engage in REM activities, and whether ISA adoption limits REM manipulation.

Finally, there is extensive evidence in the literature about the impact of audit quality on EM. Nevertheless, Alhadab and Clacher (2018); Chi, Lisic and Pevzner (2011) observed that past research has often focused on AEM and excluded REM. More recently, the meta-analysis approach taken by Zehri and Zgarni (2020) supported this view, as most empirical studies use discretionary accrual proxy to detect the magnitude of EM, and how internal and external CG reduces discretionary accruals. Only one notable study by Chi et al. (2011) examined the relationship between high-quality auditors and REM, but not in the context of ISA adoption. In support of this viewpoint, Zehri and Zgarni (2020) suggested further research should include REM as a proxy for earnings quality. Also, they contend that new studies should estimate moderating functions that other variables play in exploring the relationship between internal and external CG with EM, for example, implementing changes in governance regulations (Zehri & Zgarni 2020). Accordingly, examining audit quality and REM post ISA adoption will add value to the academic literature on ISA and REM.

3.9 Pioneering literature of adjustment in REM measurements

The second aim of the pioneering literature on REM was to consider adjustments in REM measurements. The first study that investigated and developed the three types of REM was Roychowdhury (2006), by applying one benchmark only: meet or beat zero earnings. He does not use the costs of goods sold but instead uses production costs to detect abnormal production costs and uses only three control variables of the firm: size, performance, and growth. Nevertheless, Roychowdhury (2006) does not discuss other benchmarks (e.g., analysts' forecast and last year's earnings), so we lack understanding of the importance of meeting earnings targets, and the extent and long-term effects of REM activities. This shows that his study does not recognize the timing of REM manipulation over the year but only

documents the existence of REM. The study is limited to the US and no comparison is made with other countries. To develop other REM measures, Gunny (2010) relied to some extent on Roychowdhury (2006)'s model and focused on two earnings benchmarks (zero earnings and last year's earnings). Four REM types have been examined for reducing discretionary expenditure: (1) R&D expenditure levels, (2) SG&A expenditure levels, (3) overproduction costs, and (4) timing the sale of fixed assets for reporting gained assets. However, other types of REM are not considered (i.e., sales-based manipulation) and other countries' contexts have not been addressed, except for the US. Also, despite the fact that SOX legislation (2002) was implemented during the period of her study (1988 to 2002), Gunny (2010) does not cover the impact of this statute on REM. Later, Zang (2012) used an empirical model (a new variable) that incorporates costs associated with REM and AEM, but examines only two types of REM: discretionary expenditure and overproduction costs. Zang found that overproduction reduced COGS to avoid reporting losses in the US. The above study provides evidence of trade-off decisions between REM and AEM but ignores the implementation of new rules (i.e. SOX), and does not discuss the legal environment affecting REM, similar to Gunny (2010).

Gunny (2010) and Vorst (2016) both include a new indicator variable. They adjusted original REM models to contain a new explanatory variable to quantify the effect of sales decline (Cohen et al. 2020). Moreover, Srivastava (2019) suggested improvements in REM estimation models. He found that REM models cannot distinguish between a firm's competitive strategy and EM, because both require different levels of cost in relation to industry peers. As a result, if firms in the same industry pursue different competitive strategies, researchers could erroneously infer REM based on the presence and extent of EM. Therefore, to address these problems, the above recent study has concluded with improvements in REM estimation models.

However, there are still some issues to do with REM measurements, addressed by Siriviriyakul (2015) and Cohen et al. (2020), who analyse empirical measures for REM. Siriviriyakul (2015) conducted a detailed evaluation of three traditional measures for REM and found highly persistent measures, which indicate omitted variables. The measures are a function of underlying performance, which can create a correlated omitted variable problem in certain research settings. Also, to improve traditional measures, the author summarizes and evaluates many alternative approaches and found that time-series-adjusted measures show desirable properties of REM manipulation. Cohen et al. (2020) noted that commonly used REM measures are evident, yet these authors lack systematic evidence for statistical properties. Type I error rates deviate from the nominal significance level of the test, especially with firm characteristics or extreme performance, so measures are often mis specified. Therefore, traditional REM measures coupled with performance-matched REM measures are compared to examine whether the latter provides more powerful and better specified tests. The findings indicate that in terms of discovering abnormal REM ranging from 1 to 10% of (lagged) total assets, neither approach is consistently more powerful than the other. As a result, the authors recommended using both approaches

to assess reliability of the inferences drawn about the significance and amount of the abnormal REM authenticated in a given study.

3.9.1 Critical evaluation of adjustment of REM measurement

Despite the issues identified in recent studies (Cohen et al. 2020; Siriviriyakul 2015), researchers continue to use the abovementioned models of REM. Therefore, to mitigate those issues, the current study uses the original REM models developed by Roychowdhury (2006) for the main analysis. The study then applies the robust test by using modified REM measurements developed by Gunny (2010) and Vorst (2016) for additional analysis. This gives the current study more accurate and correct findings and assists to avoid issues that could appear in any model.

3.10 Effectiveness of audit quality post ISA implementation

In the last decade, reliable information at the global level has been achieved by ISA being adopted and harmonized (Bookey & Soobaroyen 2017). ISA adoption improves FRQ (Needles Jr, Ramamoorti & Shelton 2002; Reid et al. 2019) and discourages EM practice – an indicator that earnings quality will increase (Reid et al. 2019; Sami & Zhou 2008). The reasons for such effectiveness (Alhadab & Clacher 2018) follow:

- ISA requires auditors to be convinced about managerial integrity in eliminating opportunistic EM, fraud, and material misstatement such as ISA 240.
- ISA provides an auditor with mechanisms that permit the individual to inspect both AEM and REM such as written representations in ISA 580.
- Auditors are concerned with the following ethical factors: management competence, management integrity, and due care in ISA 580 under Section A2.

Moreover, Chi, Lisic and Pevzner (2011) suggested that monitoring bodies, including boards and audit committees, should take into account the implications of imposing better quality auditing. The creation of these policies could provide firms with a reason to potentially curtail the use of REM activities, especially if high-quality audit practices become the standard for all businesses (Chi, Lisic & Pevzner 2011). Apart from this reason, the audit committee's responsibility can extend to monitoring REM activities (Sultana, Cahan & Rahman 2020), as its task is "to oversee the financial reporting process in order to reduce EM magnitude" (Laux & Laux 2009, p. 873).

In other words, the ability of the audit committee should be greater to uncover attempts to manipulate finance documents (Laux & Laux 2009), as REM is based on activities rather than accounting policies, thus less likely to be audited by auditors (Sultana, Cahan & Rahman 2020). Not only this, but also audit committees with greater independence and governance expertise are effective in supporting external auditors and shielding them from dismissal when an unfavorable report is issued (Carcello, J. V. & Neal,

T. L. 2003). Further, according to ISA 260 “communication with those charged with governance”, auditors should contact the individual(s) charged with governance while auditing financial statements including the board of directors and audit committee”. ISA 265 on “communicating deficiencies in internal control to those charged with governance and management” requires the auditor to report deficiencies in internal controls to those executives in charge of governance and management. ISA 610 on “using the work of internal auditors”, states that the auditor should refer to the internal auditing function, if it exists, to obtain additional checking evidence. In this way, ISA provides auditors with mechanisms that allow an auditor to take actions or request certain materials.

However, evidence shows that EM is not affected by audit quality (Orazalin & Akhmetzhanov 2019), even when ISA (Lento & Yeung 2017) and REM were not influenced by using high-quality audit indicators, for instance, audit industry experts and Big N auditors (Chi, Lisic & Pevzner 2011). Also, when the ability to manage accruals is constrained because of IFRS adoption (Ho, Liao & Taylor 2015; Sohn 2016) or other government-imposed regimes (Choi, Choi & Sohn 2018), company managers will engage in REM. As discussed earlier, REM is not a violation of regulations or laws (Commerford et al. 2019), so it is difficult for auditors to detect and differentiate normal business decisions from REM (Roychowdhury 2006). To solve this problem, the audit committee should monitor real earnings activities (Laux & Laux 2009; Sultana, Cahan & Rahman 2020). According to the above discussion, there are mixed results regarding the effectiveness of implementing ISA for the purpose of ensuring audit quality and the use of EM by companies.

- In the case of Saudi Arabia, the study expects that if IFRS reduces engagement in AEM on one hand, the implementation of ISA will decline using REM on the other. However, if the study finds a marked increase in REM, this suggests that ISA adoption neither affects REM nor audit quality.
- ISA obliges auditors to contact the board of directors and audit committees in particular scenarios and encourage communication between the auditor and those who are responsible for governance matters, which in turn supports audit quality (Li, Hay & Lau 2019). Accordingly, this study expects that when there are more effective audit committee characteristics, the body of knowledge will support greater adherence to ISA standards. According to ISA (610), the study expects that a company’s internal auditing functions will support the auditing process as well.

For the above listed reasons, the study expects that audit quality and REM are affected by the acceptance of ISA, and the relationship between audit quality and REM is influenced by the existence of ISA. Thus, the two main hypotheses are:

1. ISA adoption is positively associated with increasing audit quality and reducing the level of REM in Saudi non-financial listed firms.

2. There is a negative association between levels of REM and audit quality mechanisms (external audit attributes, audit committee characteristics, and IAF) post ISA adoption in Saudi non-financial listed firms.

3.11 Summary

This chapter discussed the relevant literature concerning ISA, AQ, EM and REM and provided a critical evaluation of the literature gap. Also, this chapter emphasized and explained the effectiveness of ISA implementation and what audit quality will look like post implementation. The main hypotheses for the proposed research were also presented. The next chapter provides the theoretical framework through discussion of different theories related to the research questions. Also, it will identify the literature gap and then present the hypotheses of the study through developing hypotheses for (1) ISA and audit quality and (2) for audit quality attributes with REM.

Chapter 4: Theoretical Framework and Hypothesis Development

4.1 Introduction

The previous chapter reviewed the relevant literature regarding ISA, AQ, EM and REM, which helped to identify a gap in the literature and the main hypotheses in this research were presented. Effectiveness of ISA implementation and its impact on audit quality post implementation were explained. This chapter serves to illustrate different theories relating to the research questions. Section 4.2 discusses theories of audit quality and earnings management. Section 4.3 presents the developed hypotheses for ISA and AQ, while section 4.4 presents hypotheses development for AQ attributes with EM and REM. Both sections review and identify the literature gap for each stated attribute, and the hypotheses serve to fill those gaps. Section 4.5 provides a brief summary of the main themes covered in this chapter.

4.2 Audit quality (AQ) and earnings management (EM) theories

Theories can be classified as normative, which means explaining issues in a positive light (Schroeder, Clark & Cathey 2019). Positive theories seek to explain and predict particular (observed) phenomena (Schroeder, Clark & Cathey 2019), popularized in economic research by Friedman (1953) to distinguish research that sought to explain and predict (positive research) from research that aimed to provide prescription (normative research) (Deegan 2013). Positivist theories of accounting begin with assumption(s) (hypotheses) that are usually tested using observations of reality while the hypothesis is not rejected if the logical deduction is accepted (Deegan & Unerman 2006). It further makes it possible to conduct empirical studies (observations), according to (Deegan & Unerman 2006), which help to increase the generalizability of accounting theories.

Corporate scandals have created the need for effective theoretical perspectives to shape corporate legislation (Fearnley & Beattie 2004; Glaum, Lichtblau & Lindemann 2004). Consequently, various theories have emerged to explain audit quality and CG mechanisms such as agency, stewardship, stakeholders, and institutional theory. Other theories involve exploring and interpreting EM practices such as agency, positive accounting, and institutional theory. However, these theories function to complement and not be a substitute for agency theory (Daily, Dalton and Cannella Jr (2003). Accordingly, agency theory is widely used in the investigation of audit quality, CG mechanisms and exploration of EM practices. Agency theory will be used to formulate the hypotheses and both agency institutional and stakeholder theories used to interpret results. In the interim, the most important theories related to the research question include positive accounting, stewardship, stakeholder, agency, and institutional theory, discussed below.

4.2.1 Positive accounting theory

This research based on the positive perspective refers to several positive theories of accounting. One is Positive Accounting Theory (PAT) which started with Watts and Zimmerman (1979); (1986). In later research, Watts and Zimmerman (1990) adopt the "positive" label based on the term in economics, as this label can be helpful in differentiating accounting research aimed at generating prescriptions from those intended to better comprehend accounting. PAT explains and predicts accounting and auditing practices by empirical association of related variables (Collin et al. 2009; Watts & Zimmerman 1986, 1990) which helps to interpret opportunistic behaviors of managers. This theory has been explained by Deegan (2013) in more detail as follows: PAT is concerned with the relationship between several individuals, who provide resources in an organization and how accounting can be employed in the functioning of these relationships, whether between owners and managers or between managers and the firm's loan providers. This kind of relationship (known as agency relationship) obliges the decision-making authority to be delegated from one party (the principal) to another party (the agent)(Deegan 2013). This can lead to subsequent costs due to loss of efficiency, where the manager may not work as hard as the owner, since the manager may not be directly involved in firm results. Profit loss due to the manager's actions is classified as an agency cost (of equity)(Deegan 2013).

The assumption of PAT is that individual actions are driven by self-interest, where individuals act opportunistically to increase their advantages and/or wealth. Therefore, PAT predicts that organizations will seek to employ mechanisms that align the interests of managers (the agents) with owners (the principals). In the case of accounting based 'alignment mechanisms', producing financial statements is necessary and for managers this may be costly. This cost in PAT is referred to as bonding costs. In this case, based on PAT, financial statements prepared by managers (the agents) must be monitored and audited; otherwise, they try to overstate profits (assuming self-interest). The cost of undertaking an audit is known as monitoring in PAT. This theory supposes that the motivation behind the accounting choice can be a result of the economic consequences (Collin et al. 2009; Watts & Zimmerman 1990), as managers are motivated to manage earnings due to regulatory, political, and tax considerations (Watts & Zimmerman 1978). These earnings (Collin et al. 2009; Watts & Zimmerman 1978, 1986, 1990) include the following: (1) Bonus plan incentive: firms with bonus plans have managers who are more likely to use accounting methods that may increase their own benefit or compensation on bonus plan to grow the reported income for the current period; (2) Debt/equity covenant (contract) incentive: due to the pressure on creditors to provide guarantees that repayments and interest will be performed at a predetermined time. Managers are more likely to use accounting methods at firms that have a high debt/equity ratio to raise income (Collin et al. 2009; Watts & Zimmerman 1990) or to increase asset value by revaluation to show higher collateral value; (3) Political cost incentive: government pressure using regulations and increased costs might lead large firms to engage in accounting choices to reduce reported profits.

However, the academic literature has critiqued PAT. Sterling (1990) criticized this theory and argued that these circumstances are not helpful or acceptable to use choices as an accounting method. Also, Milne (2002) stated that the theory does not provide distinct arguments for managers maximizing their own wealth, and shows that all empirical evidence supporting PAT regarding social disclosure, in general, fails in its endeavours. As identified by Sterling (1990), there is a large body of evidence that confirms the tendency of managers and owners to achieve a financial advantage by manipulating accounting figures. This evidence provides an additional reason for increased audit functions (Sterling 1990).

4.2.2 Stewardship theory

The theoretical basis for stewardship theory is psychology and sociology, since these fields focus on non-economic influence that guides managerial activity (Davis, Schoorman & Donaldson 1997; Mason, Kirkbride & Bryde 2007). The primary assumption of this theory is the idea that managers have a fiduciary duty and will act as stewards over company resources, so they can be trusted (Turnbull 1997). The theory assumes that managers will work to maximise organizational performance (Fox & Hamilton 1994) and that “there is no motivation problem or non-alignment of interest between management and ownership” (Hung 1998, p. 107). Additionally, managers are assumed to act in the best interests of the owner(s) and organizations which require managers be given power and governance mechanisms to facilitate and empower structures (Davis, Schoorman & Donaldson 1997; Donaldson 1990; L’Huillier 2014).

According to stewardship theory, the primary idea of corporate governance is that managers are good stewards (Donaldson 1990) and work to maximize shareholder returns (Donaldson & Davis 1991). There is no conflict of interest between managers, owners, and shareholders, since a manager’s performance is influenced by the structure of the organization and not self-interest (Davis, Schoorman & Donaldson 1997; Donaldson 1990; Glinkowska & Kaczmarek 2015). In this case, managers can be given autonomy which will help to minimize monitoring costs as there is confidence that managers will act appropriately. This indicates that stewardship theory differs from agency theory. Agency theory may not apply to all cases related to owner–manager relationships. Hence, stewardship theory is an alternative model of managerial motivation and behavior that relates to a sociological and psychological approach.

There has however been opposition to the stewardship perspective, since it is impossible for managers to always work to align their own best interests with those of shareholders; even if this exists, this may be due to managers being rewarded with shares in the company rather than bonuses/cash. Also, Choo and Tan (2007) made a psychological argument that the lack of non-executive directors on a board could motivate managers to manipulate data and engage in fraud. The nature of the relationship between owners and managers using the stewardship theory can also provide significant opportunities for fraud

(Albrecht, Albrecht & Albrecht 2004). For these reasons, the stewardship theory is excluded. The above three theories are excluded for the reasons explained in Table 4.1.

Table 4.1: Reasons for excluding theories

Theory	Excluded Reasons
Positive Accounting	PAT depends on internal contractual reasons that impact manager behavior instead of testing capital market motivations. This study will shift its focus from PAT, since EM motivation is often due to capital market motivation such as encouraging investment and meeting financial expectations of analysts and investors (Habbash & Alghamdi 2015). This theory does not in fact match the study’s objectives as much as agency theory, thus this research is based on agency theory.
Stewardship	The study objective does not match stewardship theory, as this study seeks to measure the extent to which managers engage in EM and how EM is influenced by audit factors pre and post ISA adoption. It should be noted that if stewardship theory predicts there is no conflict of interest between managers and shareholders, there is no need for managers to falsify their revenues/assets, and in turn no need for an intensive audit or even to adopt new standards (such as ISA).

4.2.3 Agency theory

Agency theory began with the work of Jensen and Meckling (1976), while issues and problems regarding the separation of ownership and control were first reported by Fama and Jensen (1983). According to Jensen and Meckling (1976, p. 308), an agency relationship is “A contractual relationship between one party (principal) engaging another party (agent) to perform a service(s) on behalf of the principal, which involves some decision-making authority being yielded to the agent”. Agency theory argues that agents (corporate managers) who work on behalf of principals (shareholders/owners) can be opportunistic and work to maximize their own interests, even if this work is detrimental to others (Jensen & Meckling 1976; Piot 2001). They will probably have different motives to principals, which may be affected by certain factors, such as labor market opportunities, financial rewards and relationships with other parties (ICAEW 2006). As a result, this assumption identifies two impediments to effective contractual performance: (a) moral hazard, and (b) adverse selection (Hoque 2018; Nilakant & Rao 1994), where one party may change their behavior and provide misleading information or where one party has more accurate and different information (Nickolas 2021). Both describe situations where one party is at a disadvantage as a consequence of another party's behavior (Nickolas 2021). For example, in a moral hazard situation, the agent may not put in the required effort while in the adverse selection situation, the principal cannot determine if the effort made by the agent is suitable (Nilakant & Rao 1994).

In this case, the principals (owners) express concerns about information asymmetries, where agents have information that principals are not privy to (ICAEW 2006). Thus, principals require the relevant information to evaluate the manager’s performance. Based on these assumptions, agency theory seeks to determine the nature of contracts so that agency costs are diminished; this refers to the costs of

motivating, monitoring and ensuring the commitment of the agent (Nilakant & Rao 1994). For instance, principals can seek to motivate agents to act in their interests through attractive remuneration/salary packages (ICAEW 2006), incentive alignment, and establishing monitoring mechanisms that restrict irregular activities (Van Puyvelde et al. 2012). These mechanisms include the audit (internal and external) and other forms of corporate governance, etc. The audit provides an independent check of the information provided by the agent, which helps to maintain trust and confidence (ICAEW 2006). In short, using various mechanisms helps to align the interests of principals and agents, and permit principals to reinforce their trust in agents and what they do (ICAEW 2006).

However, these monitoring devices can incur costs (agency costs) which can take different forms (Shapiro 2005) such as monitoring costs (Hoque 2018). In support of this, Jiraporn et al. (2008) indicated that firms which have fewer (more) agency costs will often be subject to large (less) EM practices. Jensen and Meckling (1976) represent and define agency costs as the sum of:

- **Monitoring costs** (by the principal) can be incurred because of an agent's monitoring behavior like internal and external audits, CG, or other actions that are intended to mitigate opportunistic behavior.
- **Bonding costs** (by the agent) relate to the alignment of a principal's interest with an agent's interest such as compensation or rewards that limit opportunistic behavior.
- **Residual costs** (loss) are all costs that stem from the dispute between principal and agent interests that do not relate to monitoring and bonding costs.

Hence, EM might be classified within agency costs and information asymmetries, as management presents inaccurate financial reports (Davidson, Goodwin-Stewart & Kent 2005) that could be considered a residual cost. Managers avoid reporting loss of earnings because these have serious implications for them and the firm's transactions with stakeholders (Burgstahler & Dichev 1997). It is expected that the firm will bear sharply higher costs in transactions with stakeholders than if the firm reported earnings increased earnings. This is because the terms of transaction between the firm and its stakeholders are affected by information about earnings (Burgstahler & Dichev 1997).

4.2.3.1 Agency theory with audit quality and EM

Consistent with agency theory, it is supposed that monitoring mechanisms should be aligned with managers' and shareholders' interests jointly, in the process of resolving conflicts of interest and engaging in opportunistic behavior (Alzoubi 2019). The audit rationale (purpose), as described by Jensen and Meckling (1976), is considered to be an important bonding mechanism in firms, as it assists in identifying managers' interests with those of external equity holders. Therefore, auditing roles aid in reducing asymmetric information and conflicts of interest between owners, shareholders and managers (Arens, Elder & Mark 2012). Additionally, auditing diminishes residual loss from managers engaging in opportunistic actions when preparing financial reports (Piot 2001). To expand on this point, auditors who effectively monitor suspicious accounting practices support agency theory (Becker et al. 1998; Gul,

Fung & Jaggi 2009). Accordingly, the internal and external auditing process is a monitoring tool that should not give managers the motivation to manipulate business earnings (Alzoubi 2019; Habbash & Alghamdi 2017).

Many studies have used agency theory because it examines the impact of corporate governance mechanisms like audit committees and the internal and external audit, as effective monitoring tools (Cohen, Krishnamoorthy and Wright (2004); Lin and Hwang (2010); Orazalin and Akhmetzhanov (2019); Turley and Zaman (2007)

Such mechanisms can mitigate agency problems between managers and shareholders and align managers' interests with those of owners (Inaam & Khamoussi 2016). In addition, the high level of audit quality results in better earnings quality (Gul, Fung & Jaggi 2009). Earnings quality indicates that highly managed earnings are of poor quality, while lack of EM is not adequate to guarantee high-quality earnings or high-quality accounting numbers because there are other factors contributing to the quality of earnings, such as employing a strong set of standards; weak ones generate low-quality financial reports (Lo 2008). Therefore, taking all these factors together can create a much closer connection between earnings quality and EM (Lo 2008). Here, the current study investigates the REM situation pre and post ISA adoption. Using stricter auditing standards results in high audit fees but conversely, it is useful for discouraging auditors' possible misalignment of interest with investors and can benefit auditors at the firms' expense which also results in an increase in audit quality (Gao & Zhang 2019). In this regard, ISA adoption in the KSA is expected to trigger high audit costs/fees, but fees fall with high audit value, auditor experience, and high-quality audits. This protects the company from mistakes, opportunistic behavior, fraud, and any expected losses in future, which results in maintaining company reputation and gaining the confidence of investors, which goes a long way to realising the Saudi government's 2030 Vision economic strategy.

4.2.3.2 Interaction of ISA, AC, EA and EM within agency theory

The theoretical framework for the proposed study is grounded on agency theory which forms a framework to explain how ISA adoption and quality internal and external auditing can diminish agency costs and problems between businesses and stakeholders, by monitoring financial reporting and auditing in a fairer way. Financial reports that are clear to beneficiaries and reflect the actual performance of the company with fewer inconsistencies and asymmetries will curtail agency costs. More precisely, EM practices could indicate an agency problem and cause an increase in agency costs. Thus, ISA adoption using internal and external auditing mechanisms can lead to low monitoring costs to restrict agency problems and the excessive cost of EM. To better understand and interpret the relationship between ISA, internal and external auditing, and EM practices, Figure 4.1 shows how agency theory can be used in this study.

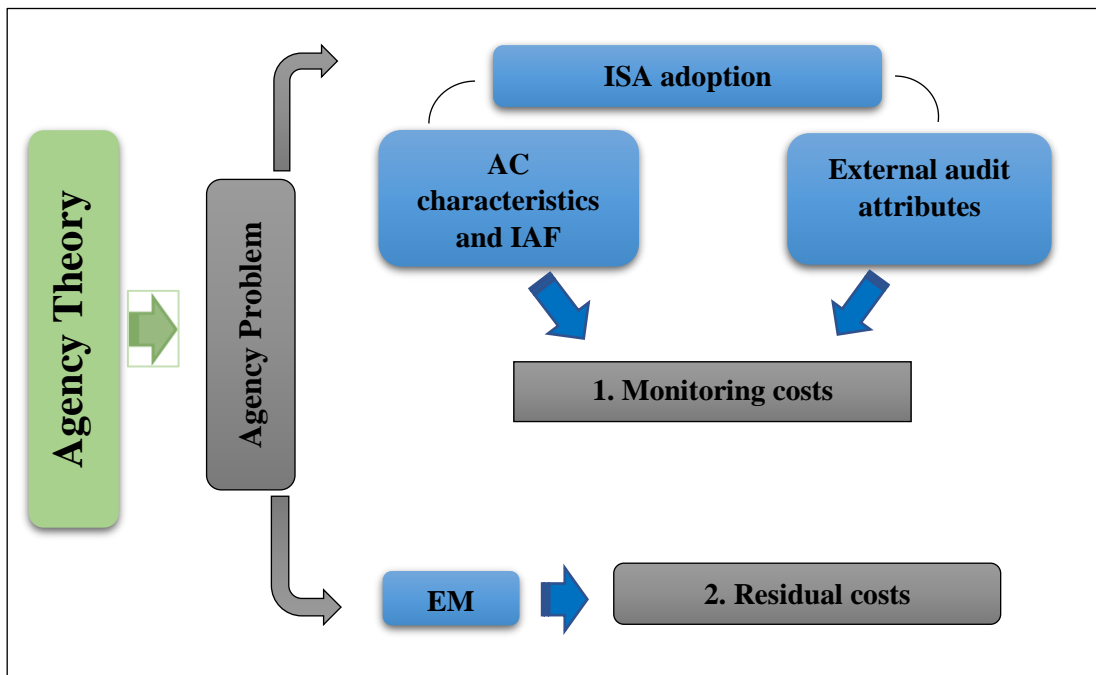


Figure 4.1: Theoretical explanation of interaction of ISA, AC, EA and EM within agency theory.

Moreover, if the business owner appointed internal and external mechanisms to perform firm tasks (i.e., monitor, control and audit), with or without due regard for their ability to perform those roles (Haniffa & Hudaib 2007), agency problems would still exist. Real-life cases such as Enron, WorldCom, Lehman Bros, and more recently Steinhoff, constitute strong evidence of weak auditing quality and failure of corporate governance mechanisms, resulting in huge financial losses and corporate collapse (Fearnley & Beattie 2004; Rossouw & Styan 2019). In the KSA, the violation of CG rules and accounting and auditing scandals (accounting errors) in MMG (Mohammad Al Mojil Group) led to banning Deloitte’s (Bakr Abulkhair & Co.) from auditing public companies effective 1 June 2015, while the case of Etihad Etisalat (known as Mobily), one of the largest telecommunications companies, led to a drop of about \$380 million in profits, a sharp decline in earnings per share and a high debt ratio (Zerban 2017). In the case of MMG, shareholders had been deceived by the IPO subscribers and traders, where investors made the decision to purchase stocks based on financial information provided by the business, which regrettably was misleading. In the case of Mobily, investors were tremendously affected, as there was suspected violation of rules related to disclosure of financial information, market manipulation and insider trading. According to the above cases, in most accounting and auditing scandals, these occur mainly due to managers being greedy, and where the auditing office profits from a scandal or performed poorly (Zerban 2017).

Therefore, such crises not only require effective internal mechanisms (e.g., CG) but also very good quality of external auditing attributes by applying a strong set of standards (e.g., ISA). The interaction between internal and external mechanisms contributes to a better guarantee of the credibility of financial

reporting which assists in regaining stakeholders' confidence. Even with internal and external mechanisms, the agency problem has affected external audit practices in Saudi listed firms, which highlights the importance of using agency theory to explain the probable behavioral relationship and to understand whether managers are focusing on the expectation of owners in Saudi Arabia. However, based on the results, the theory may be refined, modified, or even rejected, to interpret the findings more correctly.

Based on the above, the study has developed its hypotheses based on agency theory for the following reasons. First, agency theory provides logical reasoning to understand conflicts of interest between agents and principals, especially those that could arise from potential areas of opportunism. Second, this theory (the only perspective) recognizes "human being's self-interest behavior" to accomplish financial or personal objectives. Third, the cost incurred for ISA adoption, internal auditing, external auditing, and CG cause can be regarded as agency costs, which are required to reduce EM practices by monitoring managers' behavior. Fourth, agency theory makes it possible to measure EM using the internal and external audit, as well as other tools such as audit committees and IAF, following the implementation of ISA. Fifth, agency theory asserts that monitoring management enhances the integrity of financial reporting (Peasnell, Pope & Young 2005) which supports this study. Sixth, this argument should be tested empirically, especially post ISA implementation as a monitoring tool in Saudi Arabia. Seventh, there is to date not enough Saudi evidence regarding the nature of the relationship between principals and agents, so more research needs to be done on the various factors that can influence this relationship: culture, religious/social traditions and the overarching Islamic religious framework (Alghamdi 2012). Thus, the type of relationship is still ambiguous, and therefore needs to be tested (see Figure 4.1 above).

4.2.4 Institutional theory

Institutional theory is a dominant perspective in organization and management theory (OMT) (Cao, Xiong & Jia 2022; Greenwood et al. 2017). The version of "old" institutionalism focused on coalitions, power, influence, informal structures, and competing values (Selznick 1980, 2011). In the late 1970s and early 1980s, the "new" institutionalism emerged with the work of DiMaggio and Powell (1983); Meyer and Rowan (1977). The original foundation of "new" institutional theory concentrated on fields, legitimacy, schema, templates, and institutional logic, work and entrepreneurship (Greenwood et al. 2017). It assumes that organizations respond to pressure from the institutional environment, and that procedures and structures that are socially accepted must be adopted as a suitable organizational choice to respond to these pressures (Carpenter & Feroz 2001).

Institutional isomorphism is a valuable tool to understand policies and practices within modernistic organizational life (DiMaggio & Powell 1983). Hence, DiMaggio and Powell (1983) established three mechanisms of institutional isomorphic change: coercive, mimetic, and normative, defined below:

- **Coercive isomorphism** stems from political influence, the problem of legitimacy, formal and informal pressures by other organizations, or cultural expectations in society.
- **Mimetic isomorphism** stems from standard responses to uncertainty, for example, if goals and objectives are vague or organizational technologies are weak, organizations can make their own model depending on other organizations.
- **Normative isomorphism** relates to professionalization, as professions have coercive and mimetic pressures like organizations. Professional power is assigned by the state and is created by the activities of the professions. The normative mechanism is performed mostly by professional groups promoting their competence in society (Collin et al. 2009).

In sum, institutional pressures and influences could be a reason to impose regulations, machinimas, and standards. Supporting this viewpoint, Collin et al. (2009) stressed that institutional influences such as coercive influence, mimetic behavior, and normative influence will impact the selection of appropriate institutional standards. Carpenter and Feroz (2001) viewed external institutional pressures as potent forces and a reason for standards to be adopted in some cases. Also, Yapa, Jalathge and Siriwardhane (2017) findings in the case of Sri Lanka indicate that the reasons for ISA adoption are turnover intention, unethical practices by some of the big firms, poaching of professionals by the Big Four, and the influence of international agencies.

For this study, the adoption of accounting and auditing standards in KSA could be due to coercive pressure and professional groups' pressure to impose prominent institutional practices to increase audit quality. Coercive pressure occurs using mechanisms of legitimation, power, and authority to compel organizations (listed companies) to adopt international standards (such as IFRS and ISA) that focus on achieving international harmony through ensuring the effectiveness and efficiency of the organization's activities. Normative isomorphism arises from professional groups putting pressure on the industry to increase the professional manner that the overall industry uses. In the KSA, this type of pressure can occur through SOCPA,, since it is a professional organization responsible for supervising and improving the accounting and auditing professions (Habbash & Alghamdi 2017; Nurunnabi 2017). Hence, normative isomorphism for an organization depends on professional expectations to increase professionalism, which leads to compliance with and greater adherence to more stringent accounting and auditing standards. Figure 4.2 shows how institutional theory is used in this study.

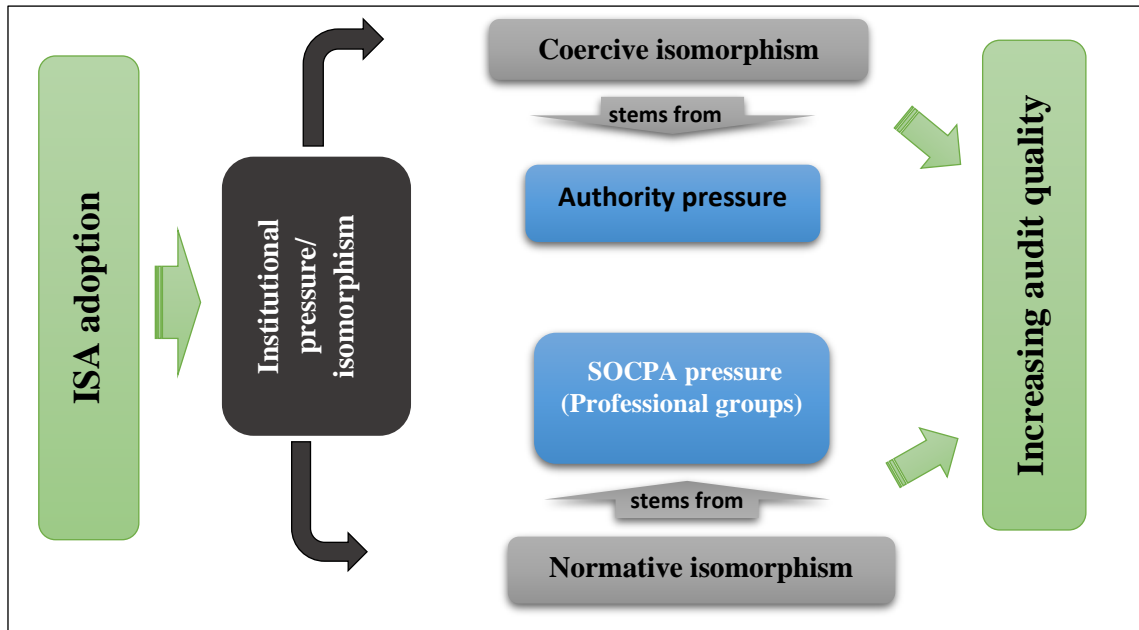


Figure 4.2: Theoretical explanation of institutional pressure within institutional theory

However, Royston, Hinings and Dave (2014) criticized institutional theory, since it had only focused on explaining institutions and institutional processes instead of being used to study, understand and explain organizations and how they operate (Meyer & Höllerer 2014). This theory focuses on similarity and isomorphism and neglects theorizing differences (obvious heterogeneity) in organizations (Meyer & Höllerer 2014; Royston, Hinings & Dave 2014). The relationship between owners and managers could provide an opportunity to engage in fraud, including EM. Based on these deficiencies, the study not only depends on institutional theory, but it will be complemented by other perspectives like agency theory (Yazdifar 2003). Institutional theory will be used, since institutional pressures and isomorphism (coercive, mimetic, and normative) may be a reason to impose certain standards and can interpret findings, if necessary. In addition, there are some differences between agency and institutional theory from the audit viewpoint (Cohen, Krishnamoorthy & Wright 2008), and this study combines both theories for a more comprehensive understanding. Table 4.2 presents those differences.

Table 4.2: Differences between agency and institutional theory

Criteria	Agency Theory	Institutional Theory
The primary focus of the board	Monitor management actions	Provide assurance to outsiders that information provided by management is legitimate
The importance of the AC in ensuring high-quality financial reporting	Highest	Indeterminate
The role of the auditor	Independent party working with other governance parties to ensure sound financial reporting	The auditor is heavily responsible for sound financial reporting with the AC and board symbolic.

Source: (Cohen, Krishnamoorthy & Wright 2008)

4.2.5 Stakeholder theory

The theoretical basis of stakeholder theory is management, law, politics, and corporate governance which all focus on the coordinating role of the governing board to achieve stakeholder interests (Hung 1998). The original definition for stockholder by Freeman (1984) (cited in Frooman 1999; Viveros 2016, p. 25) has been used widely, and refers to "any group or individual who can affect or is affected by the achievement of the firm's objectives". The basic assumption of stakeholder theory is that each individual has an implicit and explicit contract with a firm, regardless of the stake they have (Hill & Jones 1992). Managers should also work as if all stakeholder interests have substantial value (Donaldson & Preston 1995). Stakeholder theory, hence, has been subject to various interpretations and applications regarding corporate social responsibility, business ethics, strategic management, corporate governance, and finance (Miles 2017). In addition, this theory seeks to maximize social welfare for all of the corporation's constituents (Benson & Davidson 2010; Turnbull 1997). Phillips, Freeman and Wicks (2003) stated that stakeholder theory focuses on more than just maximizing shareholder wealth and applies to all who have a relationship or would be impacted by the achievement of organizational objectives. In this way, it is like the alternative model and works like other theories of strategic management (Frooman 1999).

This theory has a number of perspectives, as identified by Thomas and Lee (1995), including: (1) The descriptive accuracy: presents the company as a constellation of competitive and operative interests holding intrinsic value; (2) The instrumental power: sets up a framework to investigate the connections between the attainment of corporate performance objectives and the practice of stakeholder management; (3) The normative validity: is the primary basis of stakeholder theory which includes the following ideas: (a) stakeholders have legitimate interests in substantive and/or procedural aspects of corporate activity; and (b) the interests of all stakeholders are of intrinsic value; (4) The managerial perspective: supposes that managers must pay attention to all stakeholder groups. Accordingly, Thomas and Lee (1995) argue that stakeholder theory is "managerial", as the theory recommends practices, structures, and attitudes that comprise stakeholder management philosophy. More precisely, stakeholder management requires that attention be paid to all stakeholder interests when creating policies, structures, and making decisions on a case-by-case basis. This condition applies to anyone who can impact corporate policy including government, managers, and shareholders, among others (Thomas & Lee 1995). The results of Viveros (2016) show that managers are aware of how government, communities, and unions are the most salient stakeholders. However, stakeholder theory assumes that managers are not the only focus of corporate governance or control and that stakeholders should be identified, but not necessarily equally engaged, in the decision-making process.

Stakeholder theory considers that company management works as an agent for all stakeholders. Some stakeholders can therefore be misled about the company's true economic performance (Healy & Wahlen 1999). Deegan and Blomquist (2006, p. 349) state that "According to stakeholder theory, the disclosure of particular types of information can be used to gain or maintain the support of particular groups". For

example, in this study, if a potentially powerful group is concerned with the outputs of audit reports, the organisation may see the need to publicly disclose more information about content of audit reports and financial statements (such as key matters relating to audits and procedures to solve those matters) to alleviate some powerful stakeholders' concerns. This could interpret improvement in content of audit reports post ISA adoption in Saudi firms. Not only this, but because KSA adopted ISA and began dealing globally, firms may feel a need to react to expectations of all stakeholders (global and local) to attract powerful stakeholders. Hence, the more significant a stakeholder is to the organisation, the more the effort put into managing the relationship (Islam & Deegan 2008). This could lead managers to manage (manipulate) disclosed information presented in reports in order to gain stakeholders' support and approval, or to distract their opposition and their disapproval (Islam & Deegan 2008). This manipulation can be about the company's true economic performance through the use of EM (Healy & Wahlen 1999). Therefore, this perspective of stakeholder theory (managerial branch) could interpret the increase of REM after ISA adoption in Saudi firms because they seek to present satisfactory financial statements for stakeholders (e.g., investors, owners, creditors, or regulators). Figure 4.3 shows how stakeholder theory is used in this study.

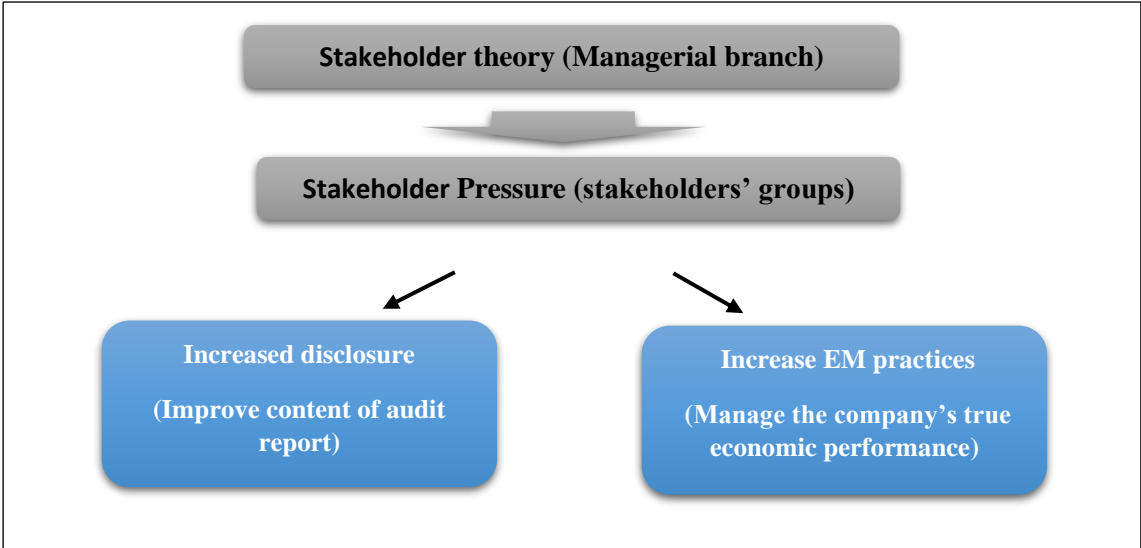


Figure 4.3: Theoretical explanation of stakeholder pressure within stakeholder theory

However, this theory has been criticized by various parties as shown in the work of Sternberg (1997). The theory cannot provide a way to manage business conduct or performance, have better CG and is inconsistent with its intrinsic objectives. The theory is also difficult to administer, since representing and dealing with all stakeholders equally can be very difficult as their goals are different and have inevitable conflicts (Benson & Davidson 2010; Etzioni 1999). Both agency and stakeholder theory agree that manager behavior (agent) should align with the interests of shareholders or stakeholders respectively, so this theory has been used only to interpret study results.

In summary, different theories have emerged to explain audit quality and CG mechanisms and to investigate earnings management motivations and techniques such as agency, stewardship, institutional, stakeholders, and positive accounting theories. Those theories are used to complement, not substitute agency theory (Daily, Dalton & Cannella Jr 2003). However, using this theory alone may not provide adequate interpretation of the findings, so institutional and stockholder theories were used as well. Convergence between theories is useful and valuable, as they provide a precise interpretation of REM motivation or practice and reasonable reasons for imposing or applying audit mechanisms. Figure 4.4 presents the theories used in the current study.

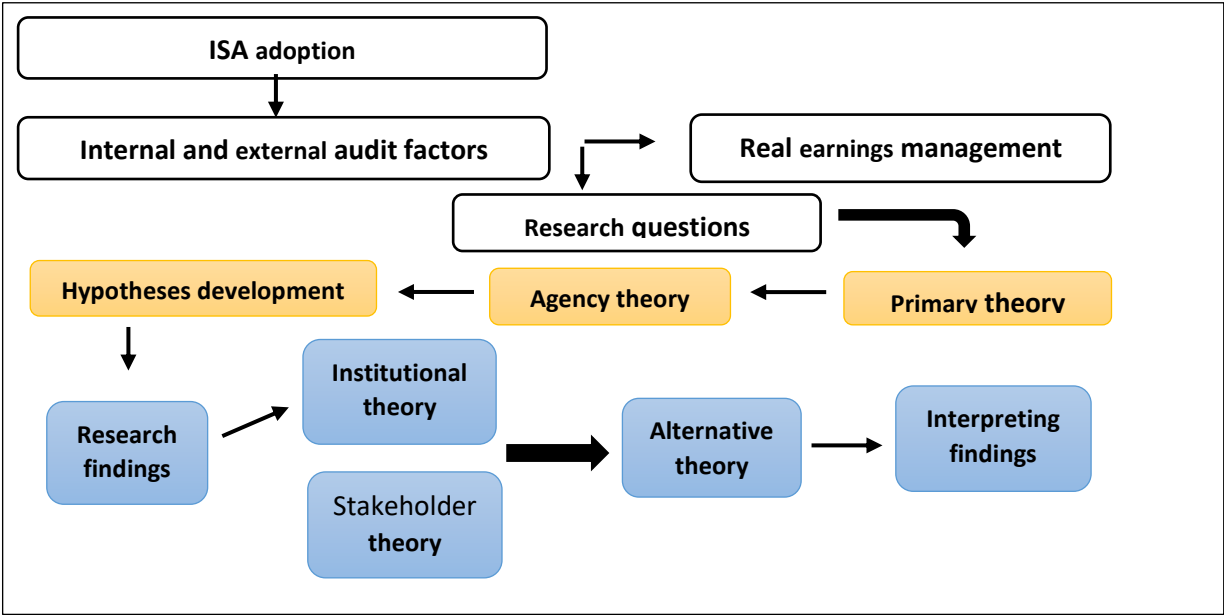


Figure 4.4: Explanation of potential theories used in the current study

4.3 Hypotheses development

The theoretical framework of the study is presented in Figure 4.4. Hypotheses are built on agency theory and study results are interpreted on agency and institutional theory as well. There are four questions that contain 19 hypotheses, discussed below.

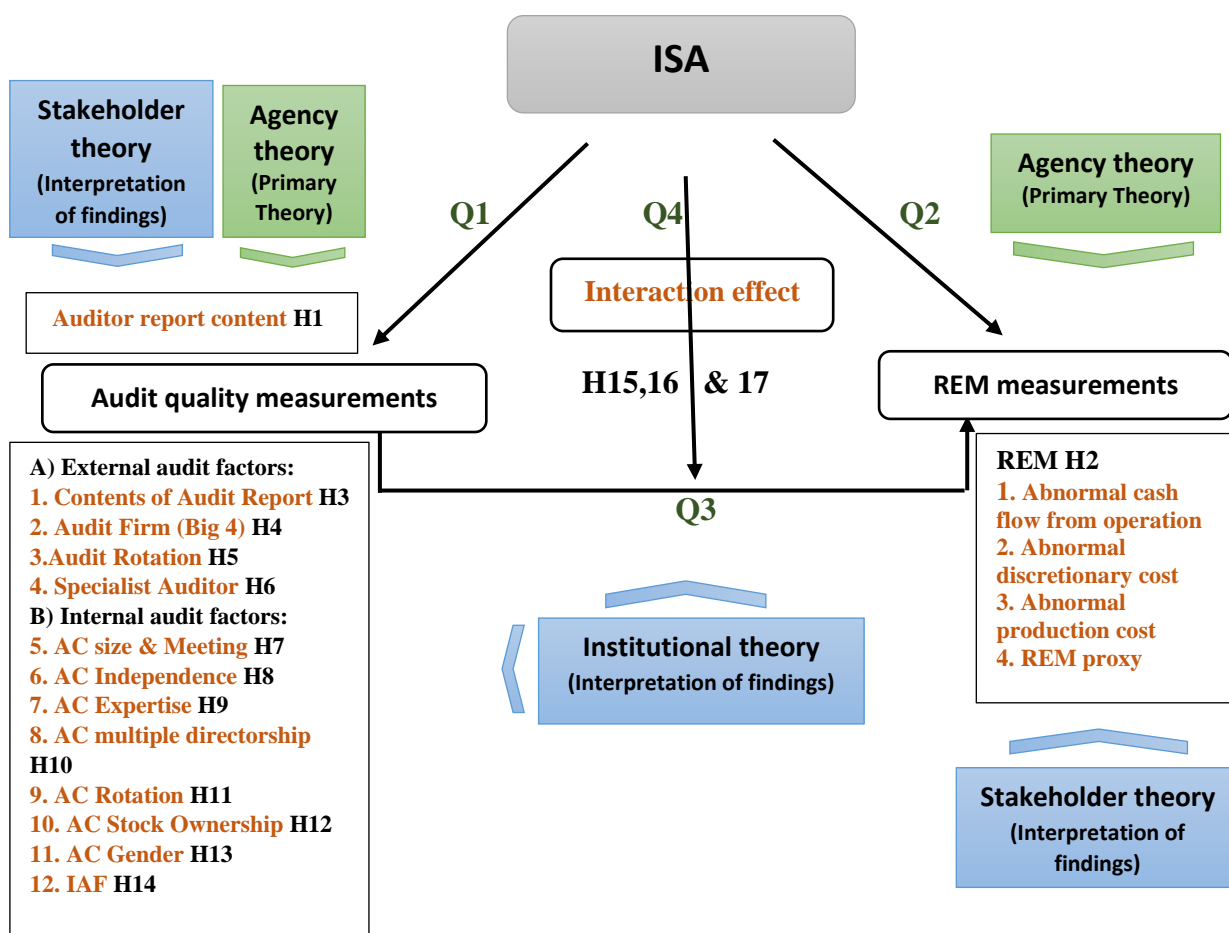


Figure 4.5: Theoretical framework used in the current study

4.3.1 ISA with audit quality and REM measurements

Auditing standards constitute an important part of high-quality audits (Garcia-Benau & Zorio 2004). Burns and Fogarty (2010) assert that the first step to achieving a high-quality audit process is to have high standards. Simunic, Ye and Zhang (2015) stated that audit quality is based on the legal system and the characteristics of auditing standards under which auditors' function. Furthermore, the World Bank (WB) indicates that the strength of auditing standards in a nation can ensure transparency and credibility of financial data (Bookey & Omoteso 2016a). Accordingly, the IAASB seeks to establish and develop international standards for auditing, assurance, and quality control (ISA), to a high quality that suits a profession that is global in reach.

Different viewpoints exist in the literature regarding ISA adoption and audit efficiency, but the evidence to date supports ISA enhances audit quality. For example, to determine the national competitive index in a particular country, the World Economic Forum (WEF) uses ISA as a proxy for strengthening auditing and reporting systems (Bookey & Omoteso 2016a). Also, the WB states that ISA functions as a tool to enhance a country's financial system. Accordingly, Favere-Marchesi (2000) suggested that the ISA can improve audit quality, and this supports Burns and Fogarty (2010) who believed that high-

quality auditing standards (ISA) will influence auditors' behavior positively and help the auditing process. Haapamäki and Sihvonen (2019) suggest that concentrating on ISA, especially in modern studies, has a positive relationship with auditing efficiency. This is explained by ISA requiring auditors to be convinced about the integrity of financial statements and related data as previously mentioned (Alhadab & Clacher 2018). For example, ISA 240 states that the auditor's responsibility is to get reasonable assurance that financial statements are free from material misstatement caused by fraud and/or error. Hence, ISA is key to the improvement of audit standards (Dellaportas, Senarath Yapa & Sivanantham 2008).

However, others propose that the impact of new reporting requirements impose additional pressures on auditors which can result in adverse outcomes for audit quality (KMOG 2015). Also, the new audit reporting requirements may be costly in terms of both resources and time (KMOG 2015; Vanstraelen et al. 2011), and also disclosure of critical audit matters (CAMs) affects an auditor's liability, either increasing or reducing liability (Brasel et al. 2016). The increased expense is due to the possibility of charging high audit fees as a result of exhibiting high attributes of a credence good while reporting requirements (or new changes) may not need to increase fees or prices substantially, or even spend additional auditing time (Causholli & Knechel 2012; Mock et al. 2013). On this basis, it is clear that most studies on accounting and auditing, such as Favere-Marchesi (2000), Garcia-Benau and Zorio (2004), Burns and Fogarty (2010), Simunic, Ye and Zhang (2015) and Haapamäki and Sihvonen (2019), have determined that ISA would be useful in enhancing the quality of a country's audit system. Nonetheless, this study has not found any study that has assessed the effectiveness of ISA adoption empirically in a country. Even if these standards are issued by an internationally accredited body, the empirical investigation of appropriateness and effectiveness in countries with different socio-economic contexts is required to determine the usefulness of such standards. Such investigation will help to refine the standards over time for different countries with diverse needs. Therefore, this study will investigate whether ISA adoption has improved the audit quality of firms in Saudi Arabia. In order to determine whether this is the case, this study will mainly address the following two main questions (with associated hypotheses):

Q1: Did ISA adoption (1) improve audit quality (content of audit reports) and (2) decrease the level of REM in Saudi listed firms?

Two hypotheses emerged from this question:

H1: ISA adoption has improved the contents of audit report.

H2: ISA adoption is negatively related to the level of REM.

Q2: Did audit report content reduce the level of REM post ISA adoption in KSA?

One hypothesis emerged from this question.

H3: REM is negatively related to audit report content post ISA adoption.

4.3.2 Audit quality attributes and EM

External auditing and internal auditing mechanisms (audit committees) are considered as possible tools that could reduce companies' agency problems (Inaam & Khamoussi 2016). An examination of these two factors separately could lead to varied results in the literature, so it would be more useful if studies concentrated on both factors together.

Accordingly, this study will be a more comprehensive one that includes both factors of internal mechanisms and external audits jointly. To support this contention, Van der Zahn, Singh and Singh (2008) showed that the relationship and interaction between external audits and audit committees could potentially enhance the quality of financial and non-financial information provided to independent directors and external stakeholders. These interactions could provide several opportunities to detect if the auditor corroborated with objectivity and honesty to prevent or minimise upward earnings management (Inaam & Khamoussi 2016). Added to this, good audit quality and effective audit committees should reduce EM practices (Lin & Hwang 2010). Consequently, based on the above, the third main question is derived:

Q3: What is the relationship of REM practices with external and internal audits pre and post ISA adoption in Saudi listed firms? **or** are there significant differences regarding the impact of external and internal audits on REM practices in Saudi listed firms post ISA? Compared to the Pre-ISA period and post ISA implementation, internal and external audits are expected to constrain real earnings management activities in Saudi Arabia because their effectiveness is expected to be greater under ISA than under traditional national reporting regimes.

The external audit is measured by four factors, built around three hypotheses:

H4: REM is negatively related to the Big 4 auditors post ISA adoption.

H5: REM is positively related to the retention of the same audit firm for two consecutive years post ISA adoption.

H6: REM is negatively related to industry specialist auditor post ISA adoption.

The internal audit is measured by nine factors (audit committee characteristics, AC and IAF), built around eight hypotheses.

H7: REM is negatively related to audit committee activity (size and frequency of meetings) post ISA adoption.

H8: REM is negatively related to audit committee independence post ISA adoption.

H9: REM is negatively related to accounting and financial expertise on the audit committee post ISA adoption.

H10: REM is positively related to audit committee members with other directorships post ISA adoption.

H11: REM is negatively related to audit committee rotation (at least one) post ISA adoption.

H12: REM is negatively related to audit committee members' stock ownership post ISA adoption.

H13: REM is negatively related to gender diversity on the audit committee post ISA adoption.

H14: REM is negatively related to internal audit function post ISA adoption.

4.3.3 Interaction (incremental) effect of ISA on the impact of audit factors on REM

Both internal and external governance mechanisms play a significant role in overseeing and preventing EM (Inaam & Khamoussi 2016). Therefore, instead of evaluating the separate effects of each mechanism, it is more judicious to integrate various governance mechanisms simultaneously to examine overall governance system efficiency (Zgarni, Hlioui & Zehri 2016). Evidence reveals insights on the interaction between different internal and external mechanisms of governance (Agrawal & Knoeber 1996; Florackis 2005). It is important to investigate complementary or substitute mechanisms for both audit committee characteristics: IFA and audit factors.

It is expected that EM is systematically related to the strength of internal and external mechanisms, including the board of directors, IAF, AC, and choice of external auditor (Davidson, Goodwin-Stewart & Kent 2005). Accordingly, the current study includes the AC, since it is responsible for supervising financial statements and overseeing the interests of shareholders, so the AC must be more efficient and provide maximum transparency (Zgarni, Hlioui & Zehri 2016). Yet this organ of control needs the support of other facets of business, such as external auditing bodies, to detect any suspected manipulation (Zgarni, Hlioui & Zehri 2016), especially post ISA implementation. Zgarni, Hlioui and Zehri (2016) examined the role and interaction of AC effectiveness and audit quality on financial reporting quality (EM). The results indicate that before the enforcement of laws dealing with financial securities, there was a substitute impact between the effective audit committee and presence of the Big 4 auditors to reduce discretionary accruals. Also, they found a complementary relationship between: firstly, auditor industry specialisation and AC effectiveness to constrain EM; and secondly, between audit tenure and AC effectiveness and after the passage of the law. Alzeban (2019) also revealed that all AC and external auditor quality components have a positive impact on FRQ.

Accordingly, the final hypothesis is related to the interaction effect of ISA adoption. Although extensive research has been carried out on audit factors, the audit committee and IAF, there is a lack of research on measuring the extent of their effectiveness in relation to the interaction effect of ISA adoption. Accordingly, this study seeks to address the question of whether ISA interaction impacts the relationship between REM practices and (external and internal) audit factors.

Hence, the fourth main question is derived: **Q4:** Does the interaction of ISA adoption impact the relationship between REM and audit factors in Saudi Arabia (reducing REM)?

The study expects that those factors limit REM in the first place (as will be discussed below), and this restriction will, a fortiori, be greater in light of the interaction effect of ISA adoption. In other words, there are significant differences in the impact of REM on external and internal audit factors when using the interaction effect of ISA adoption.

The remaining hypotheses are:

H15: The interaction of ISA adoption and the index score of four external audit factors is negatively related to the REM proxy (integrate only external factors).

H16: The interaction of ISA adoption and the index score of nine internal audit factors is negatively related to the REM proxy (integrate only internal factors).

H17: The interaction of ISA adoption and the index score of thirteen internal and external audit factors is negatively related to the REM proxy (integrate internal and external factors).

4.4 REM measurements

This study has been unable to source any studies directly examining the link between ISA adoption and REM measurements. However, some studies contend that the quality of auditing and financial reporting has increased as a result of new audit reporting requirements (Li, Hay & Lau 2019; Reid et al. 2019) and these in turn are expected to increase auditor accountability and professional scepticism (KMOG 2015; Peecher, Solomon & Trotman 2013). Accordingly, in the last decade, ISA adoption and harmonisation have become much more globalised and this has made it possible for auditing practices to provide reliable information (Boolaky & Soobaroyen 2017). The reason for this effectiveness is because ISA requires auditors to be convinced of managerial integrity in eliminating opportunistic EM, fraud, and material misstatements (Alhadab & Clacher 2018). For instance, ISA 240 states that it is the auditor's responsibility to obtain reasonable assurance for financial statements free from material misstatement caused by fraud or error. ISA also provides an auditor with mechanisms that allow him or her to inspect both AEM and REM (Alhadab & Clacher 2018). According to ISA 580 (written representations), representations by management allow the auditor to reach a fair and true viewpoint about the credibility of financial reports and related documents (Alhadab & Clacher 2018). Auditors are interested in the following ethical factors: management competence, management integrity, and due care (ISA 580, Section A2). Opportunistic EM, and in particular REM, represent managerial actions that deviate from normal business practice and have real economic consequences for the reporting entity (Alhadab & Clacher 2018).

Nevertheless, the academic literature suggests that audit quality has no impact on EM (Orazalin & Akhmetzhanov 2019), and even with ISA adoption, a high level of EM is still evident (Lento & Yeung 2017). The findings by Chi, Lisic and Pevzner (2011) indicated that even by using high-quality audit indicators like Big N auditors and audit industry experts, managers continue to use REM to generate greater earnings on paper. The reasons for increased REM use (Commerford et al. 2019), as previously mentioned, are that REM is something that is difficult to detect and auditors face unique challenges in differentiating normal business decisions from REM (Roychowdhury 2006). Additionally, employing REM does not violate any regulations or laws (Commerford et al. 2019) as long as the outcomes are properly documented in financial statements (Chi, Lisic & Pevzner 2011). Thus, it is difficult to fully eliminate REM from financial reporting since its use is not always obvious.

4.4.1 Role (effectiveness) of ISA in the presence of IFRS

When a company is audited by a Big 4 audit firm, it is perceived that audit quality will be superior. Nevertheless, audit quality may rely on the type of auditing standards they have employed (Hodgdon et al. 2009). This is consistent with Leuz and Wysocki (2016), who contended that enforcement of new reporting standards and disclosure regulations is significant, but cannot be effective without reliable auditing processes. On this issue, Hodgdon et al. (2009) found that choice of auditor positively influences IFRS compliance after controlling for leverage, profitability, firm size, degree of international diversification, and whether a firm has a US listing or has been audited according to ISA. This proves the importance of auditor choice regarding IFRS compliance. Therefore, the use of ISA is related to high IFRS compliance to achieve financial stability (Humphrey, Loft & Woods 2009).

This viewpoint is similar to those reported by Street and Bryant (2000), Glaum and Street (2003) and Boolaky, Soobaroyen and Quick (2018). When financial statements are prepared in accordance with International Accounting Standards (IAS) and an audit opinion supported by ISA, IAS compliance and disclosure are high (Street & Bryant 2000). IFRS compliance is related to the use of ISA in the audit opinion and subsequently, IFRS compliance is associated positively with firms audited by Big 5 audit companies and to cross-listings on the US stock exchange (Glaum & Street 2003). Boolaky, Soobaroyen and Quick (2018) examined the determinants of auditing and reporting quality (ARQ) in 26 Asia-Pacific nations. The results of the study show that ISA impacts perceptions of ARQ in the presence of the IFRS variable. Hence, ISA adoption provides legitimacy by creating an environment that ensures IFRS is prepared and audited (Boolaky, Soobaroyen & Quick 2018) to promote honesty and transparency for global investors (Humphrey, Loft & Woods 2009).

IFRS is nevertheless expected to curtail different types of EM (e.g., AEM and REM). Previous studies, however, have found that IFRS adoption (Ho, Liao & Taylor 2015; Sohn 2016), strict regulatory (Sarbanes-Oxley Act (SOX) (Cohen, Dey & Lys 2008a), strong legal guidelines (Choi, Choi & Sohn 2018) and stronger investor protection (Enomoto, Kimura & Yamaguchi 2015) reduce accrual-based earnings management, but increase real earnings management. The reason for these results is that firms switch from using AEM to REM for upward earnings management (Choi, Choi & Sohn 2018; Sohn 2016). In this case, this study expects that if IFRS could decrease AEM on one hand, ISA will reduce REM on the other. Thus, according to the above discussion, companies have resorted to employing REM when their ability to manage accruals is constrained due to accepting IFRS (Ho, Liao & Taylor 2015; Sohn 2016) or other government imposed regimes (Choi, Choi & Sohn 2018). Therefore, one significant question that needs to be addressed, since earlier studies have failed to do so is, “to what extent have REM practices been influenced post ISA implementation?” Accordingly, this study expects that implementing ISA will enhance audit quality and reduce REM in Saudi Arabia.

In short, if the study finds a marked reduction in REM post ISA adoption, it is suggested that ISA has affected audit quality and curtailed REM. Conversely, if there is a marked increase in REM after ISA adoption, it is suggested that ISA does not reduce REM and therefore does not impact the relationship between audit quality and REM.

4.5 Audit quality measurements

Simnett, Carson and Vanstraelen (2016) indicated that over the last decade there has been a greater stress on how to measure audit quality output. However, the literature reflects various measures of audit quality that are extremely difficult to measure due to a multi-dimensional construct (Reisch 2000), such as external or internal audit measurements.

4.5.1 External audit quality attributes (factors) and EM

As the main device of CG, the external audit is considered to be a monitoring tool that provides independent verification of financial reports prepared by corporate management (Habib 2013). The IAASB has pointed out that constructive and open relationships between auditors and management can provide several mutual advantages, including enhanced audit quality, improved management earnings, forecasting quality and accuracy, and less forecasting bias (Simnett, Carson & Vanstraelen 2016). This research subsequently focuses on different attributes, since there is no single auditor characteristic that can determine audit quality, as this quality is multidimensional and inherently unobservable (Balsam, Krishnan & Yang 2003; Inaam & Khamoussi 2016). And sometimes, even within the same country, results can be contradictory. This study comprises the following external audit quality dimensions: contents of audit reports, auditor rotation, auditor brand name, and industry specialist auditors. Here, the connections between these dimensions with the level of REM will be examined, followed by the interaction effect of ISA adoption.

4.5.1.1 Contents of audit reports

The audit report is used as the main instrument to communicate with internal and external financial statement users (Fakhfakh & Fakhfakh 2007; Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008). Uniformity in form and content is desirable to promote the reader's understanding of auditors' reports and to measure uniformity in the organisation of such reports (Fakhfakh & Fakhfakh 2007; Gangolly et al. 2002). To harmonise the audit report, international efforts by the International Auditing Practices Committee of the International Federation of Accountants (IFAC) issued ISA 13 in 1983 (Fakhfakh & Fakhfakh 2007), and to provide clarification and address issues relating to the form of the audit report ISA 13, which has been revised twice (in 1989 and 1993) (Gangolly et al. 2002). In 1994, "The Auditor's Report on Financial Statements" (Auditor Report ISA) was issued by the International Federation of Accountants in response to growing concerns about the gap in expectations (King 1999). After several years of improvement and change, ISA 13 was refined to create standard ISA 700 with the same title ("The Auditor's Report on Financial Statements") (Fakhfakh & Fakhfakh 2007). This ISA provides

guidelines and identifies elements of form and content that should be present in the auditor's report (Fakhfakh & Fakhfakh 2007; Gangolly et al. 2002; King 1999). The current five elements are the title of the auditor's report, addressee, date of the report, address of the auditor, and auditor's signature while the 22 elements in the current content describe the introductory paragraph, the scope paragraph (management's responsibility and auditor's responsibility) and the auditor's opinion paragraph (Fakhfakh & Fakhfakh 2007; Fakhfakh 2015; Gangolly et al. 2002; King 1999).

Standards issued by the IFAC always impact the performance of audit reports (Fakhfakh 2016), thus IFAC is frequently revising the International Standards on Auditors (ISA 700) to improve the contents of audit reports (Fakhfakh 2015). Under ISA 700 "forming an opinion and reporting on financial statements", the audit reporting format is prescribed. It follows the standard audit reporting framework with the following four paragraphs: an introduction clarifying the scope of an audit, management's responsibility, auditor's responsibility, and, finally, an opinion paragraph (Habib 2013).

While the audit reports (with modified opinions) are normalised by ISA 705 and ISA 706, the former relates to "Modifications to the Opinion in the Independent Auditor's Report" while the latter relates to "Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Independent Auditor's Report" (Fakhfakh 2015, 2016). More precisely, when the auditor is unable to provide a (clean) unqualified opinion, ISA 705 makes provision for a qualified, adverse, or disclaimer of opinions warranted (Fakhfakh 2016; Habib 2013). Meanwhile ISA 706 deals with additional communication in the auditor's report when necessary to draw users' attention to a certain matter (Fakhfakh 2016). The auditor's responsibilities in auditing financial statements concerning management's use of the going concern (GC) assumption in preparing financial statements is dealt with under ISA 570 "going concern" (Habib 2013).

The accuracy of audit reports is regularly seen as a sign of audit quality (Knechel et al. 2013). ISA determines the contents of audit reports and the quality of documented results (Fakhfakh 2015). The transparency of the audit function is likely to increase with new disclosure requirements under the new audit reporting regime (Li, Hay & Lau 2019). A comparison of pre and post ISA 13 for 450 auditors' reports in 33 countries by Gangolly et al. (2002), revealed: (1) the number of audit reports with separate introductory/scope/opinion paragraphs increased from 191 to 280 reports; (2) the disclosure that "the audit provides a reasonable basis for opinion" increased from 28 to 152 reports; (3) the disclosure that "the financial statements are management's responsibility" increased from 0 to 157 reports; and (4) the use of phrases "present fairly" or "true and fair view" increased in many countries. In general, disclosure is the information released by a firm – whether qualitative or quantitative, financial or non-financial, mandatory or voluntary through formal or informal channels (Gibbins, Richardson & Waterhouse 1990). This is a general definition, so it is important to focus on the definition of quality instead of disclosure. Disclosure quality can be defined as "completeness, accuracy, and reliability" (Singhvi & Desai 1971,

p. 131) and “the precision, timeliness, and quantity of information provided” (Brown & Hillegeist 2003, p. 5). Therefore, the “more extensive disclosures are likely to be more informative than brief disclosures and are, therefore, an indicator of greater transparency” (Katmun 2012, p. 18). This is consistent with the view that “the extent of disclosure (i.e. quantity) is an adequate measure of the quality of disclosure” (Beretta & Bozzolan 2008, p. 335). Further, an index of disclosure is a suitable proxy to gain insight about the level of information disclosed by firms (Hossain, Perera & Rahman 1995). However, there is no perfect definition of disclosure quality (Debreceeny & Rahman 2005) and it is impossible to define the best measure of disclosure (Beretta & Bozzolan 2008).

Also, various studies have reported differences (Bychkova & Lebedeva 2001) while others have found similarities (Gangolly et al. 2002; Lin & Chan 2000) between national and international standards. For example, a Russian report would represent more detail compared to International Federation of Accountants (IFAC) requirements (Bychkova & Lebedeva 2001). There are similarities between a Chinese standard and ISA 700 in content, structure, and format, but there are a few differences in terminology (e.g. audit report title) and in some guidelines provided (Lin & Chan 2000). In other words, the Chinese audit report is not standardised, unlike ISA 700 which provides guidelines on standardised wording (Lin & Chan 2000). In the same way, a comparative study in 33 countries found a higher degree of conformity with ISA 700 requirements generally (Gangolly et al. 2002). Also, the content and form of the Tunisian audit report do not fully and equally comply with 5 out of the 26 elements (Mondher et al. 2007); and furthermore, do not conform fully with all elements of content and structure of reports as standardised by the IFAC (Fakhfakh & Fakhfakh 2007; Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008).

Due to restricted contents of the audit report, some argue that its effectiveness, as an indicator of audit quality, is limited (Knechel et al. 2013). The literature synthesis conducted by Church, Davis and McCracken (2008) pointed out that despite the symbolic value of auditors’ reports, they convey little communicative value (e.g., there is no disclosure for the inputs of the auditor’s reporting decision). Also, due to the “communication and information gap” between auditors and users, undisclosed entity information (efforts underway to mitigate going concern issues) and undisclosed audit information (audit procedures implemented to respond to particular identified risks), in relation to the current auditor’s report, are limited (Mock et al. 2013). Gutierrez et al. (2018) found that a variation in expanded contents of audit reports had no significant effect post regulatory change on investor reaction to the release of auditors’ reports, audit quality and/or audit fees.

The usefulness of accounting information can be influenced by quality of audit reports. Comprehensibility is important for analysis of audit information, while incomprehensibility increases both the complexity of financial statements and ambiguity of accounting information (Fakhfakh 2015, 2016). Changes to disclosure in the audit report can have a substantial impact on how users interpret the

auditor's function and responsibilities (Mong & Roebuck 2005). Here, improved content is a tool, describing and promoting the quality of the audit report, so this study focuses on content post ISA adoption. Not only content, but also interpretation and application of auditing standards are influenced by differences between countries in terms of their legal system, culture, and litigation risk, and general expectations about the role of auditors, and how they define and interpret their responsibilities according to the factors operating in the auditing environment (Sormunen et al. 2013). In other words the current environment is important for auditor reporting behavior and the way standards are applied in extant practice (Sormunen et al. 2013). Accordingly, changes within, and differences between, auditing environments can impact audit reports, but we do not know whether and how the impact of ISA adoption varies from country to country (Sormunen et al. 2013); thus, this study examines audit reports in Saudi Arabia.

Previous research, in fact, does not consider the contents of audit reports, since no attempt has been made to quantify the existing distinction post new reforms and enactment. This weakness will be covered by investigating content pre and post ISA adoption and relate it with REM. As explained earlier, the research to date has not examined the effectiveness of ISA implementation on audit quality in an empirical sense (Haapamäki & Sihvonen 2019). Consequently, to assess whether audit reports are influenced by ISA adoption, the study examines the contents of audit reports in terms of disclosure and number of elements adopted by external auditors (e.g., audit procedures and management and auditor responsibilities). The relationship between contents of audit reports and REM practices post ISA adoption is investigated. The expected outcome is that contents of audit reports (1) will be improved after ISA adoption, and (2) should reduce REM post ISA adoption.

4.5.1.2 Auditor brand name (Big N)

Many studies use audit firm size (Big N versus non-Big N) as a proxy for audit quality (Chi, Lisic & Pevzner 2011; Habbash & Alghamdi 2017). Big N auditors provide high-quality audits more frequently than non-Big N auditors, so more credibility is given to financial statements audited by the former (Chi, Lisic & Pevzner 2011). This is confirmed by Garcia-Benau and Zorio (2004) who revealed that audits conducted by the Big 5 firms complied more regularly whether with ISA or local GAAP standards. Keefe, King and Gaver (1994) revealed that violations of GAAS are fewer for large audit businesses. A comparison study (pre and post ISA 13) by Gangolly et al. (2002) found there is less harmonisation of audit reports in firms that switched from Big-6-8 auditors to non-Big-6-8 auditors. Compared to smaller accounting firms, audit reports issued by large (Big-6-8) accounting firms were better harmonized regarding form and content (Gangolly et al. 2002). Zureigat (2015) indicated that modified audit reports are more regularly issued by large auditors compared to smaller ones. This demonstrates the ability of large accounting firms to comply with auditing standards, harmonisation and improving the quality of audit documentation.

With respect to EM, meta-analysis findings reveal a significant negative association between auditor's size (Big N firm) and earnings quality (Inaam & Khamoussi 2016; Lin & Hwang 2010; Zehri & Zgarni 2020), so that audit size is statistically significant in reducing EM. Becker et al. (1998) stated that the absolute value of discretionary accruals is less frequent with Big N auditors and Balsam, Krishnan and Yang (2003) revealed that clients of Big 5/6 firms have less than the absolute level of discretionary accruals (DAC). Davidson Iii, Jiraporn and DaDalt (2006) revealed that the level of EM is larger in firms switching from Big 6 to non-Big 6 auditors after receiving a modified audit opinion from their original auditor. Likewise, REM can be impacted by the presence of a Big 4 auditor. Choi, Choi and Sohn (2018) examined if REM is influenced by such presence in their analysis of data for 22 countries. They indicated that the presence of a Big 4 auditor decreases REM and AEM and can reduce the positive association between REM and a strong legal system in a country (Choi, Choi & Sohn 2018). Alhadab and Clacher (2018) reported similar results by observing that high-quality auditors (Big N audit firms) discourage manipulation of REM that occurs for discretionary expenses and accruals. In the case of ISA, Alhadab and Clacher (2018) concluded that the approach employed to detect REM partially restricts REM when a Big N auditor is present. In contrast, Chi, Lisic and Pevzner (2011) noted that levels of REM are higher with Big N auditors, since the business has a limited ability to manage accruals. Also, Davidson, Goodwin-Stewart and Kent (2005) and Piot and Janin (2007) do not succeed to confirm that the Big N auditors decreases the level of discretionary accruals and abnormal accruals.

Based on the literature, there are mixed findings regarding the use of Big N auditors. It seems that most previous analyses agree that the presence of a Big N auditor enhances audit quality, resulting in less earnings management practice. However, the literature would have been more useful and relevant if researchers had examined whether the presence of a Big N auditor reduces or increases REM, as managers resort to REM instead of AEM. This is evident in the work of Chi, Lisic and Pevzner (2011) as indicated previously. Consequently, the current study will examine whether Big N auditors reduce REM on one hand and whether their relationship is influenced in light of ISA adoption on the other. It is expected that Big N auditors should be able to reduce REM, whether in the presence of ISA or not.

4.5.1.3 Auditor rotation (change or tenure) (auditor independence)

Audit tenure is the time spent on audit engagement. Previous studies have used auditor rotation as an indicator of audit quality (Habbash & Alghamdi 2017). The length of auditor tenure can compromise the extent of auditor independence (Lys & Watts 1994). In other words AC, which has a long-lasting relationship with external auditors, engenders a high level of confidence and dependence between managers and auditors, and in turn this may increase EM (Inaam & Khamoussi 2016). Hence, the reason for restricting the tenure of an auditor is to maintain audit quality and integrity, as long tenure periods may lead to over familiarity with a client (Carey & Simnett 2006). Consistent with this argument, using meta-analysis, Lin and Hwang (2010) and Inaam and Khamoussi (2016) observed that auditor tenure has a significant negative relationship with EM. Carey and Simnett (2006) used data from Australia to

investigate the relationship between long audit partner tenure and audit quality. They found evidence of beating (missing) earnings benchmarks and a reluctance to issue a going-concern audit opinion for distressed companies, which reflects a possible deterioration in audit quality. In a similar study in Spain, González-Díaz, García-Fernández and López-Díaz (2015) observed that audit quality declined as the length of audit tenure increased (more than five years) in non-profit organisations. Moreover, Simunic, Ye and Zhang (2017) concluded that rotating auditors can improve audit quality in some circumstances, while Chi, Lisic and Pevzner (2011) found that longer auditor tenure relates positively to REM. Thus, the rotation of auditors can reduce REM, which enhances audit quality.

Nonetheless, other authors have disagreed with the contention that long audit tenure necessarily means poor audit quality and a decline in earnings quality (Chen, Lin & Lin 2008). They claim that longer tenure means the expert auditor is better at assessing risk of material misstatements and can deliver more insights about a clients' business and its internal mechanisms (Arens, Elder & Mark 2012; Inaam & Khamoussi 2016). The study by Chen, Lin and Lin (2008) observed that firms have a low level of discretionary accrual with long-tenured auditors, while Reichelt and Wang (2010) considered that a lengthy auditor tenure will reduce the magnitude of abnormal accruals. In the United States, Manry, Mock and Turner (2008) argued that audit partner tenure and discretionary accruals have a negative relationship when tenure exceeds seven years with smaller clients. Others found that auditor rotation has no relationship with earnings management. For example, Jackson, Moldrich and Roebuck (2008) found no increase or decrease in audit quality (proxied by the level of discretionary expenses), conditional on the length of auditor tenure. Also, based on the sample of firms that changed their auditors during the last year with their original auditor, DeFond and Subramanyam (1998) found that discretionary accruals reduce income and are insignificant during the first year with the new auditor. Davidson Iii, Jiraporn and DaDalt (2006) found that EM does not increase following a change of auditor. Thus far, there are different perspectives on the tenure of audit partners.

However, criticism of much of the literature about EM is that the research to date has tended to focus on AEM rather than REM in most contexts. This study will consider a research gap, whether there is a significant association between REM and the rotation of auditors, and whether there is a significant association in light of ISA adoption. Based on Chi, Lisic and Pevzner (2011), there is a strong possibility that long tenure can compromise auditor independence and motivate managers to encourage personal gain. Consequently, the current study argues that rotation of auditors reduces REM.

4.5.1.4 Industry specialist auditors

Specialization is based on training and practical experience gained from auditing in a particular industry, considered as a proxy for auditor expertise (Gramling & Stone 2001). Industry specialist auditors are defined as "auditors who have developed specific expertise and are therefore able to provide high quality and more efficient services to their clients" and "over the years, research scholars have developed a

multiplicity of measures of industry specialization (ISP)" (Audousset-Coulier, Jeny & Jiang 2016) To elaborate, specialised auditors invest in industry-specific specialization costs such as personnel, technology and training to develop and maintain industry expertise (Reichelt & Wang 2010). The more experienced auditors outperform less experienced ones (Bonner & Lewis 1990), as those with more experience can identify errors (Bédard & Biggs 1991) and fraud (Johnson, Jamal & Berryman 1991). Also, experienced auditors comply with auditing standards, protecting their reputation through diligent compliance with standards (i.e. GAAP) (Keefe, King & Gaver 1994).

Therefore, much of the literature emphasises that auditor expertise is critical in enhancing audit quality and this has been used as a proxy for audit quality (Habbash & Alghamdi 2017). A well-known example is Reichelt and Wang (2010) findings, which reveal that audit quality is higher when the auditor is an industry specialist. Such auditors not only support audit quality but also enhance the reliability of financial reporting (Chi, Lisic & Pevzner 2011). This can be illustrated directly by the results of meta-analysis that show a significant negative association between employment of an industry specialist and EM (Inaam & Khamoussi 2016; Lin & Hwang 2010). Elsewhere, Balsam, Krishnan and Yang (2003) found low levels of AEM with industry specialists, which means that earnings quality is higher. In addition, Krishnan (2003) conducted a study that reported similar results. Wang et al. (2015) found that experience was negatively associated with absolute/income-increasing abnormal accruals. The effectiveness of industry specialist technique has been noted with REM in Choi, Choi and Sohn (2018) study. The evidence indicates that high-quality auditors reduce REM, especially in nations maintaining strong legal standards (Choi, Choi & Sohn 2018). Cahan and Sun (2015) results indicated that higher-quality audit services are offered by more (than less) experienced CPAs. This finding suggests that experienced auditors are more skilled in limiting absolute discretionary accruals. Thus, there is a positive association between high-quality external auditing by external auditors (Osée 2016) and auditor competence (Halim, Sutrisno & Achsin 2014), meaning the more audit qualifications and experience, the higher the quality of the external audit.

In contrast to earlier findings, evidence reveals that auditor expertise does not affect external audit quality (Augustine et al. 2014). Regarding EM, evidence reports an insignificant difference in earnings quality (Lawrence, Minutti-Meza & Zhang 2011) while a negative association between absolute discretionary accruals and audit experience was found (Cahan & Sun 2015). Furthermore, there is evidence that industry specialist auditors are associated with a high level of REM. This has been proved in the study by Chi, Lisic and Pevzner (2011), but only in one case, when the firm's ability to manage accruals was restricted. The evidence presented thus far supports the contention that there are mixed outcomes regarding industry specialist auditors and EM.

Based on most of the previous results, industry expert auditors minimize the ability of company managers to manage earnings. However, previously published research on the subject has been mostly restricted to AEM. Researchers have not investigated this issue in much detail regarding REM,

especially post new audit reforms and/or standards. Consequently, this study will examine whether industry expert auditors restrict REM practice by exploring their relationship pre and post ISA implementation. It is expected in the current study that industry expert auditors can also limit REM, especially post ISA adoption.

4.5.2 Internal (AC and IAF) auditing mechanisms and EM

Bédard, Chtourou and Courteau (2004) noted a significant relationship between audit committee governance and EM practices. Likewise, internal auditing is a monitoring tool that limits opportunistic behavior by managers who attempt to manage or manipulate earnings (Alzoubi 2019). The findings by Cohen, Krishnamoorthy and Wright (2004) indicate that, taken together, the audit committee and internal audit function can play a significant role in improving and monitoring FRQ. In support of this viewpoint, the current study examines whether the internal audit function and audit committee characteristics can reduce REM.

The audit committee is a sub-committee of the board of directors and allows official communication to occur between external auditors, internal control systems, and the board of directors (Alzoubi 2019). The committee also supervises the FRQ process and monitors management behavior (Alzoubi 2019). Audit committee characteristics give more detailed information about what is required to improve the financial reporting process (Inaam & Khamoussi 2016). Also, the audit committee influences choice of an external auditor (Knapp 1991) and one significant role of the audit committee is to protect external auditors from dismissal if an unfavourable report is issued (Carcello, J. V. & Neal, T. L. 2003). As stated by Bédard, Chtourou and Courteau (2004) the presence of an audit committee can diminish opportunistic EM in several ways (Herdman 2002). First, the committee could evaluate independence and competence of external auditors. Second, the committee could discuss major accounting judgements with external auditors and company management. Third, the committee could be given investigative powers to determine the nature and extent of issues that auditors and managers raised and determine appropriate outcomes. Also, as mentioned before, the AC plays a significant role in monitoring the financial reporting process and internal activities, and this is the best way to detect and punish REM activities (Sultana, Cahan & Rahman 2020).

Consistent with this perspective, Dechow, Sloan and Sweeney (1996) observed that companies are less likely to manipulate earnings if there is an audit committee. Piot and Janin (2007) and Davidson, Goodwin-Stewart and Kent (2005) reported that the presence of an audit committee limited the level of EM practices regarding abnormal and discretionary accruals in France and Australia, respectively. Similarly, in a more recent study, Alzoubi (2019) examined how audit committees improved FRQ and reduced levels of EM in Jordan. Despite the benefits of audit committees, evident in many studies, Baxter and Cotter (2009) found that the formation of an audit committee does not decrease accrual

estimation errors, but curtails international EM in Australian listed companies. Also, meta-analysis by Inaam and Khamoussi (2016) found no significant relationship between audit committee existence and EM. Nonetheless, the literature has convincingly proved the effectiveness of audit committees.

Although extensive research has been carried out on the effectiveness of audit committees, there is a lack of research on measuring the extent of AC effectiveness in reducing REM practices. Overall, since ISA requires external auditors to communicate with companies' audit committees, a significant question should be asked – ignored in earlier investigations: to what extent is the audit committee effective post ISA implementation in reducing REM practices? Audit quality in detecting REM practices will improve due to the interaction and communication that takes place between both parties. Accordingly, in the current study, an association between the audit committee and earnings quality which influences REM will be apparent. There are in fact several characteristics that can impact the audit committee's effectiveness; thus, it is important to study these characteristics to determine which ones are more effective in reducing REM activities. This study not only focuses on characteristics that involve communication and relationships between the firm and external auditors (e.g., independence, and expertise), but also other AC characteristics, for example, activity (size and meetings), stock ownership, additional directorships, rotation, and gender.

4.5.2.1 AC activity

Audit committee activity can be determined by AC size and frequency of meetings (Bédard, Chtourou & Courteau 2004). First, frequency of AC meetings is a significant attribute and credible measure to assess efficiency and activity (Vafeas 2005; Zehri & Zgarni 2020). It is, however, also necessary to give AC members enough time to perform their job in controlling the financial reporting process (Inaam & Khamoussi 2016; Vafeas 2005). The AC must hold at least four meetings per year (Vafeas 2005). In this regard, there are mixed results. Meta-analysis conducted by Lin and Hwang (2010), Inaam and Khamoussi (2016) and García, Barbadillo and Pérez (2012) confirm a significant negative relationship between EM and frequency of AC meetings. This shows that the more the committee meets, the more members efficiently undertake their oversight responsibilities (Zehri & Zgarni 2020). The audit committee that meets regularly during the year is more active in controlling the process (Zehri & Zgarni 2020), mitigating EM (Inaam & Khamoussi 2016; Xie, Davidson III & DaDalt 2003) and detecting possible errors in financial statements (García, Barbadillo & Pérez 2012). In contrast, others detect no correlation between frequency of AC meetings and aggressive EM (Baxter & Cotter 2009; Bédard, Chtourou & Courteau 2004; Yang & Krishnan 2005). Ghosh, Marra and Moon (2010) also observed that EM is positively associated with frequency of AC meetings. This shows that the AC normally reacts to a problem through frequent meetings and close monitoring, but this is not really a proactive measure that can limit managerial reporting discretion (Vafeas 1999). Thus, the literature examined the efficiency of AC meeting frequency and found ambiguous results.

Second, evidence shows a variety of results on the impact of AC size on EM. Meta-analysis conducted by Lin and Hwang (2010), Inaam and Khamoussi (2016) and García, Barbadillo and Pérez (2012) found a significant negative association between AC size and EM. This supports the significance of having a large AC (Inaam & Khamoussi 2016). Ghosh, Marra and Moon (2010) indicated that a large AC is less likely to miss the EM problem. The audit committee is more effective in monitoring financial reporting, since they have varied expertise (Baxter & Cotter 2009), as it is not just about including additional members but also breadth of experience and knowledge (Ghosh, Marra & Moon 2010). In contrast, Yang and Krishnan (2005) found a significant negative association between AC size and EM, indicating that a large AC is related to low quarterly EM. A small AC however may improve the quality of financial reporting (Zehri & Zgarni 2020). A large AC can undermine the directors' performance due to the challenges of coordination, unfocused communication, poor organisation and diffusion of responsibility which can weaken monitoring (Vafeas 2005). Others have observed there is no significant correlation between aggressive EM (Bédard, Chtourou & Courteau 2004), audit quality (Baxter & Cotter 2009) and REM (Sun, Lan & Liu 2014) with AC size. Therefore, the ideal AC size is large enough to supervise well, but small enough to be controllable. It is suggested that the ideal average size should be at least three to four members (Vafeas 2005).

According to the above discussion, the efficiency of the AC regarding frequency of meetings and size have been examined, but findings are mixed. It is expected that AC activity will be determined by size and frequency of meetings, and a large AC will operate better. Further, this AC will be more active post ISA adoption to ensure the credibility of financial statements before hiring an external auditor, which leads to high-quality financial reporting and auditing. Accordingly, this study assumes that attributes of AC activity (size and frequency of meetings) reduce the level of REM; therefore, the association (correlation) between them and the effect, pre and post ISA adoption will be examined.

4.5.2.2 AC independence

Independence of the audit committee influences its effectiveness in supervising the financial reporting process (Baxter & Cotter 2009) and in protecting external auditors from dismissal following the issuance of unfavourable reports (Carcello, J. V. & Neal, T. L. 2003). In other words, Carcello, J. V. and Neal, T. L. (2003) found that a more independent audit committee is more effective in shielding auditors and supporting them in final auditing decisions.

Meta-analysis conducted by Lin and Hwang (2010), Inaam and Khamoussi (2016), Zehri and Zgarni (2020) and Klein (2002) confirmed a negative relationship between audit committee independence and EM. This indicates that AC independence is statistically significant in reducing EM (Zehri & Zgarni 2020). Additionally, if the majority of audit committee members are independent, the AC will be able to exert a significant impact on the level of abnormal accruals (Klein 2002). Further, data from Bédard, Chtourou and Courteau (2004) study prove that aggressive EM is negatively associated with indicators of audit committee independence. AC members should be independent, as Dhaliwal, Naiker and Navissi

(2010) suggested. However, Ghosh, Marra and Moon (2010) observed that EM does not vary with the percentage of outside directors on the AC. Also, evidence shows that committee independence does not limit EM (Piot & Janin 2007) while some reports have found an insignificant relationship between AC independence and AEM on the one hand (Baxter & Cotter 2009; García, Barbadillo & Pérez 2012; Osma & Noguera 2007) and quarterly discretionary accruals on the other (Yang & Krishnan 2005).

The independence of the audit committee increases its effectiveness in limiting EM practices. Despite this point, research on the subject has been mostly restricted to AEM more than REM as previously mentioned for some studies. Accordingly, this thesis will consider two points that have largely been ignored. It is important to investigate the association between the independence of the AC and REM practices and measure to what extent the relationship is affected pre and post ISA adoption. This study predicts that the audit committee's independence enhances audit quality and detects (reduces) REM manipulation.

4.5.2.3 AC expertise

There is no agreement about what "financial expertise" represents or how to determine it (Inaam & Khamoussi 2016). However, AC members' financial accounting expertise can enhance the committee's work in overseeing the financial reporting process (Sun, Lan & Liu 2014). This is evident in the viewpoints that follow. First, the existence of financial expertise in the audit committee supports its overall effectiveness (Zehri & Zgarni 2020) and enhances external audit quality (Ghafran & O'Sullivan 2017). Second, financial expertise allows for a better risk assessment of company transactions and auditing scope (Berkman & Zuta 2020), and encourages rigor when dealing with managers' accounting discretion (Zehri & Zgarni 2020). This was noted by Asiriuwa et al. (2018) in their study that found the number of experts on the AC is positively associated with audit quality.

With respect to EM, meta-analysis findings confirm the significant negative association between AC expertise and EM (Inaam & Khamoussi 2016; Lin & Hwang 2010; Zehri & Zgarni 2020). Bédard, Chtourou and Courteau (2004) discovered that the presence of financial experts on the AC is negatively associated with aggressive EM. Lee and Park (2019) determined that accounting expertise on the audit committee is directly connected with how an audit committee can work to restrict managerial opportunism and manage the tone of management discussion and analysis (MD&A). Moreover, Bédard, Chtourou and Courteau (2004) noted a negative association between financial expertise of AC members and aggressive EM. On this issue, Dhaliwal, Naiker and Navissi (2010) found that an AC that contains at least one financial accounting expert has a higher accrual quality and Baxter and Cotter (2009) found that accrual estimation errors remain low when the proportion of accounting expertise on the AC is high. The above discussion supports the idea that accounting expertise increases monitoring by the AC and, subsequently, the quality of financial reporting (Visvanathan & Krishnan 2008). However, Ghosh, Marra and Moon (2010) observed that EM does not lessen, despite the AC's financial expertise. There

is also some evidence that there is no significant association between AC financial expertise and quarterly discretionary accruals (Yang & Krishnan 2005) and REM practices (Sun, Lan & Liu 2014).

Based on the above findings, the effectiveness of the audit committee increases if there is a financial expert present, as this person can help to constrain AEM effectively. Likewise, the study expects that the presence of a financial or accounting expert will provide the overall audit committee with greater knowledge and experience in detecting REM. However, the literature does not consider the relationship between audit committee expertise and REM practices, whether ISA has been implemented or not. Hence, the study predicts that the presence of accounting personnel with financial expertise on the AC reduces the level of REM, especially post ISA adoption.

4.5.2.4 AC additional directorships

There are mixed results about the AC's effectiveness when outside directors work on other corporate boards. Evidence claims they may have greater reputational capital that drives them to work more efficiently (Shivdasani 1993), and have better expertise and experience in supervising managers (Bédard, Chtourou & Courteau 2004). Empirically, Ferris, Jagannathan and Pritchard (2003) supported the call that board directors who hold various directorships serve more actively on board committees. Also, evidence finds that the number of outside directorships held by AC members is negatively correlated with aggressive EM (Bédard, Chtourou & Courteau 2004; Yang & Krishnan 2005). This indicates they are more effective in reducing quarterly discretionary accruals (Yang & Krishnan 2005) and constraining EM in general (Bédard, Chtourou & Courteau 2004). This could refer to the potential independence of those members, as their desire is to preserve their reputation and/or expertise (Fama & Jensen 1983) by dealing with financial reporting matters (Yang & Krishnan 2005).

Others claim that directors who work on additional boards become less effective because they are too busy (Core, Holthausen & Larcker 1999; Fich & Shivdasani 2006). Evidence finds that AC members' additional directorships are positively correlated with REM (Sun, Lan & Liu 2014). This supports the view that AC member's busyness weakens their monitoring effectiveness (Sun, Lan & Liu 2014). Thus, evidence suggests they should be relatively free from commitments to other firms (Dhaliwal, Naiker & Navissi 2010). Likewise, the question here is whether directors on the AC with additional directorships have good or poor monitoring skills on REM, and whether this monitoring is affected by ISA adoption. It is expected that AC members with additional directorships contribute to increased levels of REM in the current study.

4.5.2.5 AC rotation

AC directors with long board tenure may have more comprehensive expertise and experience in the supervision of financial reporting (Sun, Lan & Liu 2014) as they gain job-relevant knowledge over time. Also, they may be more committed to their duties and more effective in overseeing managers (Sun, Lan & Liu 2014). Evidence has proven this, for example, Ghosh, Marra and Moon (2010) observed that AC

directors with longer tenure are more effective in reducing EM. Furthermore, Yang and Krishnan (2005) recognised that the average tenure of AC is negatively related to quarterly EM, associated with lower EM. This supports the finding that when tenure of directors increase, discretionary accruals decrease (Kim & Yang 2014). A potential positive impact is suggested from having more knowledge and experience with a particular firm and its operations; thus, increased and effective monitoring of earnings quality can be established by learning on the job (Inaam & Khamoussi 2016; Yang & Krishnan 2005).

Those directors may, however, develop closer relationships with managers which may compromise monitoring effectiveness (Vafeas 2003). High monitoring effectiveness, commitment, and experience could be weakened as a result of such relationships (Sun, Lan & Liu 2014). Evidence found a negative association between the tenure of AC members with abnormal accruals (Bédard, Chtourou & Courteau 2004) and a positive relationship with accruals quality (Dhaliwal, Naiker & Navissi 2010), which indicates that AC should comprise recent appointees. Also, Chan, Liu and Sun (2013) found that the audit effort wanes when AC members have a long tenure. Other studies found no significant evidence of a correlation between REM and AC tenure (Sun, Lan & Liu 2014). In this regard, long board tenure may affect monitoring effectiveness, not only on AEM, but also REM. Therefore, it is expected in the current study that long tenure does affect the quality of financial reporting negatively, so rotation is the appropriate solution. The relationship between audit committee rotation and REM will be examined and the impact measured post ISA adoption.

4.5.2.6 AC stock ownership

Corporate ownership may play a key role in the oversight mechanisms that are utilised to reduce the probability of manipulation (Wei 2007). It is expected that ownership led to a closer alignment of interests (Peasnell, Pope & Young 2005), which assists to mitigate agency problems between different stakeholders, and to reduce agency costs (Jensen & Meckling 1976; McKnight & Weir 2009). In other words, since the directors of these [joint stock] firms manage other people's money rather than their own, it cannot be assumed they will guard it with the same keen attention the partners in a private partnership diligently guard their own. Therefore, in the management of the affairs of such a firm, negligence and excess might constantly predominate, more often than not (Jensen & Meckling 1976). AC stock ownership has an impact on AC effectiveness, so mixed results have been reported. Evidence claims audit committees with large shareholdings can motivate the monitoring of managers, since their equity holdings serve as mechanisms to align the interests of shareholders with those of outside directors (Shivdasani 1993).

By contrast, some studies found that having stock ownership of AC members does not reduce EM (Ghosh, Marra & Moon 2010). Empirically, meta-analysis conducted by Lin and Hwang (2010) found a positive impact of audit committee share ownership on EM. Yang and Krishnan (2005) observed that the extent of stock ownership by both independent and non-independent AC is positively related to quarterly EM. When independent directors are granted stock ownership, monitoring benefits seem to be

eroded, suggesting that stock ownership by the AC is undesirable (Yang & Krishnan 2005). Others found no significant evidence of correlation between REM and AC stock ownership (Sun, Lan & Liu 2014).

Consequently, we suppose that directors' stock ownership increase integrity which can lead to high monitoring effectiveness of REM. This study will examine whether the AC's stock ownership reduce REM practice by examining their relationship pre and post ISA.

4.5.2.7 AC gender

Board gender diversity is based on differences in executive characteristics and backgrounds. Making decisions can be influenced by differences in gender, behavior (Johnson & Powell 1994), personal roles, values, culture, and incentives of executives. However, gender diversity literature suggests that women tend to be more ethical, conservative, honest, accurate, risk-averse, stricter in monitoring (Vähämaa 2017) and trustworthy (Heminway 2007) in their managerial style. Gender diversity enhances independence, as a female is unlikely to be associated with an all-male network (Zalata, Tauringana & Tingbani 2018) Abbasi, Alam and Bhuiyan (2020). Also, women are more likely to take action (lawful or unlawful) for the benefit of others (such as corporations and shareholders) and less likely than men to act for their own personal benefit (Heminway 2007). One example supporting this view is the Enron case, as most officials were men who simply wanted to enhance their own interests and salaries (Heminway 2007). These female attributes lead to higher quality governance practices (Vähämaa 2017). Hence, after the collapse of Enron, corporate governance regulations were overhauled by policy-makers and regulators by incorporating gender diversity (Wahid 2019).

Empirically, Huang and Kisgen (2013) investigated financial and investment decisions, and found that compared with women, men exhibit relative overconfidence in significant corporate decision making. This finding indicates that female executives make decisions that are better for shareholders' wealth (Huang & Kisgen 2013; Zalata, Tauringana & Tingbani 2018). Recently, Abbasi, Alam and Bhuiyan (2020) observed that audit quality is positively associated with the presence of female directors and female accounting experts on the AC, which confirms the view that female experts can provide more thorough oversight of financial reporting. Other evidence discovers that female directors on the AC increase transparency, disclosure and reduce the omission of required information, errors, non-compliance (Pucheta-Martínez, Bel-Oms & Olcina-Sempere 2016). Female financial experts on the AC are significantly associated with reduced EM (Zalata, Tauringana & Tingbani 2018). In contrast, the evidence of a link between female audit committee directors and audit quality is limited (Abbasi, Alam & Bhuiyan 2020). Further, Sultana, Cahan and Rahman (2020) found that the positive relationship between audit quality and AC gender diversity is actually weak. This is consistent with the view that audit quality can decline despite gender diversity guidelines, as there is an increase in the demand of female directors' without an appropriate increase in the supply of the right qualifications (Sultana, Cahan

& Rahman 2020). Thus, the examination of AC gender diversity reports mixed findings. However, the presence of women on the AC may help reduce earnings manipulation and enhance credibility and reliability of financial reporting. Accordingly, the current study seeks to discover whether there is a relationship between the presence of women on the AC and REM by examining this issue before and in light of ISA adoption.

4.5.2.8 Internal audit function

The internal audit is “a function of assistance offered to the leadership of entity in order for them to better manage activities; it expresses judgments on all decisions taken by the leadership that ensure the normal and efficient functioning of its activities, and its objective is to create added value” (Petraşcu & Tieanu 2014, p. 489). To date, the literature has highlighted the effectiveness of the presence of the Internal Audit Function (IAF). This effectiveness has been demonstrated in the study by Church, McMillan and Schneider (2001) who found that internal auditors are more sensitive to elements that include fraud in financial reporting and can better explain what occurred in fraud cases. Consistent with this argument, the study conducted by Coram, Ferguson and Moroney (2008) states that organizations with an IAF are better able to detect self-reporting fraud than workplaces without an IAF. Additionally, Gras-Gil, Marin-Hernandez and Garcia-Perez de Lema (2012) asserted that the quality of financial reporting increases when an internal audit is scheduled to review financial reports. On the question of EM, Prawitt, Smith and Wood (2009) found that IAF quality is linked to moderate levels of EM. Analysis by Bajra and Cadez (2018) established that the IAF mechanism has a negative, direct impact on deterring EM in European firms. In a similar case concerning listed companies in Jordan, Alzoubi (2019) observed that IAF enhances FRQ and decreases the level of EM. Also, García, Barbadillo and Pérez (2012) found a negative association between EM and the existence of IAF in Spanish firms. The literature confirms that IAF presence should be associated with reduced EM. Nevertheless, Davidson, Goodwin-Stewart and Kent (2005) concluded that the internal audit function is not significantly associated with a decrease in the level of discretionary accruals in listed Australian firms. The findings overall detect a weak association between EM and IAF.

In Saudi Arabia, the results documented by Al-Twajjry, Brierley and Gwilliam (2004) show that the co-operation between internal and external audits is limited, while the extent of reliance by the external auditor on the work of the internal auditor varied with the quality of the internal audit department. In other words, when the internal audit department has high objectivity, competence, and good quality work being produced, external auditors are more positive about the extent of co-operation and co-ordination. However, IAF work and the potential for reliance therein are affected negatively, since it lacks professionalism and independence from management (Al-Twajjry, Brierley & Gwilliam 2004). Also Al-Shetwi et al. (2011) determined a weak relationship between FRQ and IAF in Saudi Arabian firms. The research by Aloudat et al. (2020) found that applying international standards for internal auditing, enhances competencies, and improves the relationship between internal and external auditors.

This makes a profound contribution to reinforcing internal controls of the organisation, which curbs corruption in public joint-stock companies in the KSA.

The importance of connection (co-operation) between the IAF and external auditors is reflected in ISA as recommended under ISA (610). This co-operation obtains additional auditing evidence that enhances audit quality. Consequently, this study examines the relationship between IAF and REM and to what extent this link is affected post ISA adoption. It is expected that the presence of the internal audit unit will reduce levels of REM. And likewise, researchers to date have not evaluated the effectiveness of IAF with REM, as they have tended to focus on AEM rather than REM. It is not only this weakness, but also effectiveness has not been examined following new legislation or standards being put in place.

4.6 Summary

This chapter described the most important and relevant theories on issues of audit quality, corporate governance, and EM. The above relevant theories “are intended as complements to, not substitutes for, agency theory” as stated by Daily, Dalton and Cannella Jr (2003). Thus, the most relevant theory that can address the research question is agency theory and the research hypotheses based on agency theory can examine in detail the issues concerning ISA, EM practices and AQ factors (see sections 4.3 and 4.4). The framework of agency theory can explain the expected relationship between audit quality factors and EM, which have been explained in detail in this chapter., since ISA has only recently been adopted in Saudi Arabia (and still in the nascent phase); institutional theory or other theoretical perspectives can be used to interpret study findings, if necessary. The theoretical framework for this thesis is illustrated above in Figure 4.5.

The next chapter will formulate the research methodology through discussing the research design, philosophy, strategy, methods, data collection and sample selection. Empirical models and statistical analysis will also be presented.

Chapter 5: Research Methodology

5.1 Introduction

The previous chapter summarised major theories: agency, stewardship, stakeholder, institutional, and positive accounting theories, which formed the theoretical framework and study hypotheses. This chapter will present the research methodology to test the hypotheses developed. Section 5.2 defines the current research design, including ISA and audit quality, with reference to contents of the audit report. Section 5.3 presents ISA and EM which discuss dependent, independent, interaction and control variables, empirical models, and statistical analysis. Sections 5.5 and 5.6 describe the data collection and the sample selection, respectively. Finally, section 5.7 summarises the chapter.

5.2 Research design

Research design is defined as “*The plan or proposal to conduct research, involves the intersection of philosophy, strategies of inquiry, and specific methods*” (Creswell 2009, p. 5) and the interaction amongst these three components is essential to build coherent research (Creswell 2009). The selection of research design depends on the nature of the research problem or question that needs to be addressed or answered (Creswell 2009; Mertens 2014). Therefore, the rationale for using the following design (see below) in this study is driven by the study question(s) and aims. The study design including philosophy, strategy, and methods (approach), will be discussed in more detail.

5.2.1 Research philosophy

Saunders et al. (2009, p. 159) state that the term “research philosophies” refers to “systems of beliefs and assumptions about development of knowledge”. The term ‘worldview’ means beliefs that can guide actions, and this concept is also referred to as paradigms (Guba 1990), ontologies, epistemologies or methodologies (Creswell 2009). Such worldviews (beliefs) can be organised into post-positivism, constructivism, advocacy/participatory, and pragmatism (Creswell 2009) beliefs. These basic beliefs can be determined through the response of proponents of each paradigm to the following three basic questions (Guba 1990; Saunders et al. 2009):

- **Ontology:** what is the nature or beliefs about reality? Ontology in business and management determines how the researcher sees the world of organizations, management, individual working lives, and organizational events that determine the choice of what to research (Saunders et al. 2009). Positivists (realism) believe that reality exists out there and is driven by immutable natural laws and mechanisms while interpretivists (relativism) believe that reality is socially constructed and can be understood by investigating participants' perceptions (Guba 1990).

- **Epistemology:** how to discover knowledge and the nature of the relationship of the researcher to the research topic. The context of business and management is multidisciplinary, so there are different types of knowledge, which can all be legitimate; hence researchers can adopt different epistemologies (Saunders et al. 2009). Positivists follow objectivists (Etic approach), which observe the phenomenon in an objective and dispassionate manner. In other words, a researcher should be able to study the object without influencing or being influenced. Meanwhile interpretivists follow subjectivists (Emic approach), which supposes that reality is subjective as observers (researchers) are actually part of what is being observed.
- **Methodology:** how to discover and analyze knowledge in a systematic way. The overall approach of positivism is deductive (quantitative) in experimental studies while interpretivism is inductive (qualitative) in phenomenological studies (Mertens 2014).

Accordingly, this study's worldview influences the nature of the research questions (hypotheses) and proposed methodology (Mertens 2014). Since the post-positivist lens reduces a set of ideas into a small and discrete set for testing (e.g., variables), and also depends on accurate observation and measurement of the objective reality that exists (Creswell 2009), post-positivism is the most appropriate lens to test and measure variables that comprise hypotheses. This thesis seeks to deal with questions and hypotheses in an objective, scientific, and dispassionate way and then subject them to empirical tests for verification, so post-positivist philosophy is the best approach to achieve this outcome.

5.2.2 Research strategy

Three strategies of inquiry (research methodologies) exist which provide specific direction for procedures in research: quantitative, qualitative and mixed methods design or models (Creswell 2009). And there are three main approaches to theory development: deduction, induction and abduction (Saunders et al. 2009), explained in more detail below:

- A quantitative (deductive) approach from a post-positivist worldview tests a specific theory through established narrow hypotheses, and then collects the data to support or refute hypotheses (Mertens 2014; Saunders et al. 2009) and uses the experimental strategy of inquiry and pre- and post-test measures of attitudes (Creswell 2009). Data is collected on an instrument that measures attitudes and analysis by statistical procedures to test hypotheses (Creswell 2009).
- A qualitative (inductive) approach from a constructivist worldview seeks to discover the meaning of a phenomenon from the perspectives of participants while the qualitative approach from a participatory worldview seeks to examine an issue related to the lives of individuals (Creswell 2009). In other words, this inductive approach starts by collecting

data to explore certain phenomena and build theory (Saunders et al. 2009), so the research questions can emerge from the data as the study progresses (Mertens 2014).

- A mixed methods (abductive) approach from a pragmatic worldview depends on the data collection using both quantitative and qualitative strategies, as the best way to understand a research problem (Creswell 2009; Mertens 2014). In other words, to explore a phenomenon and build a new theory or modify an existing one, the abductive approach collects and tests additional data (Saunders et al. 2009).

Table 5.1: Overview of research strategies

Quantitative	Qualitative	Mixed methods
- Experimental designs - Non-experimental design, such as surveys	- Narrative research - Phenomenology - Ethnography - Grounded theory - Case study	- Sequential - Concurrent - Transformative

Source: (Creswell 2009)

Accordingly, the current study adopts a quantitative approach for the following reasons. First, it is the best way to answer the questions; it can test theory, measure, and assess attitudes before and after the test (Creswell 2009). A large sample size can help to assess audit quality and the level of REM pre and post ISA adoption through the perspective of agency theory. In other words, the study tests hypotheses deduced from theory by examining the relationships between variables, so a quantitative approach should be used for hypotheses (Saunders et al. 2009). Second, the positivist position takes a quantitative approach (Saunders et al. 2009). Third, the main source used in this study comprises annual financial and directors' reports for six years; this type of analysis should use a quantitative approach. It enables a large sample to be used for a longer period, which makes it possible to generalize research findings, while a qualitative research generally cannot do this (Lune & Berg 2017). Previous accounting studies follow this approach and apply it to annual reports regarding content analysis (Abraham & Cox 2007; Axén 2018; Beattie, McInnes & Fearnley 2004), disclosure index (Alfraih & Almutawa 2017; Hossain, Perera & Rahman 1995), and audit quality and earnings management (Chi, Lisic & Pevzner 2011; King 1999; Zgarni, Hlioui & Zehri 2016).

5.2.3 Research methods

The specific research methods, which involve forms of data collection and analysis, constitute the third element in the research framework and design (Creswell 2009). Selecting desired methods depends on determining the type of information that must be gathered, whether in advance of the study (i.e., quantitative) or allowing it to emerge from participants' comments (i.e., qualitative) (Creswell 2009; Mertens 2014). A qualitative approach follows descriptive and non-numeric methods for collecting data to understand a phenomenon, while quantitative analysis refers to counts, numbers, statistics and measurements (Lune & Berg 2017).

Table 5.2: Data collection methods

Quantitative Methods	Mixed Methods	Qualitative Methods
<ul style="list-style-type: none"> - Pre-determined - Instrument based questions - Performance data, attitude data, observational data, and census data - Statistical analysis - Staff-related statistical interpretation 	<ul style="list-style-type: none"> - Both pre-determined and emerging methods - Both open- and closed-ended questions - Multiple forms of data drawing on all possibilities - Statistical and text analysis - Across databases interpretation 	<ul style="list-style-type: none"> - Emerging methods - Open-ended questions - Interview data observation data document data, and audio-visual data - Text and image analysis - Themes, patterns interpretation

Sources: Various data collection methods (Creswell 2009).

Table 5.2 notes various data collection methods. Since this study uses companies’ annual reports as the main source of data, the appropriate method is using the secondary data collection for observational assessment and statistical analysis (i.e., regression models) (Axén 2018; Chi, Lisic & Pevzner 2011; Hossain, Perera & Rahman 1995). Quantitative analysis involves different forms of statistical exploration to provide a more accurate and reliable measurement of employed variables (Bryman 2016; Lune & Berg 2017). Analytical methods used in this study depend on a self-constructed index extracted from audit reports and specific models that follow an organized and particular process, so quantitative research methods should be used (Punch 2013).

5.3 ISA and audit quality

Historically, as noted in the literature review chapter, enactment of new systems, policies, standards, and reforms, such as the SOX, CG, IFRS, enhances FRQ and audit quality. Likewise, the study assumes that ISA will improve audit quality which raises FRQ in the KSA (positive relationship). Therefore, this section aims to assess the first question: to what extent does audit quality improve post ISA adoption? The study employs the following proxy for audit quality: contents of audit reports. In other words, ISA might make a notable improvement to the content of financial documents. The following sub-sections aim to discover this disparity.

5.3.1 Contents of audit reports (dependent variables)

The term ‘content analysis’ can broadly be defined as “a research technique for the objective, systematic and quantitative description of the manifest content of communication” (Berelson 1952, p. 1) or a research technique for making the inference by systematically and objectively identifying specified characteristics of messages (Carney 1972; Zinnes 1974). Similarly, it can be referred to as "a research technique for making replicable and valid inferences from data (texts) to the contexts of their use” (Krippendorff 2018, p. 403). In the same vein, much previous and recent research confirms that content

analysis is a systematic technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson 1952; Krippendorff 2018; Lam et al. 2007; Stemler 2000; Weber 1990). Further, it is used to measure level of disclosure (Maali, Casson & Napier 2006), so disclosure indices have been used in the current study.

Disclosure indices are “an oft applied method in accounting research, particularly in studies of annual reports, being used to provide a single-figure summary indicator either of the entire contents of reports of comparable organisations or of particular aspects of interest covered by such reports” (Coy & Dixon 2004, p. 79). Disclosure is defined as any information published by a firm, whether financial or non-financial (Gibbins, Richardson & Waterhouse 1990). The level of firm disclosure can be assessed by a disclosure checklist (Barako 2007; Hossain, Perera & Rahman 1995); the checklist is a scale used to investigate the extent (quantity) and volume (quality) of information. However, there is no general theory or guidance to select specific items to measure the extent of disclosure so a self-disclosure checklist is necessary (Barako 2007; Wallace & Naser 1995). Accordingly, a self-constructed disclosure checklist was prepared to summarise the contents of audit reports and how this relates to specific elements.

This study takes a quantitative content analysis approach, as it focuses on counting and measuring, not interpreting and understanding information contained in the published audit report pre and post the ISA. Further, it aims to test agency theory and get evidence for this theory emerging from the data. An index has been developed to identify how the extent and nature of the contents in the audit report has been changed with the adoption of ISA after using the information gathered from content analysis. Those techniques were applied to audit reports but not annual reports, which makes the focus of the current study different from previous studies.

5.3.1.1 Content analysis technique

At the beginning of data collection and analysis, content analysis was used to gather, explore the main items (elements) of disclosure in audit reports (AR), classify them into categories and examine variations in disclosure practices, as noted by Abraham and Cox (2007); Beattie, McInnes and Fearnley (2004) and Axén (2018). On that basis, the sample unit is comprised from audit reports (AR). An inductive categorization process was used due to lack of published studies regarding AR disclosure (Graneheim, Lindgren & Lundman 2017) and the data was collected manually; the average of AR is around five pages. Systematic reviews of audit reports were then conducted to locate existing AR disclosure and identify relevant context units. In the analysis, paragraphs and sentences were used as context units (recording units). Themes (elements) was selected as coding units and used in the categorization process in accordance with accounting research (Jones & Shoemaker 1994). Using an individual word without a sentence or sentences for context does not provide a sound basis for coding social and environmental disclosures (Milne & Adler 1999). In the categorization process, the researcher considered the following

steps to get a good understanding of material and the data: (1) start with a close and detailed reading for all collected disclosures (Thomas 2006); (2) identify and code the themes (elements); and (3) compare the data to develop categories.

5.3.1.2 Measurement of the extent of content disclosed (CD)

To document and measure the level of content disclosed, an index has been developed to conduct content analysis on published audit reports by following the steps used by Wallace, Naser and Mora (1994), Hossain, Perera and Rahman (1995), Wallace and Naser (1995), Maali, Casson and Napier (2006), Barako (2007), Francis, Nanda and Olsson (2008), Menicucci (2013) and Alfraih and Almutawa (2017). Detail information on the procedure adopted for the construction of the disclosure index is listed below:

1. **Identifying the extent of CD based on GAAs /ISA:** As step 1 in developing the content index, the required information to be contained in the audit reports according to both GAAS (2014--2016) and ISA (2017--2019) have been identified (Hossain, Perera & Rahman 1995) and auditing standards. Accordingly, a current index was developed based on requirements for auditor's reports pre and post ISA adoption in the KSA.
2. **Selecting auditing standards (GAAS/ISA):** There is no specific guideline for the number of standards or items that should be involved in the disclosure index (Wallace & Naser 1995; Wallace, Naser & Mora 1994). Thus, selecting the reporting standards (Wallace, Naser & Mora 1994) or content and number of items depends on the scope of the research in determining the disclosure index (Wallace & Naser 1995). Until ISA was implemented in 2017, all KSA-listed firms followed the GAAS issued by SOCPA. The scope of the current study contains all auditing standards required for auditing, whether GAAS or ISA. Further, this study focuses on audit reports, so the most relevant standards are: 17 Pre-ISA adoption and 37 post ISA adoption.
3. **Developing an index for CD (the dependent variable):** Since there is no universally accepted disclosure index of audit reports, a content index was developed to suit the scope of the current study to measure change in contents of audit reports as a consequence of moving to ISA from GAAS. The CD index (elements) was chosen after the following steps were taken.
 - a. Step 1: The elements were identified manually by carefully reading the published audit reports and, then examining the data until becoming familiarization was excellent.
 - b. Step 2: Determining the requirements of auditor reports pre and post ISA were embraced.
 - c. Step 3: The index was selected based on the researcher's reading and the auditor's report requirements.

As mentioned above, this index covers 17 GAAS and 37 ISA. Twenty-one elements were identified as constituents of the CD index regarding the GAAS modified by SOCPA for 2014 till 2016, comprising two groups: audit and opinion. Meanwhile 34 elements were identified regarding the ISA issued by the IAASB for 2017 till 2019. This comprises six to eight groups: opinion, basis for opinion, audit approach,

other information, responsibilities of management, and those charged with governance and auditor responsibilities. Table 5.3 matches items Pre-ISA by items post ISA. The elements of the CD index pre and post ISA adoption are presented in Appendix 3.

The main reason for selecting this index (elements) is that the index was not only chosen based on the researcher's reading or examining the data, but also according to the auditor's report requirements pre and post ISA that were used by companies. This was done to ensure that the initial checklist was correct. Also, the researcher has chosen all elements available in audit reports without excluding any element for both periods. This is the best way to ensure the validity of the index, so the researcher included each element in audit reports.

Table 5.3: Matching items Pre-ISA with items post ISA

No.	Elements	Pre-ISA adoption	Post ISA adoption
		Is the element available?	
Form of Auditor's Report			
1	Title	Y	Y
2	Statement "Independent Auditor's Report"	Y	Y
3	The addressee to:	Y	Y
4	Date of reports	Y	Y
5	The address of the auditor	Y	Y
6	Auditor signature	Y	Y
Contents of Auditor's Report			
	Scope of the audit group or opinion group	Scope of the audit group	Opinion group
7	The name of the company	Y	Y
8	The title of financial statements	Y	Y
9	The date that has been covered	Y	Y
10	The standards to be followed (National auditing or ISA)	Y	Y
11	Basis of opinion group	No	Y
12	Audit based on ISA	No	Yes
13	Auditor responsibility	Yes (No details)	Yes (with details)
14	Auditor is independent of the company	No	Y
15	Auditor will fulfil other ethical responsibilities	No	Y
16	Audit evidence is sufficient	Y	Y
	Material uncertainty related to GC group	No	Y
17	Audit approach or audit description	No (Only short description of audit)	Y
18	Key audit matters	No	Y
19	Audit procedures	No	Y
20	Other information group	No	Y
21	Responsibilities of management group (statement)	No (only as statement)	Y
22	Fair financial statements preparation (2) internal control	No	Y
23	Comply, in all material respects, with the requirements of the Regulation for Companies and the Company's Articles of Association	Y	Y
24	Company's ability to continue (2) matters related to going concern (3) going concern basis of accounting	No	Y
25	Responsible for overseeing financial reporting process	No	Y

26	Auditor responsibilities group (statement)	No (only as statement)	Y
27	Auditor objectives	No	Y
28	Determine and assess risk of material misrepresentation of FS	No	Y
29	Understand internal control	No	Y
30	Evaluate accounting policies and accounting estimates	No	Y
31	Conclude on the appropriateness of management's use of the going concern basis of accounting	No	Y
32	Evaluate presentation, structure, and content of FS	No	Y
33	Clarify auditor responsibility in the group audit engagement if ISA 600 applies	No	Y
34	Communicate with those charged with governance	No	Y
35	Comply with ethical requirements regarding independence	No	Y
36	Determine the most significant matters	No	Y
37	Report on other legal and regulatory requirements	No	Y

4. **Applying the approach to calculating the CD index:** A disclosure index can be developed either by weighting elements based on their level of significance to the overall report, or giving equal weight to all identified content elements (Barako 2007; Hossain, Perera & Rahman 1995). Unweighted index assumes that all items are equally important (Barako 2007; Hossain, Perera & Rahman 1995). However, the weighted approach considers some elements in the report are important to the reader than others (Barako 2007). However, the allocation of weights for various items would be more subjective (Barako 2007; Hossain, Perera & Rahman 1995). Accordingly, an unweighted approach is used for scoring the CD index since this thesis looked at the entire range of users and considered all items (elements) in the disclosure index. Further, all content elements constitute essential information to all users, so they are regarded as equally relevant. An unweighted approach is exposed, so that the subjective discrimination between non-disclosure and non-applicable items is dealt with (Akhtaruddin 2005). When the requirement or item is absent, it may be unfairly classified through the inclusion of the value 0. Each relevant absent item is classified as a non-applicable item and excluded from the evaluation of the firm's total score. Although some requirements were not required Pre-ISA adoption and certain elements were not included in audit reports post ISA adoption, the current study does not assess the above issue. Hence, all relevant auditing standards were applied for both periods, so there is no need for exclusion or subjective discrimination.

Each item in the CD index is given equal weight; 1 represents the firm that contains the element, and 0 otherwise (Maali, Casson & Napier 2006). Once item scores were determined, the total of CD index could be calculated (Alfraih & Almutawa 2017). The unweighted approach as explained by Akhtaruddin (2005, p. 408) served to calculate "the ratio of the number of items a company actually discloses to the total that it could disclose". Hence, first, the actual level of content elements obtained for a firm (CE) can be found using an equation, such as that proposed by Wallace, Naser and Mora (1994), Hossain, Perera and Rahman (1995) and Alfraih and Almutawa (2017):

$$CE = \sum_{i=1}^n di$$

Where:

CE = the actual level (number) of content elements obtained.

$d = 1$ if content element is disclosed and 0 if not.

n = number of content elements obtained for the firm.

Second, an improvement in the contents of auditor's reports for each firm (CD Index) is set as:

CD Index = CE / T.

T = The maximum number of disclosures provided by companies in their published annual reports for pre- and post-ISA adoption. The total of Content Elements prior and post ISA adoption is 37. In more detail, the total score obtained by a firm was interpreted as an index by dividing this score by the total available points, which is 37. **Table 5.3** presents the disclosure indices awarded to the sample firms jointly for pre and post ISA adoption.

5. **Ensuring reliability and validity:** It is important to consider the reliability and validity of the nature of content analysis and CD indexing. There are various types of reliability, stability (consistency over time for the same coder of the content), producibility (producing the same result of coding the content by different coders) and accuracy (classification of content to norm or standard is correct) (Beattie, McInnes & Fearnley 2004; Krippendorff 2018). Two types of reliability were used: accuracy and stability. First, I have used the GAAS (e.g., Reports Standard No. 7) and ISA (e.g., ISA 700) to classify contents of audit reports and all elements were included. I then examined and compared the results of content elements over time and the results were consistent. Further, all the audit reports were read carefully and examined repeatedly before being approved for inclusion in this study (Alfraih & Almutawa 2017; Krippendorff 2018).
6. **Using statistical analysis to analyse the extent of CD index:** Statistical analysis using SPSS determined the main differences in information documented in audit reports to compare pre and post ISA adoption periods. Analysis – parametric or nonparametric – is determined by assumptions such as the degree of normality (Hinton, McMurray & Brownlow 2014; Pallant 2020). Here, the parametric test makes assumptions about the population from which the sample was taken while the non-parametric test does not. Further, the parametric test includes assumptions about the shape of the population distribution, while the non-parametric test does not. Both Friedman test and Wilcoxon Signed-Rank test (non-parametric statistics) are used instead of two-way repeated measures ANOVA test and paired samples test (Parametric statistics), respectively (Hinton, McMurray & Brownlow 2014; Pallant 2020). They are alternative tests and are resorted to when normality of distribution is violated; normal distribution should be more than 0.05 ($p > 0.05$) (Hinton, McMurray & Brownlow 2014; Pallant 2020), yet the values (Sig) in the current study were less than 0.05 ($p < 0.05$). Friedman test measures the same sample at three or more points at the time (Hinton,

McMurray & Brownlow 2014; Pallant 2020), and here it served to measure the CD index during 2014, 2015 and 2016 (Pre-ISA adoption) and three times for 2017, 2018 and 2019 (post ISA adoption). Meanwhile the Wilcoxon Signed-Rank test, to repeated measures t-test, measures the sample at two different occasions (Pallant 2020) and compares two paired samples (Hinton, McMurray & Brownlow 2014). This was used to measure the CD index for pre and post ISA adoption. Further, descriptive statistics helped to accurately describe study characteristics (variables) and summarise the data quickly (Hinton, McMurray & Brownlow 2014; Pallant 2020).

5.4 ISA and Real Earnings Management

5.4.1 Empirical models

Overall, as discussed in the literature review, the current research has shed light on audit factors and CG mechanisms, that they have a vital role in reducing accrual earnings management. Likewise, this study aims to investigate the following questions:

- (1) Does ISA adoption reduce real earnings management in the KSA?
- (2) Do the contents of audit reports reduce real earnings management in the KSA post ISA adoption?
- (3) Do internal and external auditing factors reduce real earnings management in the KSA for the whole period and pre and post ISA adoption (comparing two periods)? Are there differences in results of those factor relationships post ISA adoption?
- (4) Does the interaction effect of ISA moderate the relationship between REM and audit factors? First, the direct relationship between REM and audit variables is measured and then the interaction effect is examined.

The first question is answered by using Model 1, the second question by using Model 2, the third question by using Model 3 and the fourth question by using Model 4. Therefore, the study suggests that ISA adoption, contents of audit reports, auditor brand name, auditor rotation, specialized industry auditors are positively associated with lower levels of REM. Further, it assumes that independence, expertise, AC switching, size, number of meetings, gender diversity of the audit committee, and existence of the internal audit function are positively associated with lower levels of REM. However, directors with stock ownership and different directorships on the AC assumes to have a positive association with higher levels of REM. Empirical models will be discussed below under direct relationship and interaction effect sections.

5.4.1.1. Direction effect

Model 1: REM, ISA adoption and contents of audit report

In the first stage, the study will measure the direct relationship between ISA adoption and REM measurement which contains abnormal cash flow from operation, abnormal discretionary expenses and abnormal production cost. Model 1 investigates how adoption of ISA has influenced REM. This model has been used with the primary variable (IFRS adoption) by Ho, Liao and Taylor (2015). This study instead uses the ISA adoption model and modifies control variables as needed, based on the study objective, and estimates the model taking a linear regression approach. Model 1 was used in order to investigate how the adoption of ISA influenced REM in Saudi firms.

$$REM_{proxy\ it} = \alpha + \beta_1 ISA_{i,t} + \sum_{k=1}^k p_k CON_{k,i,t} + \varepsilon_{i,t} \quad (M1)$$

REM is the dependent variable which extends real earning management of a given firm. It is measured by using an aggregate measure of REM which used three measures: abnormal cash flow from operation (ACFO_{it}), abnormal discretionary expenses (ADISEXPT_{it}), abnormal production cost (APRODCOST_{it}). ISA is the testing variable (International Standards on Auditing). CON is a vector of 'k' number of control variables which include board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). 'i,t' represent the firm i in year t.

Model 2: REM, ISA adoption and change in contents of audit report

Model 1 has been extended to determine whether improved contents of the audit report post ISA adoption changed REM by incorporating an interaction variable (ISA and contents of the audit report). This model is deduced based on the works of Sun, Lan and Liu (2014), Marra and Mazzola (2014) Inaam and Khamoussi (2016), (Zgarni, Hlioui & Zehri 2016) and Alzoubi (2019) with some changes that serve the aim of the study. The extended model has been given below and estimated using linear regression.

$$REM_{proxy\ it} = \alpha + \beta_1 ISA_{i,t} + \beta_2 ContentAR_{i,t} + \beta_3 (ContentAR_{i,t} \times ISA) + \sum_{k=1}^k p_k CON_{k,i,t} + \varepsilon_{i,t} \quad (M2)$$

Where: REM is real earnings management; ISA is International Standards on Auditing; ContentAR is contents of audit report and the interaction effect of ISA with contents of audit report. CON is a vector of 'k' number of control variables which include board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). 'i,t' represent the firm i in year t.

Model 3: REM and AQ factors

Model 3 is used to determine how external and internal audit factors influence REM. This model is estimated separately for the (3A) whole sample (2014--2019), (3B) period (2014--2016) pre-ISA adoption and (3C) the period (2017--2019) post ISA adoption. Following Marra, Mazzola and Prencipe (2011), the analysis is applied by using a "constant" sample for pre and post ISA periods in order to more accurately examine the effectiveness of audit factors and to determine whether there are significant differences in the results (coefficients of test variables) for these periods (Marra, Mazzola & Prencipe 2011). This, model has been used by Chi, Lisic and Pevzner (2011), Sun, Lan and Liu (2014), Habbash and Alghamdi (2017), Baatour, Othman and Hussainey (2017) and has been extended to this study with appropriate changes, as shown below, and estimated using linear regression.

$$REM_{proxy\ it} = \alpha + \sum_{n=1}^N \beta_n AQ_{n,i,t-1} + \sum_{m=1}^M \vartheta_m AC_{m,i,t-1} + \sum_{k=1}^K \rho_k CON_{k,i,t} + \varepsilon_{i,t} \quad (M3A, B \& C)$$

REM is real earnings management. **AQ** is a vector of ‘n’ number of audit quality variables which include audit brand (BIG4), audit firm rotation (FiSwh) and industry specialized auditor (AudSpec). **AC** is a vector of ‘M’ number of audit committee variables which include audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSwh), stock ownership of AC members (ACstock), diversity of audit committee (ACDiv) and Internal audit function (IAF). The study uses AQ and AC variables lagged in one period (Yt-1) to determine the audit effect on REM by using lag effect. Where the previous year audit work might affect change to reporting practices used by the manager in the next year and no such logic on one-to-one comparison. **CON** is a vector of ‘k’ number of control variables which include board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC).

Further details of dependent and explanatory variables used in the above three models have been provided in the following table.

Table 5.4: Definition and measurement of dependent and explanatory variables

Variable	Definition	Measurement
<i>REM_{i,t}</i>	REM measurements are abnormal cash flow from operation (ACFO _{it}), abnormal discretionary expenses (ADISEXPT _{it}), and abnormal production cost (APRODCOST _{it}).	Estimated using the Roychowdhury (2006) framework
<i>REM proxy_{i,t}</i>	Sum the estimated residuals of the three individual REM (ACFO _{it} , ADISEXPT _{it} and APRODCOST _{it}).	Aggregate of above three REM measure after multiplying and by -1 to make their sign positive like (Cohen, Dey & Lys 2008b; Zang 2012)
Audit quality variables		
<i>ISA_{i,t}</i>	International Standards of Auditing	A dummy variable which takes 1 for all years following the adoption of ISA (2017-2019) and zero

ContentAR	Contents of audit report	CD Index = The total score obtained by a firm / the total available points, which is 37.
ContentAR * ISA	Contents of audit report and International Standards of Auditing	The interaction effect of ISA with contents of audit report
BIG_{i,t}	Audit brand name	A dummy variable equal 1 if a company is audited by Big 4 and zero otherwise for year t – 1
FiSwh_{i,t}	Audit firm rotation	A dummy variable equal to one when the same audit firm is used to audit a company for two consecutive and zero when audit firm is changed for year t – 1
AudSpec_{i,t}	Industry specialized auditor	A dummy variable, which equal 1 when a company is audited by a specialized auditor and zero otherwise for year t – 1
Audit committee variables		
ACSize_{i,t}	Audit committee size	The number of audit committee members in the year t – 1
ACMeet_{i,t}	Audit committee meetings	The number of audit committee meetings holding in the year t – 1
ACInd_{i,t}	Audit committee independence	The percentage of independent directors on AC divided by the total number of audit committee members in the year t – 1
ACExpt_{i,t}	Audit committee expertise	The percentage of AC with financial accounting (academic or experiences) expert directors divided by the total number of audit committee members in the year t – 1
ACadd_{i,t}	Audit committee busyness	It measured through the average by dividing the total number of all distinct positions of AC on the total number of values in the set in the year t – 1
ACSwh_{i,t}	Audit committee rotation	Takes value of 1 if at least one of AC members has changed and zero otherwise in the year t – 1
ACStock_{i,t}	Stock ownership of Audit committee	The total stock ownership of AC members and then divided it by the total of firm shareholdings in the year t – 1
ACDiv_{i,t}	Diversity of audit committee	A dummy variable which equal 1 if the company has female in the audit committee, and zero otherwise for the year t – 1
IAF_{i,t}	Internal audit function	A dummy variable equal 1 if the firm has IAF, and zero otherwise for the year t – 1
Control variables		
BMeet_{i,t}	Board meetings	Number of board meetings for the fiscal year
BExpt_{i,t}	Board expertise	Percentage of directors who have finance or accounting background (certificate) and have financial or accounting experience on the board divided by board size
ROA_{i,t}	Firm performance (Return on assets)	Net income before extraordinary items divided by total assets for year t – 1
LEV_{i,t}	Firm leverage	Total debt to total assets ratio at year-end t
MB_{i,t}	Firm growth potential	Market-to-book value ratio
MC_{i,t}	Firm size	Market capitalization at year end

5.4.1.2 Interaction (incremental) effects

To determine whether ISA adoption has changed the magnitude of the impact of internal and external audit factors, interaction of those variables with ISA has been incorporated in Model 4 to moderate the relationship between REM and audit. Further, ISA is moderating the effect between independent variables and REM which gives the difference. Accordingly, the interaction effect was examined in two models (4A & 4B). Model 4A tests the interaction effect of ISA on REM use with internal and external audit quality factors separately. A separate model for each set of factors is adopted because this enables the study to investigate the influence of external audit factors on REM separately from the influence of internal audit factors (AC & IAF). Then, both external and internal audit factors were combined in one model. Model 4B tests the interaction effect by applying all audit quality factors, together. Those steps are useful and valuable to ensure whether there is change or effect on relationships using different models and to be examined in reasonable ways to allow for catching all possible relationships. These models are defined below.

Model 4: REM and audit factors

To capture the extent to which audit factors are improved post ISA adoption, the study will measure the interaction effect of dummy variable of ISA on the relationship between audit factors and REM proxy. **Model 4A** investigates how the index score of five external factors and nine internal factors for audit have influenced REM. While **Model 4B** investigates how the index score of a combination of 13 internal and external audit factors influenced REM. Combining internal and external audit factors allows for catching all possible relationships in presence of all audit factors. Those models are deduced based on the works of Yang and Krishnan (2005), Baxter and Cotter (2009), Ghosh, Marra and Moon (2010), García, Barbadillo and Pérez (2012), Sun, Lan and Liu (2014), Marra and Mazzola (2014) Inaam and Khamoussi (2016), (Zgarni, Hlioui & Zehri 2016) and Alzoubi (2019) with some changes that serve the aim of the study.

$$REM_{proxy\ it} = \alpha + ExAQ_{it} + InAQ_{it} + ISA + (ExAQ_{it} \times ISA) + (InAQ_{it} \times ISA) + \sum_{k=1}^k p_k CON_{k,i,t} + \varepsilon_{i,t} \quad (\mathbf{M4A})$$

$$REM_{proxy\ it} = \alpha + EXINAQ_{it} + ISA + (EXINAQ_{it} \times ISA) + \sum_{k=1}^k p_k CON_{k,i,t} + \varepsilon_{i,t} \quad (\mathbf{M4B})$$

In Models 4A and 4B, an additive and unweighted scoring approach was used to calculate the external and internal audit quality score (EXAQ, INAQ and EXINAQ). Four external audit attributes and nine internal audit characteristics are considered in Model 4A. Then, the total of the firm's binary variables is used to calculate the score (i.e., 13 scores) in model 4B. For example, if EXAQ = 4, INAQ = 9 and EXINAQ = 13, this denotes a higher audit quality. These models are presented below.

Table 5.5: External and internal audit quality scores

Variable	Definition	Points assigned
EXAQ is the index score of external audit factors		
<i>BIG4_{it}</i>	1 if a company is audited by Big 4 and zero otherwise	1
<i>FiSw_{it}</i>	1 if the audit firm is used to audit a company for two consecutive and zero otherwise	1
<i>AudSpec_{it}</i>	1 if a company is audited by a specialized auditor and zero otherwise	1
<i>ARL_{it}</i>	1 if the audit report is published in the legal delay and zero otherwise ⁹	1
Maximum points allocated		4
INAQ is the index score of internal audit factors		
<i>ACSize_{it}</i>	1 if the number of audit committee members is 4 and more, 3 (or less) takes zero	1
<i>ACMeet_{it}</i>	1 if the number of audit committee meetings is 5 and more during year, 4 (or less) takes zero	1
<i>ACInd_{it}</i>	1 if the percentage of independent directors on AC is 50% (or more), 49% (or less) takes zero	1
<i>ACExpt_{it}</i>	1 if the percentage of AC with financial accounting expert directors is 50% (or more), 49% (or less) takes zero	1
<i>ACadd_{it}</i>	1 if the average of AC busyness is less than 3, otherwise zero	1
<i>ACSw_{it}</i>	1 if at least one of AC members has changed during the year and zero otherwise	1
<i>ACStock_{it}</i>	1 if the total stock ownership of AC members is more than 50% and zero otherwise	1
<i>ACDiv_{it}</i>	1 if the company has female in the audit committee, and zero otherwise	1
<i>IAF_{it}</i>	1 if the firm has IAF, and zero otherwise	1
Maximum points allocated		9
EXINAQ is the index score of both external and internal audit factors		
Maximum points allocated		13

5.4.2 Dependent variables (REM)

As discussed in Chapter 3, REM measurements initially developed by Roychowdhury (2006) have been extended by number in later research including Gunny (2010), Zang (2012), Siriviriyakul (2015), Vorst (2016), Srivastava (2019) and Cohen et al. (2020). This thesis adopted the original model of Roychowdhury (2006) because, unlike other extension of REM measurements, original REM models are mostly used, and most studies employ them. In contrast, later REM improvements by Zang (2012), Siriviriyakul (2015), Srivastava (2019) and Cohen et al. (2020) were not tested or used much in the literature. Further, Srivastava (2019) model is not suitable for use, since that normally relies on data for a nine-year period, yet this current study employs a sample with data for a six-year period. Thus, the original models extended by Gunny (2010) and Vorst (2016) have been used in this study, because those models are well suited for the sample period. In short, the study has sought to apply all available models that do not lead to a diminished sample or cause unreliable results.

⁹ From 2014 to 2016 and in 2019, the publishing of annual financial reporting must have been conducted for 75 days starting from the end of the fiscal year. However, for 2017 and 2018, the publishing period extended from 75 days to 90 days due to adoption of IFRS and ISA.

Following DeFond and Jiambalvo (1994); Gunny (2010); Peasnell, Pope and Young (2005), this study estimates Roychowdhury models based on a cross-sectional basis due to the following:

- In contrast to the industry approach, the cross-sectional approach allows firms to be included in the sample, even if they less than fifteen firms in the same industry (Bartov, Gul & Tsui 2000). Hence, using a cross-sectional model is more appropriate with the current sample because the number of companies allocated under specific industry is insufficient (less than 15 firms).
- In contrast to the industry approach, the cross-sectional method enables a study of all listed firms in the sample, even if timeframe is less than eight-years (Bartov, Gul & Tsui 2000; DeFond & Jiambalvo 1994). For instance, models under the industry approach are generated for the first sample year, 2014, based on models calculated over an eight-year period, from 2006 to 2013, etc. This approach would result in a lower sample size, where the data from 2006 to 2011 is not available for all firms in the Saudi Stock Exchange (Tadawul). Hence, using cross sectional model is more appropriate so that not result in a lower sample size.
- The cross-sectional approach has a number of advantages over their time-series counterparts (Bartov, Gul & Tsui 2000) as follows:
 - Using a cross-sectional approach produces a bigger sample size that is less susceptible to a survivorship bias resulting from the use of long-time series data (industry approach) (Bartov, Gul & Tsui 2000). Hence, this study estimate the REM model on a cross-sectional basis to overcome survivorship bias brought on by using a firm-specific time-series approach (Peasnell, Pope & Young 2005).
 - Compared to time-series models (industry approach), cross-sectional models enable investigation of firms with a shorter history, such as fresh start-ups participating in initial public offerings (Bartov, Gul & Tsui 2000). This study only uses six years (three Pre-ISA and three post ISA adoption). Exclusive reliance on the time-series approach limits their usefulness in this study, so cross-sectional models are more effective with short time-series data.

Both approaches (industry and cross sectional) provide consistent findings as stated by DeFond and Jiambalvo (1994), so the study results will not affected by using one or the other approach.

Previous studies have measured the extent of earnings management using REM measurements, abnormal cash flow from operation, abnormal inventory overproduction and abnormal discretionary costs (Sitanggang et al. 2019). The current study investigates REM pre and post ISA adoption, which examines the relationship between REM with audit factors and determines the interaction effect of ISA concerning the impact of REM on audit factors. As previously explained, this study uses Roychowdhury (2006) original models and estimates the abnormal level. Roychowdhury (2006) created four models to measure REM and they focus on different components of operating income. The first two models describe negative abnormal levels for cutbacks in discretionary costs for research and development (R&D), and for general expenses including costs associated with sales and administration (SG&A). The

third model estimates the positive abnormal production cost to be overproduction which involves cost of goods sold (COGS) plus changes in inventory. The fourth and final model considers abnormal cash flow from operation as a symbol of EM. Linear regression models with a cross-sectional approach are used for all four variables (abnormal values). For the main analysis, this study used the following Roychowdhury (2006) original models:

1. **Cash flow from operation (CFO)** is a linear function of sales and change in sales in the current year. To estimate the model (abnormal operating cash flow, ACFO), the following cross-sectional regression is run:

$$\frac{CFO_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{S_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (\text{Eq.1})$$

Where:

$CFO_{i,t}$	= The actual Cash Flow from Operation of ' i^{th} ' firm in year ($CFO_{i,t}$).
$TA_{i,t-1}$	= Total assets of ' i^{th} ' firm in year $t - 1$,
$S_{i,t}$	= Total sales of ' i^{th} ' firm in year t , Sales is changes in revenues
$\Delta S_{i,t-1}$	= $Sales_t - Sales_{t-1}$, So, sales of ' i^{th} ' firm in year t minus sales of firm i in year $t - 1$,
$\beta_{0,1,2,3 \text{ and } 4}$	= Parameters to be estimated,
$\varepsilon_{i,t}$	= Residuals or the error term of the regression which used as the abnormal cash flow on operation (ACFO) of firm i in year t .

Abnormal cash flow from operation is the difference (residuals) of the actual CFO and predicted CFO estimation using the equation 1: (1) the relevant industry-year model and firm-sales year's (2) lagged assets for each firm-year combination (Sitanggang et al. 2019). Curtailment of sales expenses is represented by residuals (Sitanggang et al. 2019). Lower values suggest greater levels of REM manipulation (Lopez & Vega 2019).

2. **Discretionary expenses (DISEXP)** are the total of Research and Development (R&D) expenses, Advertising (ADV) expenses, and Selling, General and Administrative (SG&A) expenses. In other words, to detect a decrease in **discretionary expenses (DISEXP)**, each of the above elements is measured by estimating the equation given below:

$$DISEXP_{i,t} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad \text{Eq. 2}$$

To measure abnormal **discretionary expenses (ADISEXP)**, the subsequent cross-sectional model is estimated:

$$\frac{DISEXP_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{S_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{\Delta S_{i,t-1}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (\text{Eq. 3})$$

Where:

$DISEXP_{i,t}$	= The sum of Research and Development Expenses ($R\&D_t$), Advertising Expenses (ADV_t), and Selling, General and Administrative expenses ($SG\&A_t$) of firm i in year t ($DISEXP_{i,t}$).
$TA_{i,t-1}$	= Total assets of firm i in year $t - 1$,
$S_{i,t}$	= Total sales of firm i in year t , Sales is changes in revenues.
$\beta_{0,1,2,3 \text{ and } 4}$	= Parameters to be estimated, namely the betas,
$\epsilon_{i,t}$	= Residuals word that determine the level of abnormal discretionary expenses (ADISEXPT) of firm i in year t .

Abnormal discretionary expenses are equal to the difference between actual and predicted DISEXP, calculated based on the above cross-sectional model, firm-sales and lagged assets (Sitanggang et al. 2019). Manipulation of discretionary costs is identified as the residuals considered to be the inverse measures of manipulation. When there is greater reduction of discretionary costs, there will be more negative R&D, ADV and SG&A residuals. More specifically, reducing discretionary costs, such as advertising, results in abnormally low expenses but improved margins (Lopez & Vega 2019). Therefore, lower values for this metric indicate higher REM (Lopez & Vega 2019).

3. Production Cost (PRODCOST) is the total of annual change of Inventories () and the Cost of Goods Sold (). Following Roychowdhury (2006), the models for normal COGS and normal inventory growth are estimated as flowing regressions:

$$\frac{COGS_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{S_{i,t}}{TA_{i,t-1}} + \epsilon_{i,t} \quad (\text{Eq. 4})$$

$$\frac{\Delta INV_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{\Delta S_{i,t-1}}{TA_{i,t-1}} + \epsilon_{i,t} \quad (\text{Eq. 5})$$

By using **Eq. 4** and **Eq. 5**, the normal production cost has been estimated from the following industry-year regression (**Eq.6**) to determine **overproduction** (APROD) (Roychowdhury 2006).

$$\frac{PRODCOST_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{TA_{i,t-1}} + \beta_2 \frac{S_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + \beta_4 \frac{\Delta S_{i,t-1}}{TA_{i,t-1}} + \epsilon_{i,t} \quad (\text{Eq. 6})$$

Where:

$PRODCOST_{i,t}$	= The sum of change in inventory and the cost of goods sold of firm i in year t
$TA_{i,t-1}$	= Total assets of firm i in year $t - 1$,
$S_{i,t}$	= Total sales of firm i in year t , Sales is changes in revenues
$\Delta S_{i,t}$	= $Sales_t - Sales_{t-1}$, So, sales of firm i in year t minus sales of firm i in year $t - 1$,
ΔS_{t-1}	= $Sales_{t-1} - Sales_{t-2}$, So, sales of firms i in year $t - 1$ minus sales of firm i in year $t - 2$
$\beta_{0,1,2,3 \text{ and } 4}$	= Parameters to be estimated, namely the betas,
$\epsilon_{i,t}$	= Residuals or the error term which used as the level of abnormal production cost (APROD) of firm i in year t .

Abnormal production cost (APROD) is equal to actual production (PROD) minus predicted PROD derived using the relevant industry-year model and the firm-sales year's lagged assets for each firm-year combination (Sitanggang et al. 2019). The size of the estimated residual might signal the misstatement of production cost. The larger size residuals could be larger than earnings management (greater values for this metric) (Lopez & Vega 2019). To show higher profit margins, companies might generally raise production levels to distribute fixed costs across more units, which might lower the costs of goods/services sold (Lopez & Vega 2019).

In addition to the REM model developed by Roychowdhury (2006), the study also employs modified REM measurements devised by Gunny (2010) and Vorst (2016) for additional analysis (robustness tests). Modified REM measurements ensure the main results are reliable and credible. Definitions and measurements for Cash Flow Operation (CFO), Discretionary Expenses (DISEXP) and Production Cost (PRODCOST) variables have been introduced before (see Roychowdhury 2006). The above REM underlying models are adjusted to contain a new explanatory variable to quantify the effect of sales decline (Cohen et al. 2020). These researchers estimated this using the following predicted Operating Cash Flow (CFO), Discretionary Expenses (DISEXPT) and Production Cost (PROD) models (by industry and year):

1. Operating cash flow Model:

$$\frac{CFO_{i,t}}{TA_{i,t-1}} = k_0 + k_1 \frac{1}{TA_{i,t-1}} + k_2 \frac{S_{i,t}}{TA_{i,t-1}} + k_3 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + k_4 \frac{\Delta S_{i,t}}{TA_{i,t-1}} \times DD + \epsilon_{i,t} \quad \text{E.q. 7}$$

2. Discretionary Expenses Model:

$$\frac{DISEXP_{i,t}}{TA_{i,t-1}} = k_0 + k_1 \frac{1}{TA_{i,t-1}} + k_2 \frac{S_{i,t}}{TA_{i,t-1}} + k_3 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + k_4 \frac{\Delta S_{i,t}}{TA_{i,t-1}} \times DD + \epsilon_{i,t} \quad \text{E.q. 8}$$

3. Production Cost Model:

$$\frac{PRODCOST_{i,t}}{TA_{i,t-1}} = k_0 + k_1 \frac{1}{TA_{i,t-1}} + k_2 \frac{S_{i,t}}{TA_{i,t-1}} + k_3 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + k_4 \frac{\Delta S_{i,t}}{TA_{i,t-1}} + k_5 \frac{\Delta S_{i,t}}{TA_{i,t-1}} \times DD + k_6 \frac{\Delta S_{i,t-1}}{TA_{i,t-1}} \times DD + \epsilon_{i,t} \quad \text{E.q. 9}$$

Where: *DD* is a dummy variable which assign one (01) whenever a firm record a negative change in sales (declined) otherwise zero (0). The remaining variables are as previously explained with the original models developed by Roychowdhury (2006). The residuals from models 9, 10 and 11 is the abnormal cash flows from the operation, abnormal discretionary expenses and abnormal production cost, respectively (Cohen et al. 2020).

Although Roychowdhury (2006) measured REM using the above three proxies, recent research has estimated REM by aggregate proxy of the three measurements including Cohen, Dey and Lys (2008b); Eng et al. (2019); Ghaleb, Kamardin and Hashed (2021); Ghaleb et al. (2021); Kang and Kim (2012); Zang (2012). According to those abovementioned studies, a comprehensive measurement assists to

capture the effects of REM in a comprehensive way and to capture the total effects of abnormal real activities because businesses that manage higher earnings are likely to use a variety of activities (Kang & Kim 2012). Further, Eng et al. (2019) claims that the aggregate measure of REM would more accurately reflect earnings management activity than any individual measure of REM. Each direction indicates that earnings management is different, so, it is necessary for both to go in the same direction (Kang & Kim 2012). In more detail, abnormal cash flow from operation and abnormal discretionary expenses are negative measures of REM, while abnormal production cost is a positive measure of REM (Chi, Lisic & Pevzner 2011). Accordingly, the negative sign of abnormal cash flow from operation and abnormal discretionary expenses indicates an increase in REM manipulation, while the positive sign indicates a decrease in REM manipulation. The positive sign of abnormal production cost indicates an increase in REM, and the negative sign indicates a decrease in REM (Ghaleb, Kamardin & Hashed 2021). The three individual variables have various earnings implications (Cohen, Dey & Lys 2008b). Using the three measures individually may dilute any findings or lead to inconsistent results. Therefore, this study uses a single measure (REM_proxy) to unify measurements and to make it easier to interpret results.

Estimated residuals from regressions related to ACFO and AEXP is multiplied by -1, such that positive (higher) values indicate greater amounts of ACFO and AEXP cut by firms to increase reported earnings, while negative (lower) values indicate fewer amounts (Ghaleb, Kamardin & Hashed 2021; Kang & Kim 2012; Zang 2012). Then, ACFO and AEXP are added to the standardized residual of APORD (Ghaleb, Kamardin & Hashed 2021). The values of the three individual REM measures are estimated as residuals of three regressions: equations (1, 3 and 6) (Ghaleb, Kamardin & Hashed 2021). Those three measures are then aggregated into one proxy, by taking the sum of standardised residuals values of the three individual measurements using equation 10 (Cohen, Dey & Lys 2008b; Eng et al. 2019; Zang 2012), (positive composite score of REM) (Chi, Lisic & Pevzner 2011). This single REM proxy will be used to measure the relationship and interaction effect between REM and audit factors.

$$REM_{proxy} = ACFO (-1) + AEXP(-1) + APORD \quad (\text{Eq. 10})$$

5.4.3 Independent variables (audit quality factors)

As discussed in Chapters 3 and 4, the literature has shown that external audit attributes, audit committee characteristics, and the presence of an internal audit function can diminish managers' ability to use EM practices. Accordingly, the rationale for choosing these variables is because there is a consensus in the accounting literature that these variables represent internal and external mechanisms to monitor and supervise managerial activities. Further, the agency cost model suggests that the role of the auditor reduces agency cost, which includes managers' incentives to manipulate earnings, so it is a monitoring mechanism (Spathis, Doumpos & Zopounidis 2004). Therefore, the adoption of ISA is expected to enhance audit quality when standards such as ISA 260, 610, and 265 are implemented because they

oblige external auditors to contact corporate governance (CG), audit committee members (AC), and internal audit function (IAF) to enhance the audit process. Any report deficiencies in internal controls must be reported to CG and managers.

The study anticipates that the effectiveness of external audit attributes, AC characteristics and IAF will support external auditors and enhance audit quality by reducing REM. However, audit quality is difficult to measure, given it is a multi-dimensional potential construct and inherently unobservable. Therefore, several measurements for audit quality have been used to get a better understanding and a complete picture (Balsam, Krishnan & Yang 2003; Inaam & Khamoussi 2016; Reisch 2000). First, factors such as ISA adoption, industry specialist auditors, auditor and audit firm rotation and auditor brand name (Big 4) (dummy variables) have been identified as external audit quality attributes, since there is no single auditor characteristic that can determine the preciseness of external audit quality. Second, using the internal audit function (IAF) (dummy variable) and various characteristics of the audit committee, each characteristic can have a different impact on this committee's effectiveness. Audit committee characteristics are identified based on the degree of independence, level of expertise, activity involved (size and meetings), stock ownership, additional directorships (continuous variables), switching of membership, and gender equality (dummy variables). Both external and internal audit quality attributes can impact controlling REM activities. The rest of the section, therefore, lists and describes the possible impact of external and internal audit factors (variables) on REM. (See Appendix 4 for how those factors were measured in previous studies.)

5.4.3.1 External auditor factors

Factors such as the contents of audit reports, industry specialist auditors, auditor and audit firm rotation and auditor brand name (Big 4) are expected to be used for investigating the research question that relates external audit quality factors and REM proxy. This research has hypothesised that the effectiveness of external audit factors in constraining REM has increased with ISA adoption.

5.4.3.1.1 Contents of audit reports (ContentAR):

The study not only uses content analysis to examine the quality of audit reports but also to measure how contents of audit reports has influenced REM post ISA adoption. The new audit reforms (adoption of ISA) in the KSA increased auditor responsibility. The adoption of ISA is expected to provide auditors with further incentives to comply with new audit obligations, tools to provide higher-quality audits and requiring companies to provide auditors with all materials they require. How to measure the contents of the audit report is discussed above in section 5.3 (5.3.1.2) in more detail.

5.4.3.1.2 Auditor brand name (Big 4)

Previous studies have used the brand name of the audit firm which audited the account as an indicator of quality. As previous studies argued, if the audit is conducted by a firm belonging to one of the Big 4 audit conglomerates, such work is considered as an audit conducted by more comprehensive audit

procedures, which ultimately can be regarded as a reflection of a high quality audit (Habbash & Alghamdi 2017). The variable, brand name, is a dummy variable which takes value one (01) if the firm is audited by one of the Big 4 audit firms otherwise zero (0). The reasons for using the Big 4 but not the Big 6 or Big 8 are: First, due to the series of mergers between the big audit firms, the number of major audit businesses fell (Habib et al. 2019) from eight to six in 1989, six to five 1998, then five to four firms in 2002 (Singh 2014). Hence, the current Big 4 audit firms are PricewaterhouseCoopers (PWC), KPMG, Deloitte and Touche or Ernst and Young (Axén 2018; Cahan, Jeter & Naiker 2011; Sarhan, Ntim & Al-Najjar 2019; Wan-Hussin & Bamahros 2013). Second, most believe that firms belonging to the Big 4 are delivering better quality audits, since they have technical expertise in auditing, greater resources and global reach (Sarhan, Ntim & Al-Najjar 2019). This measurement is consistent with Myers, Schmidt and Wilkins (2013), Tsipouridou and Spathis (2014), Zgarni, Hlioui and Zehri (2016), Habbash and Alghamdi (2017), Alzoubi (2019), Sitanggang et al. (2019), and Imen and Anis (2020).

5.4.3.1.3 Audit tenure (audit rotation)

Audit tenure is the number of consecutive years a firm has retained its auditor (Myers, Myers & Omer 2003). This variable has been measured by calculating the number of years (the natural logarithm): (1) the audit firm has audited the company's financial statements (Chi, Lisic & Pevzner 2011; Sultana, Cahan & Rahman 2020; Zgarni, Hlioui & Zehri 2016); and (2) the external auditor has audited the company (Baatwah, Salleh & Ahmad 2015; Cohen & Zarowin 2010; Ho, Liao & Taylor 2015; Reichelt & Wang 2010; Sitanggang et al. 2019; Wan-Hussin & Bamahros 2013). Further, it measures as 1 if the auditor (or audit firm) has been with the client for a specific period time (e.g. four or five years or more), and 0 otherwise (Asthana 2014). Audit tenure is included in this study due to it being used as a proxy for audit security and audit quality (Ho, Liao & Taylor 2015). Accordingly, it is difficult to prefer one measure over the other because each is used based on the study objective.

The current study identified the rotation of an auditor in a given year as an alternative proxy for audit tenure. Thus, the aim is to examine whether audit firm rotation shows different potential effects on REM manipulation. Consistent with Imen and Anis (2020) and Herranz, Lopez-Iturriaga and Reguera-Alvarado (2020), audit rotation is measured as a dummy variable that takes the value of one when the same audit firm is used to audit a company for two consecutive years (current and previous year) and zero when the audit firm is changed (Imen & Anis 2020; Khoo, Lim & Monroe 2020). This variable was collected by writing all audit firms' names and then comparing the current year to the previous year.

5.4.3.1.4 Industry specialist auditors

To measure auditors' industry specialization, previous studies have used the audit firm's portfolio share and market share to proxy the auditor's specialist status (Lowensohn et al. 2007; Neal & Riley Jr 2004).

- The portfolio share approach examined the relative significance of the audit fees charged by a firm providing audit services to different client firms (Neal & Riley Jr 2004). In other words, industry-specific knowledge can be inferred through observing audit firms' distribution of audit fees

according to the industry their clients are operating. The audit firm is deemed to be specialized when generating the most fees (revenue) relative to its practice (Lowensohn et al. 2007). The main bottleneck of this approach is that it may not reflect specific efforts conducted by the audit firm to specialize in a specific industry, as the designation of specialists is likely driven by the size and nature of the industry (Neal & Riley Jr 2004). Lowensohn et al. (2007) confirmed this view in their results; Big 4 auditors only consistently charge higher audit fees, but this does not improve perceived audit quality. However, audit fees charged by different audit firms are not available in the public domain (Audoussert-Coulier, Jeny & Jiang 2016). Therefore, this approach is not used in this study.

- Market share approach is described as audit firms having the largest market share in a particular industry, with more industry-specific knowledge and expertise, significant investment in specific auditing technologies, etc. (Lowensohn et al. 2007; Mayhew & Wilkins 2003; Neal & Riley Jr 2004). This approach depends on the assumption that industry expertise is built by repetition in similar conditions, so the large volume of business in an industry refers to trust in expertise (Balsam, Krishnan & Yang 2003). In other words, when audit firms have the largest market share based on the number of clients, they are believed to be specialists, as they likely have the ability to understand sensitive issues and knowledge about a particular industry (Habbash & Alghamdi 2017). However, the limitation of using market share is that specializing in an industry refers to either a few large clients or a large number of small clients (Balsam, Krishnan & Yang 2003). To address this issue, the study uses several proxies and then determines which one provides accurate outcomes. These measures include continuous market share: number of clients, client size (number of client sales and assets) audited by the firm.

Industry specialist auditors can be determined based on relative or absolute levels of market share (Audoussert-Coulier, Jeny & Jiang 2016). The relative level can be determined when the audit firm has the largest or second largest market share, while the absolute level can be determined when its market share is 20% larger than what it would be if all auditing companies divided the industry evenly amongst them. Accordingly, the study adopted a more rigid approach because it seeks the quality of specialist auditors. Regarding the number of clients method, the audit firm was determined as a specialist when it had the largest market share in an industry (relative level) (Audoussert-Coulier, Jeny & Jiang 2016). Regarding the client size (assets and sales) method, the audit firm is determined as a specialist when its market share is 30% (or more) (Cahan, Jeter & Naiker 2011) (absolute level).

To develop a list of key industries for each auditor, the data was collected from audit reports (number of clients, audit firms) and database (client size, assets, and sales). Further, the clients audited by the Big 4-6 or non-Big 4-6 were included. Also, to ensure that the auditor really specialized in a particular industry, the study looked at the sectors which are categorized based on the sub-sector (level 2), not the major sector (level 1) of global standards for sectors (GICS). The major sector (level 1) can have around three or four sub-sectors (level 2), but they may not help to differentiate the exact specialists who work

industries. Furthermore, a list of key industries for each auditor was devised by using all client years from 2014 to 2019, not by year only. Firstly, because the classification of industries was based on the sub-sector (level 2) of the GICS, the number of firms in each sub-sector was small. Hence, if the classification is done by year only, it raises an issue concerning small sample size. Second, some sectors had different audit firms for each company, which makes it difficult to count which one is the most specialized if I only used one year. Third, some sectors have only five or six firms, so it is not fair to determine that the audit firm is specialized because it audited two firms in that sector. To avoid this problem, the study included all observations of six years in each industry.

The study used the following equations in determining the level of industry market share, to be consistent with Mayhew and Wilkins (2003), Balsam, Krishnan and Yang (2003), Cahan, Jeter and Naiker (2011), and Audousset-Coulier, Jeny and Jiang (2016):

$$\frac{\begin{matrix} (1) \text{ Percentage of clients in a given industry audited by the same audit firm for all 6 years.} \\ (2) \text{ Clients' revenue or assets audited by the same audit firm in a given industry} \end{matrix}}{\text{All clients' revenue or assets within that industry (for 6 years).}}$$

The study uses industry specialization (AudSpec) as a dummy variable, which equals one when a company is audited by a specialized auditor and zero otherwise, so it agrees with Chen, Lin and Zhou (2005), Johl, Jubb and Houghton (2007), Prawitt, Smith and Wood (2009), Ho, Liao and Taylor (2015), Zgarni, Hlioui and Zehri (2016), Habbash and Alghamdi (2017), Imen and Anis (2020) and Sultana, Cahan and Rahman (2020). However, if the audit firm is classified as a specialist based on client size (assets or revenue) while it has a small number of clients in the industry, the study uses the measure of the number of clients (Balsam, Krishnan & Yang 2003). The reason is that client size proxy (assets and sales) does not closely associate with audit effort; it is simply a client-size measure (Audousset-Coulier, Jeny & Jiang 2016). This measurement may lead to bias in favour of large clients as it depends on sales and assets. The percentage of clients in an industry audited by a specialist firm is a parsimonious way of capturing the specialists' competitive position within an industry (Cahan, Jeter & Naiker 2011).

5.4.3.2 Internal audit factor and audit committee characteristics

Internal audit function and audit committee characteristics such as independence, expertise, activity (size and meetings), stock ownership, additional directorships, switching, and gender expected to use for investigating the research question: Do internal audit quality characteristics decrease REM proxy? and the main hypotheses: the effectiveness of the internal characteristics in constraining REM is higher under ISA than under national reporting regimes. Those factors will be discussed below.

5.4.3.2.1 Audit Committee activity (effectiveness) (ACSize and ACMeet)

Previous studies have measured AC activity based on size and number of AC meetings (Xie, Davidson III & DaDalt 2003). To identify the impact of AC size on REM, some have used the natural logarithm of the actual size (Endrawes et al. 2020) and some studies have used the average or number of audit committee members throughout the year including Abbasi, Alam and Bhuiyan (2020); Baxter and Cotter (2009); Lawati, Hussainey and Sagitova (2021); Setiawan et al. (2020); Sultana, Cahan and Rahman (2020). Further, other studies have used a dummy variable based on the size of the AC including Knechel, Sharma and Sharma (2012), Asiriwuwa et al. (2018) and Ismael and Kamel (2021).

Audit committee meeting (ACMeet) is measured as the average or number of meetings held each year (Lawati, Hussainey & Sagitova 2021; Setiawan et al. 2020; Sultana, Cahan & Rahman 2020; Vlaminc & Sarens 2015; Zgarni, Hlioui & Zehri 2016). Further, other studies have used a dummy variable based on the number of AC meeting during the year including Al-Shetwi et al. (2011); Asiriwuwa et al. (2018) Ismael and Kamel (2021); Knechel, Sharma and Sharma (2012) and Bédard, Chtourou and Courteau (2004). Accordingly, this study counts the number for audit committee size and number of meetings held throughout the year for each company.

5.4.3.2.2 Audit Committee Independence (ACInd)

Audit Committee Independence (ACInd) is defined as the percentage of independent directors on the committee. It is measured as independence if AC directors have no relationship with the firm (Setiawan et al. 2020), or if annual reports declared that AC directors are independent. The literature measures AC independence as a dummy variable by giving a value of 1 when all its members are independent (Alzeban 2020; García, Barbadillo & Pérez 2012; Ghafran & O'Sullivan 2017; Mardessi & Fourati 2020); exceed the median percentage of independent directors on the AC (Ismael & Kamel 2021; Knechel, Sharma & Sharma 2012); when AC comprises external and independent members exclusively (Zgarni, Hlioui & Zehri 2016); or the majority of AC members are independent (Osma & Noguer 2007) and 0 otherwise. Other studies measure AC independence by the average (Dhaliwal, Naiker & Navissi 2010) or percentage of independent directors on the AC (Aldamen, Hollindale & Ziegelmayer 2018; Alzeban 2019; Lawati, Hussainey & Sagitova 2021; Mardessi & Fourati 2020; Sultana, Cahan & Rahman 2020; Vlaminc & Sarens 2015). Thus, based on the majority of previous studies, AC independence in this study is the percentage of members who are declared to be independent in annual reports, divided by the total number of audit committee personnel. This is consistent with Farhan, Obaid and Azlan (2017); Habbash and Alghamdi (2017); Hashed and Almaqtari (2021).

5.4.3.2.3 Audit Committee Expertise (ACExpt)

Audit committee expertise has been measured in various ways. Some research uses it as a dummy variable which is equal to one if the company has one or more of financial accounting experts on the committee, and 0 otherwise (Alzeban 2020; Bédard, Chtourou & Courteau 2004; Ghosh, Marra & Moon 2010; Ismael & Kamel 2021; Yang & Krishnan 2005; Zgarni, Hlioui & Zehri 2016). This measurement

is not suitable for this study, as each AC must have at least accounting or financial expertise based on CG guideline in the KSA. Other studies measure AC expertise by number of experts on the committee (Alzeban 2015; Mardessi & Fourati 2020; Masmoudi 2021) or by the proportion of directors on the committee with accounting and financial qualifications (Alzeban 2019; Chan, Liu & Sun 2013; Garven 2015; Lawati, Hussainey & Sagitova 2021; Setiawan et al. 2020; Sun & Liu 2014; Vafeas 2005). So an audit committee with more members characterized by financial and accounting skills indicates a higher level of expertise (Endrawes et al. 2020). This measurement is accurate and suitable as it makes it possible to calculate each member who has expertise, with either academic or industry experience, to accounting or financial backgrounds. This thesis measures experts as the percentage of AC members with financial accounting (academic or industry experience) divided by the total number of members (Visvanathan & Krishnan 2008).

5.4.3.2.4 Audit Committee Switching (ACSw)

Audit committee switching refers to the tenure of directors on the committee. Some prior research measures it as the average tenure (number of years) of directors (Garven 2015; Khoo, Lim & Monroe 2020; Sultana, Cahan & Rahman 2020; Sun, Lan & Liu 2014) on the board (Ghosh, Marra & Moon 2010; Vafeas 2005). Other researchers use it as a dummy variable which is equal to 1 if the average tenure of the members on the AC is three years (or less) or at least nine years, and 0 otherwise (Sharma, Vineeta D. & Iselin, Errol R. 2012). Some studies measure it as the proportion of directors with 10 or more years of board tenure (Sun & Liu 2014) or the proportion of AC members with more than three or six years tenure on the board. However, those measurements are not suitable here as most AC tenure in the KSA is around three years and the period covered here is six years. It is difficult to get accurate results, so this study looks at each year separately.

While prior studies focus exclusively on AC tenure, this study departs from that approach. It has been developed as an alternative measurement of tenure by focusing on changing members from year to year. It predicts that doing this influences the effectiveness of AC and in turn REM. This is a new variable, and it will help examine to what extent changing AC members from year-to-year influences EM in the KSA. This information was gathered by noting all member names on the AC and then determining whether they had changed in the following year or not. If so, the study considers this as a switch between AC members. Some audit committees change only one member, or more than one member, while others do not. For this reason, if only one member has changed, the study considers this as a switch between AC members, so it takes the value of one but zero if they have not changed

5.4.3.2.5. Audit Committee directorships (ACadd) (Busyness)

Audit committee directorships are defined as directorships held by each committee member (Vafeas 2005). This variable is measured as the average number of other directorships (Sun, Lan & Liu 2014; Vafeas 2005), outside directorships (Garven 2015; Yang & Krishnan 2005) served on by audit committee members (Sultana, Cahan & Rahman 2020) or the average number of outside boards on

which a committee's directors serve (Ghafran & O'Sullivan 2017) in the same year (Herranz, Lopez-Iturriaga & Reguera-Alvarado 2020). It calculates the proportion of directors who serve on three or more other board seats on the AC (Chan, Liu & Sun 2013; Sharma, Vineeta D. & Iselin, Errol R. 2012; Sun & Liu 2014; Vlamincck & Sarens 2015), or the proportion of AC members who serve on several boards (Lawati, Hussainey & Sagitova 2021). Further, it is used as a dummy variable which equals 1 if all AC members serve on three other board seats (Sharma, Vineeta D. & Iselin, Errol R. 2012), while others treat it as a proxy for governance expertise. It serves as the average number of directorship positions they hold in other listed companies (Carcello, Joseph V & Neal, Terry L 2003).

Accordingly, if the outside director serves on three or more other corporate boards, this is considered as a member with different directorships (Core, Holthausen & Larcker 1999). Some literature has used this to measure the extent of busyness of the audit committee. For example, they only count those who serve in three or more different directorships while ignoring others, even if they have two other directorships. This study does not use this measurement because it may not be accurate and fair for determining the extent of busyness of the AC. For example, when the AC has four members and each one serves in two distinct positions, it is not fair to consider that this audit committee is not busy while its members serve in eight different directorships. To avoid this issue, the current study measures busyness as the average by dividing the total number of all distinct positions of the AC on the total number of values in the set in each year. This measurement is more accurate than others because it does not ignore any position and calculates all positions without exception, whether less or more than three. It makes the findings more accurate, where it relates to the overall burden incurred by the audit committee as a whole as a result of busyness of members. This information was collected by noting all the different directorships held by each member of the AC and counting them to calculate the average.

5.4.3.2.6. Audit Committee Share Ownership (ACStock)

Audit committee share ownership is stock owned by each committee member (Vafeas 2005). Some studies measure it by using the average value of common stock owned by the AC (Garven 2015) or by the proportion of the client's common stock (and stock options) held by AC members (Carcello, Joseph V & Neal, Terry L 2003). Other studies use the proportion of audit committee members with block shareholding (Sun, Lan & Liu 2014), number of shares (García, Barbadillo & Pérez 2012) or outstanding shares (Dhaliwal, Naiker & Navissi 2010) held by members of the board of directors in the AC. A few use the proportion of directors who hold at least 1% of the company's shares (Sun & Liu 2014) or the percentage of stock ownership of independent (or non-independent) directors on the AC (Yang & Krishnan 2005). Further, the actual stock ownership for all AC members (Vafeas 2005) or the percentage of stock ownership of directors on the AC (Ghosh, Marra & Moon 2010) has been used. Accordingly, this variable is collected by calculating the total stock owned by AC members and then divided it by the total shareholdings to get the average.

5.4.3.2.7 Diversity on the AC

As discussed in Chapter 3, diversity on the AC influences its effectiveness and in turn influences REM. Diversity on the AC is measured by the presence of women directors (which equals 1 and 0 otherwise) (Aldamen, Hollindale & Ziegelmayer 2018). Further, diversity is measured by ratio (Abbas 2020), percentage of female members on the AC (Abbasi, Alam & Bhuiyan 2020; Lawati, Hussainey & Sagitova 2021; Mardessi & Fourati 2020; Setiawan et al. 2020; Sun & Liu 2014; Zalata, Tauringana & Tingbani 2018), or by number of women on the AC divided by the total number of AC directors (Pucheta-Martínez, Bel-Oms & Olcina-Sempere 2016). Sultana, Cahan and Rahman (2020) confirm that gender diversity on the AC can be measured in three ways: (1) a continuous measure (%ACFemale), (2) a dichotomous measure (DumACFemale), and (3) actual number of female AC members (#ACFemale). However, the latter cannot be used in this research, since the AC that has female members only has one female. Therefore, the appropriate measurement of diversity is to use it as a dummy variable which equals one if the company has women on the audit committee, and zero otherwise.

5.4.3.2.8 Internal Audit Function (IAF)

As discussed in Chapter 3 audit quality is influenced by internal audit function (IAF). IAF is measured in two ways: first, the existence of IAF on the firm by giving 1 if the firm has its own IAF and 0 otherwise (Alzoubi 2019; Axén 2018; Davidson, Goodwin-Stewart & Kent 2005; García, Barbadillo & Pérez 2012; Wan-Hussin & Bamahros 2013; Yassin & Nelson 2012). Second, the percentage of total members on IAF (size) (Ismael & Kamel 2021). Accordingly, the percentage of IAF members cannot be used in this study, since the information regarding the IAF department was not declared in annual reports. The only information declared is the existence of IAF or not. Therefore, the best measurement is to use this as a dummy variable which equals one if the firm has IAF, and zero otherwise.

5.4.4 Interaction variables

The adoption of ISA give auditors more tools to establish and determine managerial integrity (Alhadab & Clacher 2018). These new audit reforms increase auditor responsibility, which is expected to provide auditors with the tools to provide higher-quality reports. Accordingly, this section focuses on the ISA adoption variable in order to assess how adoption has moderated the link between audit quality factors and REM measurements. ISA is a dummy variable that takes the value of 1 for Pre-ISA adoption, otherwise 0. The ISA (moderator variable) distinguishes between two periods: the average of REM pre and post ISA. Interactions between the dummy variable for the introduction of ISA and the above independent variables (internal and external audit factors) are presented as follows: (ISA * index score of independent variables). However, this interaction was applied for contents of audit reports separately. Also, it was applied separately for internal and external audit factors and then applied together for both.

The definition of those variables will be presented in the section on empirical models under the interaction effect (Model 4).

5.4.5 Control variables

Control variables are significant as other than the primary variable, they may be driving any observed differences in the dependent variable (Johnson, Khurana & Reynolds 2002). Also, ignoring control variables in models may lead the primary variable to serve as a proxy for other factors that determine the independent variable (Myers, Myers & Omer 2003). Although the second objective of this study is to examine whether ISA adoption affects REM and the relationship of REM with audit factors and AC characteristics in the KSA, other corporate governance and firm characteristics can also affect the relationship. Thus, those characteristics should distinguish their effects on REM from other testing variables to determine whether they affect the study models or not. That is, corporate governance characteristics are board size, board independence, financial and accounting experts on the board, board meeting, family and managerial ownership and gender diversity (females), while firm characteristics are complex, profitability (ROA & LOSS), leverage, market-to-book value, market cap and firm size (assets and revenue). Accordingly, this study attempts to collect all possible control variables for study models.

However, after employing control variables with study models, variables were sorted, which resulted in the deletion of most of them from study models. The reason was that some have a high correlation with independent variables (more than 70%), which raises the multicollinearity issue in models, while others have no significant relationship with dependent variables. Those variables are size and independence of the board, family and managerial ownership, existence of female members (corporate governance characteristics), complex, and firm size (assets and revenue) and loss (firm characteristics).¹⁰ Accordingly, only control variables that do not cause a multicollinearity issue in regression models and have a significant relationship with dependent variables are kept. They are financial and accounting experts on the board, board meeting, ROA, leverage, market-to-book value, and market capitalization. Those variables, the effect of each and the reason for selecting them, will be discussed briefly below. Further, how those variables were measured in previous studies is presented in Appendix 4.

5.4.5.1 Corporate governance characteristics

The term "corporate governance" (CG) refers to a set of practices, procedures, and policies that serve as guidelines for a company's management and control (Almaqtari et al. 2020). As previous studies expected, CG characteristics are proxies for underlying corporate governance quality that capture the

¹⁰ Board size is measured by the number of board members. Board independence is calculated by the proportion of independent directors and non-executive members on the board and divided by the board size. Family and managerial ownership are defined as the percentage of total shares held by family and executive directors divided by the total number of the firm's shares for year t . The existence of a female member is a dummy variable that has the value of 1 if the company has a female member on the board, otherwise 0. The complex is a dummy variable that has the value of 1 if the company has a subsidiary and 0 otherwise. Firm size is measured by the logarithm of total assets and total revenue for year t . Loss is a dummy variable that has the value of 1 if a firm has a negative income before extraordinary items for year $t - 1$, and 0 otherwise.

quality of underlying corporate governance mechanisms (de Villiers & Dimes 2021) and effectively constrain earnings manipulation (Feng & Huang 2021; Man & Wong 2013; Xie, Davidson III & DaDalt 2003). As a result, the extent to which CG mechanisms promote hope in reining in or mitigating many flaws, anomalies, or fragilities in corporate behaviour has been linked (Gendron 2018), which in turn can increase audit quality. This makes use of CG factors necessary in models in order to measure its effect. Board expertise and meetings are classified under corporate governance characteristics. Xie, Davidson III and DaDalt (2003) found that board activity (e.g., meetings) and financial background are major factors in limiting managers' willingness to engage in earnings management. Further, Man and Wong (2013) confirmed that directors with financial expertise can provide incremental control effects on earnings management, particularly in companies with poor CG. CG can be an effective tool for supervising management in the financial accounting process (Feng & Huang 2021). Therefore, CG is included in this study to capture its impacts on REM manipulation.

Board expertise is defined as the percentage of directors who have finance or accounting background. Hence, expert (BExpt) measured by the percentage of directors who have finance or accounting background (certification) and have financial or accounting experience on the board (Alzoubi 2019; Baxter & Cotter 2009; Kang & Kim 2012) divided by board size. Further, it measures (by selecting 1) if the director has an accounting degree or designation and has worked in an accounting-related position, and 0 otherwise (Wahid 2019). While board meeting (BMeet) is measured by the number of board meetings for the fiscal year (Al-Shaer & Zaman 2018; Alzeban 2020; Baatour, Othman & Hussainey 2017; Baxter & Cotter 2009; Carcello et al. 2002; Garven 2015; Kang & Kim 2012; Marra & Mazzola 2014; Wahid 2019). It also measures total number of meetings attended by all board members divided by the total number of meetings held during the year (Hashed & Almaqtari 2021) or by giving 1 if BExpt exceeds the median number of board meetings (Knechel, Sharma & Sharma 2012). Accordingly, board expertise is measured in the current study by the percentage of directors who have a finance or accounting background (certificate or experience) on the board and divided by board size, while board meeting is measured by the number of board meetings for the fiscal year. However, no prediction is made about the direction of the correlation between REM and corporate governance characteristics.

5.4.5.2 Firm characteristics

As expected, firm characteristics have a high impact on any relationship, so it is important to contain them on the model to determine their impact. Four characteristics are used in this study: performance (ROA), leverage (LEV), growth (MB) and size (MC) of the firm. Consistent with Gunny (2010), the inclusion of ROA addresses concerns that REM is linked to performance. MC is in control of size effects while the MB is in control of growth opportunities (Gunny 2010). Further, these factors have been chosen because prior work has identified them as motivation to manipulate earnings (as discussed below). And because those control variables yield inconsistent results in the previous studies, no prediction is made concerning the coefficient on those variables.

Firm performance affects managers' motivation, as manipulating earnings may be driven by firm performance measure improvement (Guay, Kothari & Watts 1996). Further, the result of Dechow, Sloan and Sweeney (1995) highlights that earnings management stimuli are correlated to financial performance. Ignoring firm performance may lead to bias and interfere with statistical inferences from models, so it is important when investigating EM, to control the model by performance (Dechow, Sloan & Sweeney 1995). Furthermore, when evaluated by earnings, the direct link between earnings and both accruals and cash flow are consistent with the influence of performance (Makarem 2015). Consistent with Tsipouridou and Spathis (2014), Jung, Kim and Chung (2016), Zalata, Tauringana and Tingbani (2018), Sitanggang et al. (2019), Khoo, Lim and Monroe (2020) and Ismael and Kamel (2021), this study uses return on assets for the previous year as a control measurement. This is calculated as net income before extraordinary items scaled by total assets at year (net income/total asset (lag)).

The financial structure of the company (e.g. level of leverage) could provide an incentive for REM (Johnson, Khurana & Reynolds 2002). Firms with relatively greater leverage which could be subject to the risk of bankruptcy (Bartov, Gul & Tsui 2000). The subsequent financial distress could mean that REM reveals better operational conditions that satisfy covenants on financing (debt) contracts (Becker et al. 1998; Johnson, Khurana & Reynolds 2002; Zgarni, Hlioui & Zehri 2016). The positive relationship between EM and leverage can be due to such reasons, while the negative relationship (Balsam, Krishnan & Yang 2003; Becker et al. 1998) can be explained by the fact that companies realize financial lenders' awareness of information content and they do require correct and updated information. For this reason good firms do not engage in manipulation of earnings (Pornupatham 2006). Consistent with the work done by García, Barbadillo and Pérez (2012), Sun and Liu (2014), Baatwah, Salleh and Ahmad (2015), Choi, Choi and Sohn (2018), Alzoubi (2019), and Ismael and Kamel (2021), firm leverage is calculated as total debt scaled by total assets ratio at the end of the year.

Firm size can have a positive effect on REM since large diversified firms can employ complex financial reporting systems which provide more opportunities to manipulate earnings in such a way that external financial statements users can not be identified (Lobo & Zhou 2006). However, large firms may have been subject to more scrutiny on the stock market due to their large market capitalization. Hence, such firms may have less incentive to overstate earnings (Lobo & Zhou 2006). Having considered such mixed effects, the current study used SIZE as a control variable without predefining the expected relationship.

To proxy firm size, previous studies have used value of total assets (TA) held by the firm, total sales, and market capitalisation. For example, total assets include, Sun and Liu (2014), Habib and Bhuiyan (2016), Abbasi, Alam and Bhuiyan (2020); Alzoubi (2019); Sun and Liu (2014); Wali and Masmoudi (2020); total sales (TS) include Myers, Schmidt and Wilkins (2013); market capitalisation (MC) includes Khlif and Samaha (2014); Masmoudi (2021); Wali and Masmoudi (2020); Zalata, Tauringana

and Tingbani (2018) equity capitalization includes Vafeas (2005) and/or market value of equity of firm include Yang and Krishnan (2005). Following similar studies, this study used natural logarithms of market capitalisation (MC) to proxy firm size (Wali and Masmoudi (2020)). Further, MC represents future expectations of the firm (Fama & French 2021), which can influence earnings manipulation incentives.

Firm growth opportunities affect practice earnings management (Zgarni, Hlioui & Zehri 2016). Firms seek to attain constant annual growth rates (Bartov 1993); therefore, negative growth trends can lead to EM manipulation. Further, managers' bonuses can be affected, as bonuses are conditional on achieving particular performance targets (Nagar 2002). However, firms growing rapidly are more likely to be engaged in EM practice (Zgarni, Hlioui & Zehri 2016). Matsumoto (2002) confirms that high-growth firms appear to manage earnings upward but do not guide forecasts downward. The above discussion indicates that managers take action to avoid negative earnings surprises (Matsumoto 2002). However, firms with high-growth rates are less likely to engage in earnings management through real activities (Gunny 2010). The current study uses growth to control the firm's life cycle (Al-Shattarat 2017; Gunny 2010). Hence, this is consistent with Vafeas (2005), Gunny (2010), Cahan, Jeter and Naiker (2011), Zgarni, Hlioui and Zehri (2016), Li, Hay and Lau (2019) and Khoo et al. (2020), firm growth (market-to-book value ratio), is used as a control variable but the variable sign is left unpredicted. This is measured as the book value of net assets divided by market value of the firm in year t (Mardnly, Badran & Mouselli 2021).

5.4.6 Statistical analysis

Statistical data results were analysed using SPSS and Stata software.¹¹ To examine the impact of internal and external audit factors on REM manipulation, descriptive analysis, correlation matrix and a multiple regression model were carried out.

5.4.6.1 Descriptive analysis

Descriptive analysis provides background statistics for study variables (Rabe-Hesketh & Everitt 2003). This analysis is most commonly used to measure central tendency through mean, median and mode, or mean, minimum and maximum. Descriptive analysis was chosen since it provides general observations and reports on quantitative data trends and provides a basis for comparison between variables. The most important measurement is mean (Veal 2005), since it shows the average value of variables; thus mean measurement was used in this study.

¹¹ SPSS is an enormously powerful data analysis package that can handle very complex statistical procedures (Pallant, 2020). Stata is a computer programme that allows you to execute a variety of statistical calculations. Calculation of summary measures, graph building, frequency distribution using contingency tables, parameter estimate in generalised linear models and survival analysis models utilising uncorrelated and correlated data, are only a few examples (Suarez et al., 2019).

5.4.6.2 Correlation matrix

A correlation matrix presents correlation coefficients among study variables. It only considers how close the dots are to the regression line when determining strength of the relationship (Acock 2008). Pearson's Product-Moment Correlation is used in most correlation matrices (r) for parametric correlations while Spearman's and Kendall's Correlation are commonly used for non-parametric correlations (Pallant 2020). The current study uses Spearman's Rank Order Correlation (non-parametric correlations) because the data did not meet the five assumptions, as will be discussed below in the regression section. Spearman's ρ (alternative to the Pearson test) is useful for exploring relationships and describing strength and direction of the linear relationship between study variables (Pallant 2020; Suarez et al. 2019). Figure 5.1 presents different interpretations with additional details of correlation coefficient values between -1.0 and 1.0. The study uses the following interpretations, which apply, whether or not there is a negative sign in front of the r or ρ value. The correlation coefficient between r or ρ values is the same, but in a different direction based on the presence or absence of a negative sign.

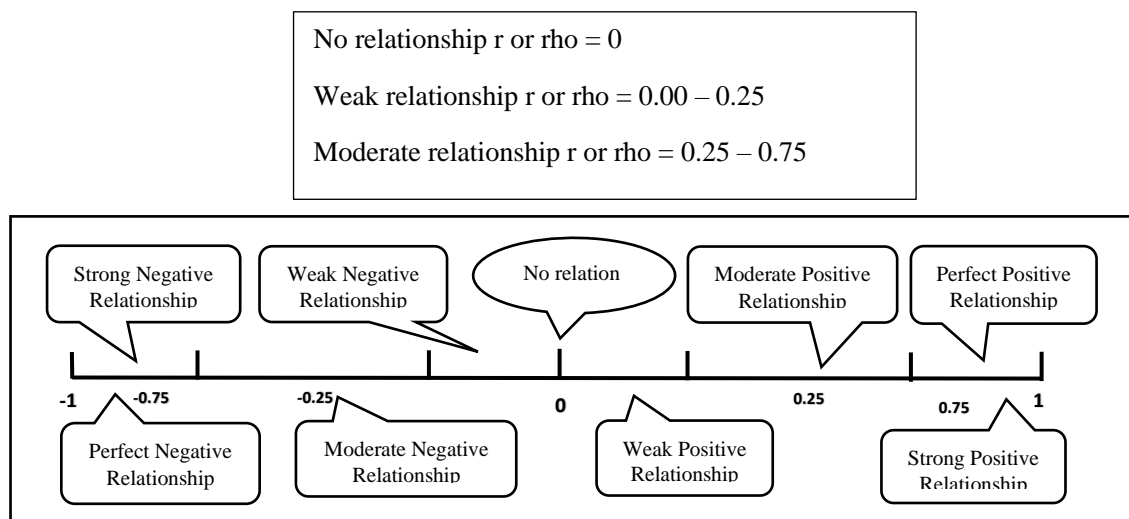


Figure 5.1: Interpretations of the Correlation Coefficient Values

5.4.6.3 Regression

Linear regression is one of the most famous techniques in the analytics industry, widely used in business, finance, marketing, healthcare, FMCG/CPG/retain goods and so on (Kothari 2015). Model regression has been used, as this type of regression measures the relationship between variables: something that makes regression analysis one of the most suitable and practical avenues for testing hypotheses. The current study applies multivariate statistical analyses to test the hypotheses. To accept or reject the model, multivariate model validation is a difficult decision-making task that entails comparing numerous associated quantities using available data and prior knowledge (Jiang & Mahadevan 2008). This process will be discussed below.

First, before the analysis stage, the data was screened for econometric problems using diagnostic tests of normality, multicollinearity, autocorrelation, linearity, and heteroskedasticity (Gujarati 2009).

Ignoring the above tests might negatively impact analysis by providing incorrect estimates, by either overestimating or underestimating significance (Gujarati 2009). Thus, the sample should fulfil five fundamental assumptions (Pallant 2020) to consider that regression analysis is valid. These assumptions are:

1. Normality: scores should be distributed normality on each variable. This was tested by inspecting histograms of scores on each variable.
2. Linearity: the relationship between two variables should be linear. The scatterplot of scores gave a straight line (roughly), not a curve.
3. Homoscedasticity (same variance): variance in scores should be constant for variable X and variable Y at all values, not heteroscedasticity, which is the violation of homoscedasticity. The scatterplot shows a fairly even cigar shape along its length.
4. Independent observations: errors associated with one observation should not be correlated with errors of other observations. The observations should be independent of one another. No variable (measurement) was influenced by any other variable (measurement).
5. Multicollinearity: There should be no exact collinearity among predictors. When independent variables are related to each other, multicollinearity issue can be raised (Liu et al. 2003; Suarez et al. 2019). Due to similarities between variables, the regression equation will have an additive effect, which may inflate predicted values (Suarez et al. 2019). Further, standard errors are inflated, and coefficients of variables become unstable (Suarez et al. 2019). Multicollinearity can be checked by running correlation analysis among independent variables to test how variables are correlated or whether correlation is high (Liu et al. 2003). Further, to give a more realistic picture, multicollinearity should be checked by using the variance inflation factor (VIF) for each variable (Liu et al. 2003), which indicates how related it is compared to other variables (Suarez et al. 2019). When the variable has a VIF higher than 3, it should be dropped from the model, since it is considered multicollinear (Suarez et al. 2019).

In this study, the condition of multicollinearity has been fulfilled; the model is free from multicollinearity issues. The variance inflation factor (VIF) value is less than 10 and no greater than 5 or 3 (Chan, Liu & Sun 2013), and tolerance values were not close to zero (Liu et al. 2003), as will be presented in Chapter 7 (Table 7.4). However, the data did not fulfil the assumption of normality and homoscedasticity.

Second, because the data did not fulfil the assumption of normality and homoscedasticity, the appropriate linear regression for the current study is GLS. GLS estimators are more efficient and appropriate than OLS when the assumptions of heteroscedasticity or autocorrelation of regression errors fail (Cameron & Trivedi 2010). Also, panel data is more advantageous than other types of data because it investigates the dynamics of adjustment and cross-sectional distribution (Baltagi 2021). Panel data are a special type of pooled data and repeat measurements at different points in time on the same individual

unit, such as firm, country and state (Cameron & Trivedi 2010; Grill 2017; Upton 2016). Hence, observations in panel data involve a time-series dimension and cross-sectional dimension (Grill 2017). Accordingly, the current study observed panel data at regular time intervals and used balanced panel data (all individual units are observed in all time periods) and a short panel dataset (few time periods and many units) (Cameron & Trivedi 2010; Grill 2017).

There are different linear models for panel data (Cameron & Trivedi 2010) but the most prominent are fixed and random effect models (Grill 2017). Both are applied to model the level of the dependent variable (Grill 2017) and in both models individual-level effects are random (Cameron & Trivedi 2010). Fixed and random effect models are the best to use with heteroscedasticity or autocorrelation problems, but with some correction models, if needed (e.g. Robust test and Cluster test) (Hoechle 2007), so these models are applied.

Third, the current study has applied several tests (correction models) to determine the appropriate regression model to estimate study results. Choosing the incorrect analytical method can lead to erroneous conclusions (Grill 2017). These tests are Hausman, Breusch and Pagan IM tests, Pesaran's test of cross-sectional independence, the Wooldridge test for autocorrelation in panel data, Modified Wald test for GroupWise heteroskedasticity, Cross-sectional time-series FGLS regression and Prais-Winsten regression, correlated panel corrected standards errors (PCSEs).

According to Büyükkurt (2018); Wali and Masmoudi (2020) and Habib, Ahsan and Bhuiyan, Md Borhan Uddin (2016), the Breusch and Pagan Lagrange Multiplier (LM) test, and Hausman test should be performed to find the best model. The Hausman test is a statistical test that aims to detect whether unit effects are truly uncorrelated with any input factors (Grill 2017). Therefore, it is the best-known test to determine whether the Random-effect (RE) model (null hypothesis) or Fixed-effect (FE) model (alternative hypothesis) is appropriate to explain outcomes (Damodar N 2004; Esarey & Jaffe 2017; Grill 2017; Zulfikar & STp 2019). If there is significant unobserved heterogeneity, the FE model is correct (there are correlated fixed effects and FE model is consistent and efficient), otherwise, the RE model is correct if there is no unobserved heterogeneity (RE is consistent and efficient) (Moody 2009). To be more specific, when the test shows a statistically significant p-value ($p < 0.05$), the FE model (H1) is appropriate, otherwise, the RE model (H0) is appropriate ($p > 0.05$) (Moody 2009; Zulfikar & STp 2019). Further, to double check, an LM test is applied. The function of this test is to determine the best estimate, whether using a Random effect or not, and to determine whether the Common effect (pooled regression PLS) model (null hypothesis) or Random effect model (alternative hypothesis) is an appropriate method (Reschiwati & Solikhah 2018; Zulfikar & STp 2019). Select the RE model (H1) for p-value ($p < 0.05$), and select the CE model (H0) for p-value ($p > 0.05$) (Reschiwati & Solikhah 2018; Zulfikar & STp 2019).

Fourth: after determining the appropriate model, serial correlation, autocorrelation and heteroskedasticity should be checked following previous studies including Skaife and Gassen (2009), Choi et al. (2010), Marra, Mazzola and Prencipe (2011), Reed and Ye (2011), Ho, Liao and Taylor (2015), Boolaky and Omoteso (2016b) and Sultana, Cahan and Rahman (2020). Ignoring serial correlation and homoscedastic disturbances when present results in consistent but inefficient estimates of regression coefficients that will be biased (Baltagi 2021). Serial correlation is a potential problem (disadvantage) for panel data (Reed & Ye 2011) because this correlation refers to the fact that repeated observations on the same units are significantly correlated, which violate the assumption of uncorrelated errors (Grill 2017). Furthermore, many panel data models in the literature assume that disturbances have homoscedastic variance, so testing for heteroskedasticity is an important step in panel data analysis (Feng et al. 2020). Accordingly, the current study applied the following tests: Pesaran's test of cross-sectional independence and the Wooldridge test for autocorrelation in panel data to check serial correlation, and Modified Wald test for groupwise heteroskedasticity and heteroskedasticity and homoscedastic tests (cross-sectional time-series FGLS regression) to check heteroskedasticity for FE and RE, respectively. When the p-value is less than 0.05, there is a potential problem regarding serial correlation, autocorrelation and heteroskedasticity in the model. For now, the above tests confirm the presence of potential problems regarding serial correlation, autocorrelation and heteroskedasticity for all six (the actual and additional) models.

Fifth: to adjust those potential problems, robust standard error (SE) estimates for linear panel models are produced (Hoechle 2007). For example, the Robust test (SE estimates are robust to disturbances that is heteroskedastic), Cluster test (SE estimates are robust to disturbances that are heteroskedastic and autocorrelation), Feasible Generalized Least Square (FGLS) and panel corrected standard errors (PCSEs) (SE estimates are robust to disturbances that are heteroskedastic, contemporaneously cross-sectionally correlated, and autocorrelated) (Hoechle 2007). It appears that the Robust test corrects only heteroscedasticity, the Cluster test corrects heteroskedastic and autocorrelation problems, while FGLS and PCSEs are considering all issues the model could have (Hoechle 2007). Accordingly, the current study applies these panel correction models; Cross-sectional time-series FGLS regression and Prais-Winsten regression, correlated PCSEs (panel-corrected standard errors). Those two tests ensure the model is appropriate and free from potential problems.

FGLS is an efficient estimation and implemented when the number of cross-sections (N) (firms or observations) are lower than the number of time periods (T); T is greater than or equal to N (Reed & Ye 2011). If the number of cross-sections (observations) is more than time periods, it is better to use PCSE (Hoechle 2007). This study applied six years and 96 firms; around 576 observations (T is lower than N), so PCSE is the more appropriate model for the current study. PCSE estimation is a two-step, modified version of 'inefficient' Ordinary Least Squares (OLS) and it performs substantially better than the asymptotically efficient FGLS estimator in many circumstances (Beck & Katz 1995; Reed & Ye

2011). PCSE is an alternative estimator of standard errors, which is correct when error structures show complications that may lead to extreme overconfidence or underestimating variability by 50% or more, like standard errors produce with the GLS approach (Beck & Katz 1995). Thus, following previous studies, Barako (2007), Hoechle (2007) and Cameron and Trivedi (2010) regression coefficients (p-values) are reported based on PCSE standard errors due to the panel of our nature data.¹²

According to the previous discussion, major statistical techniques used in the current study are:

1. Descriptive analysis: describe all study variables by presenting mean, median, minimum, and maximum and standard deviation scores. Further, all variables are winsorized at the top and bottom 1% of their distributions to reduce the impact of outliers.
2. Correlation matrix: apply Spearman's (non-parametric) test to find out to what extent the study variables are correlated.
3. Regression analysis (multivariate analysis): apply random and fixed effect panel regression tests, and then apply panel corrected standard errors (PCSE) for each model. Regression analysis contains two steps:
 - a. REM relationship with audit factors variables.
 - b. REM relationship with study variables in the case of interaction with ISA (interaction effect).
4. Sensitivity analysis and additional analysis: apply sensitivity analysis by using PCSE tests. Additional analysis was applied by using the modified REM measurement developed by Gunny (2010) and Vorst (2016).

5.5 Sample and data

This study employed secondary data to assess audit quality and REM variables. The data was extracted from published annual reports including annual financial statements and board of directors' reports relating to non-financial listed firms. All annual reports contain two parts: financial statements and directors' information. Table 5.6 details how both financial and directors' reports were used to extract the required data.

¹² PCSE estimator has gained a wide range of applications (Reed, 2011) and this can be found in studies including Marques (2005), Lago-Peñas (2006) and Bitzer (2007).

Table 5.6: Study variables that extracted financial and directors' reports

Variables	Information	Type of Reports
Dependent variables	1. Contents of audit reports	Annual financial reports (audit reports)
	2. REM variables	Annual financial reports (financial statements)
Independent variables	1. Audit committee characteristics	Annual directors' reports
	2. External audit attributes	Annual financial reports (audit reports)
Control variables	1. Financial variables	Annual financial reports (financial statements)
	2. Board variables	Annual directors' reports

As explained, all required data for the study is provided by the annual report. In addition, the use of annual reports for the study is encouraged for reasons explained below. Firstly, annual reports provide comprehensive financial and non-financial information on financial status and operational results of the firm (Chen et al. 2017). Secondly, the annual report is the mostly used information source by shareholders and other interested parties to make decisions about the firm, as they read main and formal publications (Bradbury, Hsiao & Scott 2020; Chen et al. 2017; Hussainey & Aal-Eisa 2009). Further, in line with the objective of this research, using annual reports to compare two periods (i.e., pre and post ISA) is a reasonable and reliable way to compare information across firms. And especially if someone wants to know how a business manages their earnings, one only must look at its published record, so annual reports are the best source for earnings management.

Finally, instead of using informal sources, other channels of communication, media releases, internet home pages, or contact analysts, which can take more time and effort; annual reports are statutory reports produced regularly and accessed easily and quickly (Wilmshurst & Frost 2000). The reports and associated data were sourced from the Saudi Stock Exchange (Tadawul)¹³ and Argaam¹⁴ websites while the DataStream financial database servers were useful for finding non-financial firms listed on Tadawul, to ensure reliability of the study data. Firms which did not provide required information from the abovementioned sources have been eliminated from the study sample. To analyse collected data, the Statistical Package for the Social Sciences (SPSS) and Stata software were used. The study employed appropriate data analysis based on each objective. For example, how ISA adoption impacts audit quality

¹³ The Saudi Stock Exchange (Tadawul) is a joint stock company and the sole entity authorised in Saudi Arabia to act as the securities exchange, carrying out listing and trading. It is supervised by the Capital Market Authority. Tadawul is considered the largest capital market in the Middle East and Turkey <https://www.tadawul.com.sa/wps/portal/tadawul/home/>

¹⁴ Argaam is a Saudi financial news portal. It is considered the primary source for media and the public for financial news, since it provides real-time updates on financial markets as well as market data and analysis, interviews, and coverage of stocks listed across the region <https://www.argaam.com/en>

will be discussed separately from how ISA adoption impacts REM and its relationship with audit quality characteristics.

Saudi firms listed on the Saudi Stock Exchange (Tadawul) numbered 202 firms in 2019 and operate in 10 main sectors and 21 sub-sectors. However, the study has applied specific criteria for excluding some firms based on the relevant literature. Those criteria are related to financial firms, a balanced sample and some conditions related to the REM sample, explained below.

First: 45 financial firms which include banks, insurance, and diversified financial sectors are excluded from the study sample. The exclusion of financial firms is common in the EM literature (Jha 2013) and accounting research for the following reasons:

- The complicated nature, unique characteristics, and differences in relation to how financial activities and services operate and financial reporting methods (Habbash 2010; Jakob & Razvan 2016; Lopez & Vega 2019; Morgan 2002). Fundamental differences in financial accounting methods applied in such firms make computing discretionary accruals for such entities problematic (Hessayri & Saihi 2015). Subsequently, excluding the financial sector makes the sample more homogeneous, and results more comparable (Hessayri & Saihi 2015).
- Differences in internal governance structure and regulatory regimes (Peasnell, Pope & Young 2000) and differences in disclosure requirements and GC code (Bassiouny 2016). Accordingly, it is expected that financial institutions are closely regulated by government (Jha 2013; Lin et al. 2014), so motivation to manage earnings can be affected by regulatory issues (Jha 2013).
- Various accounting operations and practices might lead to difficulty in documenting management's opportunistic manipulations as noted by Habbash (2010); Peasnell, Pope and Young (2000).
- Significantly, the main aim of this study is to investigate the relationship between selected variables post ISA adoption. However, there is some variation in the implementation of international standards in financial and non-financial firms in Saudi Arabia. The financial sector applied those standards in 2008 (IFAC 2019; SAMA 2019), while non-financial companies applied the standards approximately a decade later in 2017 (IFAC 2019; IFRS 2019; SOCPA 2018).

This study covers a six-year financial period (2014--2019), three years Pre-ISA and three years post ISA adoption. Since the implementation of ISA began in 2017 (IFAC 2019; IFRS 2019; SOCPA 2018), the study will cover all years post ISA (2017--2019), and three years Pre-ISA (2014--2016). Six years of data collection is deemed sufficient for understanding audit quality and earning management activities for both periods.

Second: after excluding financial firms, there were 157 listed non-financial firms. Nevertheless, 43 firms were excluded, since this study used a balanced sample method, defined as the number of study samples for every year of the six years chosen (Sitanggang et al. 2019). Following (Marra, Mazzola & Prencipe

2011), firms not operating in this kind of scenario were eliminated. For example, firms no longer listed and firms recently listed were excluded (30 firms). Firms that did not publish their annual reports for all six years of the study (13 firms) were also excluded. This approach produces a steady sample over the entire analysis period (114 firms), allowing results to be compared pre and post ISA adoption (Marra, Mazzola & Prencipe 2011).

Third: the study sample is classified based on some conditions related to REM. Firms in financial services sectors (SIC codes between 6000 and 6500) and regulated industries (SIC codes between 4400 and 5000) have been excluded from the study sample due to significant differences in their operations and financial reporting methods (Lopez & Vega 2019; Roychowdhury 2006). Accordingly, the final sample comprises five main sectors (first level) and 11 sub-sectors (second level). Further, the final population sample is 96 non-financial firms and total observations amounted to 576 over six years from 2014 to 2019. Classification for the study sample is presented in Table 5.7.

Table 5.7: Classification for the study sample (included firms)

Main Sector (Level one)	Sub-Industry Name (Level two)	Firms in 2019	Included Firms (First & second criteria)	Included Firms (Third criteria)
1. Materials	Materials	42	38	38
2. Energy	Energy	5	4	0
3. Industries	Capital Goods	11	10	10
	Commercial & Professional Svc.	4	2	2
	Transportation	6	4	3
4. Luxury consumer goods	Consumer Services	10	6	6
	Consumer Durables & Apparel (long-term goods)	6	4	4
	Retailing (retailing of luxury goods)	8	6	6
	Media and Entertainment	2	2	2
5. Basic Consumer goods	Food & Staples Retailing (Food Retailing)	5	3	3
	Food & Beverages (Food production)	12	12	12
6. Health	Health Care Equipment & Svc. (Health care)	8	6	0
	Pharma, Biotech & Life Sciences (Pharma)	1	1	0
7. Telecommunications	Telecommunication Services	4	4	0
	Software & Services	2	0	0
8. Utilities	Utilities.	3	2	0
9. Real Estate	Real Estate Management and Development	11	10	10
	REITs	17	0	0
10. Finance	Banks	11	0	0
	Insurance	30	0	0
	Diversified Financials	4	0	0
Total		202	114	96

5.6 Summary

This chapter explained the research methodology and the design employed to empirically test hypotheses. The chapter discusses ISA and audit quality by using contents of the audit report as dependent variables and ISA and EM by applying REM measurements as dependent variables, internal and external audit factors as independent variables, and CG and firm characteristics as control variables. Further, empirical models, statistical analysis, data collection and sample selection are presented.

The next chapter will discuss how the adoption of ISA adoption has improved audit report content (H1). The results related to the audit quality and ISA adoption through discussing the improvement in contents of auditors' report, similarities, and differences in auditors' reports pre and post ISA adoption will be presented and analysed.

Chapter 6: Discussion of Audit Quality and ISA Adoption

6.1 Introduction

The previous chapter presented study methodology while this chapter analyses and discusses how ISA adoption has improved contents of audit reports (H1). This study examines to what extent audit quality improved after KSA listed firms adopted ISA. Audit quality was measured by examining the contents of audit reports (H1) as the main test for Pre-adoption (2014--2016) and post-adoption (2017--2019) periods. Consequently, empirical analysis showed that the results correlated with improved outcomes in contents of audit reports. Friedman and Wilcoxon tests (non-parametric statistics) were used since the normality of distribution for the data was violated. This chapter is structured as follows. Section 6.2 discusses the extent of improvement in contents of audit reports (dependent variable) over time and especially descriptive analysis, Friedman and Wilcoxon tests, key similarities, and differences. Section 6.3 provides a summary of the chapter.

6.2 Improvement in contents of audit reports

This chapter addresses the first study question: “To what extent has the adoption of ISA improved the quality of audit reports in KSA listed firms?” The first hypothesis examines contents of audit reports post ISA adoption (2017--2019) comparing it to Pre-ISA adoption (2014--2016). A content index was devised to determine whether ISA improved audit quality in firms listed on the KSA stock exchange (Tadawul).

Content includes 20 elements for 2014--2016 (see Appendix 5) and 33 elements for 2017--2019 (see Appendix 6). Requirements for audit reports increased post ISA adoption, so the number of elements increased as well. The content index that included all requirements for audit reports pre and post ISA was accepted, which includes 37 elements for both of the above periods (see Chapter 5, Table 5.3).

To test improvements in audit reports, the following statistical tests were employed: Descriptive Statistic, Friedman test and Wilcoxon Signed-Rank test. Descriptive Statistic describes study characteristics (variables), the Friedman test measures identical samples at three or more points in time, while the Wilcoxon Signed-Rank test compares two paired groups and comes in two versions: rank sum and signed rank tests (Hinton, McMurray & Brownlow 2014; Pallant 2020). The goal is to determine whether two or more sets of pairs are different from one another in a statistically significant manner. These tests are non-parametric statistics employed when the normality of distribution is violated. The degree of normality of dependent variables is what determines the results of parametric or nonparametric analysis (Hinton, McMurray & Brownlow 2014; Pallant 2020).

6.2.1 Descriptive analysis of content index pre and post ISA adoption

Table 6.1 presents characteristics of the contents of audit report (Pallant 2020). In total, 96 firms were observed from 2014 to 2019 and a total of 576 observations were made for all six study years.

Table 6.1: Descriptive statistics of the content index for six years

	Mean	Std. Dev	Min	Max	N	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
2014	0.3723	0.02264	0.30	0.41	96	-2.064	0.246	3.803	0.488
2015	0.3743	0.01972	0.27	0.38	96	-3.484	0.246	11.785	0.488
2016	0.3759	0.01928	0.32	0.41	96	-1.815	0.246	4.025	0.488
2017	0.9774	0.02027	0.92	1.00	96	-.511	0.246	.108	0.488
2018	0.9479	0.12931	0.24	1.00	96	-5.277	0.246	27.122	0.488
2019	0.9691	0.02052	0.84	1.00	96	-2.274	0.246	15.547	0.488

Table 6.1 presents the mean of the content index. The mean converged around 37% in the pre-implementation period. On the other hand, the mean of content index for the post period was in the range from 94-98%.

The highest score (2017) may be due to actual KSA adoption of ISA in 2017, as this was the first-year audit reforms were introduced and mandatory. There was a gradual increase (37.23% to 37.59%) before 2017, probably the result of mandatory implementation. This increase shows improvement in contents of audit reports which could be due to long-term accumulated experience and/or expertise of auditors and firms. Further, it is evident that the value decreased from 97% in 2017 to 94% in 2018 and this decrease is perhaps due to changes that occurred in 2018 in the Saudi market: (1) the new requirements in the auditor's report related to IFRS (IFRS 9 and IFRS 15) (SOCPA 2018); (2) other companies (unlisted companies) were obligated to apply international standards (IFRS & ISA) (SOCPA 2018); (3) lack of experience and knowledge of the new standards could be a reason for the decline.

Table 6.2: Descriptive statistics of the content index for two periods (pre and post ISA)

Content	Mean	Std. Dev	Min	Max	N	Skewness		Kurtosis	
						Statistic	Std. Err	Statistic	Std. Err
Pre-ISA	0.3742	0.02058	0.27	0.41	288	-2.413	0.144	6.066	0.286
Post ISA	0.9648	0.07723	0.24	1.00	288	-8.701	0.144	79.793	0.286

Table 6.2 summarizes key descriptive statistical analysis of the content index for two periods (pre and post ISA adoption) by revealing the number of observations, minimum, maximum, mean, and standard deviation. The number of observations is 288 pre and post ISA adoption. The mean is 37.42% and 96.48% pre and post ISA adoption, respectively. The mean is higher post ISA adoption compared to Pre-ISA adoption. Furthermore, elements in auditors' reports increased due to the new requirements.

Table 6.3: Frequency distribution scores of audit reports' elements (pre and post ISA)

Extent of Content Improvement (%)	Pre-ISA		Post ISA		Pooled	
	No.	%	No.	%	No.	%
11 – 20	0	0%	0	0%	0	0.00%
21 – 30	6	2%	3	1%	9	1.56%
31 – 40	273	94.99%	0	0%	273	47.40%
41 – 50	9	3.1%	0	0%	9	1.56%
51 – 60	0	0%	0	0%	0	0.00%
61 – 70	0	0%	0	0%	0	0.00%
71 – 80	0	0%	0	0%	0	0.00%
81 – 90	0	0%	3	1%	3	0.52%
91 – 99	0	0%	212	73.7%	212	36.81%
100	0	0%	70	24.3%	70	12.15%
Total	288	100.0%	288	100.0%	576	100.00%

Table 6.3 lists all the elements in the auditors' reports of KSA listed firms pre and post ISA acceptance. Frequency distribution of content improvement (CI) among listed companies makes it possible to obtain good insights about audited content. As shown in Table 6.3, the content improvement score Pre-ISA adoption was low compared to post-ISA adoption. Most firms (98%) post ISA adoption provided more than 91% of content while all firms Pre-ISA adoption provided less than 50%. This demonstrates that KSA listed firms included more elements in auditors' reports post ISA adoption.

Overall, post ISA, the contents of the audit report significantly improved compared to Pre-ISA adoption. Specifically, most firms (94.99%) Pre-ISA provide around 31 to 40 elements of CI. Meanwhile, post ISA adoption, most firms (73.7%) provide around 91 to 99 elements while 24.30% provide 100 elements of CI.

6.2.2 Friedman test (pre and post ISA adoption)

The Friedman test investigated to what extent a change occurred in content index scores for 2014, 2015 and 2016 (Pre-ISA adoption), and 2017, 2018 and 2019 (post ISA adoption). This test (non-parametric alternative) was employed instead of two-way repeated measures ANOVA (parametric statistic) because the data is not normally distributed for both periods. Table 6.4 presents test of normality for six years. The values (Sig.) of Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests pre and post ISA adoption are less than 0.05 ($p < 0.05$).

Table 6.4: Test of normality for the content index over six years

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pre-ISA adoption						
2014	0.477	96	0.000	0.538	96	0.000
2015	0.531	96	0.000	0.318	96	0.000
2016	0.469	96	0.000	0.541	96	0.000
Post ISA adoption						
2017	0.267	96	0.000	0.803	96	0.000
2018	0.444	96	0.000	0.268	96	0.000
2019	0.315	96	0.000	0.678	96	0.000

The Friedman test (non-parametric alternative) ascertained to what extent changes occurred in content index scores (see Table 6.5). First, it tabulates the results for the Pre-ISA adoption period. It accepts the null hypothesis and rejects the alternative hypothesis. The Chi-square test is low (1.575), and a Sig. level is (0.455) (more than .05), which means the three tests are relatively equal. This suggests that there are no significant differences in the content index scores across the three periods. The mean rank Pre-ISA adoption (Table 6.5) shows a steady (no change) content index. This may be because no audit reforms occurring in those years. Firms were still using the Saudi Generally Accepted Auditing Standards (GAAS) as issued by SOCPA.

However, the results of the Friedman test reject the null hypothesis and accept the alternative hypothesis: that contents of audit reports post ISA adoption were significantly different to Pre-ISA adoption at 1% significant level. Further, the mean rank (Table 6.5) shows a clear variation in content index scores post implementation. Also, new audit reforms (ISA) effectively transformed the results from insignificant differences Pre-adoption to significant differences once ISA was accepted.

Table 6.5: Friedman test of the content index scores

Pre-ISA Adoption		Post ISA Adoption	
Ranks			
	Mean Rank		Mean Rank
2014	1.97	2017	2.26
2015	1.98	2018	1.86
2016	2.05	2019	1.89
Test Statistics			
N	96	N	96
Chi-Square	1.575	Chi-Square	19.857
df	2	df	2
Asymp. Sig.	.455	Asymp. Sig.	0.000

Table 6.6 (pairwise comparison) summarizes differences. The Sig. level is 1% (more than .050) between 2018 and 2019, so no real differences were evident. Conversely, the Sig. level is less than 0.05 between 2017 and 2018 (0.01) and between 2018 and 2019 (0.03). There are statistically significant differences between 2017-2018 and 2017-2019 groups, but not between 2018 and 2019. It appears that these

differences are linked to 2017 and the two years that follow. This may be due to ISA being introduced in 2017. Alternatively, it could be explained by the stability that occurred after 2018, so subsequently there was no difference between 2018 and 2019.

Table 6.6: Friedman test post ISA adoption: Pairwise comparisons

Sample 1- Sample2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. ^a
2018 - 2019	-0.026	0.144	-0.180	0.857	1.000
2018 - 2017	-0.396	0.144	2.742	0.006	0.018
2019 - 2017	0.370	0.144	2.562	0.010	0.031

6.2.3 Wilcoxon test (pre and post ISA adoption)

This section compares these two different periods and explains to what extent there is a change in the contents index. The degree of normality determines whether the analysis is parametric or nonparametric (Hinton, McMurray & Brownlow 2014; Pallant 2020).

Table 6.7: Test of Normality for the contents of two periods (pre and post ISA)

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-ISA	0.494	288	0.000	0.481	288	0.000
Post ISA	0.389	288	0.000	0.232	288	0.000

Table 6.7 shows the test of Normality for audit report content pre and post ISA adoption. The parametric statistical approach (paired samples t-test) cannot apply, because the values of Kolmogorov-Smirnov (K-S) and Shapiro-Wilk tests are less than 0.05. Hence, it should switch to alternative nonparametric analysis methods (Wilcoxon Signed Rank test) to compare both periods. Doing this will help to determine to what extent content index scores changed before and after ISA adoption. The test is repeated for the nonparametric alternative in order to measure the repeated t-test. The paired samples t-test (parametric alternative) was used when normal distribution was not fulfilled. The normal distribution should be more than 0.05 ($p > 0.05$) (Pallant 2020).

Table 6.8: Wilcoxon signed-rank analysis of content (pre and post ISA)

Ranks				
		N	Mean Rank	Sum of Ranks
Post ISA - Pre-ISA	Negative Ranks	3a	2.00	6.00
	Positive Ranks	285b	146.00	41610.00
	Ties	0c		
	Total	288		

Test Statistics	
Content after ISA - Content before ISA	
Z	-14.957 ^b
Sig. (2-tailed)	0.000

Table 6.8 presents results of the Wilcoxon Signed-Rank test which compared the differences between matched pairs (pre- and post-adoption) of audit report contents with mean rank. There were 285 positive ranks with a mean rank of 146.00 and three negative ranks with a mean rank of 2. Z test statistics reveal a statistically significant difference Pre-ISA adoption (2014, 2015 and 2016) and post ISA adoption (2017, 2018 and 2019). This evidence confirmed that the contents of audit reports has significantly improved post ISA adoption.

In summary, audit quality improvement post ISA adoption is supported, as discussed above. The results from all statistical tests (Friedman and Wilcoxon Signed-Rank tests) demonstrated that the contents of audit reports post ISA adoption (2017, 2018 and 2019) were much better compared to Pre-ISA adoption (2014, 2015 and 2016). Audit reforms undertaken by the KSA government in 2017 led to improved reporting. Consequently, the alternative study's hypothesis has been accepted.

6.3 Discussion of audit reports pre and post ISA adoption

This section will discuss key similarities and differences in audit reports for both periods.

6.3.1 Key similarities

Standardization of accounting practices (including audit report form and content) is a prerequisite for improved financial communication (Fakhfakh & Fakhfakh 2010). Thus, audit reports can be analysed in two ways: form and content. The investigation found similarities in some audit reports for both periods of ISA adoption, as discussed below.

6.3.1.1 Form of audit reports

It emerges that elements related to form of audit reports were identical (100%) for the whole study sample (576 reports). Symmetry existed in all form elements:

- **Title:** Pre-ISA adoption noted as "Auditor's Report" or "Independent Auditor's Report" and post ISA adoption "Independent Auditor's Report".
- **Addressee:** noted as "the shareholders" or "the stakeholders" at the beginning of each audit report under the title.
- **Date:** indicated by both Gregorian and Hijri dates (day, month, and year) at the end of each report.
- **Address of the auditor:** all audit reports referred to the country (KSA), the city, and the office while others included extra information such as telephone number, facsimile number, and website, written down on the side of the report, either at the top or at the bottom.
- **Auditor signature:** audit reports contained the personal name of the auditor and his signature, licence no. or registration no., audit firm, and official seal at the end of the report.

6.3.1.2 Contents of the audit report

Some content elements pre and post ISA adoption are similar (100%) for the whole study sample (576 reports). Some had the same elements: name of the audited company; titles of audited financial

statements (Income Statements, Balance Sheet, Cash Flow, Change in Equity); and related notes. Furthermore, the date and period are covered by financial statements, which usually considers the financial year. The only difference is that audit reports Pre-ISA adoption presented those elements in the "Scope of Audit" section while Pre-ISA adoption they were presented in the "Opinion" section.

In short, this matching indicates the significance of the existence of these elements in all audit reports, pre or post ISA adoption. The title differentiates audit reports from other accounts published annually, while the addressee indicates to whom the audit reports are addressed (Gangolly et al. 2002). The date informs the user that events subsequent to the completion date of auditing have not been included (Gangolly et al. 2002; King 1999). The auditor’s address (location: country, city, and audit office) determines the office that is responsible for the audit while the auditor's signature (personal name of auditor, audit firm, and signature) lends authenticity to the account (Gangolly et al. 2002; King 1999). Further, the company’s name, financial statements and the period covered are obvious requirements when an auditing assignment is commissioned.

6.3.2 Key differences in audit reports (pre and post ISA adoption)

Investigation in this study reveals that audit reports post ISA adoption differ from Pre-ISA adoption in some parts, such as number of pages, harmony (consensus), compliance, and content. These differences will be discussed below.

6.3.2.1 Length of the audit report

Table 6.9: Length of audit report (pre and pot ISA adoption)

Page No.	Pre-ISA Adoption		Post ISA Adoption	
	No. of Audit Reports	%	No. of Audit Reports	%
1	234	81.25	5	1.74
2	49	17.01	0	0
3	1	0.35	22	7.64
4	2	0.69	62	21.53
5	2	0.69	101	35.07
6	0	0	56	19.44
7	0	0	24	8.33
8	0	0	13	4.51
9	0	0	4	1.39
10	0	0	0	0
11	0	0	1	0.35
Total	288	100	288	100

Table 6.9 summarises length of audit reports based on the number of pages for both periods. Pre-ISA adoption, analysis results show that the number of pages for 98.26% (283) of audit reports is between one to two. 81.25% of audit reports (234) contain only one page, while 17.1% (49) auditors’ reports contain two pages. However, around 1.73% (5) includes more than one or two pages (i.e., three, four or five pages). It is evident from previous analysis that fewer pages were evident Pre-ISA adoption. Due

to fewer pages, auditor reports for KSA listed firms have not contained sufficient information or elements Pre-ISA adoption.

Post ISA adoption, the number of pages for 76.04% of audit reports (219) is between four to six pages. The remaining 23.96% of audit reports (69 R) varied between one to 11 pages. The reason for the discrepancy is the audit approach. Audit reports differ in terms of the number of basic auditing matters and procedures. Accordingly, the higher number of pages (post ISA adoption) is a clear indicator of high level of disclosure. This reveals the improved quality of audit reports post ISA adoption.

6.3.2.2 Harmony and compliance in audit reports

6.3.2.2.1 Key length of audit reports pre and post ISA adoption

Content analysis classified audit reports into four key lengths prior to ISA adoption: shorter, medium, and longer audit reports, and a review report. While audit reports are classified into two lengths post ISA adoption: longer audit reports and review reports, as referred to in Table 6.10. The difference is explained as follows.

According to “The standard for examining initial financial reports” in the KSA, the objective of audit scope is to express an opinion on whether the financial statements are presented fairly. In this case the auditor should reach such an opinion in the following types of documents: a shorter, medium, and longer audit report, and a review report. However, according to the standard for examining/reviewing initial financial reports KSA, the scope reviews is less than the scope of audit reports undertaken both for KSA GAAS and ISA purposes. The auditor should only indicate the result or conclusion of review as evident in such reports; they should not express any personal opinions about the fairness of financial statements. In short, the auditor should express an opinion in all audit report types but not in review reports.

Table 6.10 summarises audit report lengths pre-ISA adoption into three key types:

1. The shorter and medium report contains two independently produced paragraphs: the scope of the audit and the opinion, evident in 78.13% reports. The difference between a shorter and medium refers to the scope of the audit. Where the shorter presents information in only one paragraph, the medium offers extensive information in two paragraphs. Accordingly, two types of information concerning scope were: brief and extensive, so the study classified audit reports under scope of the audit as shorter or medium.

Table 6.10: Key types of audit reports pre and post ISA adoption

Lengths of Audit Report	Sections	Pre-ISA Adoption		Post ISA Adoption	
		No.	%	No.	%
1. shorter, medium	1. Scope of audit 2. Auditor's opinion	225	78.13%	None	-
2. Longer	1. Introductory paragraph 2. Management responsibility 3. Auditor's responsibility 4. Auditor's opinion	52	18.05%	None	-
	1. Opinion 2. Basis for opinion 3. Audit approach 4. Other information 5. Responsibilities of management and those charged with governance 6. Auditor's responsibilities	3	1.04%	285	98.96%
3. Review/examination	1. Scope of review/examination 2. Result of review or review conclusion	8	2.78	None	-
	1. Introductory paragraph 2. Scope of review/examination 3. Result of review or review conclusion	None	-	3	1.04%
		288	100%	288	100%

2. The longer audit report contains four short independent paragraphs: introductory, management responsibility, auditor responsibility and opinion. These paragraphs summarise responsibility of management and auditor in a few sentences. Meanwhile, 1.04% of audit reports in 2016 presented four independent paragraphs in more detail with added independent paragraphs (see Appendix 6). These reports were virtually the same as those published post ISA adoption. This type (form) of long audit report was adopted by KPMG for all study years (2014-2016). However, three long audit reports for 2016 were not audited by KPMG, but RSM, Crowe Horwath and Aldar for Audit, and their opinions were qualified for both 2015 and 2016. It may be that those three audit firms followed the longer audit report due to perceived qualified opinion. Perhaps the auditor followed this type specifically to disclose more information.

3. The review /examination report contains two paragraphs: scope and result of the review, which count as 2.78% (8) of 288 audit reports.

However, there were two lengths of audit reports post ISA adoption as shown in Table 6.10:

1. Audit reports contain six sections, and 98.96% (285) of 288 audit reports have this feature. Some reports contain more than six sections (when needed) such as material uncertainty related to Going Concern and other legal and regulatory requirements.
2. Review reports contain only three sections, which count as 1.04% (3) of 288 reports in 2018.

In short, around 98.96% of reports post ISA adoption followed one type (long audit report), while Pre-ISA adoption reports were different types. 78.13% were shorter or medium, 18.05% were long (four sections), 1.04% were long (more than four sections) and 2.78% were review reports. The level of consistency post ISA adoption rose markedly.

Accounting or audit reforms modify the objective and mandate of the external audit because these changes greatly affect the nature of the final audit report (Skaife & Gassen 2009). From the above discussion, it is evident that the level of consistency among audit reports has increased significantly post ISA adoption. Pre-ISA adoption, there were different types: shorter, medium, longer and review reports. Also, there was perhaps no consensus and consistency in presenting information. For example, under scope of the audit section, there were two types of information: brief and extensive, so audit reports are classified as shorter and/or medium. Furthermore, there was no consistency in long audit reports. Most in fact contained four independent sections (i.e., introductory, management responsibility, auditor responsibility and opinion) while others contained more explanation under each section. Again, other reports contained more than four sections: key audit matters and audit procedures. Only KPMG, RSM, Crowe Horwath and Aldar for Audit adopted this type of reporting. In contrast, audit reports post ISA adoption had the same consistency in and regularity of information, except for three review reports. This result confirmed the superior quality of audit reports post ISA adoption.

The above results may be consistent with King (1999), which examined the degree of harmonisation in form and content of the European Union's auditor's report. Harmonisation is present in three of five form elements (title, report date, auditor's office location), but not content elements. Furthermore, according to Gangolly et al. (2002), 86% of respondents in 86 countries achieved ISA 13 harmonisation; compared to audit reports from pre to post ISA 13 dates in 33 IFAC member countries, post ISA 13 reports had a higher degree of conformity with the standard. Harmonisation of audit reports facilitates comparisons between companies investing in worldwide financial markets (Fakhfakh & Fakhfakh 2010).

6.3.2.3 Content (elements) of audit reports

Contents of audit reports post ISA adoption is significantly different to Pre-ISA adoption. Content and form of audit reports has changed, due to recent audit standard setting, by including new disclosures on critical or key matters relating to audit areas of significant attention (Schaefer et al. 2021). Expanded reports are designed to improve information content and utility of audit opinions, increase external monitoring of auditors and management, and create a more open dialogue between auditors and financial reporting users (Minutti-Meza 2020). Appendix 5 presents form and content Pre-ISA adoption while Appendix 6 presents form and content post ISA adoption. The following points summarise differences in contents of the audit report for both periods.

- Firstly, content is divided into two sections (Pre-ISA adoption) and six sections (post ISA adoption). The two groups (Pre-ISA adoption) are scope of audit and opinion while the six groups post ISA adoption are opinions, basis for opinions, audit approach (key audit matters and how the matters were addressed in the audit), other information, responsibilities of management, and those charged with governance and auditor responsibilities. Also, contents of audit reports are divided into various elements: 20 elements Pre-ISA adoption and 33 elements post ISA adoption (see Appendix 5 and Appendix 6).
- Secondly, some new sections (groups) were added in audit reports post ISA adoption, such as material uncertainty related to “Going Concern”, other legal and regulatory requirements, other information, and audit approach. Each section has been presented separately with more elements and explanation. For example:
 - Matters that relate to "Going Concern" were presented in the Material Uncertainty Related to Going Concern section. Disclosure about Going Concern (GC) problems indicate the extent to which audit procedures performed by considering factors that may have had a genuine impact on the company's ability to continue as a going concern (Mong & Roebuck 2005). This information is useful and valuable, as independent assurance contributes to the quality of accounting data (Schaefer et al. 2021). If there is a GC matter, the auditor should prepare the audit report according to ISA 570 "Going Concern".
 - The Other Information section contained the auditor's responsibilities relating to financial and non-financial issues. When needed, auditors should prepare their reports according to ISA 720, "The Auditor's Responsibilities Relating to Other Information". ISA 720 aims to increase auditor involvement with "other information", which means both financial and non-financial issues, other than audited financial statements and the audit report included in annual reports (IAASB 2021a). Further, it includes some requirements that relate to auditor reporting on other information (IAASB 2021a).
 - The Report on other Legal and Regulatory Requirements section covered other reporting responsibilities. If the auditor deals with these requirements in his report, they must be addressed in a separate section under the above heading or any other title that fits section content.
 - The Audit Approach section lists and explains key audit matters and procedures in each year. Key audit matters are described as those, in the professional judgment, that were most significant in the audit of consolidated financial statements of the current year (IAASB 2016). Further, this section presents how key audit matters were addressed in the audit and the amount of detail that needs to be provided is a matter of professional

judgment (IAASB 2016). In response to concerns about lack of transparency in auditor reports, regulators and standard-setters (PCAOB and IAASB)¹⁵ have recently launched an expanded audit reporting model, which implements key audit matters (KAMs) (Bédard, Gonthier-Besacier & Schatt 2019; IAASB 2016). This is about new disclosure rules, requiring auditors to provide information on serious matters (e.g. significant risks, transactions or events or significant judgments by auditors) they encountered during the audit to better inform investors and to understand the auditor's role and responsibilities (IAASB 2016; Pinto & Morais 2019). KAMs have the potential to improve not only transparency for financial statement users, but also managerial financial reporting behaviour (Gold et al. 2020). Gold et al. (2020) found that KAMs are a useful mechanism for improving financial reporting quality regardless of auditor precision. Further, KAMS enhances the informed value of audit reports (Bédard, Gonthier & Schatt 2016).

Table 6.11: Frequent key audit matters (2017 to 2019)

Frequent Key Audit Matters		
2017	2018	2019
1. Adoption/transition to international standards (IFRS)	1. Adoption of IFRS 9 and 15	1. Adoption of IFRS 16 and 15
2. Impairment of assets, equipment, and property	2. Revenue recognition	2. Revenue recognition
3. Revenue recognition	3. Impairment of goodwill	3. Assets, equipment, and property
4. Impairment of receivables	4. Trade receivables	4. Inventories
5. Impairment of goodwill		5. Receivables

The most frequent key matters that have been included in audit reports are documented in Table 6.11. Most reports have had varying foci depending on each or the specific year. Accordingly, it appears that the most frequent key matters for all years (2017, 2018 and 2019) related to the adoption of IFRS, revenue recognition and receivables. This finding is consistent with Pinto and Morais (2019) who found that more accurate accounting standards (or requirements) lead to a higher number of KAMs being disclosed. However, audit procedures for each audit report varied over 2017, 2018 and 2019. The number of audit procedures used to address key matters in 2017 was highest, while 2018 and 2019 have similar numbers of audit procedures. The reason for the difference in results for these years is due to a major change in financial statements in 2017. They were prepared in the first place, according to IFRS, and then audited according to ISA, which led to an increase in key audit matters and procedures for that year. What is confirmed here is that most audit reports included transformation to IFRS in 2017 and also classified audit procedures to help investors understand how the audit can solve issues.

¹⁵ PCAOB is the Public Company Accounting Oversight Board and IAASB is the International Auditing and Assurance Standards Board.

Thirdly, there was more disclosed information and explanation in some elements Pre-ISA adoption, such as Responsibilities for Financial Statements. This section provides guidance on auditor responsibilities to consider fraud, error and other audit stuff (International Auditing Practices Committee International Federation of Accountants 2001). Those management and auditor responsibilities Pre-ISA adoption is presented in one or two sentences within "the scope of audit" paragraph, in most of the study sample without explanation. For example: "These financial statements are the responsibility of the company's management or the group's management... and the auditor's responsibility is to express an opinion on these financial statements based on our audit". Meanwhile, a few such audit reports have covered management and auditor responsibilities in detail, which appear to be like audit reports post ISA adoption. However, post ISA adoption, these responsibilities were classified into two independent sections: Responsibilities of management and those charged with governance for financial statements and auditor responsibilities for the audit of financial statements. Each section was explained separately and contained additional elements and details. The auditor's responsibility, as required communication with those charged with governance, could help the entire board understand fraud and related tasks carried out at their respective entity (Schaefer et al., 2021). Increasing frequency of communication and adding required communication post ISA could help those in charge of governance be more effective in decreasing the likelihood of fraud (Schaefer et al., 2021). The new disclosures (i.e., serious problems in a company's financial reporting and auditing) constitute a landmark change in the auditor's responsibilities in terms of providing information to the public (Minutti-Meza 2020).

Accordingly, the recommended new structure of contents in audit reports significantly differed from the structure of recommended content in the SOCPA report. This is consistent with findings of the study conducted by the Federation des Experts Comptables Europes (Fakhfakh, Fakhfakh & Consuelo Pucheta-Martínez 2008) on European and international audit report standards. ISA requires a longer audit report with explanatory and descriptive paragraphs about the auditor's work. Consequently, it appears that the contents of audit reports post ISA adoption need to include sufficient detailed explanations. This affects the increased length of audit reports post ISA adoption (Bradbury, Hsiao & Scott 2020). The longer audit report assists the reader by providing more information on audit procedures and practices applied in delivering the audit report (Mong & Roebuck 2005). Confirming this finding, Bradbury, Hsiao and Scott (2020) found that the contents of audit reports is positively associated with length.

This confirms that the level of disclosure has increased and content is more useful for readers. Disclosing different levels of work undertaken to express the opinion of the audit report would increase its reliability for users (Mong & Roebuck 2005). One of the methods by which the assurance provider is expected to influence the level of assurance placed on his/her report involves describing the level of

work completed, assuming that what is described actually contains relevant information content (Roebuck, Simnett & Ho 2000). Furthermore, gaps in expectations will be reduced by proper disclosure and in this way, ensure that users become more familiar with the auditor's role and responsibilities (Mong & Roebuck 2005). Since audit reporting initiatives (ARIs) or any changes to audit reports have the ability to generate information where gaps exist (i.e., the gap between what users want to know about a company and its financial statements) or alternatively, the audit that has been done and what is available to them (Bédard et al. 2016). Gutierrez et al. (2018), however, contended that corporations with longer reports are paid higher fees, but the sheer increase in disclosure has no bearing on either audit fees or subsequent reporting quality. In spite of this, the more information publicly available in the audit report means that the audit firm will gain a definite advantage. There is a very high opportunity for differentiating the audit firm, in terms of its policies and approach to audits, and thus how aspects of ensuring audit quality are carried out. It could further improve the likelihood of the audit firm being chosen by companies or other entities to audit their reports or help them choose a new audit firm when needed. This makes it possible to establish a larger number of clients.

In summary, the outcome indicates the extent of quality improvement of audit reports post ISA adoption, which supports and leads the researcher to accept the first alternative hypothesis. The length of financial (annual) reports has been observed post IFRS adoption (Bradbury, Hsiao & Scott 2020; Morunga & Bradbury 2012). Similarly, this also explains the length of KSA audit reports, due to the adoption of international standards (IFRS & ISA) in 2017. The implication of international standards requires additional disclosure, which contributes to better informing users (Manduca 2016). Informative disclosures lower information risk and aid investor decision making by providing better knowledge of the company's overall economic risk (Elliott & Jacobson 1994). Further, audited information, usually, is more reliable than unaudited information, especially by ISA. Where auditors' efforts increase confidence in competence and trustworthiness of reported results, in turn, reliability is increased (Kinney Jr 2000). Further, new audit report requirements, usually, aim to make audit reports more informative for investors (Bédard, Gonthier-Besacier & Schatt 2019; Lennox, Schmidt & Thompson 2022) by increasing corporate transparency.¹⁶ This transparency serves at least two purposes in governance, according to Mitchell (2011): transparency of and for governance. Transparency for governance is referring to the effects of transparency principles on an organisation or society which means that transparency in auditing is a requirement rather than an outcome (de Fine Licht 2019). Auditing, also, has a clear role to play in creating transparency in both procedures and outcomes. Transparency, in this sense, can be seen as a link between audit practice and the public (de Fine Licht 2019). Although the audit procedure is complex in and of itself, when it is followed and reported on in

¹⁶ Corporate transparency is defined as the availability of firm-specific information to individuals outside publicly listed corporations and determined as the result of a multifaceted system whose components work together to develop, gather, validate, and disseminate data (see (Bushman, Piotroski & Smith 2004)

a transparent manner, it aids readers in determining audit worth as a tool of quality assurance (De Kleijn & Van Leeuwen 2018).

According to agency theory (as discussed in Chapter 4), one of the reasons for increased agency is information asymmetry between management and shareholders, or between minority shareholders and the dominant shareholder (Darmadi 2013). Increased disclosure is a way to reduce information asymmetry (Darmadi 2013), so the more disclosure in audit reports, the less information asymmetry and thus better informing users. Therefore, to protect shareholders, agency theory assumes that completeness, accuracy, and reliability are necessary to limit information asymmetry, so this theory can be helpful to reduce cost and mitigate agency problems. The study result confirms that enhanced quality reporting is a key advantage the KSA has enjoyed from this adoption (Manduca 2016). This is consistent with the following study which concluded that audit quality did improve in New Zealand (Li, Hay & Lau 2019). This was especially the case after the issuance of new audit reporting requirements, which in the United Kingdom led to much better financial reporting quality (Reid et al. 2019).

In addition, according to stakeholder theory, as previously discussed, "the disclosure of particular types of information can be used to gain or maintain the support of particular groups" (Deegan and Blomquist (2006) For example, in this study, if a potentially powerful group has concerns regarding outputs of audit reports, the organisation may see the requirement to publicly disclose more information in audit reports and financial statements, for instance, key audit matters and procedures in place for solving those matters. In doing so, this may to some extent assuage powerful stakeholder concerns. This could be interpreted as improved contents of audit reports post ISA adoption in Saudi firms. In addition, listed firms in Saudi Arabia may feel a need to react to all stakeholder expectations (global and local) to attract powerful stakeholders, as KSA adopted ISA and began dealing globally. Hence, the more significant a stakeholder is to the organisation, the more effort put into gaining or maintaining their support (Islam & Deegan 2008). Therefore, audit report changes could have a big influence on financial statement users and the stock market (Bédard et al. 2016). The differences between elements pre and post ISA adoption will be discussed below.

According to Gray, Kouhy and Lavers (1995, p. 67) "different theoretical perspectives need not be seen as competitors for the explanation but as sources of interpretation of different factors at different levels of resolution". In this sense, both agency and stakeholder theory contribute to our understanding of auditing practice. Agency theory has been applied as a basis for the theoretical framework, which explains how the adoption of ISA can reduce agency costs and problems between businesses and stakeholders by improving contents of audit reports (more disclosure and transparency regarding audit report elements). Stakeholder theory has been used to interpret how audit reporting practice of organisations responds to particular pressures being exerted by stakeholder groups, which leads to improvement in contents of audit reports.

6.4 Conclusion

In summary, this chapter aimed to answer the following: To what extent has the adoption of ISA improved the quality of auditing in KSA listed firms? The contents of audit reports were examined. This process led to developing a content index, which includes 37 elements. The extent of content improvement in audit reports was investigated. Evidence supports the improvement of audit quality post ISA implementation in KSA listed firms.

The next chapter examines the relationship between REM and audit factors. It will analyse the findings and discuss descriptive statistics, correlation matrix and multivariate analysis. Further analysis will be carried out using robustness tests.

Chapter 7: Real Earnings Management

7.1 Introduction

The previous chapter presented empirical results of the impact of adoption of ISA on contents of audit reports. This chapter presents results and discusses empirical investigation conducted to address the research questions regarding whether REM decreases post ISA adoption and whether contents of audit reports decrease REM post ISA adoption. In addition, testing whether external and internal audit attributes decrease REM pre and post ISA adoption and testing the interaction effect of ISA on the impact of the relationship between REM and audit factors. This chapter presents results, analysis and discussion of tests which relate to the research questions. In addressing these questions, Roychowdhury's three models on REM have been applied to estimate REM. Four empirical research models (main models) were used to test hypotheses.

This chapter is structured as follows. Section 7.2 presents discussion of descriptive statistics. Section 7.3 explains the correlation matrix, and section 7.4 presents multivariate analyses (hypotheses tests). This section also provides discussion of REM measurements and audit factors. Section 7.5 discusses the findings based on agency theory. Section 7.6 offers further investigation by using alternative REM models. Section 7.7 summarises the chapter.

7.2 Descriptive statistics of test variables

This section presents descriptive statistics (means, standard deviation (SD), minimum and maximum) of test variables. SD shows how observed values are distributed around mean values. Variables with a large SD indicate higher dispersions and small SD indicates lower distribution from their respective mean values. If a variable mean value has a SD greater than the mean, such variables may not normally be distributed. To reduce the impact of outliers, all variables are winsorized at the top and bottom 1% of their distribution. Table 7.1 presents descriptive statistics of test variables separately for the full sample period, pre and post ISA adoption.

Table 7.1: Summary of descriptive statistics for study variables

Variable	Full Sample				Pre-ISA				Post ISA			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
ACFO	1.23E-04	0.129	-1.594	0.63	-.021	0.153	-1.594	0.413	0.021	0.094	-0.546	0.63
ADISEXP	1.23E-04	0.056	-0.199	0.391	0.004	0.062	-.199	0.391	-0.004	0.048	-0.171	0.14
APRODCOST	1.23E-04	0.078	-0.299	0.456	-.014	0.086	-.281	0.456	0.014	0.065	-0.299	0.247
REM	1.23E-04	0.191	-1.95	1.081	-0.032	0.219	-1.95	1.081	0.032	0.152	-0.672	0.627
ISA	0.500	0.5	0	1	0	0	0	0	1	0	1	1
Big4	0.486	0.5	0	1	0.569	0.496	0	1	0.406	0.492	0	1
FiSwh	0.708	0.455	0	1	0.67	0.471	0	1	0.747	0.436	0	1
AudSpec	0.276	0.447	0	1	0.26	0.44	0	1	0.292	0.455	0	1
ACSize	3.554	0.72	3	6	3.479	0.642	3	5	3.611	0.762	3	6
ACMeet	5.684	2.127	2	22	5.49	1.765	2	12	5.823	2.342	3	22
ACInd	0.65	0.248	0	1.667	0.673	0.237	0	1	0.623	0.248	0	1
ACExpt	0.427	0.277	0	1.333	0.373	0.26	0	1	0.48	0.283	0	1.333
ACadd	2.773	2.981	0	27	1.817	1.746	0	10	3.733	3.594	0	27
ACSwh	0.424	0.495	0	1	0.406	0.492	0	1	0.444	0.498	0	1
ACStock	0.06	0.143	0	0.903	0.066	0.145	0	0.689	0.054	0.141	0	0.903
ACDiv	0.017	0.131	0	1	0.014	0.117	0	1	0.021	0.143	0	1
IFA	0.844	0.363	0	1	0.802	0.399	0	1	0.885	0.319	0	1
BMeet	5.243	1.965	1	19	5.281	1.963	1	19	5.205	2.063	1	19
BExpt	0.172	0.131	0	0.571	0.152	0.123	0	0.571	0.202	0.134	0	0.571
ROA	5.923	8.251	-16.46	34.8	7.502	7.532	-13.34	34.8	2.753	6.4871	-16.46	23.41
LEV	0.23	0.191	0	0.763	0.227	0.186	0	0.697	0.231	0.196	0	0.763
MB	2.595	2.378	0.001	27.17	2.788	2.547	0.001	27.17	2.174	2.299	0.36	27.17
MC	6.351	0.6	5.21	8.542	6.385	0.584	5.21	8.485	6.292	0.623	5.21	8.542

Where real earnings management measurements contain abnormal cash flow from operation (ACFO), abnormal discretionary expenses (ADISEXP), abnormal production costs (APRODCOST) and real earnings management (REM). Explanatory variable is International Standards on Auditing (ISA). Audit factors are audit brand (Big4), audit firm rotation (FiSwh) and industry specialized auditor (AudSpec). Audit committee characteristics are audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSwh), stock ownership of AC members (ACStock), diversity of audit committee (ACDiv) and internal audit function (IFA). Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). The mean value represents the percentage of variables.

7.2.1 External audit factors

Table 7.1 shows that almost all Saudi audit firms used ISA post implementation. Further, descriptive statistics indicate 49% of Saudi listed firms were audited by one of the Big 4 audit firms. However, the average number of firms audited by the Big 4 declined to 40.3% from 56.9% post ISA adoption. On average (reported on FiSwh), 71% of listed firms appointed the same audit firm for two consecutive years, respectively. Averages reported pre- and post-adoption indicate this trend increased post-adoption. Audit firms' industry specialization (AudSpec) has been identified based on market share (size of the firm, and number of clients). It appears that only 27% (with 44% SD) of Saudi firms tend to deal with specialist auditors based on market share. The mean of specialist auditor (AudSpec) post ISA is 29, which is greater than the mean of 26 Pre-ISA. This indicates that Saudi firms post ISA adoption tended to deal with specialist auditors, more so than Pre-ISA adoption.

7.2.2 Internal audit factors (audit committee characteristics and IFA)

Table 7.1 summarizes the fact that audit committee size (ACSize) in Saudi firms is generally around three to four members (3.55), and they hold approximately six (5.68) meetings (ACMeet) per year.¹⁷ The mean and SD of AC size Pre-ISA are 3.47 and 0.64, while post ISA they are 3.61 and 0.76, respectively. Further, the mean and SD of AC meetings post ISA are 5.82 and 2.34 while Pre-ISA they are 5.49 and 1.76, respectively. The mean and SD of AC size and number of meetings post ISA are greater than Pre-ISA adoption, indicating that the period post ISA has a greater number related to AC size and meetings than Pre-ISA adoption.

On average, 65% of audit committee members are independent (ACInd) and 42% have accounting or financial expertise (ACExpt). They hold either financial and accounting academic qualifications or relevant experience and knowledge of the financial and accounting industry. The mean Pre-ISA adoption for ACInd (67) is greater than post ISA adoption, while SD is 0.23 (Pre-ISA) and 0.24 (post ISA). However, the mean and SD of ACExpt post ISA are (48) and (0.28), greater than the mean (37) and SD (0.26) Pre-ISA (experts on the AC have increased from 0.37 to 0.48). Overall, this may be consistent with corporate governance regulations (CMA 2019), which state the audit committee should contain at least one independent member and one member who specialises in accounting and financial affairs. However, the mean of ACExpt post ISA is (48), greater than the mean (37) Pre-ISA with SD of 0.28 and 0.26. This suggests experts on the AC have increased from 0.37 to 0.48 post ISA adoption.

¹⁷ Saudi firms complied with the government's amended corporate governance regulations in 2019. See (CMA 2019). These guidelines state that the number of AC members should not be less than three and not more than five and their meetings should not be less than four during the fiscal year.

According to estimated average value, 2.77% of AC members hold two or three different directorships on other corporate boards (ACadd). The mean of ACadd post ISA increased from 1.817 to 3.73 with SD of 1.7 and 3.59, suggesting that AC members post ISA tend to hold more than two or three different directorships compared to Pre-ISA adoption. 42% of Saudi firms tend to change one (at least) AC member from year to year (ACSw). As expected, the mean of ACSw post ISA is 44, more than the mean Pre-ISA (40) with SD of 49. This suggests that Saudi firms post ISA tend to change AC members more than Pre-ISA adoption. Audit committee members hold 0.6% of total stock shareholdings (ACStock) in the firm. AC stock ownership post ISA (05) is less than ownership Pre-ISA (06) with SD of 14. Only 2% of audit committees have female members (ACDiv). The mean of ACDiv is 02 post ISA and 01 Pre-ISA, with SD of 14 and 11, respectively. This indicates that female participation on the AC post ISA increased compared to Pre-ISA adoption. Around 84% of Saudi firms have an Internal Auditing Function (IAF) section in their operations. The mean of IAF post ISA is 88 and 80 Pre-ISA adoption, with SD of 31 and 39, respectively. This indicates that Saudi firms post ISA adoption tended to have an IAF more so than Pre-ISA adoption.

7.2.3 Control variables

Table 7.1 shows that a company board holds around five meetings (5.24) per year. Board meetings Pre-ISA are more than post ISA, as the mean Pre-ISA is 5.28 and 5.20, post ISA adoption. Furthermore, 17.2% of board directors are expected to have expertise in financial or accounting matters and appropriate qualifications. The percentage of board expertise increased post ISA (mean 20) more so than Pre-ISA (mean 15). This is consistent with CG regulations (CMA 2019), which state that the board should hold at least four meetings every year, and consist of members who have relevant financial knowledge and experience.

The mean ROA of sample firms is 5.92% with SD of 8.25%. And the mean of ROA post ISA (2.75%) is relatively less than the mean ROA Pre-ISA adoption (7.50%). Variability of ROA among different firms post-adoption is also relatively close (6.48%) to Pre-ISA adoption (7.50%). Meanwhile, the mean of leverage (LEV) (debt to assets) is 23%, with SD of 0.19. The mean of LEV for two periods is the same (23) while SD post ISA (19) is more Pre-ISA (18) adoption.

The mean of firm growth (market-to-book value, MB) is 2.59%, with SD of 2.37. The mean of MB is 2.17 post ISA and less than the mean MB Pre-ISA adoption (2.78), with SD of 2.54 post ISA and 2.29 Pre-ISA adoption. Also, the mean of firm size (market capitalization, MC) is 6.35%, with SD of 0.6. The mean of MC post ISA (6.29%) is less than the mean MC Pre-ISA adoption (6.38%). The SD of MC post ISA (0.62%) is high compared with Pre-ISA adoption (0.58%). This analysis reveals that firm performance, firm growth, and firm size in Saudi Arabia Pre-ISA adoption are relatively high compared with post ISA adoption.

7.3 Correlation matrix and discussion

Table 7.2 presents estimated correlation coefficients among test variables which are used identify level of collinearity among study variables. Since the study cannot meet the five assumptions¹⁸, it should use the non-parametric alternative test (Spearman's Rank Order Correlation 'rho') rather than the parametric test (Pearson product-moment correlation 'r') (Pallant 2020). Spearman is a useful test for exploring relationships and describing strength and direction of the linear relationship between study variables (Pallant 2020). The correlation between REM measurements and other variables provided mixed results (positive/negative and statistically significant/insignificant).

Free from multicollinearity among explanatory variables is one of the necessary conditions in regression analysis to establish unbiased prediction of model variables (Liu et al. 2003). The

¹⁸ The five assumptions are normality, linearity, homoscedasticity, independent observations and multicollinearity.

correlation coefficient presented in Table 7.2 shows there are no significant multicollinearity issues. Table 7.3 presents variance inflation factor (VIF) analysis which further investigates the existence of VIF multicollinearity. If variables have a low tolerance and large variance inflation factor (VIF), this means there is a collinearity problem (Liu et al. 2003). VIF value is less than 10 and tolerance values were not close to zero: all independent variables have small values. These indicated that no multicollinearity problems were evident, and no harmful correlation between independent variables in the models occurred, consistent with Imen and Anis (2020). Hence, after confirming there was no multicollinearity problem, the models were statistically appropriate for carrying out multiple regression analysis.

Table 7.2: Spearman's rank correlation coefficients for study variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
1) REM	1.00																					
2) ISA	0.20*	1.00																				
3) Content	0.00	-0.02	1.00																			
4) Big4	-0.15*	-0.23*	0.00	1.00																		
5) Fiswh	-0.08	-0.00	0.01	0.14*	1.00																	
6) AudSpec	0.00	0.03	-0.03	-0.01	-0.05	1.00																
7) ACsize	0.06	0.08	0.02	-0.07	0.03	0.13*	1.00															
8) ACmeet	0.03	0.12*	0.04	-0.03	-0.06	0.03	0.09	1.00														
9) ACIND	-0.05	-0.04	-0.08	-0.01	-0.00	-0.03	-0.15*	0.06	1.00													
10) ACExpt	0.10*	0.18*	0.03	-0.03	0.04	-0.00	0.06	0.04	-0.24*	1.00												
11) ACadd	0.02	0.26*	0.04	-0.04	0.02	0.15*	0.20*	0.07	0.04	-0.00	1.00											
12) ACSwh	0.04	0.07	0.02	-0.04	0.01	0.05	0.33*	0.08	-0.03	0.03	-0.00	1.00										
13) ACStck	-0.10*	-0.04	0.01	0.03	0.00	-0.13*	-0.09	0.00	0.30*	-0.01	-0.07	-0.05	1.00									
14) ACDIV	-0.05	-0.02	0.02	0.03	-0.04	0.01	0.08	-0.11*	-0.07	0.13*	-0.04	0.02	0.09	1.00								
15) IFA	0.16*	0.08	0.02	-0.05	0.00	0.19*	0.09	-0.01	0.02	-0.13*	0.12*	0.00	-0.00	0.00	1.00							
16) BMeet	0.00	-0.01	0.00	-0.10*	-0.07	0.06	0.18*	0.07	0.07	-0.01	0.05	-0.01	0.02	0.04	0.03	1.00						
17) BExpt	0.05	0.19*	-0.01	-0.18*	0.01	0.08	0.06	0.08	-0.15*	0.45*	0.02	0.04	-0.05	-0.07	-0.05	0.02	1.00					
18) ROA	-0.30*	-0.26*	0.02	0.25*	0.12*	-0.04	-0.12*	-0.00	0.07	-0.16*	-0.04	-0.04	-0.10*	-0.17*	-0.09	-0.06	-0.00	1.00				
19) LEVD	-0.03	0.01	0.06	0.00	0.07	-0.02	0.08	-0.07	-0.18*	0.13*	0.16*	0.02	-0.16*	0.11*	0.08	-0.14*	0.18*	0.14*	1.00			
20) MVB	-0.30*	-0.22*	-0.04	0.15*	0.10*	-0.10*	-0.02	0.01	-0.04	-0.15*	-0.05	-0.06	-0.03	0.00	-0.14*	0.09*	-0.06	0.34*	0.00	1.00		
21) MC	-0.05	-0.09	-0.02	0.40*	0.03	0.03	-0.10*	-0.01	-0.00	-0.09	0.01	-0.00	-0.02	-0.12*	-0.08	-0.05	-0.12*	0.48*	-0.03	0.18*	1.00	

Dependent variable is real earnings management (REM). Explanatory variables are **lagged of all explanatory variables** which are International Standards on Auditing (ISA), contents of audit reports (Content), audit brand (BIG4), audit firm rotation (FiSw), industry specialized auditor (AudSpec), audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSw), stock ownership of AC members (ACstock), diversity of audit committee (ACDiv) and internal audit function (IAF). Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). Spearman rho = 0.167

Table 7.3: VIF test results

Variables	Model 1		Variables	Model2		Variables	Model3						Variables	Model 4			
	Full Sample			Full Sample			(A) Full Sample (Pre & Post ISA)		(B) Pre-ISA adoption		(C) Post-ISA adoption			(A) Separately		(B) Together	
	VIF	1/VIF		VIF	1/VIF		VIF	1/VIF	VIF	1/VIF	VIF	1/VIF		VIF	1/VIF	VIF	1/VIF
ISA	1.138	.879	Content	1.14	.877	Big4	1.338	.747	1.411	.709	1.395	.717	ISA	1.19	.84	1.171	.854
BMeet	1.032	.969	BMeet	1.032	.969	FiSwh	1.047	.955	1.14	.878	1.111	.9	EXAQ	1.104	.906	-	-
BExpt	1.083	.924	BExpt	1.084	.923	AudSpece	1.108	.903	1.166	.858	1.154	.866	INAQ	1.056	.947	-	-
ROA	1.231	.813	ROA	1.231	.813	Acsize	1.175	.851	1.214	.824	1.202	.832	EXINAQ	-	-	1.046	.956
LEV	1.046	.956	LEV	1.046	.956	ACMeet	1.108	.903	1.114	.898	1.217	.822	ExAQ	1.104	.906	-	-
MB	1.07	.935	MB	1.069	.935	ACInd	1.129	.886	1.127	.887	1.236	.809	BMeet	1.048	.954	1.041	.961
MC	1.194	.838	MC	1.194	.838	ACExpt	1.4	.714	1.347	.742	1.531	.653	BExpt	1.122	.891	1.091	.917
Mean VIF	1.113	.	Mean VIF	1.114	.	ACadd	1.122	.891	1.196	.836	1.17	.854	ROA	1.236	.809	1.235	.81
						ACswh	1.086	.921	1.106	.904	1.144	.874	LEV	1.048	.955	1.046	.956
						ACStock	1.07	.934	1.228	.814	1.086	.921	MB	1.072	.933	1.07	.935
						ACDIV	1.083	.923	1.195	.837	1.06	.943	MC	1.227	.815	1.201	.833
						IAF	1.082	.925	1.147	.872	1.133	.883	Mean VIF	1.123	.	1.113	.
						BMeet	1.103	.906	1.159	.863	1.146	.873					
						BExpt	1.396	.716	1.439	.695	1.401	.714					
						ROA	1.239	.807	1.4	.714	1.208	.828					
						LEV	1.105	.905	1.172	.854	1.14	.877					
						MB	1.07	.935	1.137	.879	1.11	.901					
						MC	1.43	.699	1.475	.678	1.525	.656					
						Mean VIF	1.164	.	1.225	.	1.215	.					
						Mean VIF	1.164	.	1.225	.	1.215	.					

Dependent variable is real earnings management (REM). Explanatory Variables are **lagged of all explanatory variables** which are contents of audit reports (Content), International Standards on Auditing (ISA), audit brand (BIG4), audit firm rotation (FiSwh), industry specialized auditor (AudSpec), audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACswh), stock ownership of AC members (ACstock), diversity of audit committee (ACDiv) and internal audit function (IAF). Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC).

7.4 Multivariate analyses (hypotheses testing)

7.4.1 REM

7.4.1.1 REM models coefficients

The current study employs an aggregate measure of REM which used the three measures introduced by Roychowdhury (2006) (by taking the sum of the three individual REM measurements). The three Roychowdhury's REM measurements are Cash flow from operation, Discretionary Expenses and Production Costs. To identify each measurement, these models have been estimated by using three cross-sectional models as identified below. They are estimated using linear regression.

- **Model 1: Cash flow from operation (CFO).** The abnormal CFO is the actual CFO minus the “normal” CFO. To calculate the CFO, three independent variables were used: total assets, cash from operations and sales.
- **Model 2: Discretionary expenses (DISEXP).** It uses five independent variables: assets, sales, ($R\&D_{i,t}$), advertising ($ADV_{i,t}$), and Selling, General and Administrative expenses ($SG\&A_{i,t}$). The abnormal discretionary expenses are the actual DISEXP minus the “normal” DISEXP.
- **Model 3: Production costs (PRODCOST).** This model uses the following independent variables: assets, sales, Cost of Goods Sold ($COGS_{i,t}$) and delta inventories ($\Delta INV_{i,t}$). Abnormal cash flow from operation is the actual PROD minus the “normal” PROD.

7.4.1.2 Estimations of Roychowdhury models (REM measurements)

Table 7.5 presents the estimation results for equations 1, 3 and 6 (presented in methodology chapter). The equations are estimated by cross-sectionally basis and the coefficients provided are the mean values of coefficients across sectional. Roychowdhury's models expect that the coefficient in the REM model on sales at the beginning of year ($St / At-1$) should be positive because firms with higher sales have higher expenses. Similar to Roychowdhury (2006), the coefficient ($St / At-1$) in this study is statistically significant and positive. The three regression coefficients (ACFO, ADISEX & APROD) of the current study are significantly different from zero and comparable to those published by Roychowdhury (2006), with one exception. The coefficient on the APROD model on $\Delta St / At-1$ is a significant positive sign in Roychowdhury (2006), but it is an insignificant positive sign (0.015) in Table 7.5. The difference in the model estimation table of REM, however, could be due to market variance. The coefficient will be discussed below in more detail:

1. The model which is used for predicting abnormal cash flow (ACFO) from operational activities is expected to have a positive coefficient for $St / At-1$, and a negative coefficient for $\Delta St / At-1$. However, the coefficient reported by Roychowdhury (2006) is significant and positive. The result of this study is consistent with the coefficient of Roychowdhury as presented in Table 7.5: the estimated coefficient for $St / At-1$ is (0.062) and for $\Delta St / At-1$ is (0.213). The positive

sign on $\Delta St / At-1$ showing that a higher change in sales suggests a higher CFO conditional on contemporaneous sales (Roychowdhury 2006).

2. Following Roychowdhury (2006), discretionary expenses (advertising, selling, general, administrative, and research and development) are calculated as a fraction of lagged sales. The model of abnormal discretionary expenses (AEXP) recorded a positive coefficient for the ' $St-1 / At-1$ ', which is similar to the coefficient reported by Roychowdhury (2006).
3. To interpret the coefficients of abnormal production costs (APROD), it should be categorised into two groups based on what they represent.
 - a. The first category is Cost of Goods Sold (COGS) determined as the fraction of current sales (Roychowdhury 2006). COGS represents the estimated coefficient of $St / At-1$. As predicted, the mean coefficient of $St / At-1$ in this study is positive (0.855), which is similar to the result reported by Roychowdhury (2006).
 - b. Normal inventory increase is the second group. Change in inventory is a linear function of change in sales (Dechow, Kothari & Watts 1998). The rationale is that firms often forecast sales for the following period, for which they keep a target inventory. Dechow, Kothari and Watts (1998) and Roychowdhury (2006) discovered a positive coefficient for $\Delta St / At-1$ and a negative coefficient for $\Delta St-1 / At-1$. This study found contrasting signs: the coefficient is positive for both $\Delta St / At-1$ (0.015) and $\Delta St-1 / At-1$ (0.015) as presented in Table 7.4.

Table 7.5 presents the estimated coefficient for models used for estimating REM. The recorded F statistics for all three models indicate that the modified version in Roychowdhury's approach is more appropriate to model REM. In other words, the F-test is high, indicating the model's specification is adequate for explaining variables. By recording relatively higher adjusted R^2 values, all models in this study explain REM reasonably well. The ACFO model has a mean adjusted of 42%, 98% for APROD, 48% for AEXPT as presented in Table 7.4. As a result, these models appear to have reasonable to substantial explanatory power (Zang 2012). Also, similar to Roychowdhury's models, the constant is positive with ACFO and AEXPT but negative with APROD.

Table 7.4: Roychowdhury models

Variables	ACFO	ADISEXP	APRODCOST
Constant	0.083***(10.48)	0.020***(5.96)	-0.061***(-12.51)
$1/TA_{i,t-1}$	-1992***(-13.04)	1541**(2.42)	1014***(10.82)
S_t/TA_{t-1}	0.062***(6.21)	0.041***(006)	0.855***(138.66)
$\Delta S_t/TA_{t-1}$	0.213***(12.97)	-	0.015(1.34)
S_{t-1}/TA_{t-1}	-	0.049***(0.007)	-
$\Delta S_{t-1}/TA_{t-1}$	-	-	0.051***(4.88)
Observations	576	576	576
R-squared	0.426	0.486	0.982
adj. R-squared	0.423	0.483	0.982
F-statistic	141.32	179.99	7940.97
p (F)	0.000	0.001	0.000

ACFO, ADISEXP and APRODCOST are dependent variables which represent abnormal cash flow from operation, abnormal discretionary expenses, and abnormal production costs. $1/TA_{i,t-1}$, $\Delta S_t/TA_{t-1}$, S_{t-1}/TA_{t-1} , and $\Delta S_{t-1}/TA_{t-1}$ are explanatory variables used. Variable 'S' and 'TA' represent sales and total assets of each firm. Standard errors of each estimated coefficients are in parentheses. '***', '**', '*' are the levels of significance at 99%, 95%, and 90%, respectively ¹⁹.

Abnormal cash flow from operation and abnormal discretionary expenses are negative measures of REM, while abnormal production cost is a positive measure of REM (Chi, Lisic & Pevzner 2011). Accordingly, the negative sign of abnormal cash flow from operation and abnormal discretionary expenses indicates an increase in REM manipulation, while the positive sign indicates a decrease in REM manipulation. The positive sign of abnormal production cost indicates an increase in REM, and the negative sign indicates a decrease in REM. To unify measurements, estimated residuals from regressions related to ACFO and AEXP are multiplied by -1, such that positive (higher) values indicate greater amounts of ACFO and AEXP cut by firms to increase reported earnings, while negative (lower) values indicate fewer amounts (Zang 2012). Thus, to capture the effects of REM in a comprehensive measure through all three variables, the three individual REM measures are aggregated into one proxy, by taking their sum (Cohen, Dey & Lys 2008b; Zang 2012), (positive composite score of REM) (Chi, Lisic & Pevzner 2011).

7.4.1.3 Descriptive statistics of REM measurements

Table 7.5 shows descriptive statistics of REM measurements for the full sample, pre and post ISA adoption.

¹⁹ See Roychowdhury models (2006) in Ch 5 (section 5.4.2).

Table 7.5: Descriptive statistics of REM measurements

Variable	Full Sample					
	Median	Mean	SD	Min	Max	Range
ACFO	0.015	1.23	0.129	-1.594	0.63	2.224
ADISEXP	0.014	1.23	0.056	-0.199	0.391	0.589
APRODCOST	0.008	1.23	0.078	-0.299	0.456	0.755
REM	0.024	1.23	0.191	-1.95	1.081	3.031

Variable	Pre-ISA					
	Median	Mean	SD	Min	Max	Range
ACFO	0.002	-0.021	0.153	-1.594	0.413	2.008
ADISEXP	0.017	0.004	0.062	-0.199	0.391	0.589
APRODCOST	-0.003	-0.014	0.086	-0.281	0.456	0.737
REM	-0.012	-0.032	0.219	-1.95	1.081	3.031

Variable	Post ISA					
	Median	Mean	SD	Min	Max	Range
ACFO	0.023	0.021	0.094	-0.546	0.63	1.176
ADISEXP	0.012	-0.004	0.048	-0.171	0.14	0.311
APRODCOST	0.021	0.014	0.065	-0.299	0.247	0.546
REM	0.052	0.032	0.152	-0.672	0.627	1.299

Because "the best-fitting regression line is the one that makes the mean residual equal to 0," the means of REM proxies are equal to zero, indicating a satisfactory fit for a linear mode (Hayes 2020). Zero is consistent with previous studies (Gunny 2010; Zang 2012). The minimum value of the three REM measurements is abnormal production costs (ADISEXP) (-0.199) while the maximum value is abnormal cash flow from operation (ACFO) (0.63) after REM, presented in Figure 7.1 for all six years.

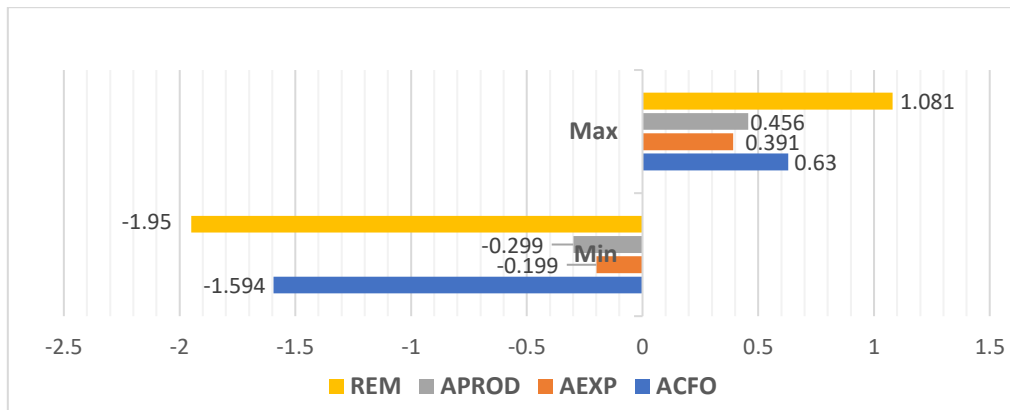


Figure 7.1: Descriptive analysis for REM measurements for 6 years

The pattern of REM measurements presented in Figure 7.2 clearly exhibits that all REM measurements (ACFO, ADISEXP and APROD) and the combined measurement (REM) increased post ISA (2016 to 2019) compared to Pre-ISA adoption (2014 to 2016). Generally, there is a little stagnation from 2015 to 2016, 2017 to 2018 and 2018 to 2019. Presumably, ISA adoption has a negative impact on REM; however, this expected effect is not statistically confirmed in either the regression analysis or

Hypothesis 2 test (as discussed in section 7.4.2). Obviously, the shift and decline in most REM measurements remained within the zero-confidence interval. The explanation for the insignificance of ISA moderating influence could be the declining trend that existed Pre-ISA adoption. Also, the reason could be due to the fact that REM practice does not violate generally accepted accounting standards in a given context (Gerged et al., 2021).

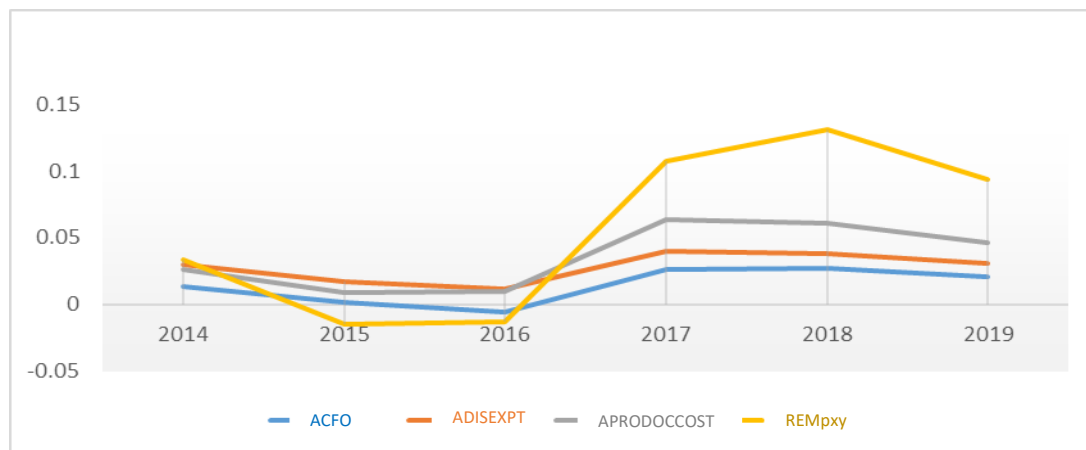


Figure 7.2: Plot of average ACFO, ADISEXPT, APRODCOST and REMpxy per Year

The negative sign (mean) of REM measurements Pre-ISA indicates that REM manipulation was lower than post ISA adoption. Abnormal cash flow from operation (ACFO) may result in an increase in sales volume in the short term on accelerating sales timing through price discounting or more lenient credit conditions (Cohen, Dey & Lys 2008b; Habib, Ahsan & Bhuiyan, Md Borhan Uddin 2016). This enhances sales volumes in the near term, but it will decline in the long term when the price reverts. Pacheco Paredes and Wheatley (2017) found that decreases in discretionary expenses (that would ordinarily be indicative of REM) are connected with improved future assets and security returns, in the case of controlling restructuring. Further, an awareness of future risk can be a possible reason for lower abnormal discretionary expenses in firms. Abnormal production costs (APRODCOST) report a low cost of goods sold through increased production results (Cohen, Dey & Lys 2008b). Increasing production beyond what is necessary to distribute fixed overhead costs across a larger number of units increases profitability and earnings (Cohen, Dey & Lys 2008b; Habib, Ahsan & Bhuiyan, Md Borhan Uddin 2016). If a decrease in fixed costs per unit is not offset by an increase in marginal costs per unit, this strategy will be effective. The cost of goods sold will be reduced (with a positive impact on profit) and the firm can report higher operating margins (Cohen, Dey & Lys 2008b; Habib, Ahsan & Bhuiyan, Md Borhan Uddin 2016). However, given the same sales levels, the company will still pay other production and holding costs, resulting in higher annual production costs relative to sales and reduced cash flow from operation (Cohen, Dey & Lys 2008b).

7.4.2 REM and ISA (Model 1)

Table 7.6 presents regression results for the aggregate REM proxy which total abnormal cash flow from operation (ACFO), abnormal discretionary expenses (AEXPT), and abnormal production cost (APROD). The regression result reported shows the impact of ISA adoption on REM measurements with ISA after controlling for board meeting (BMeet) and expert (BExpt), firm performance (ROA), leverage, firm growth (MB), and firm size (MC). The results presented in Table 7.6 show that the F-test is 36.36 with level of significance 0.00. These statistics indicate that specification of the model is fit to explain dependent variables. However, the recorded low (6.30%) indicates that the model explanatory power is very low.

Table 7.6: REM relationship with ISA and control variables

Variables	REM		
	Coef. / t.value		
ISA	0.049 *** (3.33)		
BMeet	0.002 (0.38)		
BExpt	-0.008 (-0.10)		
ROA	-0.003 (-1.28)		
LEV	0.004 (0.06)		
MB	-0.001 (-0.12)		
MC	-0.01 (-0.42)		
Constant	0.049 (0.36)		
Mean DV	-0.000	SD DV	0.191
R-squared	0.063	No of Obs	576
Wald (F) test Chi-square	36.361	Prob > chi2	0.000
Dependent variable is real earnings management (REM). Testing variable is International Standards on Auditing (ISA). Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). Standard errors of each estimated coefficients are in parentheses. '***', '**', '*' are level of significance at 99%, 95%, and 90%, respectively.			

Hypothesis H2 predicted that ISA adoption reduces REM (negative relationship). However, the recorded positive significant coefficient presented in Table 7.6 indicates that REM increased post ISA adoption and rejected the hypothesized relationship. This finding is inconsistent with Sami and Zhou (2008) who found a decrease in EM post implementation of auditing standards.

The result implies that the adoption of new standards or laws are not achieved as intended outcomes, which is reduced earnings management (Inaam, Khmoussi & Fatma 2012). In turn, as demonstrated by Lopez and Vega (2019), this result could suggest that REM activities surface as an unintended consequence of superior performance of auditors (e.g. able to better constrain accrual management activities). As suggested by Malik (2015), this could happen by switching managers from accrual-based earnings management to real earnings management. REM manipulation might give outsiders a false

impression of a company's financial performance, but it does not violate generally accepted accounting standards in a given context (Gerged, Albitar & Al-Haddad 2021).

Switching earnings management from one strategy to another to avoid detection of REM activities may affect a positive relationship. In addition, REM might encompass any genuine action that deviates from normal business practice, and for this reason it is intrinsically more difficult to discover more firm-specific information on this issue (Chen, Cussatt & Gunny 2020). The inherent uncertainty in business environments makes it more difficult to detect such activities and no benchmark currently determines what should have been done in any given case (Lo 2008). Consequently, if firm-specific knowledge is lacking, expertise is required to differentiate normal business practice from deviations (Chen, Cussatt & Gunny 2020). Implementing ISA will be ineffective for detecting REM, especially since it is not easy for outsiders to detect or prevent REM (Järvinen & Myllymäki 2016). Given this scenario, REM is a significant cause of auditor discomfort (Commerford et al. 2016).

Generally, while prior research has shown that high audit quality limits a manager's ability to manage earnings through accruals (Sitanggang et al. 2019), this study's findings suggest that higher audit quality may push managers to use REM. When faced with more restrictive legislation or standards or increased scrutiny from auditors which may limit their capacity to use discretionary accruals, managers can convert from accruals to REM (Sitanggang et al. 2019). Thus, Hypothesis 2 was rejected since there is a positive relationship between REM and ISA adoption.

7.4.3 REM and the contents of the audit report (Model 2).

This section evaluates the relationship of REM measurements with the contents of audit reports and control variables (board meeting (BMeet) and expert (BExpt), firm performance (ROA), leverage, firm growth (MB) and firm size (MC). Table 7.7 provide the regression. The table shows that the F-test is 59.54 with the high level of significance 0.00. The model's specification is adequate for explaining the dependent variables. However, the R^2 is about 7.30% and the low value of F suggests some other factors which may explain the variation in the level of REM (Rahman & Ali 2006).

Table 7.7: Relationship of REM measurements with content and control variables

Variables	REM
	Coef. /t-value
ISA	0.377 (1.64)
Contents	1.114 (1.84) *
Contents*ISA	-1.022 (-1.68) *
BMeet	0.001 (0.12)
BExpt	-0.013 (-0.17)
ROA	-0.003 (-1.29)

LEV	0 (0.01)		
MB	-0.002 (-0.17)		
MC	-0.01 (-0.41)		
Constant	-0.361 (-1.59)		
Mean DV	-0.000	SD DV	0.191
R-squared	0.073	No of Obs	576
Wald (F) test Chi-square	59.542	Prob > chi2	0.000
Dependent variable is real earnings management (REM). Explanatory variables are the adoption of the International Standards on Auditing (ISA), contents of audit reports (Content) and interaction of content of audit reports and ISA (Content*ISA). Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). T-statistics of each estimated coefficient are in parentheses. ‘***’, ‘**’, ‘*’ are level of significance at 99%, 95%, and 90%, respectively.			

Hypothesis 3 predicted that improved contents of audit reports post ISA adoption reduce REM. Supporting the predicted relationship, results presented in Table 7.7 record that interaction of ISA adoption and contents of audit reports have a significant negative effect on REM. This result suggests that improved audit content with the introduction of ISA contributed to reducing REM. The adoption of new auditing standards should increase the pressure on auditors to discover any earnings management activity (Sami & Zhou 2008). Increased monitoring due to ISA can reduce managers’ desire to be involved in REM, thereby a negative relationship. Audited information, usually, is more reliable than unaudited information, especially by ISA. Where auditors' efforts increase confidence in competence and trustworthiness of reported results, in turn reliability is increased (Kinney Jr 2000). Further, the implication of international standards (e.g. ISA) require additional disclosure, which contributes to better informing users (Manduca 2016). This confirms the claim that more disclosure regarding contents of audit reports may prevent REM.

7.4.4 REM and audit factors (Model 3)

This section evaluates the relationship of REM proxy with external and internal audit factors (audit committee characteristics and IAF). Table 7.8 presents regression results for the three REM measurements (cash flow operation, discretionary expenses, and production cost) in one proxy: REM. The reported F-statistic and related probabilities indicate that the present specification of the model is fit to explain the variation of REM due to the factors identified. However, reported low values for all three regressions indicates that only a small percentage of variation of dependent variables is explained by explanatory variables included in those models. Detailed discussion on regression results is presented below.

Table 7.8: Relationship between REM proxy and lagged audit variables (pre and post ISA)

	Full Sample (3A)	Pre- ISA model (3B)	Post- ISA model (3C)	Expected Relationship (Exp. Sign)	Is HY accepted?
Variables	Coef. /t-value	Coef. /t-value	Coef. /t-value		
(1) Big4	-0.034** (-2.21)	-0.032 (-1.34)	-0.041** (- 2.41)	Negative	Accepted
(2) Fiswih	-0.005 (-0.36)	-0.006 (-0.30)	0.011 (0.69)	Positive	NO evidence
(3) AudSpec	-0.015 (-1.17)	-0.019 (-1.35)	-0.004 (-0.33)	Negative	NO evidence
(4)AC activity					
- ACsize	-0.002 (-0.18)	0.009 (0.72)	-0.006 (-0.46)	Negative	NO evidence
- ACMeet	0.003 (1.25)	0.001 (0.26)	-0.003(-.69)	Negative	NO evidence
(5) ACInd	-0.065 (-1.57)	-0.057 (-1.18)	0.015 (0.36)	Negative	NO evidence
(6) ACExpt	0.017 (0.48)	0.014 (0.26)	0.091 *** (3.05)	Negative	Rejected
(7) ACadd	0 (-0.09)	0 (0.05)	0.004** (2.12)	Positive	Accepted
(8) ACswh	0.004 (0.42)	0.001 (0.04)	-0.003 (-0.24)	Negative	NO evidence
(9) ACstock	-0.013 (-0.27)	0.049 (0.88)	-0.139** (-2.51)	Negative	Accepted
(10) ACDIV	-0.003 (-0.07)	-0.123 (-1.31)	0.028 (0.45)	Negative	NO evidence
(11) IFA	0.046** (2.55)	0.038** (2.12)	0.046** (2.38)	Negative	Rejected
BMeet	0 (0.12)	-0.002 (-0.56)	0.001 (0.24)		
BExpt	0.06 (0.87)	0.076 (0.66)	-0.101*** (- 2.88)		
ROA	-0.003 (-1.34)	-0.006*** (-3.71)	-0.003*** (-3.45)		
LEV	-0.027 (-0.48)	-0.017 (-0.20)	-0.063 (-1.12)		
MB	-0.003 (-0.28)	-0.001 (-0.04)	-0.005 (-1.13)		
MC	0.016 (0.72)	0.039* (1.69)	0.01 (0.02)		
Constant	-0.061(-0.40)	-0.206 (-1.03)	0.019 (0.25)		
Mean DV	0.006	-0.013	0.032		
R-squared	0.099	0.122	0.157		
Wald (F) test Chi-square	101.447	43.234	77.606		
SD DV	0.166	0.172	0.152		
Number of obs	576	288	288		
Prob > chi2	0.000	0.000	0.000		

Dependent variable is real earnings management (REM). Explanatory variables are **lagged of all explanatory variables** which are audit brand (BIG4), audit firm rotation (FiSwih), industry specialized auditor (AudSpec) and audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSwih), stock ownership of AC members (ACstock), diversity of audit committee (ACDiv) and internal audit function (IAF). Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). T-statistics of each estimated coefficient are in parentheses. ‘***’, ‘**’, ‘*’ are level of significance at 99%, 95%, and 90%, respectively.

7.4.4.1 External auditor factors and REM measurements

The study tested the impact of four external audit factors on REM. Out of all the external audit factors, auditor brand name (Big 4) recorded statistically significant associations with REM. The recorded relationship of this factor has been discussed in detail below.

Auditor brand name (Big 4): Hypothesis 4 (H4) predicted that Big 4 audits have a negative impact on REM. This negative impact is expected to increase with ISA adoption. The estimated coefficient for Big 4 for the whole period provides significant negative evidence on the expected relationship. Also, further analysis found a statistically significant negative coefficient post ISA adoption but could not find significant evidence pre-ISA adoption. The magnitude of coefficients also takes a higher value than the coefficients estimated. The study test covered the whole period and the pre and post ISA adoption phase. Overall, this result supports the study hypotheses that the adoption of ISA increased Big 4 influence on reducing REM. Also, although mean values of the Big 4 variable post ISA adoption (0.403) were lower Pre-ISA adoption (0.569), this had a negative effect on REM. This could have been the result of strict guidance provided by ISA on their duties and responsibilities to Big 4 auditors (Pekdemir & Türel 2014). This is consistent with meta-analysis, which found that auditor size (Big 4) is negatively related to EM (Lin & Hwang 2010). Further, Inaam, Khmoussi and Fatma (2012) and Setiawan et al. (2020) confirm that Big 4 audit firms have a negative effect on EM, indicating that this is effective in limiting opportunistic behaviour.

External audit rotation: This study did not find any evidence to support or reject predicted relationships for hypotheses H5: that the impact of appointing the same audit firm for more than two consecutive years on REM could have increased with adoption of ISA. Thus, a positive relationship is expected between external audit rotation and REM, post ISA adoption.

Industry specialist auditors: The study was unable to provide sufficient evidence to support or reject predicted relationships in Hypothesis 6 (H6): that the impact of industry specialist auditor on REM could have reduced with ISA adoption. The hypothesis expects a negative relationship between industry specialist auditor and REM post ISA adoption.

In short, results confirm that using audit firms (Big 4) reduced REM practice post ISA adoption in Saudi Arabia. However, other external audit factors (i.e., appointing the same audit firm for more than two consecutive years and specialist auditor) are not affected by REM practice in Saudi Arabia. The study did not find any evidence to support or reject predicted relationships in hypotheses H5 and H6. This result regarding external audit factors in Saudi Arabia could be explained based on the following Habbash and Alghamdi (2017) argument. The first possible explanation is due to the lacklustre audit committee role in KSA (this is what this study proves later), which could be to blame for inferior audit

quality. Another possible explanation is that the performance of audit firms and auditors in KSA may differ from developed nations because they are affiliated with local auditors. Therefore, if the audit fails to defend shareholders' interests, the reputation is attributed to the local auditor rather than the Big 4 auditors, which avoids them being subjected to arduous litigation. This is due to the fact that litigation can be resolved privately in devolving countries, which may not be a deterrent in developed countries. This indicates lack of investor protection and volume of litigation in developing countries. This is what Francis (2004) refers to: that we don't know if US evidence on audit quality should be generalized and applied to audits in other countries, especially countries with different legal systems and non-common-law nations with investor protection and less ability for suing auditors for incompetence and misconduct. The findings suggest discussing and considering issues that impair external audit quality in Saudi Arabia (Habbash & Alghamdi 2017).

*7.4.4.2 Internal audit factor, **audit committee characteristics** and REM measurements*

Only four internal factors have a significant association with REM: AC expertise, AC additional directorships, AC stock ownership and IAF. These factors will be discussed below in more detail. AC activity (size and meetings), AC independence, AC rotation, and AC diversity are not able to provide any evidence to support a significant association with REM.

Experience of audit committee: Hypothesis 9 (H9) predicts that inclusion of members with accounting and financial expertise to the AC could reduce REM. Rejecting H9, the study found a statistically significant positive relationship post ISA adoption. The estimated coefficient for the period post ISA is greater than estimated coefficients for the full sample and the sample Pre-ISA adoption. This indicates that the inclusion of members with accounting and financial expertise increase REM with ISA adoption, to some extent.

The reported positive coefficients relationship indicates that the inclusion of members with financial and accounting expertise increase REM in Saudi listed firms. This result is consistent with Setiawan et al. (2020) who found a positive effect between financial expertise and EM, indicating that expertise may not be effective in reducing EM. However, this finding is contrary to the assertion that an AC with accounting and financial expertise impedes REM. Further, such a finding disagrees with the perspective of agency theory: that AC expertise is associated with an increase in earnings quality, as it is more effective in constraining management's opportunistic behaviour due to advanced accounting and financial knowledge (Chen & Komal 2018). And further, it does not agree with the view that the quality of external and internal auditing would be improved if there was a competent AC with highly qualified members (Al-Hadrami et al. 2020).

However, expertise gained through education and experience appears to be complementary, bringing a variety of skills and competencies to the audit committee (Herranz, Lopez-Iturriaga & Reguera-Alvarado 2020). Chen and Komal (2018) meta-analysis indicate a positive relationship between earnings quality and AC financial expertise, confirming that accounting financial experts are more strongly associated with earnings quality than non-accounting financial experts. Further, a lower likelihood of aggressive EM (Sharma & Kuang 2014) and engaging in REM (Mardessi & Fourati 2020) associated with financial expertise and audit quality is positively associated with female accounting experts on the AC (Abbasi, Alam & Bhuiyan 2020). Also, through perceived AC's competence, investors' trust in financial reporting increases in the presence of financial accounting and non-accounting expertise and industry experts (coming from experience), which has a positive impact on their investment decisions (Al-Hadrami et al. 2020).

Members of audit committee who hold additional directorships: Hypothesis 10 (H10) predicts that the impact of AC members with additional directorships increased the level of REM with ISA adoption. Accepting the hypothesized relationship, the recorded result shows that AC members with additional directorships had a significant positive relationship with REM post ISA adoption. The result is that AC additional directorships increase REM manipulation in Saudi listed firms. The reason is possibly due to the increase in mean values of the variable from 1.817 Pre-ISA to 3.73 post ISA adoption. This consequence could be due to increased busyness post ISA adoption which impedes the detection of REM. This view is consistent with Sharma and Iselin (2012), who suggested that AC members who serve on multiple boards may be overworked because they are stretched too thinly and therefore unable to perform their monitoring duties effectively. Further, Tanyi and Smith (2015) found that firms with a busy AC have significantly high EM, suggesting that busyness weakens the oversight and monitoring role the AC plays in the financial reporting process. This indicates that the increased workload that comes with multiple AC memberships jeopardises AC member ability to monitor the financial reporting process effectively (Khoo, Lim & Monroe 2020), so this supports the call for limits to multiple directorships (Sharma, Vineeta D & Iselin, Errol R 2012). This indicates also that new regulatory reforms may not influence financial reporting quality or audit quality. This is consistent with Sharma, Vineeta D and Iselin, Errol R (2012), who confirm that multiple directorships of AC members have not positively affected financial reporting quality post Sarbanes-Oxley (SOX) reform.

However, Vlaminck and Sarens (2015) confirmed a positive and significant link between financial statement quality and the proportion of AC members who hold more than three directorships at the same time. Sharma and Kuang (2014) also found that those who serve on other boards are less likely to engage in aggressive EM. This suggests an increase in reputational capital and expertise which will aid in monitoring EM manipulation. Khoo, Lim and Monroe (2020) suggested that AC members with multiple memberships tend to focus on memberships that provide them with the greatest reputation incentives

and benefits (i.e., more effective monitors), associated with effective monitoring of the financial reporting process. In other words, those with several directorships are perceived as monitoring experts, and thus may be more concerned with safeguarding their reputations, so they pay closer attention to management behaviour and its impact on financial statement quality (Vlaminck & Sarens 2015). AC member behaviour and actions are influenced by reputation concerns, which impacts their ability to monitor the financial reporting process (Khoo, Lim & Monroe 2020).

Audit committee stock ownership: Hypothesis 12 (H12) expects that REM is negatively related to audit committee members' stock ownership post ISA adoption. H12 is supported because recorded results show that the relationship between AC stock ownership and REM is negative post ISA adoption and no evidence was found Pre-ISA adoption. The mean value of the AC stock variable post ISA (0.054) is lower than Pre-ISA adoption (0.066), but it had a negative effect on REM. Although the independence of the directors on the audit committees, it has not impacted REM practices; the adoption of ISA may have been the main reason. This could have been a result of ISA's strict guidance (Pekdemir & Türel 2014).

The result shows the percentage of stock ownership for AC decreases REM practices in Saudi listed firms. This is consistent with the findings of Klein (2002), which discovered a negative relationship between earnings management and 5% block holders sitting on audit committees. Also, US research observed a lower level of earning management with the ownership (Peasnell, Pope & Young 2005). Moreover, Ballesta and García-Meca (2005) found the ownership provides an improved company governance, which lead to high quality of financial reporting. The result of this study supports the view that the ownership lead to a closer alignment of interests (Peasnell, Pope & Young 2005). Hence, ownership is considered as an internal mechanism to reduce the potential manipulation.

However, this result is inconsistent with meta-analysis for 48 prior studies, which assert that the ownership of shares by the AC has a positive impact on earnings management (Lin & Hwang 2010). Further, Sharma and Kuang (2014) found that greater stock ownership on the AC raises the risk of aggressive EM. They may not consider REM manipulation, as they would gain benefits from stock ownership.

Internal auditing function (IAF): Hypothesis H14 (H14) predicted that IFA has a negative effect on REM, which should have enhanced with ISA adoption. The results presented in Table 7.8, indicate that IAF has a significant positive effect on REM for the whole period and pre and post ISA adoption. The estimated coefficient post ISA is greater than estimated coefficients Pre-ISA adoption. Also, although the mean value of the IAF variable post ISA (0.885) is greater than Pre-ISA adoption (0.802), it had a positive effect on REM. Accordingly, this study provides evidence on the impact of IAF on REM post ISA adoption, but the recorded relationship on REM rejects the hypothesized relationship.

Contrary to expectations, this finding suggests that even if the firm has an internal auditing function (IAF), the use of REM is increased. It is somewhat surprising that the existence of IAF does not inhibit the manipulation of REM. This positive sign can be due to the fact that many Saudi companies' IAF lacked professionalism and independence from management and the small size of the internal auditing department, which adversely affects their work and potential for reliance on them (Al-Twajjry, Brierley & Gwilliam 2004). Despite IAF importance as a crucial governance mechanism, external stakeholders lack information about this function (Holt & DeZoort 2009). Information on an active internal audit department provides incremental assurance to investors about the veracity of reported results generated by the auditor (Holt & DeZoort 2009). Hence, providing all relevant information regarding IAF for external stakeholders could improve the effectiveness of IAF in Saudi Arabia.

This conflicts with Wali and Masmoudi (2020) who show that REM is negatively affected by a high internal control index (e.g., internal auditing), and demonstrates that control of the environment (e.g., CG and internal auditing) mainly influence REM. Further, Ismael and Kamel (2021) found a negative relationship, so they confirm the prominent role of the internal audit in reducing EM. The internal audit function is a critical and unique governance mechanism that maintains credibility through competent and objective oversight (Holt & DeZoort 2009).

Audit committee activity (size and meeting): This study did not find any evidence to support or reject predicted relationships in hypotheses H7A and H7B that impact audit committee activity (large size and frequency of meetings) on REM that could have reduced (negatively) with ISA adoption. This finding is consistent with Setiawan et al. (2020), who found no significant influence of AC size on EM and Masmoudi (2021), who found no major impact on abnormal operating cash flow or discretionary expenses with AC meetings.

Audit committee independence: This study did not find any evidence to support or reject predicted relationships in Hypothesis 8 (H8) that impact audit committee independence on REM, which could have reduced (negatively) with ISA adoption. This is consistent with Setiawan et al. (2020), as they found no significant influence of AC independence on EM.

Rotation of audit committee membership: Hypothesis 11 (H11) predicted that rotation of audit committee membership has a negative effect on REM and this should have been enhanced with ISA adoption. However, the study found no evidence to support or reject predicted relationships in H11. This could be consistent with the view that financial reporting quality or audit quality may not be influenced by new regulatory reforms. For example, post Sarbanes-Oxley (SOX) reform, tenure of AC members has not positively affected financial reporting quality (Sharma, Vineeta D & Iselin, Errol R 2012).

Audit committee diversity: This study did not find any evidence to support or reject predicted relationships in Hypothesis 13 (H13) that the impact of gender diversity on the audit committee on REM could have reduced (negatively) with ISA adoption. This indicates that gender diversity on the AC in Saudi listed firms has not affected REM.

In short, the findings do not support the role of the audit committee in corporate governance, especially post ISA adoption, and these have implications for both businesses and policymakers. These findings agree with Habbash and Alghamdi (2017), that the audit committee has a weak role in Saudi Arabia, which could be to blame for lower audit quality. Therefore, first, the results suggest considering the complementarities among academic and professional expertise (skills) of audit committee members for both periods (pre and post ISA adoption). Second, considering multiple directorships of audit committee members, especially post ISA adoption, because they increased REM. Third, considering retention of AC members for more than one year because the rotation from year-to-year increased REM Pre-ISA adoption. Fourth, there is a need to pay further attention to internal audit functions (Al-Twajjry, Brierley & Gwilliam 2004), especially post ISA adoption, by enhancing internal audit competence (Ismael & Kamel 2021) and appointing different competencies that must be taken into account, and thus defining possible ways in which REM can be reduced. This is because firms reporting internal control weaknesses are prone to using real activities manipulation as a form of EM (Lenard et al. 2016).

7.4.5 Interaction (incremental) effect (Model 4)

This section analyses the interaction effect of ISA adoption on the relationship between REM proxy and audit quality factors to compare pre and post ISA adoption. Using ISA as the moderating variable assists in this comparison, by determining whether there is a different outcome in REM when external and internal audit factors are considered. In other words, the study aims to see whether the strength or direction of the relationship between audit factors and REM is influenced by ISA. Further, this section comprises two steps with two models (4A and 4B). The first step (model 4A) involves analysing the interaction effect of ISA on the use of REM with audit quality factors separately. One variable contains the index score for four external audit factors and the other contains the index score for nine internal audit factors. The second step (model 4B) analyses the interaction effect by applying all external and internal audit quality factors in one variable by using an index score of 13. In short, the study is not only testing the individual impact of external or internal audit factors on REM, but also verifies the simultaneous and combined effect of those two control mechanisms on REM. Hence, these two steps can extend the results by merging or separating internal and external factors, generating more insight about differentiating between these two possible outcomes. For this reason, the two models will be discussed below with the REM proxy.

Table 7.9 presents regression results for models 4A and 4B with REM proxy. It shows a highly significant prob its regression at ($p < 0.00$) and high F-test of model fitness: 85.32 for model 4A and

59.49 for model 4B. This is about 08% for both models and the low value indicates other factors that may strongly influence variation in the level of REM (Rahman & Ali 2006).

Table 7.9: Interaction effect of ISA with audit factors

	External & Internal factors (separately) model (4A)	External & Internal factors (Collective) model (4B)		
	REM proxy			
Variables			Exp. sign	Is HY accepted?
(1) ISA	0.255 ***(3.79)			-
(2) EXAQ	0.011 (1.36)			
(3) INAQ	0.022 ***(4.26)			
(4) EXAQ*ISA	-0.02* (-1.83)		Negative	Accepted
(5) INAQ*ISA	-0.024*** (-2.61)		Negative	Accepted
(6) EXINAQ		0.015*** (3.24)		
(6) EXINAQ*ISA		-0.018*** (-3.05)	Negative	Accepted
BMeet	0 (-0.01)	0.001 (0.22)		
BExpt	-0.025 (-0.31)	-0.0160 (-0.21)		
ROA	-0.003 (-1.34)	-0.003 (-1.28)		
LEV	0.008 (0.14)	0.005 (0.08)		
MB	-0.001 (-0.14)	-0.001 (-0.08)		
MC	-0.007 (-0.32)	-0.008 (-0.35)		
Constant	-0.116 (-0.86)	-0.081 (-0.65)		
Mean DV	-0.000	-0.000		
R-squared	0.080	0.075		
Wald (F) test, Chi-square	92.735	59.491		
SD dependent var	0.191	0.191		
Number of obs	576	576		
Prob > chi2	0.000	0.000		
Dependent variable is real earnings management (REM). Explanatory variables are ISA= International Standards on Auditing), EXAQ = the index score of the four external audit factors (audit brand, audit firm rotation, industry specialized auditor and audit report lag), INAQ = the index score of nine internal audit factors (audit committee size, meeting, independence, expertise, busyness, rotation, stock ownership, gender diversity and internal audit function. EXINAQ = the index score of both external and internal audit factors, which is the total of the above variables. Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). Standard errors of each estimated coefficients are in parentheses. '***', '**', '*' are level of significance at 99%, 95%, and 90%, respectively.				

7.4.5.1 The separate effect of internal and external audit factors (Model 4A)

Regression results reported in Table 7.9 (column 2) present the interaction effect of ISA adoption on the relationship between REM use and individual audit factors. EXAQ is the total index score for four external audit factors (4 scores) while INAQ is the total index score for nine internal audit factors (9 scores). The higher the index score, the higher the audit quality.

Hypothesis 15 (H15) predicts that the interaction of ISA with external audit factors (all factors together) has a negative association with REM. Supporting the predicted relationship, results reported in Table 7.9 indicate there is a significant interaction of external audit factors with the dummy variable used to proxy the adoption of ISA (EXAQ*ISA). In other words, external auditor factors have influenced REM post ISA adoption in listed firms in KSA. This negative sign shows that using and integrating external audit factors post ISA adoption triggered a decrease in the use of REM manipulation in Saudi listed firms.

In addition, Hypothesis 16 (H16) predicts a negative association with the interaction of ISA and combined effect of all internal audit factors together with REM proxy. Supporting the predicted relationship, the study found a negative and significant interaction of internal audit factors with the dummy variable used for ISA adoption (INAQ*ISA). Integrating internal factors helped to decrease REM post ISA adoption. This negative signal indicates that REM manipulation in Saudi listed companies decreased as a result of employing and integrating internal audit criteria post ISA adoption.

7.4.5.2 The combined effect of all internal and external audit factors (Model 4B)

The regression results reported in Table 7.9 (column 3) present the interaction effect of ISA adoption on the relationship between REM and audit factors. A single variable is used in this regression to proxy the combined effect of all audit factors combined. The joint influence of both variables on REM is captured by EXINAQ, which is the total index score for five external audit factors and nine internal audit factors, which indicates 13 scores. It is assumed that firms with higher index value have higher audit quality.

Accordingly, Hypotheses 17 (H17) predicts that interaction of ISA and the index score of 13 internal and external audit factors is negatively associated with the REM proxy. Regression results indicate a negative and significant interaction of internal and external audit factors with the dummy ISA variable (EXINAQ*ISA). Integrating internal and external factors decreases REM post ISA adoption, so H17 is accepted. This negative sign shows that combining both internal and external audit factors post ISA adoption triggered a decrease in REM manipulation in Saudi listed firms. Hence, this study confirms that integrating internal and external audit quality significantly constrains REM. Results indicate that ISA adoption enhanced the negative effect of external and internal audit factors on REM. Using internal and external audit factors decreases REM use when ISA was introduced. This could be an outcome of clear auditing guidelines and benchmarks to conduct a comprehensive audit (Pekdemir & Türel 2014). According to auditing standards, financial statement audits must be conducted in a thorough and systematic manner in order to produce reliable conclusions (Pekdemir & Türel 2014). Further, this result is consistent with Masmoudi (2021), who found that the relationship between the AC and REM is positively moderated by audit quality. An audit conducted in accordance with ISA provides reasonable

assurance that financial statements are free of material misstatement (Pekdemir & Türel 2014). Overall, the research uncovered partial evidence of a significant link between internal and external audit quality and REM measurements with the interaction of ISA, and this finding is in line with Sitanggang et al. (2019).

7.4.6 Control variables

There was no evidence to support any association of REM with control variables on Model 1: REM & ISA, Model 2: REM & contents of audit reports, and Model 4: Interaction effect. In Model 3, two control variables, board expertise and ROA, recorded a significant relationship with REM post ISA adoption, whereas one variable, MC, recorded a significant relationship Pre-ISA adoption, as presented in Table 7.8. Post ISA adoption, the coefficient on board expertise is negative and significant at the level of 99%, while there is no significant relationship between board expertise and REM for the whole period and the period Pre-ISA adoption. This result indicates that the percentage of board expertise reduces REM manipulation when ISA is introduced in Saudi listed firms. This finding supports the view that the more expertise on the board, the less REM practice. This result, reported in Table 7.8, is consistent with meta-analysis on audit quality, corporate governance and earnings management of Lin and Hwang (2010), which found that board expertise is related negatively to EM.

In addition, the coefficient of ROA is a negative and significant sign at the level of 99% pre and post ISA adoption. The coefficient of ROA decreases from -0.006 to -0.003 post ISA adoption, which indicates no significant difference pre and post ISA adoption. The relationship between ROA and REM is not influenced by the introduction of ISA. However, the relationship is negative, which indicates that REM reduces with firm performance, measured by a return on assets for both periods (pre and post ISA) in Saudi listed firms.

The coefficient on MC is significant positive with REM at the level of 90% Pre-ISA adoption. This indicates that large firm size increases REM practice in Saudi Arabia. This is consistent with the view that large diversified firms provide more opportunities to manipulate earnings in such a way that external financial statements users cannot be identified due to complex financial reporting systems (Lobo & Zhou 2006). Also, this result could be due to the fact that MC represents future expectations of the firm (Fama & French 2021), which can influence the incentive of earnings manipulations.

However, the other control variables do not have a significant association with REM for the whole period and pre and post ISA periods (i.e., number of board meetings, leverage, and growth (market-to-book value, MB)). This result could support the contention that REM use in Saudi listed firms has not

been affected by the number of board meetings, leverage, and growth (market-to-book value). Those findings are consistent with Setiawan et al. (2020) who found that growth (market-to-book ratio of equity) has no significant effect on EM, but in contrast to his finding the leverage has a negative effect on EM.

7.5 Other alternative REM models

To investigate whether the evidence found in the main study model (Roychowdhury (2006) is reliable and credible, further analysis was conducted using REM measurements developed by Gunny (2010) and Vorst (2016). In their models, in addition to the other variables in Roychowdhury’s model, a dummy variable was introduced for changes in the business cycle. The dummy variable takes 1 when sales have declined and 0 otherwise (Cohen et al. 2020). This section will be divided into four sections: REM and ISA, REM and contents of audit reports, REM and audit factors and interaction effect.

7.5.1 REM and ISA (Model 1)

Additional analysis here has the same result as the main analysis with REM measurement, as presented in Table 7.10, where the coefficient of ISA is positive and significant at 99% ($p < 0.001$) with REM proxy. This analysis confirms the main results, where REM practice is increased post ISA adoption more than Pre-ISA adoption in listed firms in Saudi Arabia.

Table 7.10: REM relationship with ISA and control variables

Variables	REM 2020		
	Coef.	T-value	
ISA	0.041***	3.20	
BMeet	0.001	0.23	
BExpt	-0.029	-0.39	
ROA	-0.003*	-1.82	
LEV	0.018	0.35	
MB	-0.006	-0.84	
MC	0.007	0.35	
Constant	-0.031	-0.28	
Mean DV	0.000	SD DV	0.184
R-squared	0.093	No of Obs	576
Wald (F) test, Chi-square	36.218	Prob > chi2	0.000
Dependent variable is real earnings management (REM). Testing variable is International Standards on Auditing (ISA). Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). ‘***’, ‘**’, ‘*’ are levels of significance at 99%, 95%, and 90%, respectively.			

7.5.2 REM and contents of audit reports (Model 2)

Additional analysis has no significant effect as presented in Table 7.11. However, the results indicate that the interaction of ISA adoption with contents of audit reports has a negative effect on REM. In

addition, the coefficient of content was positive, but post ISA interaction with content, the coefficient turns to a negative sign, but nevertheless not significant.

Table 7.11: REM relationship with content and control variables

Variables	REM 2020		
	Coef.	T-value	
ISA	0.137	0.73	
Content	0.475	0.95	
Content*ISA	-0.391	-0.78	
BMeet	0	0.08	
BExpt	-0.03	-0.41	
ROA	-0.003*	-1.82	
LEV	0.016	0.32	
MB	-0.007	-0.86	
MC	0.007	0.37	
Constant	-0.207	-1.04	
Mean DV	0.000	SD DV	0.184
R-squared	0.096	No of Obs	576
Wald (F) test, Chi-square	53.077	Prob > chi2	0.000
Dependent variable is real earnings management (REM). Explanatory variables are the contents of audit report (Content) and International Standards on Auditing (ISA). Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). '***', '**', '*' are the levels of significance at 99%, 95%, and 90%, respectively.			

7.5.3 REM and audit factors (Model 3)

Additional analysis confirms the main results for external and internal audit factors with the alternative REM model as presented in Table 7.12. In more detail, Pre-ISA adoption, all external auditor factors have no significant relationship with REM in both main and additional analyses. Post ISA adoption, the Big 4 has a negative and significant relationship with REM in main and additional analyses. This indicates that using the Big 4 reduces REM practice post ISA adoption in listed firms in Saudi Arabia, which confirms main results. In addition, Pre-ISA adoption, main and additional analyses found a significant positive relationship of REM with IAF. However, post ISA adoption, additional analysis confirmed main results with the following variables: ACExpt, ACadd, ACstock and IAF. In short, additional analysis confirmed significant relationships in main results for all audit factors.

Table 7.12: Relationship between REM proxy and lagged audit variables (pre and post ISA)

	Full Sample (3A)	Pre- ISA model (3B)	Post- ISA model (3C)		
Variables	Coef. t-value	Coef. t-value	Coef. t-value	Exp. sign	Is HY accepted?
(1) Big4	-.033** (-2.15)	-.032 (-1.35)	-.0438*** (-2.59)	Negative	Accepted
(2) Fiswih	.001 (0.09)	.003 (0.13)	.01 (0.54)	Positive	NO evidence
(3) AudSpec	-.013 (-1.05)	-.02 (-1.26)	-.001 (-0.08)	Negative	NO evidence

(4) AC activity					
- ACsize	0 (-0.00)	.011 (0.90)	-.006 (-0.48)	Negative	NO evidence
- ACMeet	.002 (0.90)	0 (-0.05)	-.002 (-0.54)	Negative	NO evidence
(5) ACInd	-.051 (-1.45)	-.043 (-1.12)	.018 (0.41)	Negative	NO evidence
(6) ACExpt	.021 (0.58)	.024 (0.48)	.101*** (3.27)	Negative	Rejected
(7) ACadd	-.001 (-0.47)	-.001 (-0.14)	.003* (1.83)	Positive	Accepted
(8) ACswh	.004 (0.41)	.002 (0.12)	-.005 (-0.30)	Negative	NO evidence
(9) ACstock	-.024 (-0.59)	.035 (0.75)	-.141*** (-2.66)	Negative	Accepted
(10) ACDIV	-.007 (-0.13)	-.121 (-1.32)	.031 (0.47)	Negative	NO evidence
(11) IFA	.038** (2.18)	.039** (2.10)	.05** (2.43)	Negative	Rejected
BMeet	.001 (0.24)	-.002 (-0.49)	0 (0.09)	-	
BExpt	.052 (0.79)	.061 (0.55)	-.109*** (-3.28)	-	
ROA	-.003** (-2.17)	-.006*** (-3.71)	-.003*** (-3.88)	-	
LEV	-.01 (-0.21)	-.002 (-0.03)	-.054 (-0.98)	-	
MB	-.008 (-1.13)	-.006 (-0.54)	-.006 (-1.25)	-	
MC	.029* (1.75)	.049*** (2.67)	.015 (0.90)	-	
Constant	-.146 (-1.24)	-.282 (-1.57)	-.082 (-1.12)		
Mean DV	0.005	-0.012	0.029		
R-squared	0.128	0.140	0.179		
Wald (F) test, Chi-square	113.778	138.834	110.341		
SD dependent var	0.170	0.172	0.160		
Number of obs	576	288	288		
Prob > chi2	0.000	0.000	0.000		
Dependent variable is real earnings management (REM). Explanatory variables are lagged of all explanatory variables which are audit brand (BIG4), audit firm rotation (FiSwh), industry specialized auditor (AudSpec), audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSwH), stock ownership of AC members (ACstock), diversity of audit committee (ACDiv) and internal audit function (IAF). Control variables are board meeting (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). '***', '**', '*' are the levels of significance at 99%, 95%, and 90%, respectively.					

Main analysis uses the composite measurement of REM (Roychowdhury (2006)). Hence, individual REM measurements have been used as additional robustness to confirm the results of main analysis. In general, this analysis confirms the main results for all audit factors (Big 4, ACExpt, ACadd, ACStock and IAF) as shown in Table 7.13. In more detail, additional analysis found a negative significant relationship between Big 4 and abnormal discretionary expenses (ADISEXP) post ISA adoption. Also, AC expertise has a positive association with both REM measurements post ISA adoption: abnormal discretionary expenses (ADISEXP) and abnormal product cost (APROD). The AC withholds additional directorships which is a positive sign in main analysis. Here, post ISA adoption, the relationship is significantly positive with abnormal cash flow from operation (ACFO), but negative with abnormal discretionary expenses (ADISEXP). The estimated coefficient of the positive sign (003) is greater than the negative sign (-001), which could be the reason for giving a positive sign in the main analysis with

the composite measurement of REM. Similar to main analysis, a positive relationship is shown between audit committee stock ownership and discretionary expenses (ADISEXP) post ISA adoption. In addition, IAF has a positive relationship with abnormal discretionary expenses (ADISEXP) and abnormal product cost (APROD) post ISA adoption. However, the exception is the ACDiv variable, as additional analysis found a positive relationship with abnormal discretionary expenses (ADISEXP) post ISA adoption. It would appear that the additional analysis confirmed the main analysis with all three REM measurements.

Table 7.13: Relationship between REM measurements and lagged audit variables (pre and post ISA)

Variable	ACFO			ADISEXP			APROD		
	Full Sample	Pre-ISA	Post ISA	Full Sample	Pre-ISA	Post ISA	Full Sample	Pre-ISA	Post ISA
	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value	Coef. t-value
Big 4	-0.001(0.06) **	.01(0.68)	-.01(-0.88)	-.01(-1.65) *	-.013(-1.44)	-.015(-4.19) ***	-.018 (-1.83) *	-.018(-1.11)	-.017(-1.47)
FiSwh	-0.006(-0.61)	-.019(-1.18)	.011(0.94)	.001(0.45)	.003(0.59)	-.002(-0.68)	.001(0.09)	.007(0.58)	.005(0.75)
AudSpec	0 (0.02)	.008(0.63)	-.003(-0.31)	-.004(-1.31)	-.007(-1.20)	-.001(-0.22)	-.008(-1.21)	-.016(-2.70) ***	.005(0.81)
ACSize	0.002(0.30)	.008(0.85)	-.004(-0.62)	-.003(-1.24)	-.005(-1.44)	-.003(-1.06)	.001(0.37)	.009(1.78) *	.001(0.25)
ACMeet	0.004(2.01)	.002(0.50)	-.001(-0.44)	-.001(-2.59) ***	-.002(-3.51) ***	-.001(-1.62)	0(0.01)	0(0.11)	0(0.05)
ACInd	-0.017(-0.63)	.001(0.02)	.013(0.48)	-.016(-1.53)	-.029(-2.27) **	-.003(-0.52)	-.021(-1.86) *	-.019(-1.48)	0(-0.02)
ACExpt	-0.008(-0.34)	-.002(-0.08)	.02(1.24)	.016(2.13) **	.014(1.83) *	.025(2.76) ***	.014(0.92)	.005(0.20)	.037(2.65) ***
ACadd	0.002(1.13)	.001(0.33)	.003(8.67) ***	-.001(-1.89) *	-.001(-0.67)	-.001(-2.64) ***	0(-0.16)	-.001(-0.30)	.001(1.46)
ACSwH	0 (0.02)	-.002(-0.28)	-.009(-0.82)	.001(0.82)	.002(0.66)	.004(1.63)	.001(0.17)	0(-0.01)	-.001(-0.19)
ACStock	0.006(0.20)	.037(1.04)	-.057(-1.43)	-.018(-1.30)	-.018(-1.92) *	-.042(-2.54) **	-.012(-0.65)	.009(0.38)	-.024(-1.64)
ACDiv	0.005(0.18)	-.045(-0.94)	-.005(-0.17)	-.019 (-1.79) *	-.037(-1.87) *	.017(2.20) **	.008(0.35)	-.037(-0.83)	.022(0.81)
IFA	0.019(2.47) **	.014(1.60)	.016(1.28)	-.001(-0.18)	0(-0.03)	.01(1.90) *	.017(2.37) **	.019(2.27) **	.015(1.94) *
BMeet	0.001(0.37)	0(0.02)	.002(0.95)	0 (-0.39)	0(-0.26)	-.001(-1.01)	.001(0.92)	0(-0.10)	.001(0.40)
BExpt	-0.013(-0.24)	-.038(-0.54)	-.064(-1.55)	.022(1.05)	.065(2.31) **	.003(0.23)	.02(0.65)	.026(0.56)	-.045(-1.88) *
ROA	-0.004(-2.04) **	-.004(-4.53) ***	-.003(-11.68) ***	.001(1.84) *	.001(2.92) ***	.001(5.17) ***	-.001(-0.83)	-.003(-3.79) ***	0(-0.84)
LEV	-0.028(-0.79)	-.021(-0.41)	-.032(-1.94) *	.012(1.52)	.007(1.15)	.008(0.80)	-.011(-0.52)	-.009(-0.40)	-.027(-0.86)
MB	-0.003(-0.35)	-.003(-0.24)	-.005(-2.24) **	-.005(-1.77) *	-.004(-0.92)	-.002(-1.85) *	0(0.05)	.001(0.19)	.002(0.72)
MC	0.019(1.26) *	.031(2.32)**	.011(0.92)	.006(1.11)	.003(0.76)	.008(2.81) ***	-.009(-1.07)	.007(0.74)	-.016(-2.27) **
Constant	-0.118(-1.23)	-.194(-1.79) *	-.046(-0.80)	-.004(-0.11)	.029(1.19)	-.036(-1.64)	.06(0.96)	-.047(-0.59)	.086(2.72) ***
Mean DV	0.004	-0.010	0.021	-0.001	0.003	-0.004	0.003	-0.005	0.014
R-squared	0.163	0.134	0.277	0.186	0.171	0.232	0.072	0.189	0.088
F test (Chi square)	369.512	22.305	132.017	233.423	174.064	190.127	127.597	16.918	462.889
SD dep var	0.110	0.116	0.094	0.055	0.059	0.048	0.073	0.078	0.065
No of obs	576	288	288	576	288	288	576	288	288
Prob > chi2	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.031	0.000

Dependent variable is real earnings management measurements, abnormal cash flow from operation (ACFO), abnormal discretionary expenses (ADISEXP), and abnormal production costs (APRODCOST). Explanatory variables are **lagged of all explanatory variables** which are audit brand (BIG4), audit firm rotation (FiSwh), industry specialized auditor (AudSpec), audit committee members (ACSize), audit committee meeting (ACMeet), audit committee independence (ACInd), audit committee expertise (ACExpt), audit committee busyness (ACadd), audit committee rotation (ACSwH), stock ownership of AC members (ACStock), diversity of audit committee (ACDiv) and internal audit function (IAF). Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). '***', '**', '*' are the levels of significance at 99%, 95%, and 90% (***) $p < .01$, ** $p < .05$, * $p < .1$), respectively.

7.5.4 Interaction (incremental) effect (Model 4)

Main analysis found a significant negative relationship between REM and the interaction effect of ISA with four external audit factors and nine internal audit factors in Model 4A. Further, a negative relationship with 13 internal and external audit factors was found in Model 4B. Additional analysis also confirmed main analysis in Models 4A and 4B (see Table 7.14). This finding indicates that all audit factors play an important role in reducing REM in light of ISA adoption.

Table 7.14: Interaction effect of ISA with audit factors

	External & Internal factors (separately) Model (4)	External & Internal factors (collective) Model (5)		
REM proxy				
Variables	Coef. / t-value	Coef. / t-value	Exp. sign	Is HY accepted?
(1) ISA	0.207*** (4.42)	0.204*** (4.35)		
(2) EXAQ	0.011 (1.53)			
(3) INAQ	0.02*** (3.70)			
(4) EXAQ*ISA	-0.018* (-1.88)		Negative	Accepted
(5) INAQ*ISA	-0.023*** (-2.99)		Negative	Accepted
(6) EXINAQ		0.016*** (3.61)		
EXINAQ*ISA		-0.021*** (-3.51)	Negative	Accepted
BMeet	0 (-0.03)	0 (0.06)		
BExpt	-0.046 (-0.65)	-0.041 (-0.57)		
ROA	-0.003* (-1.84)	-0.003* (-1.83)		
LEV	0.018 (0.39)	0.017 (0.35)		
MB	-0.006 (-0.78)	-0.006 (-0.78)		
MC	0.01 (0.56)	0.009 (0.52)		
Constant	-0.181* (-1.70)	-0.172 (-1.62)		
Mean dependent var	0.000	0.000		
R-squared	0.110	0.109		
Wald (F) test, Chi-square	88.499	68.942		
SD dependent var	0.184	0.184		
Number of obs	576	576		
Prob > chi2	0.000	0.000		
Dependent variable is real earnings management (REM). Independent variables are ISA= International Standards on Auditing), EXAQ = the index score of the four external audit factors (audit brand, audit firm rotation, industry specialized auditor and audit report lag), INAQ = the index score of nine internal audit factors (audit committee size, meeting, independence, expertise, busyness, rotation, stock ownership, gender diversity and internal audit function. EXINAQ = the index score of both external and internal audit factors, which is the total of the above variables. Control variables are board meetings (BMeet), board expertise (BExpt), firm performance (ROA), leverage (LEV), firm growth (MB) and firm size (MC). Standard errors of each estimated coefficients are in parentheses. '***', '**', '*' are the levels of significance at 99%, 95%, and 90% (***) $p < .01$, ** $p < .05$, * $p < .1$), respectively.				

In summary, additional analysis is consistent with main analysis. However, there is only one difference shown evident in additional analysis: no effect between the interaction of contents of audit reports and ISA on REM. Despite that difference, study hypotheses are not influenced very much. In other words, they are still in the same situation except for H3 and no evidence was found for this hypothesis.

7.6 Discussion of findings based on theory

This research is based on the premise that information asymmetry causes agency conflict between managers and shareholders. When there is high probability of having information asymmetry, a firm's management may focus on short-term earnings targets rather than long-term expectations (Sitanggang et al. 2019) by becoming involved in activities leading to REM (Commerford et al. 2016). Accordingly, managers may use a variety of managerial tools to protect their personal interests rather than those of their shareholders (agency theory) (Al Mabsali 2018). Overall, earnings management is of great concern to corporate stakeholders (Lin & Hwang 2010).

Although true-REM is outside the purview (authority) of auditors, audit procedures which complied with ISA could avoid bias caused by earnings manipulation (Sitanggang et al. 2019). on the other hand, the audit committee as the in-charge of supervising an organization's financial reporting process keeps an eye on the company's accounting controls and financial affairs (Fama & Jensen 1983; Habib, Ahsan & Bhuiyan, Md. Borhan Uddin 2016). Therefore, an independent and competence audit committee can have a positive and significant impact on investment decision making (Al-Hadrami et al. 2020) by enhancing the credibility of financial statements (Al-Shaer & Zaman 2018).

This study examined whether there were any changes in impact of internal and external audit factors on REM during the post ISA adoption period against the pre adoption period. First, individual factors of internal and external audit and their relationships with REM have been examined (see Models 1, 2 & 3). Second, the two indexes which were developed to capture the combine effect of all internal factors and all external factors were used to identify how those factors collectively affect to the REM (Model 4A). Finally, all external and internal factors incorporated into one index and used it to identify the combine effect of both internal and external factors on REM (Model 4B).

What is surprising with this study's findings (as shown in the Table 7.8) is that out of internal audit factors, expertise of the audit committee, different directorships on the audit committee and existence of the internal audit function have recorded a significant positive relationship with REM. This evidence indicates that those audit factors do not reduce manipulating real earnings. On the other hand, the negative coefficients recorded for the Audit committee members' share ownership for the post ISA adoption period revealed that the audit committee tend to discourage selection of accounting policies which lead to REM when they are holding the shares of the firm. However, the positive coefficients

recorded for the dummy variable used for representing impact ISA adoption indicate adoption of ISA has affected to increase the REM. This could be due to the fact that, not like in the accrual-based earnings management (AEM) practices, REM practices are more difficult to detect by the procedures adopted by external auditors (Järvinen & Myllymäki 2016). As a results of that, manager might have switched from accounting policies which used to AEM to REM with the adoption of ISA (Choi, Choi & Sohn 2018; Sohn 2016). On the other hand, managers may have motivated to use the REM rather than the AEM practices, since increase audit scrutiny with ISA adoption might have diminish the ability to use of discretionary accruals for managing revenue (Sitanggang et al. 2019). Therefore, REM activities could have been surface as an unintended consequence of the superior performance of auditors (Lopez & Vega 2019). The improved contents of audit reports with ISA are evident the increased scrutiny. Further to that, as the leaders of the audit industry, BIG4 firms might have taken the leading role of adoption of ISA. This confirmed by the significant negative coefficients recorded for both variables (The contents of the audit reports and BIG4) for the post adoption regressions. In this case, managers may evade of practising AEM by substituting AEM with REM as another instrument to reach their financial targets because REM activities do not violate generally accepted accounting standards in a given context (Gerged, Albitar & Al-Haddad 2021; Malik 2015).

The audit committee and the internal audit function play a significant role in improving and monitoring FRQ (Cohen, Krishnamoorthy & Wright 2004). They are serving as a monitoring devise of management activities (Alzoubi 2019). The committee is also a devise of providing consultation to the management on audit issues by discussing major accounting judgements with company management or external auditors (Bédard, Chtourou & Courteau 2004; Herdman 2002). Hence, the positive impact of internal audit factors with REM practice may signalled that audit committee is serving as a consultation devise rather than a monitoring devise in Saudi firms. In other words, as consultation devise, audit committee may help managers to go away from possible audit inquiries. In addition, the positive sign can be explained as follows. Even after the audit committee has become widely used in listed businesses worldwide, no substantial proof has been produced that an audit committee can considerably improve information asymmetry, which is at the heart of the agency problem (Wu, Habib & Weil 2012). According to institutional scholars, audit committee will become exactly the same over time as a result of best practice imitation and/or regulatory (coercive) compliance (DiMaggio & Powell 1983). However, the question is whether the trend towards "standardised ACs" actually is a benefit to corporate governance (Wu, Habib & Weil 2012).

The findings of the index for internal audit factors (INAQ) have a positive effect on REM and the index for external audit factors (EXAQ) have no effect. On the other hand, both interaction variables (EXAQ*ISA and INAQ*ISA) that used to identify the post-ISA effect are recorded a significant negative relationship (see Table 7.9). In addition, when combined the two indexes together and test the

impact, audit factor index (EXINAQ) has a significant positive effect on REM but the interaction variable (EXINAQ*ISA)²⁰ has a significant negative effect (see Table 7.9). In short, when identify the post-ISA effect, the overall effect of both internal audit quality index and external audit quality index are negative on REM practices. Indicated here is that those factors assist in reducing REM. This findings suggest the need of having both internal and external audit factors, because external quality is closely related to internal quality (Chandler, Edwards & Anderson 1993; Inaam & Khamoussi 2016). The stronger the internal quality of the audit, the more it supports and facilitates external quality. A firm with strong and effective internal governance is more likely to maintain more robust accounting record keeping system, ensuring the ability to monitor, control, and avoid manipulation in preparation final accounts. Instead of applying or evaluating each factor, it is more judicious to integrate these audit factors so that the efficiency of the governance system with its procedures can be examined more efficiently (Zgarni, Hlioui & Zehri 2016). In general, contradictory results are evident for individual factors rather than the overall total. The possible reason for this is that other factors were complementary and impacted the cumulative outcome. The findings suggest that both internal and external audit factors should be employed and applied at the same time, because they complement each other. When audit committee characteristics, IFA and external audit factors are effective and strong, together they reduce REM manipulation. In short, employing each element of audit factors individually will not be effective in reducing REM in Saudi listed firms as much as employing them all.

Agency theory prediction can be used only with some of the study results. The findings support the agency theory with the following audit factors: improved contents of audit reports, Big 4, and audit committee stock ownership and in the case of integrating all effective internal and external audit factors. On the other hand, consistent with Habbash and Alghamdi (2017), the current study refutes some agency theory prediction, which indicates that high quality audit function can play a significant role in demotivating REM. Agency theory prediction is refused when testing REM practices with ISA adoption and when testing some of the audit factors individually such as expertise of the audit committee, different directorships on the audit committee and existence of the internal audit function. Hence, this raises two questions. The first is whether agency theory is applicable to individual audit factors wherein their effectiveness might be less compared to when all audit factors are integrated. The second is whether agency theory is applicable to Middle East and North Africa (MENA) countries (such as Saudi Arabia) since they have very different institutional histories, circumstances and settings compared to advanced economies (Sarhan, Ntim & Al-Najjar 2019).

Most hypotheses are not providing evidence for possible relationships as expected. The possible reason is that agency theory is not relevant and the application of audit factors (mechanisms) may be nothing

²⁰ EXINAQ*ISA captures the joint effect of both variables (audit factors and interaction effect) on REM as discussed in chapter 5.

but an attempt to imitate other organizations, applying regulations imposed by legislators (state) to improve organizational effectiveness, as predicted by institutional theory (Carpenter & Feroz 2001). Or it could be due to stakeholder pressure to gain or maintain the support of particular groups (Deegan & Unerman 2006), or to distract their opposition and disapproval, which is consistent with stakeholder theory prediction (Islam & Deegan 2008). This is consistent with statistical analysis by Boolaky and Soobaroyen (2017), who suggested that ISA adoption is influenced significantly by coercive, mimetic and normative pressure. Therefore, a possible explanation is that Saudi listed firms need to conform along with the rest of the world and respond to stakeholder demands for more detailed audit reporting. This has led standard-setters and regulators in the KSA to impose new standards and audit factors. As discussed previously, reports created and audited, according to national auditing, no longer meet the needs of users whose judgments are more international in scope in an era of globalisation of enterprises and marketplaces (Manduca 2016). So, Saudi Arabia has acknowledged the necessity to take advantage of globalization prospects, and as a result, the SOCPA has authorised an international standards Convergence Plan, so all listed companies are required to adopt those standards (i.e. ISA) (Manduca 2016).

Other possible reasons are that implementation of ISA is significantly more onerous than national auditing standards and it provides a challenge to corporations, practitioners, and regulators alike in Saudi Arabia, as they will necessitate additional disclosures that will aid in better informing users. Also, Saudi's unique national practices (strict local laws and Sharia laws) and a limited resource pool to draw upon are other challenges. As a result, the severity of the shortfall could be a contributing factor in the failure to achieve anticipated results. The resource shortage will likely continue for some years in the KSA, so the study recommends stakeholders and policymakers put in place adequate resources, support extensive education in schools and universities, and encourage training and professional certification (Manduca 2016). Furthermore, it would be interesting to learn more and better understand the impact of the institutional framework (context) (e.g., national culture) on audit factors and REM. Moreover, external auditors should also be more active and conduct sceptical audits, which necessitates the development of procedures that challenge management assertions (Al Mabsali 2018). In fact, auditors are aware of REM, and they frequently discover it through structured protocols such as analytical methods, discussions with management, or their business knowledge (Commerford et al. 2016). Also, auditors have concerns about REM (i.e., it threatens comfort) and they respond to the discomfort in different ways. Including increased scepticism, engaging in client discussions, changing audit methods and risk assessments, and some auditors may even be forced to resign from a project due to REM (Commerford et al. 2016). Some auditors may attempt to serve as gatekeepers of corporate morality by increasing audit procedures or speaking with members of the audit committee. In this way, the auditor serves as a gatekeeper of organizational tone and ethical climate while holding management more accountable (Commerford et al. 2016).

The independence and presence of financial (accounting and non-accounting expertise) and industry experience) on the audit committee increases investors' trust in financial reporting through the perception of audit committee's independence and competence (Al-Hadrami et al. 2020). Audit committees have been advised to learn more about business risk and the incentives provided by their companies' executive compensation systems (Habib, Ahsan & Bhuiyan, Md. Borhan Uddin 2016). Therefore, the combination of dedicated, qualified and independent elements of audit committee members, as a guarantee of efficiency, produce positive effects in the context of solid governance in the creation of a culture of compliance, and enables minimization of technical and ethical errors in decision making (Calderon, Piñero & Redín 2018). The audit committee represents the entire board of directors and facilitates personal contact and communication among board members, external and internal auditors, financial executives, and operating executives (Fama & Jensen 1983). Thus, the quality of external and internal auditing is improved (Al-Hadrami et al. 2020).

In short, this paucity of data on these potential relationships shows that using agency theory alone in certain situations may not be enough to solve the problem in developing countries such as Saudi Arabia. Hence, it should use other theories when investigating such research subjects. Figure 4.5 shows the theories used in this study. Agency theory has been applied as basis for the theoretical framework, which explains how ISA adoption and the quality of internal and external auditing can reduce agency costs and problems between businesses and stakeholders, by monitoring financial reporting and auditing in a more equitable manner. However, institutional theory and stakeholder theory have been used to interpret how audit reporting practice in organisations responds to particular pressures being exerted by authority (coercive isomorphism) and professional groups (normative isomorphism) or particular stakeholder groups. When these three connected theories are studied together, they provide rich insights into the reasons that drive REM practice and impose (apply) audit mechanisms than would be possible if they were considered separately.

7.7 Summary

This chapter aimed to answer the second question: To what extent has the adoption of ISA reduced REM activities in KSA listed firms? This question is contained in the following objectives that examine and analyse: (1) the relationship of REM and ISA adoption; (2) the relationship of REM and contents of audit reports post ISA adoption; (3) the relationship of REM and both internal and external audit factors pre and post ISA adoption and during the whole period; and (4) the interaction effect of ISA with audit factors on REM. Descriptive, matrix correlation and multivariate analysis were used to test the study hypotheses and additional analysis was used for all the above objectives. The findings were mixed, so discussion was based on agency, institutional and stakeholder theories.

The next chapter will conclude the current study. It will summarize study objectives, methodology, main findings, contributions, implications, limitations, and recommendations for future research.

Chapter 8: Conclusion

8.1 Introduction

In 2017, Saudi Arabia mandated that all companies adopt international standards, namely IFRS and ISA (SOCPA 2018). According to SOCPA, major differences exist between Saudi national standards on auditing and ISA. These differences are robust motivations to measure the extent of the impact of such standards and their effectiveness. In addition, the adoption of IFRS reduced accrual-based earnings management (AEM) (Ho, Liao & Taylor 2015; Sohn 2016), which resulted in firms manipulating other activities to manipulate earnings (e.g. REM practices). However, manipulating earnings was hindered by enforcing a high-quality audit process (Choi, Choi & Sohn 2018; Sohn 2016). ISA adoption has limited manager's opportunistic behaviour and presented stakeholders' real earnings.

Accordingly, the main aim of this study investigated whether the adoption of ISA improved audit quality and reduced REM activities of listed companies in Saudi Arabia based on four objectives. To conduct the investigation, seventeen hypotheses and multivariate regression analysis (four models) were developed. REM of individual firms was estimated using models introduced by Roychowdhury (2006) for the main analysis. In addition to the proxies used in previous studies to represent audit quality, this study uses a disclosure index based on content of published audit reports to proxy audit quality. This work contributes to existing knowledge about ISA by providing new evidence from a country ranked 3rd among Middle Eastern and Arabic countries. Overall, this thesis has drawn attention to Saudi Arabia's earnings management practice and the function of audit quality factors in ISA context. This chapter is structured as follows. Section 8.2 provides a summary of research findings. Section 8.3 explains research contributions, and section 8.4 presents theoretical and practical implications. Section 8.5 determines research limitations and recommendations, and Section 7.6 provides suggestions for future research. Section 8.7 concludes the chapter and the thesis.

8.2 Summary of research findings

8.2.1 Audit quality (contents of audit reports)

There has been an improvement in both the amount of information presented and the relevance of the information provided for stakeholder use, post ISA adoption. The study used Friedman and Wilcoxon tests (non-parametric statistics) to determine any differences in reported contents pre- and post-ISA adoption. The study found that both the contents and format of the audit report were significantly improved with the adoption of ISA (H1). In addition to the information contained in the report pre-adoption, some additional information was disclosed post ISA adoption.

Also, there were some observed changes in the contents of audit reports. This can be briefly explained. First, the extent of the audit report (i.e., number of pages used to present the audit increased from one (1) to two (2) pages to one (1) to 11 pages). This indicated quantitative improvement in the audit report post ISA adoption. Second, with ISA adoption, auditors have presented more consistent and uniform audit reports with more information. For example, audit reports were classified into three types of Pre-ISA adoption and two types of post ISA adoption. Third, content (elements) of audit reports post ISA adoption were significantly different Pre-ISA adoption in the following ways: 1) two main sections (scope of audit and opinion) were in the audit report Pre-ISA adoption, including six (06) sections (opinions, basis for opinions, audit approach, other information, responsibilities of management, and those charged with governance and auditor responsibilities) post ISA adoption; 2) new groups were added to audit reports post ISA adoption, such as material uncertainty related to the “Going Concern” section and other legal and regulatory requirements section. Each section was presented separately with more elements and explanations; and 3) some elements presented Pre-ISA adoption was also presented post ISA adoption, but with more disclosed information and explanation, such as responsibilities for financial statements.

In short, compared with the audit report used by SOCPA, the new structure under the adoption of ISA differed significantly. Areas where significant differences were found included longer text reinforced by explanatory, descriptive paragraphs and sections, details, and explanations indicating the auditor’s work. This finding indicated the extent of quality improvement of audit reports post ISA adoption. The longer the audit report, the more information disclosed, the better the content, and the more useful for those who read it. Before this study, evidence of the impact ISA was purely anecdotal, but this work contributes to existing knowledge by confirming that the adoption of ISA improves the contents of audit reports. This finding consistent with agency theory and supports the first hypothesis: the adoption of ISA is associated positively with the contents of audit reports.

8.2.2 Real Earnings Management (REM) and audit factors

Chapter 7 examined how ISA adoption and various internal and external audit factors affected REM. It also reviewed whether there were any changes in impact of internal and external audit factors on REM post ISA adoption. Table 8.1 presents findings of study hypotheses, summarized below.

ISA and REM: Rejecting Hypothesis 2, study results show a positive relationship of REM measurement with ISA adoption. This finding asserts that the use of real earnings management increased post ISA adoption. REM activities surfaced as an unintended consequence of the superior performance of auditors (‘International standards on auditing (ISA) implementation in New Zealand’ 2010; Lopez & Vega 2019), therefore, managers switched from accrual-based earnings management to real earnings management (Malik 2015).

ISA and contents of audit reports: As predicted in Hypothesis 3, the study found an increase in contents of audit reports post ISA adoption that reduced REM. This suggests that extra information disclosed in the audit report diminished the desire of management to use REM to manipulate reported earnings. The analysis of the contents of audit reports undertaken here, has extended our knowledge of investigating its relationship with REM post ISA adoption. Accordingly, this empirical findings in this study provide a new light on how REM has influenced by the contents of audit reports post ISA. The method used for this analysis may be applied to other elsewhere (countries) in the world to discover the relationship between audit reports and REM.

Audit factors and REM pre and post ISA: First, regarding external audit factor, the study found that auditing by the Big 4 audit firms reduced REM practice post ISA adoption in Saudi Arabia (H4). However, no evidence was found to support or reject the change in impact of retention on the same audit firm for two consecutive years (H5) and industry specialist auditor (H6) on the REM following the adoption of REM. This finding is consistent with agency theory.

Second, regarding internal audit factors, the study accepts Hypothesis 10 and 12. The result of H10 asserts AC members with additional directorships were positively associated with REM practice post ISA implementation. AC additional directorships increased REM manipulation in Saudi listed firms. The finding of H12 confirms the audit committee stock ownership had a negative relationship with REM practice in the KSA. Audit committee members' stock ownership is negatively related to REM post ISA adoption; indicating this factor is reduced REM. This finding is consistent with agency theory.

Conversely, hypotheses 9, 11 and 14 were rejected due to audit committee expertise and rotation, and existence of the internal audit function having a positive relationship with REM practice. These findings are inconsistent with agency theory, so other theories (institutional and stockholders) have been used to interpret the findings. However, following the adoption of ISA, no evidence was found to support or reject change in the impact of audit committee activity (H7), audit committee independence (H8) and gender diversity on the AC (H13) on REM.

Third, regarding the interaction (incremental) effect of ISA, all three hypotheses (15, 16 and 17) were accepted due to the negative and significant effect of interaction of external and internal audit factors with the dummy ISA variable on REM practice in Saudi listed firms. Overall, the findings of the interaction effect are more or less consistent with agency theory.

Table 8.1: Study hypotheses and findings

	Hypotheses	Findings
H1	<i>ISA adoption improved (associated positively with) the contents of audit reports.</i>	Supported
H2	<i>ISA adoption is negatively associated with level of REM measurements.</i>	Rejected
H3	<i>Content of audit reports is negatively associated with level of REM measurements post ISA adoption.</i>	Supported
H4	<i>Compared to Pre-ISA adoption, existence of the Big 4 auditors is negatively associated with REM proxy post ISA adoption.</i>	Supported
H5	<i>Compared to Pre-ISA adoption, retention of the same audit firm for two consecutive years is positively associated with REM post ISA adoption.</i>	No evidence
H6	<i>Compared to Pre-ISA adoption, presence of the industry specialist auditor is negatively associated with REM post ISA adoption.</i>	No evidence
H7	<i>Compared to Pre-ISA adoption, audit committee activity (size and frequency of meetings), is negatively associated with REM, especially post ISA adoption.</i>	No evidence
H8	<i>Compared to Pre-ISA adoption, audit committee independence is negatively associated with REM post ISA adoption.</i>	No evidence
H9	<i>Compared to Pre-ISA adoption, existence of accounting personnel with financial expertise on the audit committee is negatively associated with REM, especially post ISA adoption.</i>	Rejected
H10	<i>Compared to Pre-ISA adoption, AC members with additional directorships are positively associated with REM post ISA adoption.</i>	Supported
H11	<i>Compared to Pre-ISA adoption, audit committee rotation (at least one) is negatively associated with REM post ISA adoption.</i>	No evidence
H12	<i>Compared to Pre-ISA adoption, AC stock ownership is negatively associated with REM post ISA adoption.</i>	Supported
H13	<i>Compared to Pre-ISA adoption, gender diversity on the audit committee is negatively associated with REM post ISA adoption.</i>	No evidence
H14	<i>Compared to Pre-ISA adoption, existence of the internal audit function is negatively associated with REM, especially post ISA adoption.</i>	Rejected
H15	<i>Interaction of ISA adoption and the index score of four external audit factors is negatively associated with REM proxy (integrate only external factors).</i>	Supported
H16	<i>Interaction of ISA adoption and the index score of nine internal audit factors is negatively associated with REM proxy (integrate only internal factors).</i>	Supported
H17	<i>Interaction of ISA adoption and the index score of 13 internal and external audit factors is negatively associated with REM proxy (integrate internal and external factors).</i>	Supported

Sensitive analysis: Modified REM measurements devised by Gunny (2010) and Vorst (2016) have been used to verify study results for robustness tests. Main analysis is consistent with sensitive analysis conducted using other alternative REM models. However, a few differences were evident in additional analysis: (1) there is no effect between the interaction of contents of audit reports and ISA on REM; and (2) IAF has a significant positive relationship Pre-ISA adoption. New relationships are founded with the additional analysis, but not observed with main analysis and vice versa. Despite these results, the study hypotheses were not influenced that much and remained in the same situation.

8.3 Research contributions

This study examined whether using ISA as a framework for monitoring manager actions in firms in Saudi Arabia could lower agency's problems and costs. The implementation of ISA in the KSA, as a country which applies Sharia law, is still in its early stages. This study is the first in the KSA to examine how ISA affects audit quality (contents of audit reports), and the impact of both internal and external audit quality characteristics on REM pre and post ISA adoption.

As a result, in the following ways, this study adds to the existing literature regarding ISA, audit quality and earnings management. Firstly, this study is the first to empirically examine the impact of ISA adoption in a given country on REM. Thus, it contributes to the existing literature on accounting and auditing that believes standards enhance the quality of the financial reporting. This study provides further evidence of how ISA adoption has improved the quality of audit work in Saudi Arabia and affected EM of listed business firms in Saudi Arabia. This can be regarded as evidence from a country with a different business climate and norms thought to be representative of Middle Eastern and Arabic countries. Secondly, due to a lack of empirical research on the impact of ISA on audit quality (Boo-laky, Soobaroyen & Quick 2018; Christensen, Glover & Wolfe 2014), this study is significant because it will be the first to use a quantitative rather than qualitative approach to investigate the impact of ISA on audit quality and REM in Saudi Arabia listed firms (see Appendix 1 & 2). Thirdly, this study is the first comprehensive investigation of examining whether internal and external audit factors post ISA adoption have changed REM by incorporating an interaction variable (ISA and audit factors).

In addition, this study adds to the literature by making a significant theoretical contribution related to agency theory, by using content analysis as a measurement of audit quality to determine how ISA implementation affects contents of audit reports. Further, the study contributes to the literature because it examines the impact of contents of audit reports on REM post ISA adoption. Despite the importance of ISA-based harmonisation in form and contents of audit reports (Fakhfakh & Fakhfakh 2010; Haapamäki & Sihvonen 2019), the literature has not focused on how new audit standards improve the contents of audit reports. Only a few studies (about 8) look towards audit report harmonisation (Haapamäki & Sihvonen 2019). In addition, the most prevalent methodologies used to assess audit quality are audit fees, Big N membership, audit opinion, and discretionary accruals (DeFond & Zhang 2014). Therefore, this study adopted a new measurement for audit quality. Also, this study will contribute to real earnings management (REM) research, whereas previous research has frequently concentrated solely on AEM while ignoring REM, as pointed out by Alhadab and Clacher (2018); Chi, Lisic and Pevzner (2011). To put it another way, the importance of corporate governance in lowering accrual-based earnings management has been well documented in the literature, but there is no hard and conclusive evidence that it can limit real earnings management (Malik 2015). Zehri and Zgarni (2020) suggest further research that includes REM as a proxy for earnings quality.

Moreover, many studies have focused on the influence of audit committee attributes (Abbas 2020) and external auditing factors on EM, but none have focused on the moderating effect of ISA implementation on external audit factors and audit committee attributes on EM. As a result, the current study fills a gap in the literature by investigating not only whether internal and external audit factors have a role to play in reducing REM, but also the link between REM and audit quality factors in light of the introduction of ISA in Saudi Arabia. This study differs from previous studies, as it employs numerous factors to assess audit quality in one country, encompassing multiple aspects of internal and external auditing. Where most researchers have examined the association between audit factors and earnings management, according to the literature analysis, they tend to confine measures to one or two audit factors. They have generalised their conclusions without considering that audit quality is a multifaceted system. DeFond and Zhang (2014) concluded that there is no one proxy that provides an integrated picture of audit quality, so the researcher must employ numerous factors to assess audit quality. However, even within the same country, utilising this strategy (testing each audit element independently with REM) resulted in uneven and confounding results. This study used multiple variables; some have been included in the literature studies, while others, to the best of my knowledge, such as contents of audit reports and rotation, have not. This study examined the effect of REM manipulation pre and post ISA adoption, as well as the interaction effect of ISA, using contents of audit reports and the rotation variable (rotation of audit firm and audit committee member) as a novel assessment of audit quality.

8.4 Implications

This study not only investigated whether internal and external audit quality factors were linked to REM, but also measured their relations pre and post ISA adoption. Further, the study showed how REM is related to certain audit factors (AC characteristics, IAF and external audit factors) to develop a thorough understanding regarding the moderating (interaction) effect of ISA adoption on these relations. This section seeks to discuss the theoretical and practical implications of main results.

8.4.1 Theoretical implications of findings (theory)

As discussed in Chapter 4, the literature has interpreted the relationship between audit factors and earnings management under different theories (agency theory, positive accounting theory, stewardship, stakeholder, institutional), but these theories are not without contradiction. Although study hypotheses were built on agency theory, the findings were interpreted using agency, institutional and stakeholder theories. This study was founded on the idea that knowledge asymmetry causes agency conflicts between managers and shareholders. When there is high information asymmetry, it pushes managers to focus on attaining short-term earnings targets rather than long-term performance. As a result, they turn to REM, a way of altering and manipulating financial results, which is becoming popular. Consistent

with Habbash and Alghamdi (2017), some of the study findings refute agency theory prediction (audit quality factors can decrease REM). Agency theory prediction is only refused when testing a few audit factors individually, but this theory could be accepted in the case of integrating all effective internal and external audit factors.

Therefore, institutional and stakeholder theories were used in this study as alternative theories to interpret study results. Institutional theory predicts that application of audit factors (mechanisms) may be nothing but an attempt to imitate other organizations or apply regulations imposed by legislators (state) to improve organizational effectiveness (Carpenter & Feroz 2001). Stakeholder theory assumes that implementation of audit factors may be due to stakeholder pressures in order to gain or maintain the support of particular groups (Deegan & Blomquist 2006), or to distract their opposition and disapproval (Islam & Deegan 2008). Thus, adopting new standards or applying audit mechanisms is only a result of coercion by legislators, or imitation and normative isomorphism or institutional pressures or stakeholder pressures. The possible explanation of the study finding is that Saudi listed firms needed to conform to other countries and respond to stakeholder demands, which led to the imposition of new standards (ISA) and audit factors.

This data results provide theoretical validity by suggesting that using agency theory alone in certain situations may not be enough to solve the problem in developing countries such as Saudi Arabia. Hence, other theories should be used when investigating such research subjects. This confirms Gray, Kouhy and Lavers (1995, p. 67): “The different theoretical perspectives need not be seen as competitors for explanation but as sources of interpretation of different factors at different levels of resolution”. In this sense, agency, institutional and stakeholder contribute to our understandings of auditing practice rather than competing with it, and institutional and stakeholder theories complement agency theory about why managers engage in REM activities. The theoretical framework of this study was presented in Chapter 4 (see Figure 4.5).

The study proves that there are changes that occurred following the introduction of ISA. For example, the contents of audit reports improved and some relationships between audit factors and REM changed from pre to post ISA adoption. The anticipation of beneficial audit factors in constraining opportunistic REM activities was to a large extent found to be inaccurate in the KSA. That is, several audit factors investigated in this study had no impact on REM. Also, the findings indicate that employing each element of audit factors individually is not effective or useful in reducing REM in Saudi listed firms. Instead, they should be employed at the same time. Accordingly, including all those factors confirms the importance of uniting audit trinity (external audit, audit committee, and internal audit) efforts to ensure the financial reporting system and audit quality in the KSA. The findings have shown the complementary role of internal and external audit factors in a country’s environment and have

emphasised the need of management to strengthen audit committee mechanisms and audit practice. Indeed, ISA adoption, as well as complementary internal and external audit factors, has shaped financial reporting necessary for maintaining financial reporting quality. This result confirms the suggestion by Shbeilat (2018) of the significance of integrating and coordinating the audit trinity's efforts.

Overall, this study contributed to ongoing discussion about whether global audit factors can be unified: in the literature review chapter (theoretically) and in the findings chapter (empirically). This thesis suggests that the effectiveness of ISA adoption and audit quality factors varies from developing to developed countries. This difference could possibly be the result of various macro and microeconomic factors such as stock market regulations, culture, religion, corporate governance, disclosure requirements, audit factors, and others. Also, this study can provide developing economies with further insight into the role of ISA adoption and audit factors in reducing REM practices. This study provides critical evidence against agency theory, when testing audit factors individually, so it should use alternative theories to interpret study results such as institutional and stakeholder theories. However, this study could provide critical evidence for agency theory in the case of integrating all effective audit factors in reducing REM practice.

8.4.2 Practical implications

By examining audit quality and REM post implementation of ISA, the researcher is able to create an integrated assessment for internal and external auditing processes pre and post ISA adoption in Saudi Arabia. Therefore, the study's findings are useful in determining which factors of internal and external audit are most likely to have an impact on the quality of financial reporting. The study looked at the first three years pre and post implementation of Saudi Arabia's new auditing standards. This should be a timely contribution and provide relevant information to all impacted parties including governing bodies, investors, and audit professionals and regulators.

This study's practical benefit is that it provides valuable information to relevant government entities and regulatory agencies²¹ by comparing ISA and GAAS periods to explore the difference between them with regard to REM and audit quality. This comparison enables them to evaluate the expected reasons and seeks to address negative impacts that ISA adoption may cause (e.g., increasing REM). Further, these findings will be valuable for businesses including internal and external auditors and corporate governance members, and especially audit committees. For example, allowing external auditors to have more effective audit mechanisms to support the external audit process. Further, the findings should

²¹ For example, the Saudi Organization for Certified Public Accountants (SOCPA) leads and promotes auditing and accounting professions in Saudi Arabia. See (Sarhan, Ntim & Al-Najjar 2019), and the Capital Market Authority (CMA), which regulates and develops the Saudi Arabian capital market's listed enterprises.

strengthen the audit committee's perception, not only supporting its own characteristics but also the significance of uniting the audit trinity (external and internal audit and audit committee).

In addition, the results of this study show that post ISA implementation, there was an increase in earnings management by real-activity manipulation, which could impact the firm's future performance. As a result, this research has practical implications for companies, particularly those that seek to satisfy existing shareholders and investors interested in reliability and credibility of financial information in a particular country. For example, since the study observed increases in REM post-ISA, investors and current shareholders will obtain more insights into the trustworthiness of earnings statistics, and they will consider REM practice and be more willing to invest in a given company. Moreover, these findings have implications for regulators working to improve the calibre of financial reporting, like CMA. In other words, regulators may appease investors by enforcing penalties and more effective legal action against those who engage in aggressive earnings management. Also, they may encourage companies to uphold ethical standards by raising their knowledge of the significance of protecting investors. Also, the study will contribute to Middle East and North Africa (MENA) countries, especially the United Arab Emirates (UAE), which also adopted international standards in conjunction with the KSA in 2017.

8.5 Research limitations and recommendations

This study was subject to the following limitations, but these limitations could draw guidelines and recommendations for future research. Firstly, this study was limited to non-financial companies listed in the Saudi market. However, investigating in financial firms could provide different results and dimensions. Thus, it is recommended in future to give more attention to the financial and insurance sector.

Secondly, secondary data could be subject to distortion and accuracy because some data used in the study have abstracted information directly from annual reports published on Tadawul or Argam websites. The study results are dependent on accuracy of the data published in these reports. Also, the data used in this study is limited by the availability of data in the database (DataStream), so some variables were missing or not clear. For example, lack of IAF information in annual reports. This effected data collection which in turn affected the outcome. Accordingly, it is recommended that data be collected by different methods such as survey and interview. For example, factors related to internal audit function (IAF) (e.g., size, number of meetings, gender, and experience) should be collected via survey because they were not included in annual reports. In addition, IAF is a critical and unique governance mechanism that maintains credibility through competent and objective oversight (Holt & DeZoort 2009). Therefore, the study recommends providing all relevant information regarding IAF for external stakeholders in annual reports. This will lead to improving the effectiveness of IAF in the KSA, which will lead to reduced REM activities.

Thirdly, previous studies have used different models to detect real earnings management practice because there is no prior consensus on any right particular real earnings management model. This study measured REM by using Roychowdhury's 2006 models, so the findings were limited to those models. In addition, the study focused on all possible internal and external variables published in annual reports. However, other possible variables that can be collected by survey or interview have not been included. Accordingly, it is recommended to include other possible REM models and audit factors for which data can be collected using survey or interview (either or both methods). This study only measured the impact of ISA on AQ and REM, the relationship between REM and audit factors, and the interaction effect of ISA with audit factors on REM. In future studies, a more detailed investigation is recommended in order to examine what causes these relationships and other causal factors.

Penultimately, ISA was adopted in Saudi Arabia in 2017 to balance pre and post ISA periods when selecting the study sample. Therefore, the study sample was limited to the period 2014 to 2019. However, a longer sample period could provide more evidence. Thus, it is recommended in future to apply a longitudinal study from 2011 to 2022.

Lastly, the study is based on a sample of firms listed in the stock market in Saudi Arabia. In Saudi Arabia, the legal system is mainly governed by Islamic principles. Therefore, the Saudi corporate environment is significantly influenced by Islamic principles. Thus, comparison of this study results should be carefully conducted with results from studies conducted in non-Islamic countries. It would be interesting to learn more and better understand the impact of the institutional framework (context) (e.g., national culture) on audit factors and REM in the KSA. Also, the study recommends stakeholders and policymakers put in place adequate resources, support extensive education in schools and universities, and encourage training and professional certification in the KSA (Manduca 2016).

8.6 Suggestions for future research

This research has thrown up maseveralny questions in need of further investigation and provided the following insights for future research.

1. Direct extensions of the study

Regarding to the contents of audit reports, first, investigate the impact of new contents of audit reports on REM measurements by comparing the results with previous years for ISA adoption. This gives an opportunity to determine the difference between these two periods. Second, investigate the impact of new contents of audit reports on various financial statement users (especially investors) and capital markets in 2017, 2018 and 2019 and compare the results with previous years for ISA adoption (2014, 2015 and 2016). Such investigation could assess the impact on the market and determine differences between these two periods. Third, investigate to what extent new audit

reporting content can close the information gap and compare the results with previous years for ISA adoption.

Regarding ISA adoption, first, investigate the impact of first-year implementation of ISA and new ISA in subsequent years on investors (measured by abnormal returns and abnormal trading volume). Such investigation is needed to determine the economic consequences of new audit reports. Also, investigate the impact of Sharia principles on the adoption of ISA and how is the convergence between them make? Such study is needed to determine the extent of convergence between Sharia principles and ISA. Finally, investigate the impact of ISA adoption on external and internal audit factors by using qualitative methods and compare the results with previous years for ISA adoption. Such research is important to measure the effects of ISA adoption and determine whether audit factors are affected by ISA or not.

2. Broader issues to be covered

Generally speaking, to bring about advancement in the area of international auditing, it is necessary to conduct more empirical work on international auditing standards (e.g., ISA) in both developed and developing countries. Such standards are the foundation of many financial systems, so this empirical work is required to determine whether ISA implementation has increased audit efficiency. This investigation is required at an international level.

8.7 Conclusion

The adoption of ISA in 2017 in Saudi Arabia has been the motivation for this study to investigate the impact of ISA adoption on auditing quality and earnings management in listed firms from the 2014 to 2019. The effectiveness of audit attributes in limiting earnings management has been consistently questioned. Previous researchers have typically focused on examining the effect of just one particular audit trait on earnings management. It is a narrow focus because potentially masking or biasing results by omitting the complementary and/or supplementary influences of other important audit factors. This study provides a comprehensive investigation of the relationship between audit factors and earnings management using a variety of internal and external audit factors both in isolation and in unison in the context of the Saudi Arabia. The study tests the audit factors both separately and jointly (in one index) in four different models to increase the results' reliability and validity.

The study found that contents of audit reports has significantly improved post ISA adoption, which has led to reduced REM practice post ISA adoption. In addition, the Big 4, percentage of stock ownership for the audit committee post ISA adoption, and interaction of ISA with internal and external audit factors reduced REM practice. REM practice increased post ISA adoption and most findings did not indicate that internal audit factors reduced REM post ISA adoption (e.g., expertise, multiple directorships of AC

and IAF). Aside from testing the audit factors in isolation, using all internal and external audit factors in unison (in one index) are found to be significant determinants of reducing REM. Accordingly, three theories have been used: the agency, institutional and stakeholders to interpret the findings.

According to the results, analysing each component of the audit elements separately is ineffective and/or not helpful in lowering REM in Saudi Arabia. As a result, internal and external audit criteria should be examined simultaneously since they complement one another. Overall, the study's findings not only offer important information and insights into relationship between audit factors and earnings management, but also provide timely and relevant information to governing bodies, investors, audit professionals and regulatory authorities (SOCPA and CMA). It is one of the first to look at whether the introduction of the ISA has influenced audit quality and REM practices and how ISA implementation changes the contents of audit reports.

Appendices

Appendix 1: Neoteric research streams and considerations related to ISA adoption.

Authors/ Year	Topic	Objectives and Results regarding ISA
Samsonova-Taddei (2013)	Social relations and the differential local impact of global standards: The case of ISA..	The responses by local audit firms about the implementation of ISA in Russia Classify to three types; ignoring auditing standards and providing pseudo audits ('black audits'); providing voluntarily ISA audits based on the original ISA; the national auditing standards modeled on ISA mandated by audit law.
Kleinman, Lin and Palmon (2014)	Audit quality: A cross-national comparison of audit regulatory regimes	Investigating the audit regulatory practices, discussing hurdles to engage in both (intra and cross) national audits. Debating the difficulties acted by the differences between auditing standards, including economic development, investor legal protection, differing financial standard sources, and national cultural factors.
Simunic, Ye and Zhang (2015)	Audit Quality, Auditing Standards, and Legal Regimes: Implications for International Auditing Standards.	Concluding that the association between auditing standards, audit quality, and legal regimes, and discusses the implications of ISA adoption. show that optimal auditing standards for a country are a complex function of the legal system in that country.
Boolaky and Cooper (2015)	Comparing the Strength of Auditing and Reporting Standards and Investigating their Predictors in Europe and Asia	In terms of IFRS and ISA adoption, European countries are ahead of Asian countries.
P. Boolaky and Omotoso (2016)	ISA in the international financial services centers; What matters?	Examining the factors that affect ISA adoption. The study finds the following factors: social, economic, legal, and political factors.
Simnett, Carson, and Vanstraelen (2016)	International Archival Auditing and Assurance Research: Trends, Methodological Issues, and Opportunities	Reviewing 130 international archival auditing and assurance research articles from 1995 to 2014. The study presents some difficulties and opportunities in conducting international archival auditing and assurance research.
Pran K. Boolaky and Soobaroyen (2017)	Adoption of ISA: Do Institutional Factors Matter?	Investigating the determinants of ISA by employ neo-institutional theory. The adoption of ISA can be influenced by normative, mimetic, and coercive pressures.
Dan A. Simunic et al. (2017)	The joint effects of multiple legal system characteristics on auditing standards and auditor behavior.	Determining the impacts of auditing standards and legal system characteristics on auditor behavior (audit quality) and providing the implications of the adoption of ISA.
(Yapa, Jalathge & Siriwardhane 2017)	The professionalization of auditing in less developed countries: the case of Sri Lanka	Discovering that the Institute of Chartered Accountants of Sri Lanka and the local professional accounting body is actively engaged in the adoption of ISA.
Pran K. Boolaky et al. (2018)	The Determinants and Perceptions of Auditing and Reporting Quality in the Asia-Pacific Region.	IFRS affect significantly on auditing and reporting quality (ARQ). ISA is significantly related to ARQ.
Haapamäki and Sihvonen (2019)	Research on International Standards on Auditing: Literature synthesis and opportunities for future research.	Analyzing the existing literature regarding ISA adoption. The study determines seven major research streams including history and development of ISA, adoption of ISA and the relationship between ISA and national auditing standards, audit reports, audit efficiency, IFRS compliance, and financial reporting quality.

Appendix 2: Studies regarding accruals EM with audit quality.

Author/ Year	Topic	Objective regarding EM	Concentration
Becker et al. (1998)	The Effect of Audit Quality on Earning Management	Examines the relation between audit quality (Big Six auditors) and earnings management (discretionary accruals).	Audit quality (AQ) and earnings management (EM) (accruals)
Balsam, Krishnan, and Yang (2003)	Auditor Industry Specialization and Earnings Quality	Investigates the relationship between auditor industry specialization and measures of earnings quality (absolute discretionary accruals -DAC-)	AQ + EM (accruals)
G. V. Krishnan (2003)	Does Big 6 Auditor Industry Expertise Constrain Earnings Management?	Investigates the association of auditor industry expertise with a clients' level of absolute discretionary accruals.	AQ + EM (accruals)
K. Y. Chen, Vinten, Lin, and Zhou (2005)	Audit quality and earnings management for Taiwan IPO firms	Examines the relationship between audit quality (auditor size and industry specialization) and earnings management (unexpected accruals) for Taiwan IPO firms.	AQ + EM (accruals)
Davidson, Goodwin-Stewart, and Kent (2005)	Internal governance structures and earnings management	Investigates the role of a firm's internal governance structure in restricting earnings management (discretionary accruals).	Audit committee (AC) and corporate governance (CG) with EM (accruals)
Johl, Jubb, and Houghton (2007)	Earnings management and the audit opinion: evidence from Malaysia	Examines auditor reporting behaviour (auditor size and auditor industry specialisation) in the existence of aggressive EM (discretionary and abnormal accruals).	AQ + EM (accruals)
Piot and Janin (2007)	External Auditors, Audit Committees and Earnings Management in France	Investigates the impact of different audit quality dimensions (audit committee existence and independence, auditor reputation and tenure) on earnings management (abnormal accruals).	AQ + AC + EM (accruals)
Baxter and Cotter (2009)	Audit committees and earnings quality	Examines the relationship between the audit committee's formation and characteristics (Independence, expertise, activity, and size) and earnings quality (discretionary accruals and accrual estimation error) in Australia.	AQ + EM (accruals)
Prawitt, Smith, and Wood (2009)	Internal Audit Quality and Earnings Management	Investigates the relationship between internal audit function (IAF) quality and earnings management (abnormal accruals and the propensity to meet or barely beat analysts' earnings forecasts).	Internal audit function (IAF) and EM (accruals)
Lin and Hwang (2010)	Audit Quality, Corporate Governance, and Earnings Management: A Meta-Analysis	This meta-analysis identifies the effects of different corporate governance (board of directors' independence, expertise, ownership, audit committee's independence, size, expertise, and the number of meetings), and audit quality variables (auditor tenure, auditor size, and specialization) on earnings management (abnormal accrual and discretionary accrual).	AQ + CG + AC + EM (accruals)
Chen, Chen, Lobo, and Wang (2011)	Effects of Audit Quality on Earnings Management and Cost of Equity Capital: Evidence from China	Examines how differences in audit quality (audit firm size) impact earnings management (absolute discretionary accruals and income-increasing discretionary accruals) and the cost of equity capital in China.	AQ + EM (accruals)

García, Barbadillo, and Pérez (2012)	Audit committee and internal audit and the quality of earnings: empirical evidence from Spanish companies	Analyses the relationship between internal audit function, audit committee characteristics and earnings management (abnormal accruals)	IAF + AC + EM (accruals)
Tsipouridou and Spathis (2012)	Earnings management and the role of auditors in an unusual IFRS context: The case of Greece	Examines the association of audit opinion type (unqualified vs. qualified) and auditor reporting, (audit firm size) with earnings management (discretionary accruals).	AQ + EM (accruals)
Habbash and Alghamdi (2017)	Audit quality and earnings management in less developed economies: the case of Saudi Arabia	Determine the association between external audit quality attributes and earnings management (discretionary accruals).	AQ + EM (accruals)
Orazalin and Akhmetzhanov (2019)	Earnings management, audit quality, and cost of debt: evidence from a Central Asian economy	Examine 1) the effects of EM (discretionary accruals) and audit quality (audit firm size) on the cost of debt 2) the effects of audit quality on EM and whether the association between earnings management and cost of debt is affected by audit quality in Kazakhstan.	AQ + EM (accruals)

Appendix 3: Elements of CD index before and after ISA Adoption

N o.	Elements Pre- ISA adoption	Element Post- ISA adoption
1	Auditor's Report Types	Auditor's Report Types
Form of Auditor's Reports		
2	Title	Title
3	Statement "Independent Auditor's Report"	Statement "Independent Auditor's Report"
4	The addressee to:	The addressee to:
5	Date of reports	Date of reports
6	The address of the auditor	The address of the auditor
7	Auditor signature	Auditor signature
Content of Auditor's Reports		
	1. The Scope of the audit Group	1. Opinion Group
8	The name of the company.	The name of the company
9	The title of financial statements	The title of financial statements
10	Date that has been covered	The date that has been covered
11	Responsibility of management	The standards to be followed
12	Auditor responsibility	2. Basis of Opinion Group
13	Information provided with all explanations.	The audit based on ISA
14	Audit based on the relevant national auditing standards.	Auditor responsibility
15	Audit performs to obtain reasonable assurance	Auditor is independent of the company
16	The description of the audit	Auditor will fulfil other ethical responsibilities
17	Accounting policies and significant estimates	The audit evidence is sufficient
		3. Material Uncertainty Related to GC Group
		4. Audit approach Group
18	Overall financial statement presentation.	key audit matters
19	Audit gives a basis to express opinion.	Audit Procedures
	2. Opinions Group	
20	Present fairly in all material respects.	5. Other information Group
		6. Responsibilities of management Group
21	Comply, in all material respects.	Fair financial statements preparation (2) internal control.
22		Company's ability to continue (2) matters related to going concern (3) going concern basis of accounting.
23		Responsible for overseeing financial reporting process
		7. Auditor responsibilities Group
24		Auditor objectives
25		Determine and assess the risk of material misrepresentations of FS
26		Understand the internal control
27		Evaluate accounting policies and accounting estimates
28		Conclude on the appropriateness of management's use of the going concern basis of accounting
29		Evaluate the presentation, structure, and content of FS
30		Clarify auditor responsibility in the group audit engagement if ISA 600 applies.
31		Communicate with those charged with governance
32		Comply the ethical requirements regarding independence.
33		Determine the most significant matters
34		8. Report on other legal and regulatory requirements.

Appendix 4: The study variables and how the previous research measured them.

Variables	Definition	How it measured	Used by	Expected relationship
Big 4	Auditor brand name	1. Takes value one (1) if the firm is audited by one of the 'Big 4' audit firms otherwise zero (0)	Chen, Lin and Lin (2008), Lawrence, Minutti-Meza and Zhang (2011) Deumes et al. (2012), Myers, Schmidt and Wilkins (2013), Tsipouridou and Spathis (2014), Tanyi and Smith (2015), Zgarni, Hlioui and Zehri (2016), Habbash and Alghamdi (2017); Habib, Ahsan and Bhuiyan, Md. Borhan Uddin (2016), Zalata, Tauringana and Tingbani (2018), Sarhan, Ntim and Al-Najjar (2019), Li, Hay and Lau (2019), Alzoubi (2019), Sitanggang et al. (2019), and Imen and Anis (2020).	Negative
FiSwh	1. Audit firm rotation	1. The number of years (the natural logarithm) that the audit firm or external auditor have audited the company's financial statements.	(Chi, Lisic & Pevzner 2011; Sultana, Cahan & Rahman 2020; Zgarni, Hlioui & Zehri 2016). (Baatwah, Salleh & Ahmad 2015; Cohen & Zarowin 2010; Ho, Liao & Taylor 2015; Reichelt & Wang 2010; Sitanggang et al. 2019; Wan-Hussin & Bamahros 2013).	Positive
	2. External auditor rotation	2. 1 if the auditor (or audit firm) has been with the client for a specific period time (e.g., 4 or 5 years or more), and 0 otherwise.	(Asthana 2014)	
AudSpec	Specialised industry auditors	1. Equals one when a company is audited by a specialized auditor and zero otherwise.	Chen, Lin and Zhou (2005), Johl, Jubb and Houghton (2007), Prawitt, Smith and Wood (2009), Ho, Liao and Taylor (2015), Zgarni, Hlioui and Zehri (2016), Habbash and Alghamdi (2017), Imen and Anis (2020) and Sultana, Cahan and Rahman (2020).	Negative
ACSize	Audit committee size	1. The average or number of audit committee members throughout the year.	Dhaliwal, Naiker and Navissi (2010), Abbasi, Alam and Bhuiyan (2020); Baatwah, Salleh and Ahmad (2015); Baxter and Cotter (2009); Chan, Liu and Sun (2013); Endrawes et al. (2020); Herranz, Lopez-Iturriaga and Reguera-Alvarado (2020); Krishnan, Wen and Zhao (2011); Lawati, Hussainey and Sagitova (2021); Romanus, Maher and Fleming (2008); Setiawan et al. (2020); Sharma, Vineeta D. and Iselin, Errol R. (2012); Sultana, Cahan and Rahman (2020); Tanyi and Smith (2015); Vafeas (2005); Yang and Krishnan (2005)	Negative
		2. The dummy variable based on the size of the AC.	Knechel, Sharma and Sharma (2012), Asiriuwa et al. (2018) and Ismael and Kamel (2021).	

ACMeet	Audit committee meetings	1.The average or number of meetings held each year.	Dhaliwal, Naiker and Navissi (2010), (Abbasi, Alam & Bhuiyan 2020; Baatwah, Salleh & Ahmad 2015; Baxter & Cotter 2009; Farhan, Obaid & Azlan 2017; García, Barbadillo & Pérez 2012; Herranz, Lopez-Iturriaga & Reguera-Alvarado 2020; Khlif & Samaha 2014; Lawati, Hussainey & Sagitova 2021; Marra & Mazzola 2014; Romanus, Maher & Fleming 2008; Setiawan et al. 2020; Sharma, Vineeta D. & Iselin, Errol R. 2012; Sultana, Cahan & Rahman 2020; Tanyi & Smith 2015; Vafeas 2005; Vlaminck & Sarens 2015; Yang & Krishnan 2005; Zgarni, Hlioui & Zehri 2016)	Negative
		2. The dummy variable based on the number of AC meeting during the year.	Al-Shetwi et al. (2011); Asiriwuwa et al. (2018) Ismael and Kamel (2021); Knechel, Sharma and Sharma (2012), Bédard, Chtourou and Courteau (2004); Ghafran and O'Sullivan (2017) Wan-Hussin and Bamahros (2013)	
ACInd	Audit committee independence	1.The dummy variable by giving a value of 1 when all or some of its members are independent and 0 otherwise.	(Alzeban 2020; García, Barbadillo & Pérez 2012; Ghafran & O'Sullivan 2017; Mardessi & Fourati 2020). (Ismael & Kamel 2021; Knechel, Sharma & Sharma 2012), (Zgarni, Hlioui & Zehri 2016) (Osma & Noguier 2007).	Negative
		2.The average or percentage of independent directors on the AC.	Dhaliwal, Naiker and Navissi (2010) (Abbasi, Alam & Bhuiyan 2020; Al-Shaer & Zaman 2018; Aldamen, Hollindale & Ziegelmayer 2018; Alzeban 2015, 2019; Baatwah, Salleh & Ahmad 2015; Baxter & Cotter 2009; Dellaportas et al. 2012; Ghafran & O'Sullivan 2017; Ghosh, Marra & Moon 2010; Lawati, Hussainey & Sagitova 2021; Lennox & Park 2007; Mardessi & Fourati 2020; Marra & Mazzola 2014; Rahman & Ali 2006; Romanus, Maher & Fleming 2008; Setiawan et al. 2020; Sultana, Cahan & Rahman 2020; Visvanathan & Krishnan 2008; Vlaminck & Sarens 2015; Wan-Hussin & Bamahros 2013; Yang & Krishnan 2005)	
ACExpt	Audit committee experience	1. Equal 1 if the company has one or more of financial accounting experts on the committee, and 0 otherwise.	(Alzeban 2020; Bédard, Chtourou & Courteau 2004; Ghosh, Marra & Moon 2010; Ismael & Kamel 2021; Knechel, Sharma & Sharma 2012; Marra, Mazzola & Prencipe 2011; Rahman & Ali 2006; Yang & Krishnan 2005; Zgarni, Hlioui & Zehri 2016).	
		2.The number of experts on the committee or by the proportion of directors on the committee with accounting and financial qualifications.	(Alzeban 2015; Mardessi & Fourati 2020; Masmoudi 2021) (Al-Shaer & Zaman 2018; Aldamen, Hollindale & Ziegelmayer 2018; Alzeban 2019; Baatwah, Salleh & Ahmad 2015; Carcello, Joseph V & Neal, Terry L 2003; Chan, Liu & Sun 2013; Dellaportas et al. 2012; Endrawes et al. 2020; Farhan, Obaid & Azlan 2017; Garven 2015; Ghafran & O'Sullivan 2017; He & Yang 2014; Herranz, Lopez-Iturriaga &	

			Reguera-Alvarado 2020; Khoo, Lim & Monroe 2020; Lawati, Hussainey & Sagitova 2021; Romanus, Maher & Fleming 2008; Setiawan et al. 2020; Sultana, Cahan & Rahman 2020; Sun & Liu 2014; Vafeas 2005; Vlaminc & Sarens 2015; Wan-Hussin & Bamahros 2013; Yassin & Nelson 2012; Zalata, Tauringana & Tingbani 2018).	Negative
ACadd	Audit committee multiple directorships	1. The average number of other directorships, outside directorships served on by audit committee members.	(Sun, Lan & Liu 2014; Vafeas 2005), (Garven 2015; Yang & Krishnan 2005) (Sultana, Cahan & Rahman 2020) (Ghafran & O'Sullivan 2017) (Herranz, Lopez-Iturriaga & Reguera-Alvarado 2020).	Positive
		2. The proportion of directors who serve on 3 or more other board seats on the audit committee.	(Chan, Liu & Sun 2013; Sharma, Vineeta D. & Iselin, Errol R. 2012; Sun & Liu 2014; Vlaminc & Sarens 2015), (Lawati, Hussainey & Sagitova 2021).	
		3. Equals 1 if all AC members serve on 3 other board seats.	(Sharma, Vineeta D. & Iselin, Errol R. 2012).	
		4. The average number of directorships positions they hold in other listed companies.	(Carcello, Joseph V & Neal, Terry L 2003).	
ACSwch	Audit committee rotation	1. The average tenure (number of years) of directors on the board.	(Chan, Liu & Sun 2013; Dhaliwal, Naiker & Navissi 2010; Garven 2015; He & Yang 2014; Khoo, Lim & Monroe 2020; Krishnan, Wen & Zhao 2011; Sultana, Cahan & Rahman 2020; Sun, Lan & Liu 2014). (Ghosh, Marra & Moon 2010; Sharma, Vineeta D. & Iselin, Errol R. 2012; Vafeas 2005; Yang & Krishnan 2005).	Negative
		2. Equal to 1 if the average tenure of the members on the AC is 3 years (or less) or at least 9 years, and 0 otherwise.	(Sharma, Vineeta D. & Iselin, Errol R. 2012)	
		3. The proportion of directors with 10 or more years of board tenure.	(Sun & Liu 2014)	
ACStock	Audit committee stock ownership	1. The average value of common stock owned by the AC or the proportion of AC with block shareholding, number of shares or outstanding shares.	(Garven 2015) (Carcello, Joseph V & Neal, Terry L 2003). (Sun, Lan & Liu 2014), (García, Barbadillo & Pérez 2012) (Dhaliwal, Naiker & Navissi 2010) (Yang & Krishnan 2005) (Ghosh et al., 2010).	
		2. The proportion of directors who hold at least 1% of the company's shares.	(Sun & Liu 2014)	

		3. The actual stock ownership for all AC members.	(Vafeas 2005)	Positive
ACDiv	Diversity of audit committee	1.The presence of women directors (which equals 1 and 0 otherwise).	(Aldamen, Hollindale & Ziegelmayer 2018).	Negative
		2.The ratio or the percentage of female members on the AC.	(Abbas 2020) (Abbasi, Alam & Bhuiyan 2020; Lawati, Hussainey & Sagitova 2021; Mardessi & Fourati 2020; Setiawan et al. 2020; Sun & Liu 2014; Zalata, Tauringana & Tingbani 2018)	
		3. The number of women on the AC divided by the total number of directors on ACs.	(Pucheta-Martínez, Bel-Oms & Olcina-Sempere 2016).	
IAF	Internal audit function	1. Giving 1 if the firm has own its IAF and 0 otherwise.	(Alzoubi 2019; Axén 2018; Davidson, Goodwin-Stewart & Kent 2005; García, Barbadillo & Pérez 2012; Wan-Hussin & Bamahros 2013; Yassin & Nelson 2012).	Negative
		2. The percentage of total members on IAF (size).	(Ismael & Kamel 2021).	
BExpt	Board expert	1. The percentage of directors who have a finance or accounting background (certificate) and have financial or accounting experience on the board.	(Alzoubi 2019; Baxter & Cotter 2009; Kang & Kim 2012).	-
		2. Giving 1 if the director has an accounting degree or designation and has worked in an accounting-related position, and 0 otherwise.	(Wahid 2019).	
BMeet	Board Meetings	1. The number of board meetings for the fiscal year.	(Al-Shaer & Zaman 2018; Alzeban 2020; Baatour, Othman & Hussainey 2017; Baxter & Cotter 2009; Carcello et al. 2002; Garven 2015; Kang & Kim 2012; Marra & Mazzola 2014; Wahid 2019).	-
		2. Total No of meetings attended by all board members divided by total No. of meetings held during the year.	(Hashed & Almaqtari 2021)	

		3. Giving 1 if it is exceeding the median number of board meetings.	(Knechel, Sharma & Sharma 2012)	
ROA	Firm performance (return on Assets)	1. Net income before extraordinary items scaled by total assets at year (net income/total asset (lag).	Deumes et al. (2012), Tsipouridou and Spathis (2014), Habib, Ahsan and Bhuiyan, Md. Borhan Uddin (2016) Jung, Kim and Chung (2016), Zgarni, Hlioui and Zehri (2016), Choi, Choi and Sohn (2018), Zalata, Tauringana and Tingbani (2018), Li, Hay and Lau (2019), Sitanggang et al. (2019), Wali and Masmoudi (2020) Khoo, Lim and Monroe (2020), Abbasi, Alam and Bhuiyan (2020) and Imen and Anis (2020) Ismael and Kamel (2021)	-
LEV	Leverage	1. Total dept scaled by total assets ratio at the end of the year.	Al-Ajmi (2008), Baxter and Cotter (2009), García, Barbadillo and Pérez (2012), Carey and Simnett (2006), Baatwah, Salleh and Ahmad (2015), Habib, Ahsan and Bhuiyan, Md. Borhan Uddin (2016), Choi, Choi and Sohn (2018), Alzoubi (2019), Sun and Liu (2014), Wali and Masmoudi (2020), Imen and Anis (2020), and Ismael and Kamel (2021)	-
MB	Firm growth (Market-to-book value)	1. Book value of net assets divided by the market value of the firm in year t	Chen, Lin and Zhou (2005), Vafeas (2005), Rahman and Ali (2006), Gunny (2010), Chi, Lisic and Pevzner (2011), Cahan, Jeter and Naiker (2011), Ho, Liao and Taylor (2015), Zgarni, Hlioui and Zehri (2016), Zalata, Tauringana and Tingbani (2018), Li, Hay and Lau (2019), Wali and Masmoudi (2020), Abbasi, Alam and Bhuiyan (2020), Khoo, Lim and Monroe (2020), Mardnly, Badran and Mouselli (2021) and Ismael and Kamel (2021),	-
MC	Firm size (Market capitalization).	Natural logarithms of Market capitalization, equity capitalization or market value of equity of the firm	Khelif and Samaha (2014); Masmoudi (2021); Wali and Masmoudi (2020); Zalata, Tauringana and Tingbani (2018), Vafeas (2005) Yang and Krishnan (2005).	-

Appendix 5: Elements of Auditor’s Reports of KSA Listed Firms Pre-ISA Adoption.

Form of Auditor’s Reports	
1.	Title
2.	Statement “Independent Auditor's Report”
3.	The addressee to:
4.	Date of reports
5.	The address of the auditor
6.	Auditor signature
Content of Auditor’s Reports	
2. The Scope of the audit	
7.	Determine the name of the audited company and the title of the audited financial statement.
8.	Determine the title of the audited financial statements
9.	Identify the date and the period that has been covered by financial statements.
10.	Statement that financial statements are the responsibility of management or group management.
11.	State that the auditor responsibility is to express the opinion about financial statements based on the auditing conducted.
12.	State that information has been provided with all information and explanations which was required by auditor. <ul style="list-style-type: none"> • Some have provided the necessary information and explanations.
13.	Statement that audit has been done in accordance with the relevant national auditing standards or practices. <ul style="list-style-type: none"> • Audit has been conducted in accordance with the provisions of "the Regulations for Companies" or to Generally Accepted Auditing Standards by KSA • Examination has been done according to the Standard for Examination of Initial Financial Reports issued by the Saudi Organization for Certified Public Accountants (SOCPA).
14.	Statement that the audit was planned and performed to obtain reasonable assurance whether the financial statements are free from material misstatement.
15.	The description of the audit <ul style="list-style-type: none"> • Examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements” or “in the consolidated financial statements OR Examining evidence and presumptions by using samples or examining samples of documents (evidence) that support the validity of the amounts and disclosures mentioned in the financial statements. Or examining the accounting records/evidence and other procedures. • performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. Etc., Or Describe Audit approach in more detail • The limited review consists principally of analytical procedures applied to the financial data and information and making inquiries of Company’s personal responsible for financial and accounting matters.
16.	Assessing the accounting policies used and significant estimates made by management.
17.	Evaluating the overall financial statement presentation.
18.	Statement that the audit provides a reasonable basis /degree to express the opinion. <ul style="list-style-type: none"> • The “audit provides a reasonable basis for our opinion” or the “audit provides a reasonable degree of assurance to enable us to express an opinion on the consolidated financial statements” • The “audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion”. • The auditors “do not express such an opinion.”
2. Opinions	
19.	Present fairly, in all material respects.... etc.
20.	Comply, in all material respects...etc. <ul style="list-style-type: none"> • Review Conclusion

Appendix 6: The 33 Elements of Auditors' Reports for KSA Listed Firms post-ISA Adoption.

Form of Auditor's Reports	
1.	Title
2.	Statement "Independent Auditor's Report"
3.	The addressee to:
4.	Date of reports
5.	The address of the auditor
6.	Auditor signature
Content of Auditor's Reports	
	1. Opinion Group
7.	The name of the audited company
8.	The title of the audited financial statements and the notes to the consolidated financial statements, including a summary of a significant accounting policies.
9.	The date and the period that has been covered by financial statements
10.	The standards to be followed, namely, IFRS in KSA and other standards and pronouncements issued by SOCPA.
11.	2. Basis of Opinion
12.	The audit conducted "in accordance with ISA endorsed in KSA"
13.	The auditor responsibility is "under those standards are further described in the Auditor's Responsibility for the Audit of the financial Statement section"
14.	Auditor was independent of the company or Group in accordance with the professional code of conduct endorsed in KSA that are relevant to the audit of financial statements.
15.	Auditor has fulfilled his/her other ethical responsibilities according to requirements.
16.	The audit evidence that the auditor has obtained was sufficient and appropriate to provide the basis for an opinion.
	3. Material Uncertainty Related to Going Concern
	4. Audit approach
17.	Key audit matters
18.	Audit Procedures
19.	5. Other information
	6. Responsibility for the financial statements
	A. Responsibilities of management and those charged with governance
20.	(1) preparing and presenting fair financial statements according to the formwork of applied financial reports in KSA (IFRS), and other standards and pronouncement issued by SOCPA, and the applicable requirements of the regulations for companies and the company's By- law, and (2) internal control that management determines is necessary to prepare financial statements, free from material misstatements.
21.	Assessing (1) the company's ability to continue as a going concern, (2) disclosing, as applicable, matters related to going concern and (3) using the going concern basis of accounting
22.	Determine who is responsible for observing and overseeing the company financial reporting process
	B. Auditor responsibilities for the audit of the financial statements:
23.	This section clarifies the auditor objectives about obtaining a reasonable assurance that financial statements are free from material misstatement and issuing an auditor's report that contains the opinion...etc.
24.	Determine and assess the risk of material misrepresentations of financial statements whether arise from fraud or error, perform and design audit procedures responsive to those risks and obtain sufficient and appropriate audit evidence to provide the basis of auditor opinion.... etc.
25.	Understand the internal control relevant to the audit process to design audit procedures that are appropriate in the circumstances, not to express an opinion on the effectiveness of Internal control
26.	Evaluate the propriety of accounting policies used and the reasonableness of accounting estimates and related disclosures that have been done by management

27.	Conclude on the appropriateness of management's use of the going concern basis of accounting, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group ability to continue as a going concern
28.	Evaluate the overall presentation, structure, and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation
29.	Clarification auditor responsibility in the group audit engagement when applies ISA 600 applies "Special Considerations- Audit of Group Financial Statements (Including the Work of Component Auditors).
30.	Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit finding, including any significant deficiencies in internal control that we identify during the audit.
31.	Provides to those charged with governance with a statement that they complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.
32.	Determine the matters that were of most significance in the audit of financial statements of the current period and are therefore the key audit matters
33.	7. Report on other legal and regulatory requirements.

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