Asian Journal of Economic Modelling
ISSN(e): 2312-3656
ISSN(p): 2313-2884
DOI: 10.55493/5009.v11i2.4828
Vol. 11, No. 2, 75-106.

URL: www.aessweb.com

The effects of boardroom gender diversity and audit quality on financial earnings smoothing in GCC countries: Do government board members moderate the relationship?

Ahnaf Ali Alsmady
Accounting Department, University of Tabuk, Saudi Arabia.
Email: aalsmadi@ut.edu.sa

Article History
Received: 3 April 2023
Revised: 30 May 2023
Accepted: 16 June 2023
Published: 24 July 2023

Keywords
Audit quality
Boardroom gender diversity
Financial earnings smoothing
Government members
Gulf cooperation council.

JEL Classification:
H83; M40; M41; M42; M48.

ABSTRACT

This study explores the effects of boardroom gender and audit quality on financial earnings smoothing (FES) in the Gulf Cooperation Council (GCC) countries. Additionally, the moderating effects of government representatives as board members on FES are investigated. The study covers six GCC countries: Saudi Arabia, the UAE, Oman, Bahrain, Kuwait, and Qatar. The sample comprises 188 firms from 2013 to 2019. Multiple regression models are used to evaluate the study's hypotheses. The findings show that the big international and local firms that have both female and male board members, as well as government representatives, on their boards demonstrate effective governance mechanisms. Although they had a negative impact on higher FES, they had a positive impact on lower FES. As for the moderating role, the findings reveal that the role of government members on the board is complementary to the audit quality, particularly in the big four international and local firms. This research may aid businesses in implementing the best governance practices to avoid FES and improve the quality of accounting data, in line with the objectives of the government. However, good practices in moderating earnings smoothing were mainly seen amongst the males.

Contribution/ Originality: The originality of this research lies in its investigation of the effects of boardroom gender and audit quality on financial earnings smoothing and the moderating effect of government representatives on this relationship.

1. INTRODUCTION

Like the rest of the world, the Gulf Cooperation Council (GCC) countries have experienced an economic downturn (Barbuscia, 2020). Investors are primarily concerned with the profitability of a company as it is an indicator of successful investments (Cheng, Dinh, Schultze, & Assel, 2019; Gaio & Raposo, 2014). In turn, corporate managers aim to optimize their incentives for successful higher earnings based on their companies' performance and are more risk-sensitive to bonus volatility (Al-Amri, Al Shidi, Al Busaidi, & Akguc, 2017). These factors may have led to an increase in financial earnings smoothing (FES) practices in companies, as suggested in many studies (Dechow, 1994; Dechow, Sloan, & Sweeney, 1996). Shubita (2015) examined the impact of income smoothing on earnings quality in GCC countries and reported that 41.85% of the sampled companies engaged in smoothing. In this regard, the GCC countries still face several issues that support the urgency of an investigation into income smoothing and manipulation. For example, the famous case of the manipulation of Dubai Islamic Bank stocks on 29/11/2005, in which the turnover was thought to have hit a new record of Dh9.34 billion, 55% higher than the

highest-ever market turnover reported in the UAE in a single day (Augustine, 2005). Also, according to Saleh Al-Awaji, Deputy Director General of Saudi Arabia's Department of Zakat, the Zakat authority still suffers from discrepancies in the financial statements received from companies, which increased with the aim of acquiring financial facilities (BBC, 2022).

According to Matsuura (2008), FES is one of the methods managers utilize to maintain a consistent income. Managers have multiple methods of manipulating the financial picture of a company's performance. The first is accounting earnings management, and the second is real earnings management; both practices are illegal from a financial framework perspective (Matsuura, 2008). This is in line with Trueman and Titman (1988), who stated that income smoothing can be a good practice only when it concerns other circumstances. Earnings management occurs when managers choose an alternative accounting treatment to increase (decrease) profit or decrease (increase) expenditure. This would, in turn, manipulate the earnings according to their desired approach (Arun, Almahrog, & Aribi, 2015; Beneish, 2001). For example, the changing of the cost flow assumption of inventory valuation International Accounting Standard 2 (IAS 2) and the different depreciation methods used for fixed assets (IAS 16) (Chi, Lisic, & Pevzner, 2011) are both acceptable methods according to the International Financial Reporting Standards (IFRS) (Abbadi, Hijazi, & Al-Rahahleh, 2016). FES potentially poses agency issues when the managers' goal when using certain techniques does not align with the shareholders' desires. FES can lead to poor returns for investors, as they do not receive an accurate picture of a company's operations. Moreover, stakeholders may be deceived by managers who claim that the company has achieved its planned objectives (Al-Amri et al., 2017).

Dechow, Ge, and Schrand (2010) and Dechow and Dichev (2002) argued that corporate governance is important to reducing opportunistic management behaviour with regard to income smoothing. On the other hand, Minnick and Noga (2010) studied the political cost assumption, asserting that companies with ties to the government might have more control over their resources, which makes FES worse. Such actions reflect poorly on government ties. Corporate governance could control and punish the managers' FES activities. Shubita (2015) conducted a study in GCC countries to examine the effects of FES on earnings quality and found a significantly positive result. Additionally, the study showed that audit quality positively affects the association between earnings smoothness and earnings quality. However, the study did not investigate the moderating effect of government board members on audit quality and its relationship with earnings smoothing. Thus, the first objective of this study is to examine the effects of audit quality on FES. This study also investigates the moderating effects of the presence of government board members on the audit quality and earnings smoothness relationship. In addition, previous research has also highlighted the gender diversity of the board of directors (BOD) as an important characteristic in controlling company management (Ali, Kostov, & Aghab, 2021; Arun et al., 2015). Carter, D'Souza, Simkins, and Simpson (2007) argued that agency theory supports the role of board diversity, which improves the monitoring of managers and increases the board's independence. Also, the resource dependence theory can explain the importance of board diversity, whereby the diversity of the members increases the resources they can provide (Hillman, Cannella, & Paetzold, 2000). An important study by Ali et al. (2021) in the UK investigated the effect of gender diversity within the BOD on mitigating earnings management. The study supported the idea that boards with a higher percentage of women displayed a lesser degree of earnings management. This result supported that of Arun et al. (2015). Thus, the study concluded that board gender diversity is an important governance mechanism that requires more attention. Thus, the second objective of this study is to examine the effect of board gender diversity on FES in GCC companies. In addition, the moderating effects of government BOD members on the relationship between board gender diversity and FES are examined.

This study investigates the effects of government BOD members, boardroom gender diversity, and audit quality on earnings smoothing in GCC countries. In this regard, there are two opposing schools of thought on the presence of political members on the board. First, some studies have argued that the presence of political board members has a negative effect on firm transparency (Al-Hadi, Al-Yahyaee, Hussain, & Taylor, 2017) and on higher-

risk financial reporting (Ahmed Al-Hadi, Taylor, & Al-Yahyaee, 2016), which negatively moderate the relationship between analysts' recommendations and disclosure (Alazzani, Wan-Hussin, Jones, & Al-Hadi, 2021). On the other hand, Al-Hadi et al. (2017) found that having government members on the BOD is important for reducing the effect of politics on corporations and might add value to all stakeholders in many ways. Therefore, the third objective of this study is to investigate the effect of government board members of GCC companies on earnings smoothing.

The effects of corporate governance mechanisms on earnings smoothing have been a prominent focus of previous accounting and management research. The prior research suggests the importance of such issues in countries such as the GCC countries, which play an essential role in Arab and global economics. These countries have implemented a code of governance, and various studies have been conducted to assess its impact (Abdallah & Ismail, 2017; Al-Amri et al., 2017; Ahmed Al-Hadi et al., 2016; Al-Malkawi, Pillai, & Bhatti, 2014; Desoky & Mousa, 2014; Mnif & Hamouda, 2021; Pillai & Al-Malkawi, 2018; Zeitun, 2014). None of these studies, however, have examined the effects of audit quality by the four large international and local audit firms on earnings smoothing. Some have argued that gender diversity in the boardroom is vital in minimizing the agency problem. In this context, boardroom gender diversity is an important governance mechanism that has received little attention in GCC countries. These countries have a uniquely diversified boardroom that includes government representatives. Government board members may play a crucial role in monitoring opportunistic management practices, which may deter earnings smoothing in GCC countries. As a result, this study adds to the accounting and governance literature by investigating their role. A better understanding of government board members' moderating role in audit quality and earnings smoothing, as well as the boardroom gender diversity and earnings smoothing relationship, can aid regulators in increasing the effectiveness of corporate governance practices in GCC countries. Finally, the study investigates both high and low FES metrics. This study will thus provide a clear picture of the direct effects of audit quality (both locally and globally) and boardroom gender diversity on FES, as well as the moderating effects of the government board members on this relationship.

The study sample covers 188 companies in six GCC countries over 7 years, from 2013 to 2019. The six countries included are Saudi Arabia, the United Arab Emirates (UAE), Oman, Bahrain, Kuwait, and Qatar. The government-linked companies were divided into two groups: higher FES and lower FES. The results show that audit quality, boardroom gender diversity, and the presence of government members on the board are effective governance mechanisms. They deter higher FES in GCC countries and support a high quality of accounting information. Government board members thus have a role to play in reducing FES. Meanwhile, boardroom gender diversity plays a substantial role in mitigating the agency problem.

The rest of the article is organized as follows. The next section provides a brief overview of the GCC counties' economies and governance systems. The theoretical framework will then be articulated, and the hypotheses developed. The sample selection is explained in Section 4, while the research design and variable definitions are provided in Section 5. Section 6 outlines and discusses the empirical results. Lastly, in Section 7, the conclusions are summarized, and future research directions are recommended.

2. GULF COOPERATION COUNCIL COUNTRIES ECONOMY AND GOVERNANCE PRACTICES

The Gulf Cooperation Council (GCC) comprises the six countries of Saudi Arabia, Oman, Qatar, Bahrain, Kuwait, and the UAE (Shehata, 2015). According to Benbouziane and Benamar (2010), these countries have the same characteristics in terms of religion (Islam), ethnicity (Arabs), culture and tradition, and the same political structure (monarchy). The primary resource in these countries is oil. Shehata (2015) argued that the financial crisis of 2007/2008 brought greater attention to the necessity of corporate governance practices, showing that the fundamental cause of the crisis was the lack of governance in corporations. In this section, we explain some of the

statistics that illustrate the economies of GCC countries and provide a brief overview of corporate governance codes and practices.

2.1. Gulf Cooperation Council Countries' Economies

The countries of the GCC play an essential role in the global economy. With a GDP of more than $1.64 trillion in 2019, the GCC economy is rated 13th in the world, as reported by Alarabiya News (5/01/2021). This amount is equal to 4.1% of the global GDP. In 2019, 17.2 million barrels of oil were produced by the GCC countries each day, representing 22.8% of global production. In addition, by the end of 2019, the combined population of the countries comprising the GCC was 57.4 million, or 0.7% of the world's total population .About 29 million people (or 0.9% of the global labour force) are employed by GCC countries. In 2019, a total of $497.2 billion, or 1.4% of the world's total income from foreign external investment was invested in GCC countries. Kabbani and Mimoune (2021) claimed that the diversification of economies is a significant concern in the Arab Gulf states. As a result, the global economy felt the effects of the economic slowdown caused by the Covid-19 pandemic. The financial burden on the GCC countries increased as oil prices dropped from $64 per barrel at the beginning of 2020 to $23 per barrel in April 2020. Therefore, in 2020, deficits were expected to be 9.2 per cent in 2021 and 5.7 per cent in 2022.

In addition, many companies in GCC countries have government involvement, which has resulted in significant governmental lending of financial support (Abdallah & Ismail, 2017; Pillai & Al-Malkawi, 2018). This involvement aids the companies in their efforts to modernize, innovate, and grow, yet it shows that these businesses could not compete in a global economy without this assistance. The market requires more stable reforms, such as more transparency and effective governance systems, to ensure company continuity and not jeopardize the GCC's economic stability (Abdallah & Ismail, 2017; Kabbani & Mimoune, 2021).

2.2. Gulf Cooperation Council Governance Practices

Shehata (2015) stated that the GCC countries need good corporate governance for several reasons: insufficient regulation and higher needs for investor protection, inefficient and illiquid stock markets, economic uncertainty, and poor earnings. Because of this, several organizations and agencies, like the International Finance Corporation (IFC) and the Organization for Economic Cooperation and Development (OECD), have helped strengthen the GCC's governance systems (Abdallah & Ismail, 2017). In 2002, Oman was the first of the GCC countries to start consolidating its system of governance, and the last to start was Kuwait in 2013 (Oyelere & Al-Jifri, 2011). One of the GCC's accomplishments is the realization of the value of integrating the financial markets of the GCC countries as well as integrating rules and regulations. This integration will create a more stable and transparent environment, which will benefit both domestic and international investments. In 2011, standardized regulations for financial securities, such as bonds and stocks, became mandatory. In 2012, the Council also approved the establishment of a corporate governance code that applied to listed companies in GCC countries.

It is, therefore, important to discuss the six countries' governance codes. The Omani code of corporate governance, which comprises 28 articles, was the first in the region, as mentioned above. The Omani Capital Market Authority released a code that must be followed by all companies listed on the Muscat Securities Market. In 2006, the Saudi Arabian Capital Market Authority (SACMA), created a corporate governance code that applied to all publicly listed companies in Saudi Arabia. The code had 19 articles and differed from the governance code established by the Saudi Arabian Monetary Agency (SAMA) in 2012 for the banking sector (Shehata, 2015).

According to Foster (2007), the UAE issued a draft governance code in 2004, changed it in 2005, and re-issued it in 2007. It eventually became mandatory in 2010. The Kuwaiti corporate governance code was drafted in 2006 and came into practical effect in 2007, with the best practices of this code being used in 2010. This code applied to all Kuwaiti publicly traded companies. The Bahrain governance code was drafted in 2006 but was not published until 2010 (Hawkamah & IIF, 2006).

Finally, the Qatar governance code was drafted in 2006 but was not functional until 2009. All firms listed in the Qatar financial markets were subject to the code, which comprised 31 articles. The aggregation of these codes and their similarities and differences were outlined by Shehata (2015). However, the results of this comparison did not emphasize BOD diversity in terms of gender and government representation. The results highlighted the characteristics, composition, duties, independence, and number of meetings required by internal audit committees. In the external audit requirements, the auditor rotation is explained by only two countries, Oman and Qatar, and none of them stressed the importance of appointing one of the big four audit firms as a governance mechanism of audit quality.

As a result, this research will aid the countries' code regulators by examining the impact of board gender diversity and the presence of government members on the board, as well as the use of different audit companies, such as the big four and local audit firms. This study examines the impact of these governance mechanisms on FES, which is crucial to market stability.

3. THEORETICAL FRAMEWORK & HYPOTHESIS DEVELOPMENT

3.1. Theoretical Framework

The investors' objective is to maximize their wealth and return. In most listed companies, the principals (shareholders, investors) appoint agents (managers) to manage their business (Fama & Jensen, 1983; Jensen & Meckling, 1976). This results in the managers holding a higher level of power and information. According to Shleifer and Vishny (1997), agency theory argues that managers are essentially selfish and use the company's resources to increase their wealth, which is against the interests of the company's shareholders. The managers try to increase their bonus percentage by smoothing the financial returns.[1]

FES has several definitions in the literature. According to Beattie et al. (1994), managers manipulate accounting data to reduce earnings volatility in one or more periods to achieve a pre-defined goal. Shen and Chih (2007) defined FES as the extent to which insiders use their judgment to change accounting figures, resulting in lower operating profit volatility. FES, however, has also been described as the manipulative activities carried out by managers to affect accounting earnings at the expense of shareholders (Sun & Al Farooque, 2018). Also, Healy and Wahlen (1999) defined FES as a decision-making strategy employed by managers in financial reports to deceive investors regarding the company's performance. In addition, FES influences the company's financial output, investors' decisions, and tax resources. Therefore, the FES techniques used by managers have several consequences, such as principals not having a complete picture of a company's operations, meaning that investors are not able to invest effectively (Trueman & Titman, 1988). Moreover, when the agent shifts revenues from one period to another, it can change the market direction. These agents run the company selfishly by focusing on expanding their own empires. In this study, FES refers to any activity taken by management to alter the accounting data to reduce earnings volatility.

From an agency theory perspective, Jensen and Meckling (1976) and Shleifer and Vishny (1997) stated that FES raises agency costs because contractual agreements give managers the authority to use financial data. As a result, managers use FES to alter accounting figures for a variety of reasons, including larger bonuses and increased compensation, reduced tax liability, and decreased capital financing costs (Sun & Al Farooque, 2018). In this context, Shleifer and Vishny (1997) advocated for the establishment of a suitable governance mechanism within a company, which is critical in addressing the agency problem. Thus, corporate governance mechanisms could mitigate the inherent agency problem in firms. In this regard, several studies have been conducted on the effects of governance mechanisms in mitigating the agency problem (Abdallah & Ismail, 2017; Al-Amri et al., 2017; Ahmed

[1] The terms FES and earnings management have been used interchangeably in previous studies (Eckles, Halek, He, Sommer, & Zhang, 2011; Machuga & Teitel, 2008; Shen & Chih, 2007; Shubita, 2015; Trueman & Titman, 1988; Yang, Leing Tan, & Ding, 2012; Zhai & Wang, 2016).

Al-Hadi et al., 2016; Al-Malkawi et al., 2014; Dechow et al., 2010; Dechow & Dichev, 2002; Desoky & Mousa, 2014; Mnif & Hamouda, 2021; Pillai & Al-Malkawi, 2018; Zeitun, 2014). Also, previous research suggests that corporate governance plays a significant role in constraining management's FES activities (Bajra & Cadez, 2018; Chen & Zhang, 2014; Dechow et al., 2010; Dechow & Dichev, 2002; Eckles et al., 2011; Ibrahim, Abdelfattah, & Hussainey, 2020; Pinto, Gaio, & Gonçalves, 2020; Sehrawat, Kumar, Lohia, Bansal, & Agarwal, 2019; Vasilakopoulos, Tzovas, & Ballas, 2018; Yang et al., 2012).

Agency theory supports the arguments that the BOD (Ayoib, Ahmad, & Mansor, 2009; Huang, Zhang, Deis, & Moffitt, 2009; Yang et al., 2012) and audit quality (Ayoib et al., 2009; Huang et al., 2009) are important governance mechanisms to control managers' behaviour. Also, Hillman and Dalziel (2003) endorsed the integration of agency theory and resource dependence theory, arguing that government action might provide more resources and monitoring, as well as explaining how governance mechanisms either complement or substitute for the effect, which is the primary research objective of the current study.

Furthermore, Minnick and Noga (2010) researched the political cost assumption of agency theory and suggested that firms with ties to the government may practice more oversight over their businesses, leading to less FES. Faccio, Masulis, and McConnell (2006) argued that government-affiliated companies are significantly more likely to be bailed out than other companies. In addition, when faced with a crisis, these companies receive additional capital and financial aid from the government. Also, Claessens, Feijen, and Laeven (2008) suggested that having government representatives in a company makes it more likely for creditors to lend to the company in less favourable conditions. This argument was supported by Boubakri, Cosset, and Saffar (2012), who examined the performance of 234 government-connected companies from 1989 to 2003 and concluded that such companies performed better. DeAngelo (1981) further stated that high-quality audit services are the tool of governance that ensures financial statements are prepared in compliance with international standards. Consequently, it helps reduce potential agency problems. In this context, Van Tendeloo and Vanstraelen (2008) investigated the effect of the "big four" audit firms on earnings management in European countries. They found that the quality of the audits reduced managers' ability to control earnings. Similarly, Vander, Willekens, and Gaeremynck (2003) investigated the effect of audit quality on FES in Belgian companies. The study confirmed the claim that companies hiring the "big four" audit firms, as opposed to other audit firms, have a higher impact on FES. Agency theory indicates that a firm's BOD can help mitigate agency conflict. In this regard, several studies have shown that the BOD plays an essential role in mitigating agency conflict (Alfraih, 2016; Ben-Amar & Zeghal, 2011; Fama & Jensen, 1983; Fama, 1980; Farooq, Gan, & Nadeem, 2023; Goh, Lee, Ng, & Ow Yong, 2016; Gul, Srinidhi, & Ng, 2011; Torchia & Calabro, 2016).

In the agency theory context, some researchers have noted theoretical areas for improvement based on the shareholders' primacy framework; however, this focuses only on financial repercussions and ignores complexity and challenges within the firms (Issa & Zaid, 2021; Issa, Zaid, & Hanaysha, 2022; Issa, Zaid, Hanaysha, & Gull, 2022). Thus, the complexity and challenges within the firms require further theoretical underpinning. Also, theoretically, the concept of gender diversity is compatible with both agency theory and resource dependence theory. In this regard, agency theory supports the argument that a more diverse boardroom, one that includes more women, may lead to the board playing a more effective oversight role, as reported also by Agyemang-Mintah and Schadewitz (2019), which helps to increase the company's financial performance. Also, Hillman and Dalziel (2003) and Hillman, Shropshire, and Cannella (2007) suggested that a more diverse board is more productive since diversity increases board members' ability to make efficient financial decisions.

On the other hand, resource dependence theorists believe that BOD diversity is fundamental to an organization's success because it supplies crucial resources, including legitimacy and counselling (Hillman & Dalziel, 2003). Moreover, the diversity of the board brings a wide range of knowledge, expertise, connections, and perspectives to the firm. According to resource dependence theory, female directors can bring diverse skills and

perspectives to the board (Beji, Yousfi, Loukil, & Omri, 2021). Also, within the theoretical framework of resource dependence, a board that includes a greater diversity is more likely to have reliable access to a variety of resources, which improves the quality of corporate strategic decisions.

Resource dependence theory argues that adding government representatives to a BOD helps the company acquire more funds and control over managers (Pfeffer, 1972). Moreover, Pfeffer (1972) asserted that a diverse BOD can help companies obtain the outside resources required for expansion. Previous studies have indicated that board diversity is a suitable governance mechanism for mitigating agency conflict (Al-Shaer & Zaman, 2016; Ali et al., 2021; Alsmady, 2018a; Ibrahim & Hanefah, 2016). In this regard, Harymawan and Nowland (2016) investigated the influence of government representatives in terms of political ties and earnings quality in a sample of 349 companies listed on the Indonesian Stock Exchange. The study found that the efficiency of the government increased political discipline and the response to market pressures and higher-quality earnings. This study, therefore, also predicts that having government representatives on the BOD will give more power to control managers and help solve agency problems, leading to decreased FES. A two-sided theoretical basis is this necessary to predict whether gender diversity is a governance function within firms. Therefore, the following section discusses the hypothesis development for the study's variables of interest.

3.2. Hypothesis Development

3.2.1. Audit Quality and Financial Earnings Smoothing

The principals (shareholders) appoint the agents (managers) to manage the company via the agency contract (Fama & Jensen, 1983; Jensen & Meckling, 1976). Agency contract issues occur due to the separation of ownership and control (Fama & Jensen, 1983), which causes the agent to know more about the company than the principal, resulting in an information asymmetry problem. In this regard, management can manipulate earnings information using corporate information and accounting practices. Managers manipulate data for a variety of reasons, which include the changing of accounting numbers for massive bonuses (Becker, DeFond, Jiambalvo, & Subramanyam, 1998), lesser accrual liability, and lower finance costs (Sun & Al Farooque, 2018). This culminates in the need for high-quality audits, according to Alzoubi (2016).

Thus, Becker et al. (1998) contended that audit quality affects management activity in terms of FES. The authors stated that auditing reduces information asymmetry by allowing outsiders to evaluate financial statements according to certain standards. The quality of auditing differs between low audit quality service firms and high audit quality service firms (Becker et al., 1998). Previous research (Alzoubi, 2016; Chen, Hope, Li, & Wang, 2011; Chi et al., 2011; Houqe, Ahmed, & Van Zijl, 2017; Lin & Hwang, 2010; Machuga & Teitel, 2008; Van Tendeloo & Vanstraelen, 2008; Vander et al., 2003) has validated the use of the big four audit firms as a proxy for high audit quality firms. DeAngelo (1981) argued that large audit firms have more experience in detecting accounting information misreporting. Large audit companies have more clients, implying a greater potential for reputational harm. As a result, they are more motivated to do a professional job and be more independent than smaller audit firms (Davidson & Neu, 1993). Hence, the audit quality increases when the big four audit firms are appointed as it helps to minimize the management's FES practices.

Several empirical studies have investigated the relationship between audit quality and earnings smoothing (Alzoubi, 2016; Chen et al., 2011; Chi et al., 2011; Houqe et al., 2017; Lin & Hwang, 2010; Machuga & Teitel, 2008; Van Tendeloo & Vanstraelen, 2008; Vander et al., 2003). Most found that earnings smoothing is inversely related to audit quality. On the other hand, other studies have reported a positive correlation between large audit firms and earnings management (Chi et al., 2011), supporting the argument that companies that employ large audit firms are more likely to engage in earnings management. The favourable effect of the big four audit firms on Malaysian companies' performance was confirmed by Ching, Teh, San, and Hoe (2015). However, managers may not be

restrained because the researchers did not find significant evidence of an impact on earnings management. Therefore, the present study tests the following hypothesis:

H1: There is a significant relationship between audit quality and FES.

3.2.2. Board Gender Diversity and Financial Earnings Smoothing

According to Farooq et al. (2023), the BOD is the first line of defence for shareholders' rights against opportunistic managers' behaviour, which reduces the agency conflict in companies. The mitigation of the agency problem is due to several reasons, such as the provision of stringent monitoring and evaluation of managers' actions (Fama & Jensen, 1983; Fama, 1980), financial transparency and disclosure (Alfraih, 2016; Ben-Amar & Zeghal, 2011; Gul et al., 2011; Torchia & Calabro, 2016), and lower information asymmetry (Goh et al., 2016; Wu, Sorensen, & Sun, 2019). This point is reinforced by resource dependence theory. Pfeffer (1972) claimed that external resources are required for a business's survival and that gender diversity on the BOD can help a company obtain outside resources. Previous research has claimed that board gender diversity strengthens the governance of the board and provides greater internal control over managers (Arun et al., 2015; Farooq et al., 2023; Gul et al., 2011; Gul, Srinidhi, & Tsui, 2008). Farooq et al. (2023) discovered a link between boardroom gender diversity and investment inefficiencies in UK listed businesses. Diversity also improved board dynamics and ensured better information provision. Similar results were found by Nadeem, Suleman, and Ahmed (2019). Gul et al. (2008) documented that in situations of increased information asymmetry, a female board member is in high demand for greater monitoring. In addition, Gul et al. (2011) investigated the influence of board gender diversity on the reflection of information in stock prices and discovered a favourable effect. It also served as a stand-in for poor corporate governance. As a result, diversity on the BOD aids the company's governance systems and results in a more effective and dynamic monitoring function of the board. Thus, there is less information asymmetry and more control over managers' opportunism, resulting in lower risks and less FES. Previous studies have examined boardroom diversity in terms of the usefulness of disclosed information for stakeholders (Nadeem, 2020), voluntary disclosure (Nadeem, 2020), timeliness of financial reports (Alsmady, 2018b), risk-averseness (Chatjuthamard, Jiraporn, & Lee, 2021; Nadeem et al., 2019), and cases of fraud (Capezio & Mavisakalyan, 2016; Cumming, Leung, & Rui, 2015). These studies discovered a positive impact on both the usefulness of disclosed information and voluntary disclosure, as well as a negative association with risks taken by the firm and the number of fraud cases.

A diverse boardroom thus assists the company in increasing the usefulness of information and its disclosure, resulting in a reduction in the fraudulent actions of the management, which could minimize data manipulation. The results of these earlier studies highlighted the significance of gender diversity in boardrooms for reducing earnings smoothing and management in the company's accounting. This idea has been validated by numerous studies, which have concluded that boardroom gender diversity has a detrimental impact on FES (Arun et al., 2015). Arun et al. (2015) found that a significant percentage of independent female directors utilized restrained earnings management practices and displayed less accounting discretion in the financial reporting of UK companies. Additionally, Ali et al. (2021), who investigated the association between board diversity in real and accrual earnings management in UK corporations, found resonance limitations of both types. They concluded that having female directors enhanced the board's monitoring role. In addition, higher female board member representation has also been linked to a lower likelihood of financial report restatement (Abbott, Parker, & Presley, 2012). Additionally, Hashim, Ahmed, and Huey (2019) examined the connection between board diversity and earnings quality in Malaysian listed corporations. They found that diversity in terms of nationality and ethnicity had a significant association.

In contrast, diversity in terms of gender and age did not. Moreover, Sun, Liu, and Lan (2011) did not discover any evidence of a link between board gender diversity and the ability to constrain earnings management. In conclusion, empirical research on the effects of boardroom gender diversity on earnings smoothing has produced mixed results. Therefore, the current study investigates the following hypothesis:

H_2: There is a significant relationship between board gender diversity and FES.

3.2.3. Government Board Members and Financial Earnings Smoothing

Recently, many academic researchers have focused on companies' political ties (Al-Amri et al., 2017; Boubakri et al., 2012; Claessens et al., 2008). According to Jensen and Meckling (1976), the primary source of agency conflict arises when shareholders (principals) designate managers (agents) to run the business while remaining unaware of the managers' actions. This creates information asymmetry and a moral hazard for the company. Agency theory discusses managers' opportunistic behaviour in using company resources to serve their own interests, such as by manipulating financial data with the FES approach to increase their bonus (Jensen & Meckling, 1976; Shleifer & Vishny, 1997). In this regard, Pfeffer's (1972) resource dependence theory stated that including outside human resources, such as government members, on the company's BOD, would benefit the company by increasing its resources and control over management. The empirical studies on companies' political connections found two main effects. According to several studies, political affiliation, such as government representatives on the BOD, had both negative and positive impacts on a company. Yang et al. (2012) stated that income smoothing is more likely to occur when the government controls a Chinese publicly traded company. In addition, Al-Hadi et al. (2017) explored how having a political member on the board affected market risk disclosures and discovered a negative and statistically significant association. Others have claimed that political connections on the BOD can benefit businesses in a variety of ways, such as during financial crises. For example, a company's political ties can help in terms of receiving financial assistance (Faccio, 2006; Faccio et al., 2006; Khwaja & Mian, 2005). Faccio et al. (2006) found that politically connected companies were more likely to be bailed out during financial difficulties than similar, unconnected firms. Thus, the presence of political ties in a company may aid in connecting to the market, resulting in better financing (Claessens et al., 2008) and lower tax costs (Cheng, 2018). Increased control over opportunistic managers may be attained through political representatives on the BOD (Besley & Burgess, 2001). In this context, Besley and Burgess (2001) stated that having government representatives on the BOD made companies more open to media criticism and, hence, more liable for any unethical behaviours by the managers. As a result, having a government representative on the BOD gives companies more control over their managers' actions and lowers their FES. The presence of a government member on the BOD thus affects companies differently and enhances companies' control over their management (Cheng, 2018). Such considerations detract from managers' tendency to manipulate company earnings and undertake FES actions. In summary, due to inconclusive empirical evidence, government board members could have either positive or negative repercussions. Consequently, the current study explores the following hypothesis:

H_3: There is a significant relationship between government members on the BOD and FES.

3.2.4. Moderating Effects of Government Board Members

According to agency theory, the BOD is a valuable governance tool for monitoring opportunistic managers' actions and reducing agency costs (Hillman et al., 2000; Hillman & Dalziel, 2003). From a resource dependence theory perspective, the BOD plays an essential role as a source of human and relational capital. In this sense, Hillman and Dalziel (2003) supported Korn and Ferry's (1999) assertion that the BOD can play an integrative role in resource provision and monitoring .The necessity of a BOD can be highlighted by integrating the two theories (Hillman & Dalziel, 2003). On the one hand, agency theory disregards the role of the BOD as a source of financial resources. On the other, the resource dependence argument does not account for the BOD's oversight function or its part in reducing agency costs. Therefore, as Hillman and Dalziel (2003) p. 383 stated, "Integration of the two can help overcome a current myopia within the two streams of research." According to Ward, Brown, and Rodriguez (2009), the BOD should take a multidimensional strategy to reduce agency conflict, including securing outside assistance and monitoring management.

Ward et al. (2009) argued that corporate governance mechanisms could play a complementary or substitute role in minimizing agency costs. The authors also stated that external corporate governance mechanisms complement the monitoring functions of the BOD and vice versa. From a substitutability perspective, corporate governance mechanisms such as boardroom gender diversity and audit quality serve as replacements for government assistance. Regardless of the presence of government board members, therefore, they will minimize the managers' FES in the corporation. However, the complementary role perspective is that corporate governance mechanisms such as boardroom gender diversity and audit quality enhance the role of government board members in monitoring management and mitigating FES within the firm and vice versa. In this regard, Pfeffer (1972) stated that one of the strategies that companies could pursue in an attempt to ensure their survival is to improve or ensure favourable exchanges with external organizations through political connections and internal political tactics. In short, government members of the BOD may enhance governance mechanisms in mitigating FES practices. This could be achieved by performing a complementary or substitutable function in monitoring managers' FES activities.

As for the effects of political connections on FES and their moderating effects on governance mechanisms, previous studies have shown mixed results. For instance, Cheng (2018) investigated the effects of political ties on stock prices in Chinese enterprises and discovered that political ties played an alternative role in protecting shareholders' rights. Companies without political connections lost out on economic gains. In addition, Chi, Liao, and Chen (2016) investigated the effects of political connections on earnings management and discovered that politically connected firms have a lower accrual earnings management than non-connected enterprises. Braam, Nandy, Weitzel, and Lodh (2015) reported similar findings. Batta, Sucre Heredia, and Weidenmier (2014) stated that politically connected enterprises had higher-quality accounting information and lower earnings smoothing. Harymawan and Nowland (2016) investigated the moderating influence of government connections (political stability) on earnings management in Indonesian firms and discovered a substantial moderating effect on higher and lower levels of earnings management. In addition, Yang et al. (2012) investigated the impact of corporate governance and income smoothing on 1,358 Chinese listed companies. The study discovered that corporate governance, such as external audits and the BOD, had no effect on earnings smoothing because of the corporate governance infection from 1999 to 2006 as well as the dominance of government ownership. Belghitar, Clark, and Saeed (2018) examined political connections on the BOD and stated that its managerial and financial decisions increased its accruals earnings management. Shubita (2015) investigated the effects of FES on earnings quality in GCC nations. The author explored whether an opportunistic manager's practices could enhance earnings quality. The study discovered that FES had no effect on the earnings quality level. In addition, the study discovered that corporations dominated by the government outperformed companies without government assistance in terms of earnings quality. Finally, investigations have been conducted on politically connected firms and audit firm selection (Cheng, Hsu, & Kung, 2015; Guedhami, Pittman, & Saffar, 2014; Liu, Li, Zeng, & An, 2016). According to the findings of these studies, politically connected firms hired the big four audit firms for higher audit quality (Guedhami et al., 2014; Liu et al., 2016), while other firms did not (Cheng et al., 2015). Based on the preceding discussion, we could not draw any conclusions concerning government board members' moderating influence on the relationship between governance systems and FES. As a result, the study investigates the following two hypotheses:

H_{4_A}: Government board members affect the relationship between audit quality and FES.

H_{4_B}: Government board members affect the relationship between board gender diversity and FES.

4. SAMPLE SELECTION

To create a more generalizable result, the study sample is taken from the target population of all listed companies in the GCC countries. The primary target population for this study was the GCC countries, which are Saudi Arabia, the UAE, Oman, Bahrain, Kuwait, and Qatar. Each sample was compiled using annual reports from

the companies' respective websites and stock markets. The study period covered the years from 2013 to 2019, which coincides with the pre-COVID-19 pandemic period, as announced by the GCC countries.

This study used a total of 1316 observations, comprising 188 cross-sections. The final sample size was reduced because multiple criteria were used to gather the data. Several industries, such as financial service providers, banks, and insurance companies, were excluded because of differing regulations in the GCC nations. In addition, those sectors are characterized by a variety of disclosure regulations and policies and differing requirements for providing data in financial statements among the countries under study (Alsmady, 2022a, 2022b). This issue would have led to numerous missing observations, affecting the regression analysis. Additionally, the regression analysis called for more homogeneity-based and less outlier-based data, both of which were taken into account in this study (Al-Smadi, Mohd-Salleh, & Ibrahim, 2014; Alsmady, 2018a). Foreign firms were also excluded because they would be subject to additional criteria such as non-government board members and the use of local audit firms. In addition, each cross-section with missing data was dropped to create a smoothing proxy variable, as explained in the next section. Finally, companies that were taken off the market during the research period were excluded.

The distribution of samples across nations and industries is depicted in Table 1. A variety of business sectors are included in the sample: healthcare, real estate, consumer discretionary, basic materials, telecommunications, technology, financial, energy, and industry. The largest represented sectors are basic materials and real estate, with a total of 609 observations, or 47% of the selected sample, comprising 26% and 21%, respectively. Table 1 also shows that consumer discretionary and technology are the two sectors with the lowest representation, each accounting for 4% of the sample. The two countries with the largest presence are Saudi Arabia and Oman, with 36% and 34%, respectively. The least represented countries are Kuwait and Bahrain, each with 5% of the sample.

5. RESEARCH DESIGN AND VARIABLE DEFINITION

Multiple regression models were used to test the study's hypotheses. The first model examined the relationship between audit quality (H_1), boardroom gender diversity (H_2), and FES. Higher-FES (lower accounting information quality) and lower-FES (higher accounting information quality) were the two proxies for the dependent variable FES. The independent variable audit quality, on the other hand, is represented by two variables in the model: the big four foreign firms and local firms. In addition, boardroom gender diversity is represented by two variables: the number of male board members and the number of female board members.

As a result, the following model was used to validate the study's first and second hypotheses:

$$ErSmo_{i,t} = \alpha + \beta_1 AQ4_{i,t} + \beta_2 AQ\_Lo_{i,t} + \beta_3 Board\_FE_{i,t} + \beta_4 Board\_MA_{i,t} + \beta_5 SDR_{i,t} + \beta_6 chROA_{i,t-2} + \beta_7 chROA_{i,t-3} + \beta_8 LEV_{i,t} + \varepsilon_{i,t} \quad (1)$$

The study then added the government members variable into the model to investigate the government board members' complementary and substitutable roles in resolving FES. Previous research investigated the role of governance as a substitute for dealing with agency theory, which fixed the problem singularly. On the other hand, in the complementary role, either the governance mechanisms supported the government's role in minimizing the agency costs or amended their negative effects (Abdul Wahab, Ariff, Madah Marzuki, & Mohd Sanusi, 2017; Gul et al., 2011; Ward et al., 2009). In this study, as in the extant literature, we hypothesized that governance mechanisms play a key role in mitigating FES, and we expect that the government members on the board would support the role of governance mechanisms in mitigating agency problems in the GCC nations (Hillman & Dalziel, 2003). This variable is thus used to explore the study's third hypothesis (H_3), which concerns the relationship between the presence of government board members and earnings smoothing in GCC countries, using the following model:

$$ErSmo_{i,t} = \alpha + \beta_1 AQ4_{i,t} + \beta_2 AQ\_Lo_{i,t} + \beta_3 Board\_FE_{i,t} + \beta_4 Board\_MA_{i,t} + \beta_5 BoardG_{i,t} + \beta_6 SDR_{i,t} + \beta_7 chROA_{i,t-2} + \beta_8 chROA_{i,t-3} + \beta_9 LEV_{i,t} + \varepsilon_{i,t} \quad (2)$$

Table 1. Industry classification per GCC country 2013-2019.

Over seven years										
Sector	**Saudi**	**Oman**	**UAE**	**Qatar**	**Kuwait**	**Bahrain**	**Total comp.**	**Sectors %**	**Obs.**	**Obs.%**
Consumer discretionary	13	10	3	0	1	4	31	16%	217	16%
Healthcare	2	2	2	1	0	0	7	4%	49	4%
Real estate	9	13	9	4	3	1	39	21%	273	21%
Telecommunications	3	1	2	1	0	1	8	4%	56	4%
Industrial	0	1	0	0	1	0	2	1%	14	1%
Basic materials	25	12	3	3	4	1	48	26%	336	26%
Financial	10	17	3	1	0	2	33	18%	231	18%
Energy	4	4	1	3	0	0	12	6%	84	6%
Technology	2	4	1	1	0	0	8	4%	56	4%
Total	68 (36%)	64 (34%)	24 (13%)	14 (7%)	9 (5%)	9 (5%)	188	100%	1316	100%

Moreover, the study investigated the moderating role of government board members on the relationship between corporate governance mechanisms (audit quality, boardroom gender diversity) and FES as shown in the models described in Equations 3, 4, 5, and 6. Thus, a change was made to the regression model (2) by inserting $BoardG_{i,t}$ in the following models:

$$ErSmo_{i,t} = \alpha + \beta_1(AQ4_{i,t} * BoardG_{i,t}) + \beta_2 AQ\_Lo_{i,t} + \beta_3 Board\_FE_{i,t} + \beta_4 Board\_MA_{i,t} + \beta_5 BoardG_{i,t} + \beta_6 SDR_{i,t} + \beta_7 chROA_{i,t-2} + \beta_8 chROA_{i,t-3} + \beta_9 LEV_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$ErSmo_{i,t} = \alpha + \beta_1 AQ4_{i,t} + \beta_2(AQ\_Lo_{i,t} * BoardG_{i,t}) + \beta_3 Board\_FE_{i,t} + \beta_4 Board\_MA_{i,t} + \beta_5 BoardG_{i,t} + \beta_6 SDR_{i,t} + \beta_7 chROA_{i,t-2} + \beta_8 chROA_{i,t-3} + \beta_9 LEV_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$ErSmo_{i,t} = \alpha + \beta_1 AQ4_{i,t} + \beta_2 AQ\_Lo_{i,t} + \beta_3(Board\_FE_{i,t} * BoardG_{i,t}) + \beta_4 Board\_MA_{i,t} + \beta_5 BoardG_{i,t} + \beta_6 SDR_{i,t} + \beta_7 chROA_{i,t-2} + \beta_8 chROA_{i,t-3} + \beta_9 LEV_{i,t} + \varepsilon_{i,t} \quad (5)$$

$$ErSmo_{i,t} = \alpha + \beta_1 AQ4_{i,t} + \beta_2 AQ\_Lo_{i,t} + \beta_3 Board\_FE_{i,t} + \beta_4(Board\_MA_{i,t} * BoardG_{i,t}) + \beta_5 BoardG_{i,t} + \beta_6 SDR_{i,t} + \beta_7 chROA_{i,t-2} + \beta_8 chROA_{i,t-3} + \beta_9 LEV_{i,t} + \varepsilon_{i,t} \quad (6)$$

The symbols and measures used in the models are summarized and described in Table 2.

Table 2. Variables and measurements.

Variable	Symbol	Measurement
Dependent variable		
FES	$ErSmo_{i,t}$	$ErSmo_{i,t} = \frac{\sigma\ Net\ Income}{\sigma\ Operating\ Cash\ Flow}$
Higher FES	$HErSmo_{i,t}$	$ErSmo_{i,t} \geq 1$
Lower FES	$LOErSmo_{i,t}$	$ErSmo_{i,t} \leq 1$
Explanatory and moderator variables		
A: Explanatory		
Audit quality	$AQ4_{i,t}$	A dummy variable that equals one if a big four international firm is appointed, zero if a local or other firm.
Audit quality	$AQ\_Lo_{i,t}$	A dummy variable that equals one if a big four local firm is appointed, zero if a big four international or other firm.
Boardroom diversity	$Board\_FE_{i,t}$	The total number of female board members.
Boardroom diversity	$Board\_MA_{i,t}$	The total number of male board members.
B: Moderator variables		
Government member	$BoardG_{i,t}$	The total number of government board members on the board.
Control variables		
Standard deviation of revenue	$SDR_{i,t}$	The standard deviation of revenue for firm *i* in year *t*.
Change in return on assets	$chROA_{i,t-2}$	The change in return of assets from *t-1* to *t-2*.
Change in return on assets	$chROA_{i,t-3}$	The change in return of assets from *t-2* to *t-3*.
Leverage	$LEV_{i,t}$	= Percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT).
Error term	$\varepsilon_{i,t}$	The error term in the models.

5.1. Dependent Variable

FES measures the variability in accruals net income and cash net income. The shift between accruals and cash in net income, according to Zhai and Wang (2016) can be quantified either by the correlation between the change in accrual income and operating cash flow in the same period or by the ratio of the standard deviation of net income to

operating cash flow. In this research, FES was measured using the following ratio, as suggested by other researchers (Barth, Landsman, & Lang, 2008; Chen, Tang, Jiang, & Lin, 2010; Weerathunga, Chen, & Sameera, 2020; Zhai & Wang, 2016):

$$= \sigma(Net\ Income) \div \sigma(Operating\ Cash\ Flow)$$

According to Zhai and Wang (2016), a higher ratio between the standard deviation of net income and operating cash flow indicates a higher FES. It also indicates a lower quality of accounting information, which was supported by Li and Richie (2016). Thus, in this study, we calculated income smoothing using the following measurement:

$$ErSmo_{i,t} = \ Net\ Income \div Operating\ Cash\ Flow$$

This is divided into two proxies: high earnings smoothing and low earnings smoothing, as follows:

$$HErSmo_{i,t} \geq 1$$
$$LOErSmo_{i,t} \leq 1$$

5.2. Independent and Moderating Variables

This study explores external and internal governance mechanisms that previous research has suggested are essential in resolving the agency problem. The audit quality is an external mechanism with two variables. One is the big four audit firms $AQ4_{i,t}$, which is represented by a value of 1 if company i hired a big four international audit firm in year t and a value of 0 if the company hired a local audit firm (Francis, 2004; Priyanti & Dewi, 2019; Rusmin, 2010). In addition, for company i and year t, the study measured the audit quality as $AQ\_Lo_{i,t}$, which is represented by a value of 1 if the company hired a local audit firm and a value of 0 if the company hired an international or other firm. This variable distinguishes the effects of the big four foreign and local audit firms on low and high earnings smoothing. Boardroom gender diversity also has two variables; one is $Board\_FE_{i,t}$, which is the total number of female members on the board of company i in year t (Arun et al., 2015; Gul et al., 2011; Nadeem, 2022; Nadeem et al., 2019). The second is $Board\_MA_{i,t}$, which is the total number of males on the board of company i in year t (Alsmady, 2018b; Nadeem, 2022). In addition, the study inserted $BoardG_{i,t}$ as the independent variable in model (2) and the moderating variable in models (3.1), (3.2), (3.3), and (3.4). This represents the total number of government board members on the board of company i in year t (Shubita, 2015; Wong & Hooy, 2018).

5.3. Control Variables

The literature also claims that several control variables affect the correlation between governance mechanisms and FES. Thus, the study model incorporates the standard deviation of revenues ($SDR_{i,t}$) into the analysis (Chaney, Faccio, & Parsley, 2011; Zhai & Wang, 2016). Also, the change in return on assets from time t-1 to time t-2 ($chROA_{i,t-2}$) and the change in return on assets from time t-2 to time t-3 ($chROA_{i,t-3}$), which other researchers supported (Bradshaw, Liao, & Ma, 2019), are included because past performance may affect managers' FES practices. Finally, control variables such as leverage ($LEV_{i,t}$) are included (Alsayegh, Abdul Rahman, & Homayoun, 2020; Badertscher, Katz, & Rego, 2013; Chaney et al., 2011; Qingyuan & Lumeng, 2018; Zhai & Wang, 2016).

6. EMPIRICAL RESULTS

6.1. Diagnostic Tests

Before providing the results of the multiple regression of the panel data, many diagnostics and investigations are required to validate the data analysis and test certain assumptions. EViews and SPSS software packages were employed in this investigation, as in previous studies. Firstly, the Jarque-Bera normality test shows that all error terms in the running models are normally distributed at less than 5% significance and confirms $u_t \sim N(0, \sigma^2)$. To avoid data outliers, we winsorized at the 1st and 99th percentiles, as recommended by De Meyere, Vander Bauwhede, and Van Cauwenberge (2018). Table 2 shows how the SPSS analysis was used to characterize all the variables in the study. The skewness and kurtosis of the data confirmed that there were no outliers.

In addition, the intercept was included in all the models to meet the regression assumption of homoscedasticity, *E(ut) = 0*. The linearity for including variables was tested by examining the square of the variables independently, which confirmed a linear relationship with the dependent variable. The study also tested the common effect of non-different (constant) intercept and slope coefficients (based on cross-section), using the Hausman test to identify whether to use a fixed effect model or a random effect model. Thus, the study first ran the fixed effect model and next the random effect model and found that the probability value was greater than 0.05; thus, the random effect model was more appropriate. At the same time, the Durbin-Watson test was conducted to test the autocorrelation assumption, $\mathrm{cov},(u_i,u_i)=0$, among residuals in all models, which is a common problem in panel data sets. The Durbin-Watson values always range from 0 to 4. The results indicated that all values were less than 1 and ranged from 0.30 to 0.65, and there was a positive autocorrelation, which is similar to results found with the random effect model (0.45) by Alsayegh et al. (2020). Then, to identify the first and second-order serial correlation, the Breusch–Godfrey test and two lags were included: resid (1), then resid (1) and resid (2), respectively. The results indicated that only resid (1) was statistically significant with a chi-squared (1) 0.0 level. The generalized least squares (GLS) estimated model (with cross-section weights) was recommended as an alternative model by previous scholars (Fama & French, 1992) in cases where the data exhibits auto-correlation. In this regard, the results of the GLS technique led to the errors being uncorrelated, and the β of the linear model was more efficient (lowest possible variance) and unbiased; therefore, it was judged to be the best estimator for those models. Thus, the results presented in the tables use GLS regression models.

The research also supports the endogeneity assumption, wherein any connection between the independent variables and the error term is explicitly forbidden $(x_{it}\cdot u_{it})\neq 0$. Earlier studies in this area (Issa & Zaid, 2021; Issa, Zaid, & Hanaysha, 2022; Issa, Zaid, Hanaysha, et al., 2022) argued that board diversity is endogenous. Following previous research (Al-Smadi et al., 2014; Alsmady, 2018a; Bourbakri, Cosset, & Guedhami, 2005), this study developed the following equations to test for endogeneity in Equation 1 and Equation 2 among the diversity board variables: $Board\_FE_{i,t}$, the total number of female members on the board, $Board\_MA_{i,t}$, the total number of male members on the board, and $BoardG_{i,t}$, the total number of government representatives on the board:

$$\text{Board\_FE}_{\,i,t}=\alpha+\beta_1\text{AQ}_{i,t-1}+\beta_2\text{AQL}_{i,t-1}+\beta_3\ \text{Boxd\_MA}_{\,i,t-1}+\beta_4\ \text{BoardG}_{\,i,t-1}+\beta_5\text{SDR}_{i,t-1}+\beta_6\text{ROA}_{i,t}+\beta_7\text{LEV}_{\text{i,t}-1}+\beta_8\ \text{Age}_{\,i,t}+\gamma_t+\varepsilon_{i,t}\quad(7)$$

$$\text{Board\_MA}_{\,i,t}=\alpha+\beta_1\text{AQA}_{i,t-1}+\beta_2\text{AQL}_{i,t-1}+\beta_3\ \text{Board\_FE}_{\,i,t-1}+\beta_4\ \text{BordG}_{\,i,t-1}+\beta_5\text{SDR}_{i,t-1}+\beta_6\text{ROA}_{i,t}+\beta_7\text{LEV}_{i,t-1}+\beta_8\ \text{Age}_{\,i,t}+\gamma_t+\varepsilon_{i,t}\quad(8)$$

$$\text{BoardG}_{\,i,t}=\alpha+\beta_1\text{AQA}_{i,t-1}+\beta_2\text{AQL}_{i,t-1}+\beta_3\ \text{Board\_FE}_{\,i,t-1}+\beta_4\ \text{Board\_MA}_{\,i,t-1}+\beta_5\text{SDR}_{i,t-1}+\beta_6^{\text{ROA}_{i,t}}+\beta_7\text{LEV}_{\text{i,t}-1}+\beta_8\text{Age}_{\text{i,t}}+\gamma_t+\varepsilon_{i,t}\quad(9)$$

In the first stage, the study ran an ordinary least squares (OLS) model for the board diversity variables as dependent variables and used the lagged (-1) explanatory variables explained in Table 2 and another instrumental variable of the firm's age, measured as the years between the firm's establishment and 2019, where the fixed year effect is used to control for year-specific effects.

Following that, in the second stage of Equation 1, we inserted the fitted estimated values of $\widehat{Board\_FE}_{i,t}$, $\widehat{Board\_MA}_{i,t}$ and $\widehat{Board\_G}_{i,t}$ without the lagged (-1) explanatory variables and separate instrumental. This step used the Wald test of endogeneity to ensure there was no correlation between the error term and *Board_FE* $_{i,t}$, *Board_MA* $_{i,t}$, *BoardG* $_{i,t}$. The results of the first-step regression (Equations 7, 8, and 9) t-statistics are (0.430), (0.380), and (0.512); thus, there is no statistical significance at any level. Therefore, the assumption $(x_{it}\cdot u_{it})\neq 0$ is correct, and there is no correlation between those variables and the error term. Therefore, our GLS regression models do not suffer from endogeneity.

Also, the multicollinearity was investigated using the variance inflation factor *(VIF)*, and the results confirmed that all values were less than 10 and validated the assumption $\mathrm{cov},(u_i,x_t)=0$. Lastly, the F-statistic was calculated to validate the reliability of the models, and the results confirmed a high probability with a significant

value at the 0.0 level. The R^2 of all models showed a lowest value of 16% and a highest value of 27%. Finally, the correlation analysis was conducted, and it is explained in the following section.

6.2. Descriptive and Correlation Analysis

The descriptive analysis of all the fundamental variables included in all the models under investigation is reported in Table 3. First, the skewness values are found to be between -1.9 and 1.9, while the kurtosis values are between 1.34 and 6.27. This supports the normal distribution of the study sample, according to Byrne (2010), because only the government-linked companies were included in the data analysis. Thus, the total number of observations was reduced to 847.

The average (median) FES ($ErSmo$) for all samples was 2.61 (1.72), which is quite similar to the results of Shubita (2015) and Al Ani (2021). High FES ($HErSmo$) and low FES ($LOErSmo$) were exhibited by 77% and 23% of companies, respectively. Concerning the boardroom gender diversity, the maximum number of female members was very low compared to the maximum number of male members in GCC countries, with values of 1 and 8, respectively. The government members' maximum value was 6, which is relatively high. As for the control variables, the standard deviation of the company's revenue (SDR) averaged (median) 73.67(10.11). The variables of ROA changes in previous years, i,t-2 and i,t-3, showed an average (median) of -0.07(-0.06) and -0.13(-0.11), respectively. Finally, the average (median) leverage was 6.64 (7.00).

Table 4 shows the descriptive analysis of FES for all samples. We then divided the samples according to the big four international audit firms, local audit firms, government board members, male board members, and female board members. The average results of the total sample show a figure of 2.614, with 23% of samples having a higher smoothing practice while the other 76% have a lower smoothing practice. These sampled companies that had appointed international big four audit firms averaged a smoothing of 2.8, while the big four local audit firms averaged 2.26. This shows that, on average, local audit firms have a greater deterrent effect on FES practices. When comparing the higher smoothing companies to the lower smoothing companies in the sample, an average of 80% of companies had lower smoothing practices, and 20% had higher smoothing practices. Thus, the appointment of the big four international audit firms is expected to have a negative effect on FES practices in the GCC countries. Based on this sample, the lower smoothing practices were less than the higher smoothing practices, with averages of 73% and 27%, respectively.

Table 3. Descriptive analysis.

Descriptive statistic	Mean	Median	Maximum	Minimum	Std. dev.	Skewness	Kurtosis	Obs.
$AQ4$	0.05	0.00	1.00	0.00	0.51	0.20	5.46	847.00
AQ_Lo	0.05	0.00	1.00	0.00	0.48	0.58	1.34	847.00
$Board\_FE$	0.15	0.00	1.00	0.00	0.36	1.92	4.67	847.00
$Board\_MA$	6.64	7.00	8.00	3.00	0.96	-0.45	2.58	847.00
SDR	73.67	10.11	42.10	0.01	30.49	1.32	6.27	847.00
$chROA_{i,t-2}$	-0.07	-0.06	0.34	-0.40	0.10	0.09	4.88	847.00
$chROA_{i,t-3}$	-0.13	-0.11	0.47	-0.64	0.16	-0.05	4.61	847.00
$BoardG$	0.81	0.00	6.00	0.00	1.46	1.93	5.87	847.00
$ErSmo$	2.61	1.72	31.69	0.05	3.21	1.04	5.64	847.00
$LOErSmo$	0.23	0.00	1.00	0.00	0.42	1.26	2.59	847.00
$HErSmo$	0.77	1.00	1.00	0.00	0.42	-1.26	2.59	847.00
LEV	6.64	7.00	8.00	3.00	0.96	-0.45	2.58	847.00

Note: The dependent variable measure is $ErSmo$ *is* $\sigma(Net\ Income) \div \sigma(Operating\ Cash\ Flow)$. The independent variables: $AQ4$ is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. $Board\_FE$ is the total number of female members on the board. $Board\_MA$ is the total number of male members on the board. $BoardG$ is the total number of government representatives on the board. The control variables are the standard deviation of revenue for firm *i* in year *t*. LEV = percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT). $chROA_{i,t-2}$ and $chROA_{i,t-3}$ are the change in the return on assets from *t-1* to *t-2* and the change in return on assets from *t-2* to *t-3*, respectively.

The supporting result of Pfeffer (1972) stated that the external diversity of political connections may play an important role in monitoring management. The sample of firms with government board members had an average FES of 2.48, with lower FES practices at 80% and higher FES practices at 19%. Thus, the presence of government representatives on the BOD was a good practice in GCC countries to mitigate the agency problem. These results align with several previous studies (Batta et al., 2014; Besley & Burgess, 2001; Braam et al., 2015; Cheng, 2018; Chi et al., 2016). As for boardroom gender diversity, the average FES showed that female members have lower FES practices than male members as they scored 2.00 and 2.65, respectively. The female group also scored 81% on lower smoothing and 19% on higher smoothing. This result aligns with other studies that argued that the presence of women on the board constrained earnings smoothing practices (Abbott et al., 2012; Ali et al., 2021; Arun et al., 2015). The female group had a lower smoothing average of 78%, compared to a higher FES of 22%.

Table 4. Smoothing analysis.

Dependent variables	ErSmois	HErSmo	LOErSmo
Independent variables	**Mean**	**Mean**	**Mean**
All sample	2.614	0.233	0.767
$AQ4$	2.829	0.195	0.805
AQ_Lo	2.267	0.270	0.730
$BoardG$	2.482	0.189	0.811
$Board\_FE$	2.088	0.185	0.815
$Board\_MA$	2.659	0.218	0.782
$Board\_MA * BoardG$	2.482	0.189	0.811
$Board\_FE * BoardG$	1.979	0.116	0.884
$AQ4 * BoardG$	2.605	0.203	0.797
$AQ\_Lo * BoardG$	2.116	0.135	0.865

Note: The dependent variable measure is ErSmois σ(Net Income)÷σ(Operating Cash Flow), $HErSmo = is\ HErSmo_{i,t} \geq 1$ and $LOErSmo =$ is $LOErSmo_{i,t} \leq 1$. The independent variables: AQ4 is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. Board_FE is the total number of female members on the board. Board_MA is the total number of male members on the board. BoardG is the total number of government representatives on the board. * means multiply.

The sample was then divided into two variable sets by multiplying the government board members with the male members ($Board\_MA * BoardG$), female members ($Board\_FE * BoardG$), big four international audit firms ($AQ4 * BoardG$), and local audit firms ($Board\_FE * BoardG$). The female government board members set ($Board\_FE * BoardG$) had a lower smoothing average than the male government board members set ($Board\_MA * BoardG$), with values of 1.97 and 2.48, respectively. Also, the female government members group had a lower percentage compared to the male government members group, with values of 12% and 19%, respectively. Regarding the lower smoothing practices, the female government members group had a higher percentage than the male government members group, with values of 88% and 81%, respectively. Thus, the study indicates that female BOD members play a more important role than male members in mitigating the agency problem and deterring FES practices in GCC countries. Finally, the government's involvement in selecting the big four local audit firms led to fewer FES practices, with an average value of 2.11. The selection of the big four international firms, however, had an average value of 2.60. The $AQ4 * BoardG$ group also had a higher percentage of lower smoothing than high, with values of 80% and 20%, respectively. $AQ\_Lo * BoardG$ also had a higher percentage of lower smoothing than higher smoothing with values of 86% and 14%, respectively. This shows that it still had a higher percentage of lower smoothing compared to the $AQ4 * BoardG$ group.

The strength of the linear link between the independent and dependent variables is specified, and the presence of multicollinearity among the independent variables is tested in the correlation matrix in Table 5. All the

independent variables have a correlation below the critical value of 90%. According to Asteriou and Hall (2007), this means there will not be a severe multicollinearity problem in the regression analysis.

The results show that audits by the big four international firms (*AQ4*) have a significant negative correlation with FES at $p < 0.01$ (-0.089) and $p < 0.01$ (-0.007) for higher and lower FES, respectively. The big four local audit firms (*AQ_Lo*) also had a significant negative correlation with FES at $p < 0.05$ (-0.013) and $p < 0.05$ (-0.017) for higher and lower FES, respectively. In addition, government representation on the board (*BoardG*) had a significant negative correlation with higher and lower FES at $p < 0.01$ (-0.05), respectively. Also, this study found a significant positive correlation of *SDR* with lower FES at $p < 0.01$(0.009), and a significant negative correlation with higher FES at $p < 0.01$(0.009).

6.3. Regression Analysis

The regression analysis using a high and low FES proxy to test (H1), (H2), and (H3) is shown in Table 6. The first hypothesis concerns the association between audit quality and FES. The second concerns the association between the boardrooms' gender diversity and FES. The third concerns the association between the board members with government backgrounds and FES. These examine the complementary or substitutive roles in reducing the agency problem and discouraging FES in the GCC nations. Pseudo R^2 for all models had a good fit for model (1) at 16% and model (2) at 24%, which is similar to the findings of Al Ani (2021).

Using Model (1), Hypothesis (H1) examines the effect of audit quality on the FES practices of GCC nations. Two FES measurements were used. Audit quality has a significant coefficient effect on HErSmo (Lower Quality) (-0.025, $p < 0.01$). A strong positive coefficient influence on *LOErSmo* (Higher Quality) is also demonstrated by the data (0.025, $p < 0.01$). The results were the same for the local big four audit companies, with a significant negative coefficient influence on *HErSmo* (Lower Quality) (-0.003, $p < 0.10$). Additionally, LOErSmo (Higher Quality) showed a statistically significant positive coefficient effect (-0.003, $p = 0.10$). Other studies (Alzoubi, 2016; Chen et al., 2011; Chi et al., 2011; Houqe et al., 2017; Lin & Hwang, 2010; Machuga & Teitel, 2008; Van Tendeloo & Vanstraelen, 2008; Vander et al., 2003) have reported similar results.

This result is in line with Becker et al.'s (1998) argument that audit quality restricts management's ability to smoothen earnings. This study shows that audit quality is an important governance mechanism that helps to reduce the agency problem in GCC countries (Hamdan, 2020; Hassan, Aljaaidi, Bin Abidin, & Nasser, 2018; Mnif & Hamouda, 2021). Similar results have also been found in other countries, such as India (Houqe et al., 2017), the USA (Bajra & Cadez, 2018), and China (Liu et al., 2016).

When examining the associations between boardroom gender diversity and FES (H_2), the results show a negative and significant effect of female board members (*Board_FE*) on FES (*HErSmo*) (Lower Quality) (-0.0158, $p < 0.01$) and a positive effect on *LOErSmo* (Higher Quality) (-0.0157, $p < 0.01$). Similar findings were reported by Gul et al. (2008), who discovered that female board members tended towards stronger managerial oversight. The male gender (*Board_MA*) had a negative effect on *HErSmo* (Lower Quality) (-0.004, $p < 0.05$) and a positive effect on *LOErSmo* (Higher Quality) (-0.004, $p < 0.05$). The findings, therefore, support the claim that gender diversity is a vital governance mechanism that prevents managers from smoothing earnings and strengthens the company's internal control systems (Arun et al., 2015). Consequently, there is less information asymmetry and risk, and earnings smoothing is reduced (Farooq et al., 2023).

Table 5. Correlation coefficient matrix: Pearson (T-test).

Variables	*AQ4*	*AQ_Lo*	*BoardG*	*Board_FE*	*Board_MA*	*SDR*	*ErSmo*	*HErSmo*	*LOErSmo*	$chROA_{i,t-2}$	$chROA_{i,t-3}$
AQ4	1										
AQ_Lo	-0.873** (0.000)	1									
BoardG	0.107** (0.002)	-0.109** (0.002)	1								
Board_FE	0.007 (0.831)	-0.017 (0.611)	0.037 (0.282)	1							
Board_MA	0.184** (0.000)	-0.194** (0.000)	0.182** (0.000)	-0.263** (0.000)	1						
SDR	0.152** (0.000)	-0.164** (0.000)	0.176** (0.000)	-0.044 (0.201)	0.179** (0.000)	1					
ErSmo	-0.089** (0.010)	-0.085* (0.013)	-0.019 (0.590)	-0.058 (0.090)	0.050 (0.146)	0.120** (0.000)	1				
HErSmo	-0.092** (0.007)	-0.082* (0.017)	-0.097** (0.005)	-0.045 (0.186)	-0.015 (0.655)	-0.090** (0.009)	-0.351** (0.000)	1			
LOErSmo	-0.092** (0.007)	-0.082* (0.017)	0.097** (0.005)	0.045 (0.186)	0.015 (0.655)	0.090** (0.009)	0.351** (0.000)	-1.000** (0.000)	1		
$chROA_{i,t-2}$	-0.106** (0.002)	0.113** (0.001)	-0.096** (0.005)	-0.023 (0.495)	-0.059 (0.085)	0.040 (0.247)	0.041 (0.230)	0.081* (0.018)	-0.081* (0.018)	1	
$chROA_{i,t-3}$	-0.142** (0.000	0.149** (0.000)	-0.114** (0.001)	-0.025 (0.462)	-0.081* (0.018)	0.050 (0.149)	0.038 (0.268)	0.090** (0.009)	-0.090** (0.009)	0.935** (0.000)	1

Note: ** correlation is significant at the 0.01 level (2-tailed).
* correlation is significant at the 0.05 level (2-tailed).

Model (2) investigates the government's representation on the BOD and its effects on FES. The results of testing Hypothesis (H_3) on the effects of government board members ($BoardG$) on FES show a significant negative coefficient on $HErSmo$ (Lower Quality) (-0.015, $p < 0.10$) and a positive association with $LOErSmo$ (Higher Quality) (0.004, $p < 0.10$). A similar finding by Besley and Burgess (2001) showed that government representation on the BOD made corporations more open and more responsible for any unethical behaviour by their managers. This gave them a greater influence over managers' activities and FES. The big four international audit firms and big four local audit firms had similar effects as in Model (1).

Among the control variables in Model (1) and Model (2), leverage LEV and standard deviation of revenue SDR each have a significant negative effect on $HErSmo$ (Lower Quality) at 5% and 1% levels of significance, respectively. The two variables have a significant positive effect on $LOErSmo$ (Higher Quality) at 5% and 1% levels, respectively. The change in return on assets from *t-1* to *t-2* $chROA_{i,t-2}$, as well as *t-2* to *t-3* $chROA_{i,t-3}$, has no significant effect on either $HErSmo$ (Lower Quality) or $LOErSmo$ (Higher Quality).

Table 6. Direct effect model (1).

	***HErSmo* (Lower quality)**		***LOErSmo* (Higher quality)**	
Variables	**Model (1) coefficient (t-statistic)**	**Model (2) coefficient (t-statistic)**	**Model (1) coefficient (t-statistic)**	**Model (2) coefficient (t-statistic)**
AQ4	-0.025*** (-5.552)	-0.084*** (-8.236)	0.025*** (5.552)	0.084*** (8.236)
AQ_Lo	-0.003* (2.502)	-0.038* (-2.188)	0.003* (2.502)	0.038* (2.188)
Board_FE	-0.015*** (-12.516)	-0.035* (-2.040)	0.015*** (12.516)	0.035* (2.040)
Board_MA	-0.00486** (-2.561)	0.003 0.724	0.004** 2.561	-0.003 -0.724
SDR	-1.000*** (-4.884)	-8.000*** (-3.874)	0.000*** (4.884)	0.000*** (3.874)
$chROA_{i,t-2}$	-0.066 (-0.294)	-0.133 (-0.300)	0.066 (0.294)	0.133 (0.300)
$chROA_{i,t-3}$	0.144 (1.084)	0.306 (1.100)	-0.144 (-1.084)	-0.306 (-1.100)
LEV	-0.005*** (-5.249)	-0.015** (-2.696)	0.005*** (5.249)	0.0150** (2.696)
BoardG		-0.015* (-2.136)		0.015* (2.136)
C	0.128*** (6.541)	0.332*** (7.048)	0.871*** (44.350)	0.667*** (14.135)
Obs.	890	847	847	847
Adj. R^2	0.163	0.249	0.163	0.249
F-statistic	2.847***	3.407***	2.847	3.407***

Note: The dependent variable measure is ErSmois σ(Net Income)÷σ(Operating Cash Flow), $HErSmo = is\ HErSmo_{i,t} \geq 1$ and $LOErSmo =$ is $LOErSmo_{i,t} \leq 1$. The independent variables: AQ4 is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. Board_FE is the total number of female members on the board. Board_MA is the total number of male members on the board. BoardG is the total number of government representatives on the board. The control variables are SDR, the standard deviation of revenue for firm i in year t. LEV, the percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT). $chROA_{i,t-2}$ and $chROA_{i,t-3}$ the change in return on assets from *t-1* to *t-2* and the change in return on assets from *t-2* to *t-3*, respectively. Numbers between parentheses are t-statistics. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

6.4. Moderating Effects

Tables 7 and 8 show the regression results of hypotheses (*H4_A*) and (*H4_B*), which examine the interaction effects of the government's representation on the board and the corporate governance mechanisms in the study,

namely board gender diversity and audit quality. The analysis of interaction is undertaken by multiplying $BoardG$ by the variables $AQ4$, AQ_Lo, $Board\_FE$, and $Board\_MA$ in the independent models Equation 3, 4, 5, and 6 with the two proxy measurements of the dependent variables $HErSmo$ (Lower Quality) and $LOErSmo$ (Higher Quality). The results in Table 7 show that all the models have a good fit (R^2), of 27%, 27%, 21%, and 20%, which supports Al Ani (2021).

Table 7. Moderating effect: Higher earnings smoothing (Lower quality).

Models	Model (3.1) coefficient (t-statistic)	Model (3.2) coefficient (t-statistic)	Model (3.3) coefficient (t-statistic)	Model (3.4) coefficient (t-statistic)
Independent variables	**(1)**	**(2)**	**(3)**	**(4)**
$AQ4$	-0.019*** (-7.371)	-0.029*** (-5.600)	-0.026*** (-5.828)	-0.026*** (-5.641)
AQ_Lo	-0.024*** (-3.216)	-0.020*** (-3.964)	-0.035*** (-5.335)	-0.025*** (-3.379)
$Board\_FE$	-0.012*** (-13.716)	-0.011*** (-13.622)	-0.013*** (-5.039)	-0.012*** (-10.190)
$Board\_MA$	-0.002 (-0.860)	-0.001 (-0.823)	-0.001 (-0.703)	-0.005 (-1.461)
SDR	-1.810*** (-6.529)	-1.820*** (-6.568)	-1.620*** (-4.498)	-2.200*** (-0.001)
$chROA_{i,t-2}$	0.002 (0.013)	0.004 (0.021)	-0.061 (-0.302)	-0.053 (-0.257)
$chROA_{i,t-3}$	0.100 (0.833)	0.099 (0.823)	0.142 (1.147)	0.138 (1.095)
LEV	-0.004** (-4.274)	-0.004*** (-4.263)	-0.004*** (-3.818)	-0.003* (-2.514)
$BoardG$	-0.022*** (-8.334)	-0.002* (-2.120)	-0.004*** (-2.459)	-0.002*** (-2.838)
$(AQ4 * BoardG)$	-0.049*** (-6.868)			
$(AQ\_Lo * BoardG)$		-0.030*** (-6.876)		
$(Board\_FE * BoardG)$			-0.000 (-0.048)	
$(Board\_MA * BoardG)$				0.021** (2.224)
C	0.131*** (5.498)	0.110*** (4.581)	0.113*** (4.664)	0.143 (4.287)
Obs.	847	847	847	847
Adj. R^2	0.275	0.274	0.212	0.209
F-statistic	3.395***	3.389***	2.835***	

Note: The dependent variable measure is ErSmois σ(Net Income)÷σ(Operating Cash Flow), $HErSmo = is\ HErSmo_{i,t} \geq 1$ and $LOErSmo$ = is $LOErSmo_{i,t} \leq 1$. The independent variables: AQ4 is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. Board_FE is the total number of female members on the board. Board_MA is the total number of male members on the board. BoardG is the total number of government representatives on the board. The control variables are SDR, the standard deviation of revenue for firm i in year t. LEV, the percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT). $chROA_{i,t-2}$ and $chROA_{i,t-3}$ the change in return on assets from t-1 to t-2 and the change in return on assets from t-2 to t-3, respectively. Numbers between parentheses are t-statistics. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Similar to the earlier findings, the audit quality as measured by the international big four audit firms and the big four local audit firms has a significant negative effect on $HErSmo$ (Lower Quality) at the 1% level in all the models. The moderating effects of government board members on the effect of using the big four international audit firms or big four local audit firms on $HErSmo$ (Lower Quality) is negative and significant at the 1% level, with higher coefficients compared to the direct effects for both values (-0.049961, $p < 0.01$ and -0.03004, $p < 0.01$, respectively). The results show that government members on the board prefer a higher quality of accounting

information, whilst having the power to encourage firms to engage in better audit investigations during audit processes. This eventually reduces FES. It also leads companies to become more open to the media with higher concerns about reliable information, which is also argued by Besley and Burgess (2001). Similar results were documented by Guedhami et al. (2014) and Liu et al. (2016), where politically connected firms hire the top four audit firms to ensure higher audit quality.

On the other hand, female board members still have a significant negative effect on *HErSmo* (Lower Quality) at the 1% level in all models. Here, there is no significant moderating effect of government board members on the relationship between boardroom gender (female) and *HErSmo* (Lower Quality); in fact, it substituted the role of governance. The results regarding the moderating effect of government board members on boardroom gender (male) and *HErSmo* (Lower Quality) were positive and significant at the 5% level. Thus, the governance mechanism of boardroom gender diversity was not improved by the presence of government members. Thus, government representation did not play an important role in monitoring the management, as supported by Yang et al. (2012) and Belghitar et al. (2018). Finally, the findings for the control variables were similar to our earlier results. In conclusion, the role of government board members was complementary to that of audit quality *HErSmo* (Lower Quality), while their presence had a substitutive role with the governance mechanism of boardroom gender diversity.

The same analysis was implemented for the *LOErSmo* (Higher Quality) smoothing proxy. The R^2 results in Table 8 show that the models have a goodness of fit of 27%, 27%, 21%, and 20%, respectively, which is supported by Al Ani (2021). These results support the earlier findings that the big four international firms and big four local audit firms have a significant positive effect on *LOErSmo* (Higher Quality) at 1% in all models. The moderating effects of government board members supporting the big four international audit firms and big four local audit firms on *HErSmo* (Lower Quality) are positive and significant at the 1% level, with higher coefficients compared to the direct effect for both values (0.049961, $p < 0.01$ and 0.035044, $p < 0.01$, respectively). Regarding the moderating effects on the relationship between boardroom gender diversity and *LOErSmo* (Higher Quality), the female gender does not have any significant effect. Moreover, the male gender has a significant negative effect at the 5% level. Thus, the audit quality, namely the use of the big four local audit firms and the big four international audit firms, had a complementary role in mitigating FES. Other governance mechanisms have a substitutionary role in mitigating FES. The control variables performed similarly to our earlier results.

In conclusion, the overall moderating role of government members on the board is complementary to the effect of the governance mechanism of audit quality. Integrating agency theory and recourse dependence theory has an integration effect in terms of the audit quality governance mechanism. However, the other governance mechanisms had a singular effect on mitigating the agency problem and did not support the resource dependence perspective. Male government board members were not preferred. This result aligns with Hillman and Dalziel's (2003) conclusions on the integration of agency theory and resource dependence theory. The findings showed that government representation on the board and governance mechanisms complement each other and had a negative impact on earnings smoothing activities in GCC nations. Moreover, it improved the quality of accounting information.

The summary of all results for the above equations with respect to the study hypotheses can be found in Table 9. The results in Table 9 present the outcomes of Equations 1 and 2 and support the significant effect of boardroom gender diversity and audit quality on the reduction of earnings smoothing. Also, the results support that the role of government representatives on the board is complementary to the effects of audit quality on earnings smoothing. Finally, the presence of government board members plays a substitutionary role with the presence of women on the board.

Table 8. Moderating effect: Lower earnings smoothing (Higher quality).

Models	*Model (3.1)* coefficient (t-statistic)	*Model (3.2)* coefficient (t-statistic)	*Model (3.3)* coefficient (t-statistic)	*Model (3.4)* coefficient (t-statistic)
Independent variables	**(1)**	**(2)**	**(3)**	**(4)**
AQ4	0.019*** (7.371)	0.029*** (5.600)	0.026*** (5.828)	0.026*** (5.641)
AQ_Lo	0.014*** (4.216)	0.020*** (2.964)	0.035*** (5.535)	0.025*** (5.379)
Board_FE	0.012*** (13.715)	0.011*** (13.622)	0.013*** (5.039)	0.012*** (10.190)
Board_MA	0.002 (0.860)	0.001 (0.823)	0.001 (0.703)	0.005 (1.461)
SDR	0.000*** (6.529)	0.000*** (6.568)	0.000*** (4.498)	0.000*** (6.176)
$chROA_{i,t-2}$	-0.002 (-0.013)	-0.004 (-0.021)	0.061 (0.302)	0.053 (0.257)
$chROA_{i,t-3}$	-0.100 (-0.833)	-0.099 (-0.823)	-0.142 (-1.147)	-0.138 (-1.095)
LEV	0.004*** (4.274)	0.004*** (4.263)	0.004*** (3.818)	0.003** (2.514)
BoardG	0.022* (8.334)	0.002* (2.120)	0.004** (2.459)	0.024** (2.838)
$(AQ4 * BoardG)$	0.049*** (6.868)			
$(AQ\_Lo * BoardG)$		0.035*** (6.876)		
$(Board\_FE * BoardG)$			0.000 (0.048)	
$(Board\_MA * BoardG)$				-0.021** (-2.224)
C	0.868*** (36.228)	0.889*** (36.856)	0.886 (36.608)	0.856 (25.618)
Obs.	847	847	847	847
Adj.R^2	0.275	0.274	0.212	0.209
F-statistic	3.395***	3.389***	2.835***	2.807***

Note: The dependent variable measure is ErSmois σ(Net Income)÷σ(Operating Cash Flow), $HErSmo = is\ HErSmo_{i,t} \geq 1$ and $LOErSmo = is\ LOErSmo_{i,t} \leq 1$. The independent variables: AQ4 is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. Board_FE is the total number of female members on the board. Board_MA is the total number of male members on the board. BoardG is the total number of government representatives on the board. The control variables are *SDR*, the standard deviation of revenue for firm *i* in year *t*. *LEV*, the percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT). $chROA_{i,t-2}$ and $chROA_{i,t-3}$ the change in return on assets from *t-1* to *t-2* and the change in return on assets from *t-2* to *t-3*, respectively. Numbers between parentheses are t-statistics. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

7. CONCLUSION

Investors desire to maximize the return on their capital (Cheng et al., 2019; Gaio & Raposo, 2014). This requires strong governance mechanisms to ensure that managers are efficiently handling the company's resources on behalf of the investors. On the one hand, many countries around the world, including the GCC countries, look to build a solid economy by earning financial resources in a variety of ways (Abdallah & Ismail, 2017; Kabbani & Mimoune, 2021). On the other hand, companies have an inherent agency contract problem. The agency problem comes when principals (shareholders) appoint agents (managers) to run their company (Fama & Jensen, 1983; Jensen & Meckling, 1976). Managers then have more power and information about the company's resources than the shareholders. Matsuura (2008) stated that managers utilize different methods to maintain a consistent income, such as by carrying out earnings-soothing activities. Managers try to maximize their bonuses and wealth through

earnings smoothing techniques (Shleifer & Vishny, 1997). Thus, FES gives corporations a negative image and can destroy the market. Agency theory argues that a good governance system could mitigate the problem. In this regard, previous studies have supported agency theory and found that governance systems protect companies' shareholders and increase the country's economy by attracting more investors. Moreover, resource dependence theory argues that boardroom diversity helps a company to increase its resources and results in a strong board that functions as a governance mechanism (Hillman & Dalziel, 2003).

In this regard, the GCC countries play an important role in the world's economy yet they still face economic challenges that require stable and strong governance systems to attract more investment. This study examined agency theory and resource independency theory in the GCC market context to help regulators and policymakers. The study sample covered the six Arabian countries of the GCC: Saudi Arabia, the UAE, Oman, Bahrain, Kuwait, and Qatar. The study data comprised 847 firm-year observations for seven years from 2013 to 2019. The study examined the direct effects of the corporate governance mechanisms of boardroom gender diversity, audit quality, and government representation on the board on earnings smoothing. Moreover, the study analyzed in depth the role of male and female government members on the board. In addition, the study examined the moderating effect of government board members on the relationship between audit quality and FES, as well as on that between board gender diversity and FES. The study revealed several important results in support of agency theory and resource dependence theory.

First, the study found that the local and big four international audit firms have a positive (negative) effect on lower (higher) FES. Moreover, the study found that gender diversity and government board members have a positive (negative) direct effect on lower (higher) FES. In addition, the moderating effect of government board members on the relationship between audit quality and earnings smoothing revealed a positive (negative) effect on lower (higher) FES. On the other hand, the moderating effect on the gender diversity and earnings smoothing relationship indicates no significant effect at any level with the female gender and a positive sign with the male gender. Thus, the study supports the agency theory that good governance mechanisms mitigate the agency problem in companies. Also, the study supports the resource dependence theory that the diversity of the boardroom helps companies and mitigates earnings smoothing. Moreover, the study found that audit quality and government board members play a complementary role in mitigating earnings smoothing. In addition, board gender diversity only plays a complementary role with government board members when male members are present.

The findings of this study will aid policymakers, investors, audit firms, and regulators in determining and comprehending effective governance procedures in the GCC countries. This will also aid the improvement of governance standards and practices in those countries, paving the way for broader adoption. As a result, reduced FES and better-quality accounting data will benefit companies and the GCC economy. Moreover, the study recommends increased boardroom diversity, which will improve the functioning of the governance system. Finally, the study concludes that the big four international and local firms function well as a governance system to mitigate earnings smoothing. Also, the study offers a theoretical contribution to agency theory and resource dependence theory by supporting a complementary role of governance mechanisms as a good means of controlling earnings smoothing, as well as the role of board diversity in helping companies to increase the board's resources and thus mitigate the complexity of the organization's environment.

Finally, the findings of this study pave the way for future research into accounting information quality and governance systems. For example, the effects of alternative governance mechanisms on FES and the manipulation of activities and accruals can be examined. Other BOD characteristics can also be investigated to see how they affect FES and company performance. Moreover, the applied model can be used to test corporate sustainability performance. Finally, a qualitative study can also be conducted to investigate why the female function in board diversity is poor compared to the male function.

Table 9. Summary of results.

Variables	Direct effect Equation 1_2			Moderating effect Equation 3 _ 4 _ 5 and 6			
		H:		H:		Complementary	Substitute
Variables	$AQ4$	H_1	Good. Sing	H_1	Good. Sing	No	No
	AQ_Lo	H_1	Good. Sing	H_1	Good. Sing	No	No
	$Board\_FE$	H_2	Good. Sing	H_2	Good. Sing	No	No
	$Board\_MA$	H_2	Good. Sing	H_2	Good. Sing	No	No
	$BoardG$	H_3	Good. Sing	H_3	Good. Sing	No	No
Moderating effect	$(AQ4 * BoardG)$			H_{4_A}	Good. Sing	Yes	No
	$(AQ\_Lo * BoardG)$			H_{4_A}	Good. Sing	Yes	No
	$(Board\_FE * BoardG)$			H_{4_B}	No	No	Yes
	$(Board\_MA * BoardG)$			H_{4_B}	Good. Sing	Yes	No
Control variables	SDR	Good. Sing		Good. Sing		No	Positive
	$chROA_{t-2}$	No		No		No	No
	$chROA_{t-3}$	No		No		No	No
	LEV	Good. Sing		Good. Sing		No	Positive

Note: The independent variables: AQ4 is a dummy variable that is equal to 1 if a big four international firm was appointed and equal to 0 if a local or other firm was appointed instead. AQ_Lo is a dummy variable that is equal to 1 if a big four local firm was appointed and 0 if a big four international or other firm was appointed. Board_FE is the total number of female members on the board. Board_MA is the total number of male members on the board. BoardG is the total number of government representatives on the board. The control variables are SDR, the standard deviation of revenue for firm i in year t. LEV, the percentage change in net income ÷ percentage change in earnings before interest and taxes (EBIT). $chROA_{t-2}$ and $chROA_{t-3}$ the change in return on assets from t-1 to t-2 and the change in return on assets from t-2 to t-3, respectively. * means multiply.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not applicable.
Transparency: The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: Upon a reasonable request, the supporting data of this study can be provided by the corresponding author.
Competing Interests: The author declares that there are no conflicts of interests regarding the publication of this paper.

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