

DO BOARDS INFLUENCE AUDIT QUALITY? A MULTIDIMENSIONAL ANALYSIS

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Abstract

How to cite this paper: Al-Hamadeen, R., AlHmoud, T., El-Nader, H., Alsharairi, M., & Almasri, F. (2021). Do boards influence audit quality? A multidimensional analysis. *Journal of Governance & Regulation*, 10(1), 125-138.
<https://doi.org/10.22495/jgrv10i1art12>

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ISSN Print: 2220-9352

ISSN Online: 2306-6784

Received: 21.12.2020

Accepted: 03.03.2021

JEL Classification: M41, M42, M48, K22

DOI: 10.22495/jgrv10i1art12

This study investigates how corporate boards of directors influence the quality of external audit in a sample of service firms listed on the Amman Stock Exchange (ASE). We contribute to the literature by providing empirical evidence on the efficacy of the corporate governance mechanisms through corporate boards to influence audit quality in an emerging country setting (i.e., Jordan). According to Chua (1986), this is mainstream “market-based” accounting research. We regress multiple dimensions that capture the quality of financial statements’ audit on a group of board of directors (BoD) characteristics for total observations of 225 firm-year obtained for 45 companies during the period (2014-2018). Specifically, the multidimensional analysis of the response variable, audit quality, includes audit firm’s internationalization, audit fees, auditor tenure, and the number of licensed practitioners at the audit firm. Using multiple linear (Panel Least Squares - PLS) and logistic regression models, we document empirical evidence that audit quality is positively affected by the independence and size of boards but negatively affected by CEOs duality, while no influence of the board’s expertise on any measures of the audit quality. The study provides implications for policymakers and investors regarding the signals that firms can send regarding the quality of financial statements audit when complying with the best practices of corporate governance.

Keywords: Audit Quality, Board of Directors Characteristics, Auditor Internationalization, Audit Fees, Auditor Tenure

Authors’ individual contribution: Conceptualization - R.A., T.A., H.E., M.A., and F.A.; Methodology - T.A., H.E., R.A., and F.A.; Resources - H.E., T.A., R.A., and F.A.; Data Curation - T.A., H.E., R.A., and F.A.; Writing - Original Draft - R.A., M.A., and F.A.; Revision & Editing - M.A. and R.A.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The last three decades witnessed quite a few infamous business scandals associated with the collapse of notable international companies, for which it was believed that poor corporate

governance and failure of external audit were among the main factors that paved the way towards fraudulent financial reports. Examples are many such as Parmalat, Xerox, Global Crossing, and Enron. This paper focuses on the efficacy of corporate boards in improving the external audit quality.

Researchers and forensic experts argue that frauds and financial scandals are historically contingent and skewed towards certain sectors, particularly banking and finance and facilitated by international capital mobility and complex group structures and “mediated by managerial incentives and ownership concentration” (Toms, 2019, p. 477). Sarbanes-Oxley (SOX) Act, emerged in 2002 in the US, is considered as one of the most important legislative milestones that have ever influenced the public accounting profession as well as the regulators’ view towards corporate governance, not only in the US but also worldwide. According to Cohen, Hayes, Krishnamoorthy, Monroe, and Wright (2013), SOX has significantly advanced the monitoring role of the audit committee, which is attributed to financial expertise and internal control requirements and “heightened substantive diligence”. One of the vital reform steps carried out under the SOX Act of 2002 is the establishment of the Public Company Accounting Oversight Board (PCAOB) to oversee the audit of public companies in order to protect the public and investors interest, who demand “informative, accurate and independent” audit reports (PCAOB, 2015). Technically, the PCAOB is responsible for setting up auditing standards in order to monitor and increase the quality of the audits themselves, and to ensure that the audit firms carry out their duties and tasks to the fullest in accordance with established auditing standards (Arens, Elder, Beasley, & Hogan, 2016).

Furthermore, during the global financial crisis in (2008), many international companies such as Lehman Brothers Bank and American International Group witnessed financial distress and scandals such as the Madoff investment scandal in 2008. These catastrophic incidents added greater pressure towards the need to constrain the alleged managerial opportunism as well the deterioration in the public trust in the external audit of the financial statements.

Wiseman, Cuevas-Rodríguez, and Gomez-Meji (2012) emphasize that corporate governance mechanisms are among the effective means to reduce opportunistic management practices. They suggest that the agency-based governance model, if embedded in the institutional context, can minimize the conflict of interest between corporate stakeholders, mainly between managers and owners. Further, the ramifications of the conflict of interest and information asymmetry of information between management and shareholders, as theorized by Jensen and Meckling (1976), can be reduced by a greater audit quality. Within this context, the corporate board of directors (BoD) is pivotal as a governance mechanism, given its role in influencing the company’s performance, success, and control (Fama & Jensen, 1983a). Effective boards are presumably able to restrain opportunistic behavior of management, preserve owners’ rights, and ensure that financial reporting standards are adhered to. It is argued that companies with effective BoDs ensure a greater level of disclosure in their financial reports and a lower level of manipulation in performance indicators (i.e., earnings) and hence, the audit risk is at its minimum (Dechow, Sloan, & Sweeney, 1996; Gul & Leung, 2004). Certainly, effective BoDs are attentive regarding the quality of auditing procedure to ensure the highest degree of credibility to the financial statements.

This study contributes to the literature by considering multiple dimensions of audit quality

while answering the empirical question of how BoDs do influence audit quality. Specifically, for a sample of service firms listed on the Amman Stock Exchange (ASE), we use multiple linear (Panel Least Squares – PLS) and logistic regression models to examine the effect of BoD characteristics on audit quality whether indicated by audit firm’s internationalization, audit fees, auditor tenure or the number of licensed staff at the audit firm.

Given the fact that this study is empirically implemented in a developing country (i.e., Jordan), the findings have several implications for several parties including investors and regulators since it identifies the strengths of BoD that affect the quality of audit practices. This, in turn, would address concerns indicated by early research of Otman (2019) who emphasized that although there is a significant role played by the MENA markets and the OECD in progressing and improving CG practices, it is noted that these practices are still premature and thus, further research is recommended to develop CG model in the unique business environment in the MENA region.

In addition to this introduction, the remaining structure of this paper is as follows. Section 2 reviews the relevant literature. Section 3 presents the research methodology including hypotheses development. Section 4 discusses the results of the study and Section 5 presents conclusion and limitation along with future recommendations.

2. LITERATURE REVIEW

The existing literature on audit and assurance shows that the majority of the studies have considered the impact of governance mechanisms in general on the quality of external audit, whereas industrial companies and financial sector including banks are the most investigated businesses (Kolsi, Ikbil, & Affes, 2012; Dwekat, 2014; Alhababsah, 2018). The service sector is the main contributor to the GDP in Jordan. According to the World Bank (2020), it constitutes 67% of the country’s GDP. In 2020, the market value of the service-based companies is USD 2.65 billion representing 15.4% of the total market capitalization of the public companies listed on the Amman Stock Exchange (ASE, 2020)¹. This study adds to the literature by examining the impact of BoD characteristics, as a proxy of CG, on the quality of external audit within the Jordanian service corporations.

During the last few years, CG practices and their impact on external audit have been generally examined within the accounting and auditing literature. In this part of the research, attention is specifically given to those studies closely relevant to the topic being examined (i.e., impact of BoD characteristics on quality of external audit).

Harris (2007) examined the relationship between CG characteristics and audit fees for a sample of 100 companies from the Fortune 500 list of the best 500 US listed companies for the year 2005. The results indicated that there is a positive and statistically significant relationship between the measures of expertise (the number of financial experts in the audit committee and the average

¹ ASE classifies the listed equities under three key sectors. This includes financial, industrial and services. For the services-based listed companies, the following sub-sectors are identified health care, hotel and tourism, utilities and energy, transportation, media, commercial services, education, and technology and communication (ASE, 2020).

number of external departments occupied by members of BoD) and audit fees. Furthermore, the results revealed that there is a statistically significant positive correlation between the frequency of the number of board's meetings and the audit fees. Harris (2007) concluded that CG, which is indicated by the BoD characteristics and the audit committee, is associated with higher audit fees. In the same context, Kuang (2011) empirically investigated the relationship between BoD characteristics and the quality of audit, which was measured through the audit fee index. The study used a sample of the non-financial companies listed on the Shanghai and Shenzhen Stock Exchange for the period (2002-2006). The results of the OLS analysis indicated that the independence of BoD (measured by the percentage of external directors in the board), gender diversity (measured by the percentage of female directors), and the diligence of the board (measured by the number of board's meetings) correlated positively and significantly with audit fees. Similarly, the study showed that the size of the board was negatively associated with the audit fees, and no statistical significance was reported for the effect of CEO duality on audit fees.

In a study from the MENA region, Kolsi et al., (2012) investigated the impact of CG mechanisms on the quality of audit for Tunisian companies. The study sample consisted of 29 companies listed on the Tunisian Stock Exchange for the period (2005-2009). The results of the logistic regression showed that the size of the board of directors, CEO duality, and the presence of large investors are positively affecting the demand for high-quality auditing. The presence of institutional investment and the size of the company adversely affect the increase in demand for audit quality. Furthermore, results revealed that the independent members of BoD, company debt, and the CEO ownership have no impact on the audit quality. Among those studies conducted within the European context, Rabah Gana and Lajmi (2013) tested the effect of the BoD characteristics on the quality of external audit for 96 publicly listed Belgian companies for the time period (2003-2007). The study found a positive relationship between the quality of external audit and independence of the board and the number of meetings, whereas for both size of the board and the duality of CEO no significant correlations were found.

Among the few studies that used datasets from Jordan, Dwekat (2014) investigated the impact of CG mechanisms on the quality of auditing for the Jordanian industrial companies listed in ASE. The study sample consisted of 63 companies for the year 2012. The findings revealed a positive relationship between the percentage of institutional ownership and audit fees (as an indicator of audit quality). Additionally, a negative relationship between the audit committee and the specialty in the client industry (as an indicator of audit quality) was reported. Dwekat (2014) concluded that there is no effect of the size of BoD, the independence of the board, the ownership of the board, the concentration of ownership, CEO duality, and the financial leverage on audit quality. Likewise, Kasim, Hashim, and Salman (2015) examined the effectiveness of CG mechanisms on the quality of auditing by using audit fees paid as a proxy. The sample of the study consisted of 100 companies

from eight different industrial sectors from Malaysia Stock Exchange for the year 2012. The study concluded that there is a positive statistically significant relationship between the size of the board and the quality of the audit and that the financial leverage (as a controlling variable) has a positive relationship with the quality of the audit. The executive director's duality, independence, and financial experience of the audit committee were associated with a positive but non-statistically significant relationship with audit quality.

The quality of BoD is questionable in the literature. Farooq, Kazim, Usman, and Latif (2018) examined the extent of the impact of BoD quality and the audit committee on audit fees in Pakistan. The study analyzed 100 companies listed on Pakistan Stock Exchange during the period (2007-2011). The results revealed that the quality of an effective board (indicated by board size, board independence, CEO duality, board member ownership, director independence, and a number of board's meetings) correlates positively with the external audit fees. These results explicitly suggest that an effective BoD requires an increase in audit quality. Unsurprisingly, results of the study revealed that the effectiveness of the audit committee measured (by size of the committee, independence of the committee, and the number of committee's meetings) reduces the fees of the external audit. Similarly, Jizi and Nehme (2018) examined the mediating role of the CEO duality in influencing the relationship between audit fees and BO oversight (as a governance mechanism). The study targeted 664 US national commercial banks in which assets exceeded one billion dollars for the period (2009-2015). Jizi and Nehme (2018) concluded that each of (the independence and size of the BoD, CEO duality, and existence of financial experts in the audit committee) have a positive relationship with the audit fees. Unsurprisingly, intermediate variables' results indicated that highly independent boards and audit committees with high effectiveness tend to demand high-quality audit services.

Among the few papers that investigate the influence of the presence of external auditing on CG and the way corporates are managed, Ferreira (2018) examined the compliance with the CG regulations of the Securities Market Commission in Portugal. In specific, that study explored the impact of auditing over CG on information transparency and the reduction of agency problems, fraudulent practices, and economic crimes. Ferreira (2018) targeted auditing practices of the companies listed on NYSE Euronext Lisbon from 2007 to 2011. The findings revealed that there is a significant direct relationship between the fulfillment of the recommendations of CG and its verification by the external auditors. The multiple regression and multinomial logistic models revealed a greater involvement of the ROC² in complying with CG recommendations, which in turn, leads to greater transparency and further reduce agency problems, fraud, and economic crimes.

² "5.11. ROC or Statutory Auditor, natural person registered in the Order of Chartered Accountants (OROC), in accordance with the Statute of the Order of Chartered Accountants (OROC), to carry out statutory audits of accounts, as set forth in Article 2(s) of the Audit Supervision Legal Regime, approved by Law No. 148/2015, 9 September, elected by the GSM of the company" (General and Supervisory Board, 2016, p.5, retrieved from https://www.edp.com/sites/default/files/regulation_audit_services_0.pdf)

After reviewing the international literature, it could be noticed that less attention is given to investigating the BoD characteristics as suggested by national CG codes within the MENA region. Al-Saidi (2021) investigated the newly released Kuwaiti CG rules mandated over the publicly listed companies on the Kuwait Stock Exchange (KSE). This study examines the impact of BoD on firm performance following the implementation of CG rules using a sample of 89 non-financial listed companies from 2017 to 2019. Al-Saidi (2021) utilized four board variables (i.e., size, independence, family directors, and diversity). Tobin's Q results revealed that size, independence, and diversity significantly impact the firm's performance whereas family directors impacted performance under the ROA model.

In most of the reviewed studies, it is noted that these have utilized one or two indicators to measure the audit quality (Harris, 2007). Moreover, most research has considered the impact of CG rules in general and investigated some characteristics of the BoD in particular over the audit quality (Kasim et al., 2015), mostly using a sample from the industrial, banks, and insurance companies (Dwekat, 2014; Jizi & Nehme, 2018). Our study adds to the existing literature by addressing the impact of the BoD characteristics (with the majority of its variables) on the quality of external audit (measured by more than two indicators) in the service-based companies, thus, the current research attempts to close this research gap by investigating seven different characteristics for the BoD and four different measures for the audit quality over five years (2014-2018).

3. METHODOLOGY

3.1. Sample and data

According to Chua's classification, the current study is a mainstream "market-based" accounting research (Chua, 1986). This study adopts a quantitative research method through analyzing historical financial data. The population of the study consists of all public shareholding companies listed in the service sector in ASE, during the period (2014-2018). The study sample is restricted to those companies whose shares are traded, and whose annual reports and financial data are available for the variables of the study throughout the aforementioned period. According to this criteria, we include 225 firm-year representing 45 service firms.

The importance of this study stems from its design as it examines seven characteristics of BoD on the quality of external audit measured by four indicators. The characteristics of BoD that we measure in this study include independence of the board, board size, duality of duties, number of meetings, member ownership, experience of board members, diversity of board members. Additionally, quality of audit is measured by association with international offices (Big 4), the value of the audit fees, the client retention period, and the number of professional personnel within the audit firm.

3.2. Research design

In order to achieve the objectives of the study and test the effect of the BoD characteristics on audit quality, we developed models as follows:

$$BIG4AUD_{it} = \alpha + \beta_1 BIND_{it} + \beta_2 BSIZE_{it} + \beta_3 DUAL_{it} + \beta_4 BMEET_{it} + \beta_5 BOWN_{it} + \beta_6 BFEXP_{it} + \beta_7 BGEN_{it} + \beta_8 LOGFSIZE_{it} + \beta_9 ROA_{it} + \beta_{10} LEVER_{it} + \epsilon \quad (1)$$

$$LOGAFEES_{it} = \alpha + \beta_1 BIND_{it} + \beta_2 BSIZE_{it} + \beta_3 DUAL_{it} + \beta_4 BMEET_{it} + \beta_5 BOWN_{it} + \beta_6 BFEXP_{it} + \beta_7 BGEN_{it} + \beta_8 LOGFSIZE_{it} + \beta_9 ROA_{it} + \beta_{10} LEVER_{it} + \epsilon \quad (2)$$

$$ATENURE_{it} = \alpha + \beta_1 BIND_{it} + \beta_2 BSIZE_{it} + \beta_3 DUAL_{it} + \beta_4 BMEET_{it} + \beta_5 BOWN_{it} + \beta_6 BFEXP_{it} + \beta_7 BGEN_{it} + \beta_8 LOGFSIZE_{it} + \beta_9 ROA_{it} + \beta_{10} LEVER_{it} + \epsilon \quad (3)$$

$$NEMP_{it} = \alpha + \beta_1 BIND_{it} + \beta_2 BSIZE_{it} + \beta_3 DUAL_{it} + \beta_4 BMEET_{it} + \beta_5 BOWN_{it} + \beta_6 BFEXP_{it} + \beta_7 BGEN_{it} + \beta_8 LOGFSIZE_{it} + \beta_9 ROA_{it} + \beta_{10} LEVER_{it} + \epsilon \quad (4)$$

Table 1. A summary of the study variables and the method for measuring each of them

Variable(s)	Code	Description (measurement method)
Dependent variable: Quality of audit		
Association with international audit firm	BIG4AUD	A dummy variable that takes (1) if the company is audited by (BIG4) and takes (0) for others.
Audit fees	LOGAFEES	The natural logarithm of the value of the audit fees paid to the audit office in JODs.
Client retention	ATENURE	A dummy variable that takes (1) when retaining the audit client for four years or more, and takes (0) for others.
Size of audit firm	NEMP	Number of licensed practitioners at the audit firm.
Independent variables (BoD characteristics)		
Independence of BoD	BIND	Number of independent members/total number of BoD members.
Size of BoD	BSIZE	Total number of BoD members.
Duality of CEO	DUAL	A dummy variable takes (1) if the CEO is himself/herself the Chairman of BoD, and it takes (0) if not.
No. of BoD meetings	BMEET	The total number of BoD's meetings throughout the year.
Ownership of BoD members	BOWN	Company's shares owned by BoD members/the company's total shares.
Experience of BoD members	BFEXP	Number of BoD members who have financial, accounting, or administrative experience/the total number of BoD members.
Gender diversity of the BoD members	BGEN	Dummy variable that takes (1) if there is at least one female in the BoD, and it takes (0) if none.
Control variables		
Company size	LOGFSIZE	The natural logarithm of the total assets.
Return on assets	ROA	Net profit after interest and tax/total assets.
Leverage	LEVER	Total liabilities/total assets.

Note: Table 1 demonstrates all variables used in the models above and their metrics.

3.3. Study variables

The dependent variable in this study is audit quality. It refers to the extent of the auditor's success in detecting and reporting material misstatements in the financial statements, and that discovering these misstatements reflects the competence of the auditor while reporting them reflects the ethics and integrity of the auditor, especially the independence (Arens et al., 2016). Previous studies indicate that there are four key indicators that signal audit quality. These include:

1) *Association with international audit firm.* Generally, internationalization of accounting and reporting practices are linked to the quality of the reported information. According to Ballas Garefalakis, Lemonakis, and Balla (2019), the combination of sound CG practices with the generally accepted accounting practices (e.g., IFRS) would have a positive contribution to the accuracy, reliability, and quality of the information disclosed to the stakeholders especially during crisis periods. In the audit context, it could be argued that large audit firms, in terms of market share, provide high-quality audit services if compared with the small ones. According to Al-Khuffash (2018), there are several factors supporting this argument, such as the presence of high-level specialized training, the presence of an element of control over the quality of performance, and the subject of these firms to the peer-review process. From this point of view, it can be argued that the affiliation of audit firms with an international firm would ease the flow of knowledge and technology and hence improve the quality of audit (Al-Khuffash, 2018). In the same context, Suwaidan (2010) asserts that there are differences in the quality of audit services provided by large firms compared to small ones, because large audit firms charge, on average, higher audit fees than small firms. Consistently, DeAngelo (1981) confirms that the size of the audit firm is directly related to the quality of audit. However, it has been argued in this regard that the large audit firms have the ability and the incentive to provide high-quality audit services because they have a greater reputation that should be protected, in addition to the risks of being exposed to lawsuits are high in the event of proven failure of the audit engagement (Francis, 2004).

2) *Audit fees.* Audit fees refer to the amount paid to the auditor for audit services provided to the client (Kimeli, 2016). The literature reveals that audit fees correlate with the quality of provided audit services. The increase in the invoiced audit fees is normally based on a greater effort put on auditing client's accounts, and thus increasing the possibility of detecting manipulation and misrepresentation in the financial statements (O'Sullivan, 2000). Further, it has been emphasized that the value of the total audit fees charged by the audit firm is a straight indicator of the level of audit quality as well as the due care given by the auditor (Caramanis & Lennox, 2007; DeFond & Zhang, 2014). According to the recommendations of Cadbury (1992) and PCAOB (2020), it is likely that the quality of the audit process will decrease in the event of a decrease in the audit fee paid to the auditor, and this assumes that a company that pays lower audit fees will receive lower quality audit services.

3) *Client retention period.* The SOX Act of 2002 stipulated that the company must change its external auditor that supervises its auditing work on

a regular basis every five years (Elder, Beasley, & Arens, 2012). Within the literature, there are two standpoints regarding the duration of client retention and its impact on audit quality. On the one hand, long-term retention is viewed positively since the increase in the client retention period leads to a greater audit quality because of the increase in the auditor's experience in the operations and stakeholders of the audit client. Therefore, there would be an increase in the auditor's ability to detect errors and the financial records' misstatement (Hakim & Omri, 2010; Rahmina & Agoes, 2014; Türel, Tas, Genc, & Ozden, 2017). On the other hand, the increased duration of the auditor-client relationship would likely lead to the impairment of the independence and the objectivity of the auditor, due to the possibility of developing a personal and intimate relation between the company's management and the auditor. Such intimate relation between the company's management and the auditor could reduce the quality of the audit quality. Therefore, it is recommended for the auditor to limit the length of the client's retention period (Junaidi & Hartadi, 2012; Gonzalez-Diaz, Garcia-Fernandez, & Lopez-Diaz, 2015).

In Jordan, the Instructions of Corporate Governance for Shareholding Listed Companies - CG rules (JSC, 2017) indicate that the external auditor audits the company for a period of one year, which is renewable, provided that it does not exceed four consecutive years, where the auditor may be re-assigned after two years gap period.

4) *Number of professional personnel in the audit firm.* It is the number of licensed professional personnel in each audit firm. According to Suwaidan (2010), the larger the number of practitioners in the audit firm the lower the auditor incentives to exploit in a negative way affecting the audit process. On the other hand, from a different perspective, it could be argued that increasing the number of auditors contributes to improving the audit process through the presence of diverse experiences and competencies that reflects positively on the quality of audit work (DeAngelo, 1981). According to Kolsi et al., (2012) the size of the audit firm measured by the number of professional staff is an indicator of audit quality. In this regard, it has been argued that the greater the number of professional practitioners in the audit firm, the companies' audit can be exchanged between different audit teams within the firm, which eventually would eliminate the auditor's objectivity-impairment-effect resulting from client retention (Kolsi et al., 2012).

The independent variables (BoD characteristics): the board characteristics have been widely examined in the literature. These include the following:

1) *Independence of the BoD members.* There are no doubts that the objectivity of the audit fundamentally relies on the independence of the audit team from the client's executives. It has been emphasized that the BoD, which contains a larger percentage of independent directors, is more effective in monitoring the management's decisions as they are keen on protecting the company's resources and reputation. This reduces the agency problem (Fama & Jensen, 1983b). Jizi and Nehme (2018) stated that the independents sitting on BoD usually call for a greater quality of audit to guarantee the highest assurance on the reliability of the financial statements. Furthermore, it could be argued that the external members of BoD enjoy a greater level of independence and objectivity compared to

the executive members, which leads to an increased quality of audit (O'Sullivan, 2000). Overall, the literature suggests that the independence of BoD has a significantly positive impact on the audit quality (Kuang, 2011; Soliman & Abd Elsalam, 2012; Rabah Gana & Krichen, 2013; Kikhia, 2014; Farooq et al., 2018; Khudhair, Al-Zubaidi, & Raji, 2019). In accordance with the JSC CG Instructions (JSC, 2017), the independent BoD member is that one who is not associated directly with the company, or any person of the higher executive management therein, the members of the BoD, or the external auditor of the company in any "material interest or any relationship other than that related to his/her share in the company" (JSC, 2017, p. 4). In its Article 4, the JSC's CG Instructions (JSC, 2017) recommend that at least one-third of the board members be independent.

Based on the above, the first hypothesis is posited as follows:

H1: There is a positive impact of the BoD independence on the quality of audit.

2) *Size of the BoD.* The number of BoD members is considered a key factor in determining its effectiveness as a CG mechanism in monitoring the management behavior (Jensen, 1993). There are varying views regarding the ideal board size that ensures its effectiveness. The existing literature suggests that larger boards have better performance. It is argued that the inclusion of more professional members from diverse backgrounds is more beneficial to the company due to sharing the experiences and knowledge among members, as suggested by the resource dependence theory (Abidin, Kamal, & Jusoff, 2009; Dhamadasa, Gamage, & Herath, 2014). In Jordan, Article 4 of the JSC CG Instructions (JSC, 2017) states that the publicly listed company is managed by a BoD of which the number of members is not less than five and not more than thirteen in accordance with what is "specified by the company's internal bylaw".

Both Kikhia (2014) and Farooq et al., (2018) believe that the size of the BoD has a positive relationship with the external audit fees. Kolsi et al., (2012) indicate that the size of the board positively affects the demand for high-quality audit. In contrast, other studies suggest that the larger the size of the board, its effectiveness decreases due to the difficulty of communication and coordination, emergence of problems, increase in the level of conflict between members, slow decision-making processes, and the reduction in the BoD's ability to control (Jensen, 1993; Yermack, 1996). In the same vein, Khudhair et al. (2019) document evidence on the inverse relationship between board size and audit quality, while Kuang (2011) reports that the size of the BoD is negatively associated with the audit fees. Accordingly, the second hypothesis is posited as follows:

H2: There is a positive impact of the BoD size on the quality of audit.

3) *CEO Duality.* Duality of CEO refers to having one person undertaking two key responsibilities in the company simultaneously, these include the chairman of the BoD and the CEO. The JSC CG Instructions (JSC, 2017) have clearly prohibited combining the Chairman of BoD position with any other executive position in the company. Duality of CEO duties increases the concentration of power and control, which increases the threat to the rights of the owners and preference for personal interest.

This ultimately increases the agency costs due to the conflict of interests, which also affects the performance of the company (Laksmana, 2008). According to Jizi and Nehme (2018), duality correlates negatively with both financial reporting disclosures and CG effectiveness and positively with the business risk. Consistently, Zaman, Hudaib, and Haniffa (2011) report a negative impact of CEO duality on audit quality. According to the agency theory, the concentration of power within the CEO leads to weaker disclosure policies and control over opportunistic management behavior (Zhang, Chen, & Feng, 2014). Based on such arguments presented above, the third hypothesis is posited as follows:

H3: There is a negative impact of CEO duties duality on the quality of audit.

4) *Number of BoD meetings.* Several studies investigated the association between the BoD's meetings and the company's performance, quality of financial reporting, and corporate disclosure. It has been reported that the increase in the number of BoD meetings is an indication of the effectiveness of BoD (Vefees, 1999; Ayemere & Elijah, 2015; Farooq et al., 2018). From the perspective of the agency theory, a BoD that holds more frequent meetings has the ability to control the company's management and improve its financial performance (Ntim & Osei, 2011). The literature indicates that the number of board meetings is also correlated with audit fees (Goodwin-Stewart & Kent, 2006; Kuang, 2011; Farooq et al., 2018; Orshi, Ekundayo, & Samuel, 2018). Furthermore, the literature suggests that there is a positive relationship between the frequency of the board's meetings and the audit quality (Rabah Gana & Lajmi, 2013; Kasim et al., 2015). In the Jordanian context, the JSC's CG rules (JSC, 2017) in its Article 11 indicates that the BoD of the publicly listed company should hold at least one meeting every two months so that the number of its meetings during the fiscal year should not be fewer than six meetings. Hence, the fourth hypothesis is posited as follows:

H4: There is a positive impact on the number of BoD's meetings on the quality of audit.

5) *Ownership of the BoD members.* The board ownership indicates the percentage of board members ownership of the company's shares. Makhoul, Laili, Basah, and Ramli (2017) indicate that the ownership of board members has a positive impact on the overall performance of the company. Shares owned by the members of the BoD give them the incentive to gravely monitor the directors in the best interest of the shareholders, which eventually leads to alleviating the management-ownership agency problem (Brown & Maloney, 1999). Farooq et al. (2018) document that there is a positive relationship between board ownership and external audit fees. Nationally, according to Article 4 of the JSC's CG rules (JSC, 2017), a member of BoD who owns 5% or more of the subscribed company's shares or its affiliation(s) or subsidiary companies is considered non-independent. Accordingly, the fifth hypothesis is posited as follows:

H5: There is a positive impact of board members' ownership on the quality of audit.

6) *BoD members' experience.* For an effective BoD, it is important for its members to be sufficiently informed of the business-related issues as well as the accounting principles and financial reports. This expertise is vital to enable the BoD to provide the expected control and supervision over

the company's performance (Güner, Malmendier, & Tate, 2008). If such expertise exists, then BoD is more able to request the needed assurance and quality of audit. Undoubtedly, a board member with greater experience would elect the auditor that can offer high-quality auditing services and, hence, higher credibility is anticipated for the disclosures in the financial statements. For instance, Kikhia (2014) finds that board members' experience and the external audit fees are directly related. In line with the "demand side", it could be argued that a large BoD that enjoys a greater level of independence and financial expertise has a better capacity to demand higher audit quality. Harris (2007) explained that high-quality CG (as measured by board experience), is associated with higher audit fees paid. Based on the above, the sixth hypothesis is posited as follows:

H6: There is a positive impact for the experience of board members on the quality of audit.

7) *Diversity of the board gender.* The presence of females on the company's BoD is an indication of the diversity of the board, as this leads to enhancing the performance and efficiency of the company's BoD. Additionally, it has been argued that the presence of female managers on the board positively affects the performance and attendance of the male managers (Adams & Ferreira, 2009). Ararat, Aksu, and Tansel Cetin (2010) indicated that a diversified board provides better oversight and control, mitigates the intensity of conflicts, and enhances the performance of the company. It is also argued that females in the BoD have a stronger tendency to hire auditors from the "Big 4" firms - which are supposed to provide better quality assurance services (Ararat et al., 2010). Generally, females are more sensitive to the anticipated losses, they are risk-averse and they have more risk management advantages compared to male directors (Schubert, 2006). Based on the above, the seventh hypothesis is posited as follows:

H7: There is a positive impact of the board members' diversity on the quality of audit.

For the purpose of the current research design, we include the most commonly used control variables in the literature to the study model as follows:

1) *Size of the company measured by the total assets.* Several previous studies reveal that the size of the company is one of the most important determinants of audit fees. Hassan and Naser (2013) indicated that there is a direct relationship between the size of the company and the amount of audit fees paid. Usually, large companies need more audit tasks and devoted effort due to the large volume of the subject matters, which leads to higher audit fees that are an indicator of the quality of the audit.

2) *Return on assets (ROA).* This indicator measures the profitability of the company by dividing the net profit after tax on the total assets of the company. The ROA is a significant indicator of the company's performance and its current situation. The higher the profitability of the company, the lower the risks, and therefore the effort exerted by the auditor will be less compared to the poor financial results of the company that causes higher risks (Pratt & Stice, 1994).

3) *Financial leverage.* It indicates the extent of the company's dependence on financing its assets on debt. It is measured by dividing the total liabilities of the company by its total assets. Studies indicate that there is a positive relationship between the debt level of the company and the demand for external audit, as high levels of debt in the corporate capital structure increase the owners' incentives to transfer wealth from bondholders, and this, in turn, will increase the demand for external audit (Carey, Simnett, & Tanewski, 2000).

4. RESULTS

Before running the statistical tests, the suitability of the data has been statistically examined through the normal distribution and multicollinearity tests. Based on the central limit theory (CLT), which assumes that large-sized samples greater than 30 fulfill the condition of normal distribution (Gujarati, 2004), and given the fact that the current study examines 225 observations (45 firms over 5 years), it is therefore assumed that data of the study is normally distributed. Further, the multicollinearity test is necessary to ensure that there is no endogeneity due to the high correlation between two or more of the independent and control variables. The results of the multi linear correlation coefficients indicate that the values between the independent control variables were all less than 0.70 - indicating no multicollinearity issues as recommended by Gujarati (2004). This result is also confirmed by the Variance Inflation Factor (VIF) and the Tolerance test. Thresholds values of the VIF must be less than 10, and the values of the permissible variance are greater than 0.10 in order for the variables to be free of the multicollinearity problem between them (Gujarati, 2004). Table 2 shows that the degrees of the VIF are all less than 2, as their values ranged between 1.025-1.989, as well as the values of the Tolerance test ranged between 0.502-0.974, all of which greater than 0.50. Therefore, it can be confirmed that there are no concerns with the multicollinearity between the study's independent variables.

Table 2. Results of the multiple correlation test between independent and control variables

Variable	Type	Code	VIF	Tolerance
Independence of BoD	Independent	BIND	1.093	0.914
Size of BoD	Independent	BFSIZE	1.048	0.953
Duality of CEO	Independent	DUAL	1.075	0.929
No. of BoD meetings	Independent	BMEET	1.048	0.954
Ownership of BoD members	Independent	BOWN	1.025	0.974
Experience of BoD members	Independent	BFXP	1.130	0.884
Gender diversity of the BoD	Independent	BGEN	1.084	0.922
Company size	Control	LOGFSIZE	1.989	0.502
Return on assets	Control	ROA	1.263	0.791
Leverage	Control	LEVER	1.788	0.559
Average			1.254	0.838

Table 3 presents the descriptive statistics of the explanatory variables. The results indicate that the average audit fees paid by the sampled companies are JOD 23,180, with a high standard deviation of JOD 28,464, which indicates a wide variation in the amounts paid as audit fees. This can be attributed to the difference in the size of the companies themselves as well as the nature of the subject matter under audit. The reputation and

size of audit firms vary. The results also show that the average number of professional personnel in the audit firm is 6.35 and a standard deviation is 3.81.

Based on the results, it could be stated that there is a big difference between the number of professional personnel from one audit firm to another normally due to their market share and probably the type of their targeted clients.

Table 3. Descriptive statistics of the continuous variables

Variable	Average	Standard deviation (SD)	Highest value	Lowest value
Audit fees (in JOD)	23,180	28,464	152,485	1,000
Size of audit firm (no. of PP*)	6.35	3.81	15	1
Experience of BoD members	0.57	0.18	1	0
Independence of BoD	0.41	0.23	1	0
No. of BoD meetings	8.21	3	19	6
Ownership of BoD members	0.49	0.27	0.96	0
Size of BoD	8.21	2.49	13	5

Note: n = 225 * PP: Professional personnel.

With regard to the variables describing the BoD characteristics, the results indicate that on average, 57% of the BoD members have sufficient experience and knowledge in the accounting and administrative aspects. In some cases, all or most of BoD's members are qualified and experienced whereas some boards do not have any experience in the targeted fields. Regarding the independence of the board's members, the results indicate that only 41% of the targeted boards are considered independent. Such finding indicates that the majority of the companies do not comply with the board independence suggested by JSC CG Instructions (JSC, 2017). There are some companies with a fully independent BoD, whereas some others are not completely independent. In this context, the rules stipulated that at least one-third of the BoD members should be independent and non-executives (JSC, 2017).

Regarding the board's meetings, the results indicate that on average, boards call for their meetings 8.21 times per year ranged from 6 to 19 meetings. This reflects compliance of all the targeted service-based PLCs with the CG Instructions recommended by JSC (2017), as they require the BoD

meeting to be held at least 6 times a year. As per the board members' ownership, the results indicate that on average 49% of the companies' shares are owned by their BoD members. The highest reached 96% whereas in limited cases the board ownership was 0% of the company's shares. Finally, the results indicate that the average size of the BoD is 8.21 members ranged from 5 to 13 members. This finding is consistent with the CG Instructions of the JSC (2017), which stipulate that the number of board members should not be less than 5 and not more than 13 member.

Table 4 illustrates the descriptive statistics of the dummy variables considered in this study. The results indicate that on average 47% of the companies are audited by one of the internationally affiliated audit firms such as the Big 4, whereas the remaining 53% of the companies are audited by local audit firms that are not associated with international audit firms. In the same vein, about 69% of the companies maintain the same audit firm for four years or more, and that about 31% of the companies do not continue with the same auditor for more than three years. These results in general indicate a high level of client retention.

Table 4. Descriptive statistics of the dummy variables

Variable	Frequency	Percentage (%)
Association with international (Big 4)	Associated	46.7
	Not associated	53.3
	Total	100.0
Client retention	More than 4 years	69.3
	Less than 4 years	30.7
	Total	100.0
CEO duality	Duality exists	15.6
	No duality exists	84.4
	Total	100.0
Board gender diversity	Female member exists	28.0
	No female member exists	72.0
	Total	100.0

Note: n = 225.

When it comes to the CEO duality, the results indicate that 16% of the targeted companies combine the position of CEO and Chairman of the BoD. This is an indication that there are still companies that do not comply with the national CG Instructions, which stipulate that the two positions cannot be combined. As for the gender diversity of the BoD, the results show that only (28%) of the BoDs include at least one

female member. This means that almost three-fourths of the companies' BoDs are solely formed of male members.

4.1. Hypotheses testing

The study includes cross-sectional data pertaining to 45 companies, with a time series that extends

between 2014 and 2018, resulting in a balanced panel dataset. According to the data used for variables measurement, we used binary logistic regression analysis in case of the dependent dummy variables, which are, Association with International Audit Firms - Big 4 and the client retention, as indicators of the audit quality (Gujarati, 2004), whereas, a multiple regression analysis through the PLS regression is used for each of the dependent variables, namely audit fees and the number of professional personnel in the audit firm as indicators of the audit quality. Further, Hausman

test is used to test for fixed and random effects and random effects to choose the most appropriate model for analyzing the data.

The binary logistic regression results for Model 1, which are presented in Table 5, indicate that the suggested model is statistically significant, as the value of LR statistics for the model is 152.34 at a significance level of 0.01. The results suggest that approximately 49% of the change in audit quality when measured by association with international audit firm is explained by the BoD characteristics.

Table 5. Regression analysis results for Model 1:
Association with international audit firm-Big 4 as a dependent variable

Variable	Coefficient	Z-statistic	Sig.
Constant	-22.90	-4.631	0.000*
BIND	-6.110	-4.626	0.000*
BSIZ	-0.031	-0.276	0.782
DUAL	-2.342	-3.509	0.000*
BMEET	0.058	0.831	0.405
BOWN	0.864	0.922	0.356
BFEXP	1.527	1.166	0.243
BGEN	0.509	1.103	0.269
LOGFSIZE	1.410	4.522	0.000*
ROA	-6.370	-2.492	0.012**
LEVER	-1.612	-1.928	0.106
R-squared (R ²)	0.489	LR statistic	152.34*

Note: n = 225, * sig. (1%), ** sig. (5%).

Based on the results in Table 5, it could be noted that there is a statistically significant negative impact at the level of 1% for both the independence of the BoD and CEO duality on the quality of the audit measured by association with international audit firms (i.e., Big 4). This can be explained by the fact that the presence of independent members is an effective governance mechanism in the company, which probably reduces the risk of financial accounts' misstatements. Consistent with Hay, Knechel, and Ling (2008), the urgency for a higher quality of external audit (e.g., by hiring Big 4) is lower. As for the CEO duality, the presence of two positions in the hands of one person gives way to opportunistic and manipulative behavior, which leads the executive in this case to a lack of interest in the quality of audit and work to reduce them. As for the rest of the independent variables (size of BoD, number of board's meetings, ownership of and experience of the board's members, and the gender diversity), their coefficients are not statistically significant.

With regard to the control variables, we document a positive effect (significant at 1%) for the size of the company and a negative effect (significant at 5%) for ROA on the quality of audit (when measured by association with international audit firm). This could be explained by the fact that a decrease in the rate of return may be an indication of higher risks and difficulties faced by the company that requires an increase in the quality of audit to monitor its poor performance (Pratt & Stice, 1994). As for the controlling variable, the company's debt did not have any statistical significance.

The regression results of Model 2, which uses audit fees as a proxy of audit quality are presented in Table 6 and reveal that the model is statistically significant at 1%, as the value of F-statistics is 13.57 and Adj-R² is 0.359, which indicates that 36% of the change in audit fees as a determinant for audit quality is due to included independent variables including BoD characteristics.

Table 6. Regression analysis results for Model 2: Audit fees as a dependent variable

Variable	Coefficient	Z-statistic	Sig.
Constant	1.350	1.627	0.105
BIND	0.444	2.892	0.004*
BSIZ	0.007	0.306	0.759
DUAL	-0.051	-0.612	0.540
BMEET	-0.001	-0.166	0.867
BOWN	-0.140	-1.285	0.200
BFEXP	0.133	0.988	0.323
BGEN	0.088	1.477	0.140
LOGFSIZE	0.466	8.907	0.000*
ROA	-0.181	-0.808	0.419
LEVER	-0.403	-2.240	0.026**
R-squared (R ²) = 0.388	Adj-R ² = 0.359	F-statistic	13.57*

Note: n = 225, * sig. (1%), ** sig. (5%).

It is evident from Table 6 that the independence of BoD's members has a positive effect on the quality of the audit measured by the paid audit fees. This effect is statistically significant at 1% and the finding is consistent with O'Sullivan (2000) who confirmed that the BoD with high independence tends to pay higher audit fees. As for the rest of the independent variables such as BoD size, CEO duality, number of the board's meetings, ownership of the BoD members, the experience of the BoD members, and gender of the BoD members, their coefficients are not a statistically significant effect. As for the control variables, we find a positive effect significant at 1% for the size of the company and a negative impact of statistical significance at

the level 5% of the company's debt on the quality of the audit measured by the audit fees. The available funds are usually used to settle any other obligations before paying high audit fees. The ROA as a control variable does not have a statistically significant impact on audit quality.

The binary logistic regression results of Model 3 (client retention period) are presented in Table 7. They indicate that the model is statistically significant, as the value of LR statistic for this model is 39.91 at 1% significance level. The results also indicate that the value of the determination coefficient (R-squared) for this model is 0.143, which means that the model explains 14% of the occurred change on the client retention period (as an audit quality determinant).

Table 7. Regression analysis results for Model 3: Client retention period as a dependent variable

Variable	Coefficient	Z-statistic	Sig.
Constant	3.123	1.118	0.263
BIND	0.660	0.749	0.453
BSIZ	0.314	3.522	0.000*
DUAL	-0.162	-0.349	0.726
BMEET	0.024	0.398	0.690
BOWN	-0.948	-1.428	0.153
BFEXP	-3.482	-3.520	0.000*
BGEN	-0.181	-0.461	0.644
LOGFSIZE	-0.138	-0.813	0.415
ROA	2.385	1.236	0.216
LEVER	-0.895	-1.013	0.311
R-squared (R ²)	0.143	LR statistic	39.91*

Note: n = 225, * sig. (1%).

According to the results presented in Table 7, it is evident that there is a positive significant impact (at 1% sig. level) of the BoD size on the client retention period (as an indicator of the audit quality). This indicates that larger BoDs are more linked to audit firm retention. This relation could be attributable to the potential of the evolution of the relationship between the company and the auditor. We also find that there is a significant negative impact (at 1% sig. level) of the BoD experience on the client retention period (as an audit quality indicator). This result can be explained that when experts sit on a company board, it is more likely that the board will not need to develop a close and personal relationship with the auditor, and the board is more convinced with the need to rotate the auditor. As for the rest of the independent variables

(see Table 7), it is found that there is no statistically significant impact on the audit quality measured by the client retention period. The same applies to the control variables (i.e., size of the company, ROA, and company debt).

The multiple regression results for Model 4 (number of audit firm professional personnel) are presented in Table 8. The analysis represents the multiple regression of a PLS method and the fixed effect method through the Hausman test. The results indicate that the suggested model is statistically significant at 1%, as the value of F-statistics for this model is 10.23. The explanatory power of Model 4 is 69% indicating that BoD characteristics explain 69% of the variation in the elected audit firm due to the number of its professional staff (as a proxy of audit quality measure).

Table 8. Regression analysis results for Model 4: Number of the audit firm's professional personnel as a dependent variable

Variable	Coefficient	Z-statistic	Sig.
Constant	-21.50	-1.277	0.203
BIND	4.95	2.419	0.016**
BSIZ	-0.390	-1.048	0.295
DUAL	0.061	0.056	0.955
BMEET	-0.097	-1.216	0.225
BOWN	-3.227	-2.262	0.024**
BFEXP	1.221	0.699	0.485
BGEN	-1.407	-1.801	0.073***
LOGFSIZE	1.836	1.833	0.068***
ROA	-4.087	-1.411	0.159
LEVER	-2.888	-1.115	0.266
R-squared (R ²) = 0.764	Adj-R ² = 0.689	F-statistic	10.23*

Note: n = 225, *** sig. (10%), ** sig. (5%), * sig. (1%).

In contrast with Kolsi et al. (2012), our results, as presented in Table 8, indicate a positive significant effect (at 5% sig. level) of the independence of BoD

members on the audit quality measured by the audit firm size, i.e., number of the professional personnel. Further, we report a significant negative impact for

each of the board members' ownership (sig. at 5%) and the diversity of the board gender (sig. at 5%) on the audit quality, when measured by the number of audit firm professional personnel. This finding is not consistent with Kuang (2011), who documented a positive relationship between gender diversity and the number of professionals in the audit firm, while Kolsi et al. (2012) indicated that there is no statistically significant relation between the board's ownership and the number of professional staff in the audit firm.

Our findings are in line with the supervision theory, which affirms that directors' ownership of shares incentivizes them to work diligently to improve the performance of the company and increase trust in the BoD, which eventually would explain their demand for better audit quality. As for the rest of the independent variables (i.e., size of

the BoD, duality of CEO, number of board's meetings, and the experience of the BoD members), we find an insignificant effect. With regard to the control variables, there is a significant positive impact (at 10% sig. level) of the company size on the audit quality measured by the number of professional personnel of the audit firm. This means that the company's size correlates with the number of professionals at the elected audit firm. This is natural as large companies in terms of assets and operational activity require larger audit firms that have the needed professional staff. As for the rest of the control variables, they have no statistically significant coefficients.

Table 9 provides a summary of the hypotheses testing results according to the four suggested models. Further comments on these results are presented in the next section.

Table 9. Summary of the study hypotheses testing results

No.	Hypothesis	Model 1 BIG 4	Model 2 AFEE	Model 3 ATENUR	Model 4 NEMP
H1	There is a positive impact of the independence of board members on the audit quality.	Reject (-)	Accept (+)	Reject	Accept (+)
H2	There is a positive impact of the BOD size on the audit quality.	Reject	Reject	Accept (+)	Reject
H3	There is a negative impact for duality of the CEO duties on the audit quality.	Accept (-)	Reject	Reject	Reject
H4	There is a positive impact of the board's meetings on the audit quality.	Reject	Reject	Reject	Reject
H5	There is a positive impact of ownership of board members on the audit quality.	Reject	Reject	Reject	Reject (-)
H6	There is a positive impact for the experience of board members on the audit quality.	Reject	Reject	Reject (-)	Reject
H7	There is a positive impact of the diversity of board members on the quality of the audit.	Reject	Reject	Reject	Reject (-)

5. CONCLUSION

This study examines the impact of the BoD characteristics on the external audit quality in service corporations listed on the Amman Stock Exchange (ASE). We contribute to the literature by providing evidence based on a multidimensional analysis of audit quality in a developing country setting to learn more about the efficacy of the most important corporate governance mechanism, more specifically the corporate board of directors. Unlike the majority of previous studies, this study focuses on the service-based companies listed on ASE during the period 2014-2018. The study models include seven independent variables related to the board characteristics, namely: board independence, board size, CEO duality, number of board meetings, board members' ownership, board members' experience, and gender diversity of the board. We control company size, profitability, and leverage. The audit quality, which is the multidimensional dependent variable, is measured in four different dimensions, namely; the auditor's association with international audit firms (e.g., Big 4), the total audit fees, the client-auditor retention period, and the number of professional personnel in the audit firm.

We document evidence of a direct effect of the independence of BoD on audit quality when proxied by audit fees and audit firm size. On the contrary, we document evidence of an adverse effect of the BoD independence on audit quality, when measured by the association with international audit firms (e.g., Big 4). Apparently, the presence of independent members enhances the internal control

and other monitoring practices over the company and thus reduces the level of manipulation, fraud, or misstatement in the financial reports and reduces the need for the best quality of external audit. However, there is no evidence of the link between the board independence and the audit client retention period. As anticipated, our findings reveal that larger boards are more capable of selecting the audit firms that are likely to provide higher audit quality, if measured by the audit client retention period. In addition, we find evidence on the adverse effect of CEO duality on audit quality, if indicated by the auditor association with international audit firms (e.g., Big 4).

In our study, board ownership, as another crucial governance mechanism, appears to have a negative correlation with the assigned auditor's quality, when measured by the number of professional personnel in the audit firm. Unexpectedly, we also report evidence of the negative influence of the board members' relevant expertise on the retention period of the audit client and no influence of the board's expertise on any other measures of the audit quality. Moreover, we document evidence that boards with gender diversity are more likely to choose smaller audit firms, in terms of the number of professional practitioners. Finally, our study does not provide conclusive evidence on the relation between the frequency of board meetings and the quality of the external auditor.

As we control for corporate size, profitability and leverage, our study reveals that bigger companies tend to choose auditors that are likely to

provide higher audit quality due to the auditor's association with an international audit firm, the high audit fees, and the greater number of professional personnel in the audit firm. Further, financially well-performing corporations are not keen on selecting auditors associated with international firms. It could be argued that struggling companies due to weak financial performance seek quality auditors that are more capable to detect weaknesses and deficiencies. In addition, highly leveraged companies select lower quality auditors as they tend to pay the lowest audit fees.

Our findings have several implications for the regulators and the practice. It is necessary to incentivize corporations to genuinely comply with the best practices of corporate governance including the CG Instructions issued by the JSC. Extra attention should be given to enhance practices

related to greater board independence, a segregation of the CEO and BoD chairman duties, and a reduced auditor-client retention term.

Given the dataset limitations in our study, there are several venues for future research. First, the dataset used in the study is limited to the Jordanian business setting, and therefore, the generalizability of inferences to other environments and jurisdictions should be considered with caution. Second, the dataset is related to 45 service companies listed on ASE for the period 2014-2018. Thus, future research can employ larger datasets for a wider range of sectors. Further, it is recommended for future studies to consider additional proxies of audit quality. Finally, investigating regional multi-country datasets can expand knowledge about governance impact over audit quality within a cultural and regional context.

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