

Assessing Audit Committee Effectiveness: An Examination of a Sample of Studies From the Recent Years

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A lot of the research from the 20th century about audit committee effectiveness (ACE) focused on the use of expertise, independence and authority of audit committee (AC) as was summarized in the DeZoort et al. (2002) study. However, AC members' independence and AC's authority are no longer a matter of choice for any company listed in the U.S. securities markets. Also, many non-U.S. researchers have studied ACE over the recent years. The current study examines how the measurement of ACE has changed since the DeZoort et al. (2002) study for ACs of companies listed in both United States and abroad.

Keywords: audit committee effectiveness, audit committee expertise, audit committee independence, audit committee diligence, audit committee authority

INTRODUCTION

The Importance of an Audit Committee

The audit committee of a company listed in the U.S. capital markets has been an important component of corporate governance for many decades because of its oversight of financial reporting. As early as in 1940, after the McKesson-Robbins investigation, the Securities and Exchange Commission (SEC) suggested that an audit committee (AC) should nominate auditors and work on the details of the audit in a listed company. It recommended that such AC should be formed from non-executive members of the board of directors. This recommendation was reiterated in its Accounting Series Release No. 123 (SEC, 1976) where the SEC once again reiterated that public companies should have audit committee made up of outside directors. In the 1970s, audit committees were primarily responsible for recommending the appointment of the external auditor, interacting with internal and external auditors regarding the internal control within the company, and for discussing the plan of audit and the resulting audit report with the external auditor (Hildebrandt, 1977).

As companies grew bigger and the separation between ownership and management widened, "shareholders and other constituencies [needed] more assurance concerning the integrity of the internal and external auditing processes and the financial reporting process" (Spangler and Braiotta, 1990, p.135). In 1978, almost four decades after the SEC recognized the importance of corporate ACs in 1940, the New York Stock Exchange (NYSE) began to require its listed companies to have an AC, and a decade later, in 1989, Nasdaq began requiring its listed companies to have an AC. In the late 1980s, the National Commission on Fraudulent Financial Reporting (NCFRR), also known as the Treadway Commission, acknowledged that ACs were important in preventing fraudulent financial reporting by public companies and made specific recommendations about ACs (NCFRR, 1987). In the late 1990s, the Blue Ribbon

Committee on Improving the Effectiveness of Audit Committees (BRC) considered the AC a catalyst for effective financial reporting and strongly recommended independence and financial literacy for the members of the AC (BRC, 1999). When the SEC (1999a) released its final rules regarding certain disclosure requirements for ACs, those rules required a listed company's AC to include a report in the company's proxy statement that was aimed at keeping the shareholders informed about the AC's financial oversight role. The same rules also required companies to disclose in their proxy statements whether there was an AC charter in place that would inform shareholders about the duties and responsibilities of the AC. The SEC (1999a) rules did not require companies to have an AC charter or have a certain minimum number of members. However, the NYSE and Nasdaq required their listed companies to have an AC charter defining the committee's duties and responsibilities and to have a minimum of three independent members on their AC. Furthermore, the NYSE required each listed company's AC to have at least one member with accounting or financial expertise and all members with financial literacy (SEC, 1999b; SEC, 1999c).

In the years leading to the end of the 20th century, the AC was considered a vital resource within a U.S. public company and was expected to act as an intermediary between management and independent auditors. The AC would understand and review management's risk assessment activities and compliance with laws and regulations, maintain communication with internal auditors, discuss with external auditors the issue of their independence when the latter provided non-audit services, review the results of the financial audit with external auditors, and monitor the overall financial reporting process within the company (Harrison & Lanier, 1995; Goodman & Scanlon, 2001).

Research Interest in Audit Committee Effectiveness

As the SEC and major U.S. stock exchanges moved towards encouraging and eventually requiring listed companies to have an AC consisting of independent directors, a body of literature related to audit committee effectiveness (ACE) also developed. While the reports of the NCFRR (1987) and the BRC (1999) made firm recommendations that could improve ACE, there were other entities such as the National Association of Corporate Directors that outlined the principles and best practices for enhancing ACE (NACD, 2000). At the same time, how effectively ACs were fulfilling their oversight responsibilities, and their role in the instances of fraudulent financial reporting were also under scrutiny (NCFRR, 1987; BRC, 1999; Beasley et al., 1999; Abbott et al., 2000; Munter, 2000). After the importance of AC's oversight of the financial reporting process was emphasized by NCFRR (1987) and BRC (1999), many researchers studied factors associated with ACE in the years leading to the end of the 20th century (Verschoor, 1989; Spangler & Braiotta, 1990; Kalbers & Fogarty, 1993; McMullen & Raghunandan, 1996; DeZoort, 1998; Scarborough et al., 1998). Further, the research interest in this area only increased and continued after regulatory changes were brought by the SEC (1999a) at the beginning of the 21st century that concerned the AC's responsibilities and disclosures (Abbott et al., 2000; Archambeault & DeZoort, 2001; Beasley & Salterio, 2001; Raghunandan et al., 2001).

The volume of the literature related to ACE in the years up until the passage of the Sarbanes-Oxley Act of 2002 (U. S. House of Representatives, 2002) was evident from DeZoort et al.'s (2002) synthesis of the then existing ACE-related literature that defined ACE as consisting of four dimensions, namely, composition, authority, resources, and diligence. The first three dimensions were the inputs needed to achieve the output of ACE by using the process represented by the fourth dimension, i.e., diligence. The input dimensions of composition, authority and resources dealt with characteristics such as (i) independence, financial expertise, AC size, and personal integrity of the committee members, all of which were recommended by BRC (1999) when discussing how to improve the effectiveness of ACs; (ii) the influence that the AC exercised as a group by its responsibilities defined by its charter and based on the listing requirements of the stock exchanges where the company was listed, and by the powers given to it by SAS 61 and SAS 90, both of which required independent auditors to communicate with the AC regarding certain matters (ASB 1988, ASB 1999); and (iii) the ability of the AC to perform its duties adequately based on the number of members on the AC, and the level of access to management, internal auditors and the independent auditor that the AC enjoyed within the company. Diligence consisted of incentive and motivation for the AC to act diligently, and its perseverance in carrying out its duties.

How the Studies in the 20th Century Assessed ACE

In their synthesis of the prior research related to ACE, DeZoort et al. (2002) described in detail how the prior research measured the different characteristics that were hypothesized to be the indicators of ACE. Thus, their synthesis summarized the attributes of ACE as shown below:

1. AC expertise was assessed based on (i) at least one AC member possessing expertise in accounting or finance, (ii) number of members on the AC with accounting and auditing expertise, (iii) technical expertise represented by whether the AC members were CPAs, or (iv) the level of match between AC members' responsibilities and their level of skills related to accounting and auditing.
2. AC independence was assessed based on whether (i) the AC had inside or outside directors, (ii) AC members had financial links to the company because of their roles as consultants or lawyers, (iii) AC members had family-based or financial ties to management, or (iv) the percentage of AC members who were independent.
3. AC's authority was assessed based on (i) whether the authority was derived from a written document and/or support from top management, (ii) its perceived responsibilities such as overseeing the work of auditors and financial reporting by management, (iii) its authority over the hiring and dismissal of internal auditors, or (iv) whether the corporate governance in the company was a creation of top management or the company's board of directors.
4. Resources available to an AC were judged based on (i) size of the AC, i.e., number of members on the AC, (ii) the amount of support it received from both internal and external auditors, (iii) how well-designed the communications between the internal auditor and the AC were, or (iv) whether the AC was in a position to regularly communicate with the internal and external auditors without the presence of the management personnel.

AC's diligence was seen as the process that harnessed the above-mentioned input factors in achieving ACE. Thus, variables like incentive, motivation, and perseverance to work together as a committee were thought to be important ingredients of AC diligence. DeZoort et al. (2002) did not find in their research any proxies for the incentive and motivation of AC members to act diligently and also for AC members' integrity and objectivity perhaps because of the intangible nature of these variables and due to the inherent difficulty in measuring such abstract concepts. AC's perseverance was however measured based on (i) how frequently the AC met, (ii) duration of AC meetings, and (iii) whether the AC made voluntary disclosures.

Limitations of the Prior Research About the Assessment of ACE

The studies included in DeZoort et al.'s (2002) synthesis of the then-existing ACE literature were based on the data from the late 20th century and recognized factors such as independence (Collier & Gregory, 1999; Abbott & Parker, 2000; Archambeault & DeZoort, 2001; Klein, 2002) and expertise (DeZoort, 1998; DeZoort & Salterio, 2001; Raghunandan et al., 2001) of AC members, and resources available to the AC (McHugh & Raghunandan, 1994; Raghunandan et al., 2001) when there were no statutory requirements concerning the size of the AC, independence and expertise of AC members, or the determination of the AC's role based on a defined AC charter. Moreover, in summarizing their study of the existing research about ACE, DeZoort et al. (2002) pointed out the following limitations of the prior literature:

- a) Judgments about the independence and experience of AC members were based on the publicly available data in the company filings, which focused more on the appearance of independence and experience rather than on the actual assessment of the substantiveness of those attributes among the AC members. Thus, the independence in appearance did not measure how much "independent thinking" was actually demonstrated by the AC members.
- b) Attributes such as integrity and objectivity of AC members were difficult to measure and evaluate.
- c) AC members worked as a group and not as individuals, and how the group dynamics affected their ability to function effectively was not captured by the then existing research.
- d) While ACs had sufficient authority granted to them by the existing rules as well as the authoritative standards and the respective companies' AC charters, an AC was (and still is) a

subcommittee of the board of directors, and as such it derived its authority primarily from the board. Therefore, the authority and influence of each AC could vary in substance depending on the amount of actual support it received from the board.

- e) There was also insufficient research about the relationship between AC's authority and ACE.
- f) Much of the information that was accessible to an AC in the past was derived from its interactions with management, internal auditors and external auditors, and thus, it was mostly second-hand information. There was a need to examine if and how ACE was negatively affected by the AC's inability to have more first-hand information received from external parties such as independent advisors and experts.
- g) AC's diligence was difficult to measure because it also depended on other factors such as the AC members' *motivation* to act diligently, which could be affected by both the appeal of positive incentives like their monetary compensation, and by the fear of disincentives such as loss of position on the committee or damage to their reputation. Further, there could be other measures of AC's diligence such as the proportion of AC meetings attended by all members of the AC, proportion of AC members who attended all meetings of the AC, or how prepared the AC members were for each meeting.

Additionally, most of the ACE research summarized by DeZoort et al. (2002) was based on studies conducted in North America, with only two studies based on U.K.'s companies. DeZoort et al. (2002) offered various suggestions about future research that could potentially remedy some or all of the above limitations of the prior research and encouraged more research regarding ACE that would measure the above four dimensions of ACE differently and better than before; examine any possible correlation and interaction among the four dimensions; and study the issue of ACE in international settings outside of the United States.

Purpose of the Current Research

Since the DeZoort et al. (2002) study, more ACE-related literature was published. The current research aims to review this recent literature published in the last two decades to examine how it contributed to the previously existing body of the literature about ACE. Specifically, the current study examines if the ACE-related literature in the last two decades continued to focus on the same measures of ACE that were previously summarized by the DeZoort et al. (2002) research, or if the recent ACE-related studies examined any new measures that were hypothesized to assess ACE, both in the United States and internationally. The following sections discuss the motivation for the current research in light of the changed role of ACs in the corporate governance of listed companies as related to financial reporting and auditing, describe the literature related to new measures of ACE that was published over the last two decades after the DeZoort et al. (2002) study, and finally provide some concluding remarks along with suggestions for future research in this area.

MOTIVATION FOR THE CURRENT STUDY

Major Developments Affecting ACs of U.S.-Listed Companies at the Beginning of the 21st Century

Around the time the DeZoort et al. (2002) study of the extant ACE literature was published, the financial reporting environment in the United States experienced a series of major scandals, which resulted in the passage of Sarbanes-Oxley Act of 2002 (SOX) and the resultant creation of a new SEC rule (SEC, 2003) that impacted forever how ACs of U.S.-listed companies would function going forward. Also, the worldwide financial crisis towards the end of the first decade of the current century resulted in the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act). The measurement of ACE *had to* evolve in response to these events since the two statutes significantly changed the authority and especially the responsibilities of ACs of public companies listed in the U.S. securities markets, as described below.

SOX and AC's Responsibilities With Respect to U.S.-Listed Companies

After the United States witnessed a series of huge corporate financial scandals in 2001-02, the then newly enacted SOX amended Section 10A of the Securities Exchange Act of 1934 to impose significant requirements regarding the independence, responsibilities and functioning of the AC of a U.S.-listed company. Overall, the passage of SOX was an important milestone in enhancing the purported effectiveness of an AC because it not only impacted the composition of a corporate AC and changed its responsibilities but also gave it the powers and resources to discharge those responsibilities. In summary, SOX potentially affected accounting researchers' future assessment of ACE as described below:

- Section 301(3)(A) of SOX and thus Section 10A-3 of the Securities Exchange Act required each AC member of a listed company to be independent according to the specified criteria. Further, Section 407(a) of SOX required a listed company to disclose if at least one member of its AC was a financial expert with the knowledge of the U.S. GAAP, and if that was not the case, the reasons for it. Both the NYSE and Nasdaq listing standards required their companies' AC to have all members financially literate and at least one member with the accounting expertise as interpreted by the company's board (NYSE, 2013; Nasdaq, 2013). Thus, measuring ACE simply based on the independence of AC members and the existence of at least one financial expert on the AC was going to be insufficient because those were now the basic requirements for the composition of an AC in the 21st century.
- SOX enhanced the authority of the AC with respect to the oversight of the company's independent auditor because Section 301(2) of SOX required that the AC *[was to] be directly responsible for the appointment, compensation, and oversight of the work of any registered public accounting firm employed by that issuer ... for the purpose of preparing or issuing an audit report or related work, and each such registered public accounting firm [was to] report directly to the audit committee*. Further, Section 204 of the Act clearly outlined the matters that the auditor must report to the AC, and it thus empowered the AC by strengthening its role vis-à-vis both internal and external auditors. Therefore, the existence or lack of a clear and written authority could not be an important factor anymore in measuring the extent of ACE because that too was a statutory requirement.
- Section 301(5) and 301(6) of SOX provided the AC with more resources by allowing it to hire the services of independent advisors as needed, and also by providing for funding by the company to enable the AC to perform its duties. Therefore, insufficient resources and inability to hire external advisors did not have to be relevant factors in measuring ACE.
- Diligence of the AC is a construct that historically has been difficult to measure. However, post-SOX, certain provisions in the Audit Committee Additional Requirements as per Section 303A.07 of the NYSE (2013) *Listed Company Manual* could help ensure that AC members would act diligently. For example, prospective AC members have to evaluate if they have sufficient time on hand before becoming a member of a corporate AC. The company board has to determine and disclose whether members who serve on more than three public companies' ACs are able to perform their duties effectively. Last but not least, subsection (b)(iii) of Section 303A.07 defines certain duties and responsibilities of the AC that include meeting regularly with the company's management, independent auditor and internal auditors to discuss certain important matters, and to report regularly to the company's board of directors. Thus, the diligence of an AC did not have to be judged solely based on how frequently it met among its members in the case of NYSE-listed companies, as was the case in the past research summarized by DeZoort et al. (2002).

The Dodd-Frank Act and AC's Responsibilities With Respect to U.S.-Listed Companies

The 2007-2008 financial crisis in the United States and the rest of the world brought into the limelight potential flaws in the corporate governance systems of large financial institutions in particular and public companies in general. The financial crisis drew attention to top management's reckless risk-taking behavior

and corporate boards' failure to provide effective oversight. One result of the financial crisis was the passage of the Dodd-Frank Act that, without mentioning the term "audit committee," highlighted the importance of reviewing risk management decisions and practices of management and assisting boards of directors in monitoring compliance with relevant securities laws and regulations, both of which are two of the many responsibilities of an AC (Anonymous, 2013). Thus, the *diligence* of the AC in carrying out these responsibilities became even more important than before when achieving ACE.

The Enhanced Role of an AC in Corporate Governance

The following review of the Proxy Statement of a major public company illustrates how the responsibilities of an AC grew and became more diverse and complex over the past two decades. The 2001 Proxy Statement of General Electric Company showed the following duties of its AC in a nutshell: (1) *To recommend the independent auditor to the Board of Directors.* (2) *To review and approve the scope of the examination to be conducted by the independent auditor, and discuss with the independent auditor any relationship or services which may impact the independent auditor's objectivity or independence.* (3) *To review and approve the Corporate Audit Staff functions.* (4) *To review results of the examinations of the financial statements of the Company by the independent auditors, their evaluation of the Company's internal system of audit and financial controls, and their annual report on the Company's financial statements.* Subsequently, the first few years in the 21st century saw important changes wherein the AC was now in charge of selecting and overseeing the independent auditor rather than "recommending" their selection. In later years, the SEC emphasized the need for an AC to examine and assess the internal controls within the company and its employees' preparedness to handle cyber-attacks and the related frauds (Dixon et al., 2019). Accordingly, the 2021 Proxy Statement of GE Co. listed among the key responsibilities of its AC additional matters such as but not limited to *overseeing the company's enterprise risk management and cybersecurity programs*, which were supplemented by fourteen areas of Audit Committee Authority and Responsibilities in the company's AC Charter.

Keeping in mind the above developments in the financial reporting and auditing environment where ACs were now expected to act as highly vigilant corporate watchdogs more than ever. The current research in this manuscript examines the ACE-related research published in the last two decades to determine if, and how the recent literature has built upon and enhanced the measurement of the proxies of ACE that were once summarized by DeZoort et al. (2002), and to identify any new measures of ACE introduced by the recent literature that were not considered by the prior research. The current research also examines how ACE is presently being assessed by researchers in both the United States and other countries, particularly since companies in other countries that are not listed on the U.S. stock exchanges are not bound by the requirements of U.S. laws and regulations.

MEASUREMENT OF ACE IN THE RECENT TWO DECADES

To examine how the literature dealing with ACE has evolved in the last two decades in terms of the measures being used to assess ACE, we reviewed 56 published studies that examined ACE in entities either in the United States or in other countries since the DeZoort et al. (2002) research. A list of the ACE-related studies examined in the sample is provided in Table 1 below.

Among the U.S.-based studies, the focus was on those based on the data gathered after the passage of SOX to assess how its requirements impacted the choice of measures for ACE. Thus, several studies related to ACE that were published in the United States in the first few years after the passage of SOX were not considered only because those studies used data from the pre-SOX years and involved the use of variables such as AC members' independence or the existence of at least one AC member with financial expertise that were not relevant as differentiating factors among ACs after the passage of SOX. The first U.S.-based study based on the post-SOX data that was included in this sample was published in 2007 (Zhang et al., 2007) and it used archival data about AC quality and internal control weaknesses, where AC quality was measured not just based on whether there was at least one financial expert but rather on the percentage of AC members who had accounting expertise and the percentage of AC members who had non-accounting

expertise. At the same time, the first internationally conducted ACE-based research included in this study was published in 2004 and was not bound by the requirements of SOX.

TABLE 1
ACE-RELATED LITERATURE SUMMARIZED IN THIS STUDY

Study by	How data were collected	ACE was measured based on
Song and Windram (2004)	Used archival data on UK companies	Directors' financial literacy, directors' share-ownership, having an 'active' audit committee
Vera-Munoz (2005)	Conceptual paper that discussed the expectations of AC responsibilities	Financial expertise or financial literacy, ability to challenge management, diligent with the ability to ask probing questions
Gendron and Bedard (2006)	Conducted interviews in three Canadian public companies	AC members' financial expertise, independence from the company, how AC meetings were structured (formal agenda, etc.), how well the members were prepared for the meetings by remaining sufficiently informed in advance of the meetings, how much time and effort was devoted to reviewing the financial reports during the meetings, ability of the AC to ask challenging questions to management
Jaggi and Leung (2007)	Studied archival data from Hong Kong firms.	Whether family members dominated the corporate board
Muniandy (2007)	Studied archival data from Malaysian public companies.	Independence of the directors on the AC
Zhang, Zhou, and Zhou (2007)	Studied archival data of U.S. firms	Financial expertise and non-accounting expertise
Crawford, Henry, McKendrick, and Stein (2008)	Used a survey in local authorities in Scotland regarding the effectiveness of AC.	Resources available to the AC based on its ability to (i) review and monitor the internal audit function, (ii) oversee the external audit process, (iii) monitor and remain engaged with the risk management strategy of the entity, (iv) oversee the financial reporting process of the entity, and (v) monitor the corporate governance framework
Ferreira (2008)	Used a questionnaire survey in South Africa	Skills and qualifications of individual members as well as diversity of skills in the AC, inside versus outside directors on the AC, absence of conflict of interest for individual AC members on an ongoing basis, size of the AC which would ensure sufficient balance of views, periodic rotation (replacement) of AC members
Lee (2008)	Studied archival data of U.S. companies	Whether at least 1/3 of the members were financial experts, and independence of all AC members
van der Nest (2008)	Semi-structured interviews were conducted in South	How well the AC performed in the areas of risk management, oversight of financial reporting, corporate governance, internal control structure, and relationship with external auditors

Study by	How data were collected	ACE was measured based on
	African national government departments	
Beasley, Carcello, Hermanson, and Neal (2009)	Used interviews with AC members of U.S. companies	AC's oversight of internal and external auditors and management, AC's willingness and commitment to do due diligence, how well AC members were prepared prior to the meeting, AC's meeting frequency and duration
Akhtaruddin and Haron (2010)	Studied archival data for a sample of Malaysian companies	Expertise of AC members, independence of AC members
Cohen, Krishnamoorthy, and Wright (2010)	Interviewed partners and managers from the Big 4 audit firms in the U.S.	AC's expertise, the power given to them to fulfill their responsibilities, the frequency and substantiveness of their meetings
Dhaliwal, Naiker, and Navissi (2010)	Used archival data on U.S. companies	Accounting expertise of AC members, whether AC members held fewer multiple directorships and lower tenure on the AC in their firms
Magrane and Malthus (2010)	Used semi-structured interviews, internal documents, and archival data from New Zealand	Financial skills and independence of AC members, whether the AC roles were clearly defined, size of the AC, how members were remunerated, appointed and inducted into the process, tenure of AC members, whether there were open and effective relationships among the stakeholders of the AC
Carcello, Neal, Palmrose, and Scholz (2011)	Studied archival data of U.S. companies	Existence of at least one financial expert on the AC, independence of all AC members, AC size, number of their meetings. [Although this study used data from the pre-SOX years, it was included because it involved the use of a new variable, CEO involvement in the selection of directors]
Dobroteanu, Dobroteanu and Raileanu (2011)	Conceptually examined the Romanian regulatory framework about AC's roles and responsibilities	Whether authoritative documents such as the law and the governance code contained sufficient provisions as to the AC's responsibilities
Habbash (2011)	Studied archival data for UK companies	Financial expertise on the AC, "full" independence of AC, size of the AC, no. of AC meetings per year
Kang, Kilgore, and Wright (2011)	Studied archival data related to low and mid-cap companies listed on the Australian Stock Exchange	Presence of multiple directorships by AC members, presence of accounting expertise and industry expertise, independence of individual AC members and stock ownership by AC members, presence of an AC charter, AC size, meeting frequency
Ika and Ghazali (2012)	Studied archival data on non-financial Indonesian companies	Used an AC effectiveness index that was based on the four dimensions of AC effectiveness identified by prior literature
Lary and Taylor (2012)	Studied the archival data of Australian listed companies	Financial sophistication and industry expertise of AC members, independence of AC members, AC's meeting frequency, AC size

Study by	How data were collected	ACE was measured based on
Offiong and Ewa (2013)	Used a questionnaire survey with Nigerian banks	Expertise, independence, and integrity of AC members, although it was not clear how “integrity” was measured
Suarez, Garcia, Mendez, and Gutierrez (2013)	Examined archival data related to Spanish non-financial listed companies	Independence of the AC from management, whether the AC was set up voluntarily or mandatorily under a legal obligation, AC meeting frequency during the year, ability of the AC to remove avoidable qualifications in audit reports and improve reliability of financial information
Contessotto and Moroney (2014)	Surveyed audit partners and managers from Australian offices of large CPA firms	Whether AC received a copy of internal audit reports and management’s responses, AC members committed appropriate amount of time to AC’s tasks, AC members received high quality agenda material before each AC meeting, AC members asked challenging questions of management, frequency of AC meetings, AC meetings allowed sufficient time for discussions on issues raised
Guo and Yeh (2014)	Used archival data from listed companies in Hong Kong, Singapore, and Malaysia	Percentage of AC members with a significant position in accounting, independence of AC members
Purcell, Francis, and Clark (2014)	Data were collected with a survey from a local government in Australia	Expertise variability, need for ongoing development, member retention, gaming behaviors and power struggles within the AC, and domination by certain AC members or management
Kamolsakulchai (2015)	Used archival data of companies listed on Thailand Stock Exchange	Ratio of members with accounting/financial expertise in the AC, AC’s size, AC’s meeting frequency
Piyawiboon (2015)	Used archival data of companies listed on Thailand Stock Exchange	Presence of at least one financial expert on the AC, AC’s meeting frequency
Al-Matari, Homaïd, and Alaaraj (2016)	Surveyed chief audit executives and internal audit members of banks in Yemen	Frequency of meetings between the AC and internal auditors, AC reviews of internal audit plans and programs including ensuring that sufficient resources were available to internal auditors, and AC reviews of the results of internal audit activities
Bin-Ghanem, and Ariff (2016)	Used archival data on financial companies in Gulf Cooperation Council countries	Proportion of AC members with financial expertise, proportion of independent directors on the AC, AC’s size, AC’s meeting frequency per year
Hashim and Amrah (2016)	Used archival data on companies from the Muscat Securities Market	Proportion of AC members with credentials or experience in accounting or finance, proportion of independent directors on the AC, AC’s size, AC’s meeting frequency

Study by	How data were collected	ACE was measured based on
Lisic, Neal, Zhang, and Zhang (2016)	Used archival data on U.S. companies	Proportion of financial experts on the AC
Wan Mohammad, Wasiuzzaman, and Nik Salleh (2016)	Used archival data on Malaysian companies	Proportion of AC members with financial expertise, independence
Ariningrum, and Diyanty (2017)	Used archival data from Indonesian public companies	Competence of AC members, size of the AC, activities performed by the AC
Safari (2017)	Used archival data of companies listed on the Australian Securities Exchange	Presence of only non-executive directors on the AC, independence of a majority of AC members, independence of the AC chair, existence of AC charter, AC's size
Ali, Singh, and Al-Akra (2018)	Studied archival data of Australian listed companies	Financial and accounting expertise by the AC chair, independence of a majority of directors, AC's size, AC's meeting frequency
Alqatamin (2018)	Studied archival data from companies listed on Amman Stock Exchange	Availability of members with accounting or finance experience, independence of AC members, size of AC, gender diversity on AC, frequency of AC's meetings
Cassell, Myers, Schmardebeck, and Zhou (2018)	Studied archival data from U.S. companies	Proportion of, and tenure of, AC members who joined the board after the current CEO's appointment
Idris, Abu Siam, and Ahmad (2018)	Studied archival data of companies listed on Amman Stock Exchange	Proportion of members with financial expertise, percentage of independent members on the AC, AC size, frequency of AC's meetings
Oussii and Taktak (2018)	Studied archival data from Tunisian listed companies	Financial and accounting expertise of members, members' independence (non-related or outside directors), AC's authority as indicated by the charter of the AC, AC's size, frequency of AC's meetings
Rani (2018)	Studied archival data on the listed companies in the S&P BSE-500 Index	Percentage of members with accounting or financial experience, proportion of independent non-executive directors on the AC, percentage of AC meetings attended by independent members, AC's size, frequency of AC's meetings
Agyei-Mensah (2019)	Studied archival data of Ghanaian listed companies	Whether the AC had at least one member with finance expertise and prior AC experience, independence of the AC, number of members on the AC, number of AC's meetings
Al-Jaifi, Al-Rassas, and Al-Qadasi (2019)	Studied yearly firm archival observations in Bursa Malaysia	AC's size, AC members' independence and financial expertise, and number of AC meetings
Al-Musali, Qeshta, Al-Attafi, and Al-Ebel (2019)	Studied archival data from firms in Gulf Cooperation Council	Financial expertise, multiple directorships of AC members, percentage of independent members above the sample median, AC Chair's independence from the CEO, size of the AC, percentage of AC members who attended AC meetings for the year, frequency of AC's meetings

Study by	How data were collected	ACE was measured based on
Ashfaq and Rui (2019)	Studied archival data from non-financial companies in India, Bangladesh, and Pakistan	Proportion of accounting and financial experts on the AC, proportion of independent members, independence of AC chair, AC members' shareholding in the company, AC size, gender diversity, proportion of foreign members on the AC, frequency of AC's meetings
Bananuka, Kadaali, Mukyala, Muramuzi, and Namusobya (2019)	Used a questionnaire survey of Microfinance Institutions in Uganda	Financial expertise, committee independence, AC's authority, AC's size, frequency of AC's meetings
Al-Okaily and Naueihed (2020)	Used archival data from UK's public family firms and non-family firms	Percentage of financial experts on the AC, AC's size, AC's meeting frequency
Azam (2020)	Studied Bahrain's Islamic banks by using interviews	Roles, duties, and responsibilities of ACs
Khoo, Lim, and Monroe (2020)	Studied archival data of U.S. companies	Proportion of AC financial experts, AC size, AC members' multiple audit committee positions where their reputation was at stake due to the multiple positions
Phornlaphatrachakorn (2020)	Used questionnaire surveys with companies listed in Thailand	Authority and resources given to the AC to protect stakeholders' interests, willingness of AC members to work together
Baldacchino, Tabone, Debono, & Grima (2021)	Studied ACE within Maltese-listed companies with structured interviews	Whether non-executive directors were chosen with proper regard to their competencies and independence, adequacy of resources provided to achieve AC's objectives, AC's ability to handle their diverse objectives
Geng, Cheng, and Zhang (2021)	Used archival data from Chinese banks	Financial expertise, AC members who had served on the board for a long period
Palupi and Karmudiandri (2021)	Studied archival data for manufacturing companies listed on Indonesian Stock Exchange	Expertise, independence of the AC, AC's authority, AC's size
Tumwebaze, Bananuka, Kaawaase, Bonareri, and Mutesasira (2022)	Used questionnaires with financial services firms in Uganda	Output factors like AC's recommendations and decisions that enhance societal and environmental welfare
Nguyen (2022)	Used archival data of banks in 7 ASEAN countries	Existence of written charter, whether all members of the AC attended 75% of board meetings, at least one AC member was a financial expert, and frequency of AC's meetings
Krishnamoorthy, Bruynseels, De Groote, Wright, and Van Peteghem (2023)	Based on archival data from U.S. public companies	The accounting and financial expertise (AFE) of AC's chair

All U.S.-based studies and the majority of the international studies in this research examined ACE based on the input factors related to AC's independence, expertise, authority, diligence, etc., whereas only two of the international studies examined ACE based on the output of the AC that was manifested in the

form of outcomes such as the quality of internal control or corporate governance, and whether the AC's decisions improved societal and environmental welfare. Further, while many of the U.S.-based studies focused on the same measurement variables such as the number of financial experts on AC, size of the AC, or the frequency of AC's meetings, several internationally-based studies examined factors such as diversity of skills within the AC and periodic rotation of AC members (Ferreira, 2008), motivation of AC members based on how they were appointed and remunerated (Magrane & Malthus, 2010), or if AC members received high quality agenda material before each AC meeting and devoted sufficient time to discussing important matters (Contessotto & Moroney, 2014). Finally, like the prior research, a large number (nearly 70%) of the studies in this sample relied on the use of publicly available archival data, whereas two studies were conceptual in nature, and the remaining studies were conducted with either interviews or questionnaire surveys. Table 2 below presents a description of the sample of studies used in this research.

TABLE 2
DESCRIPTIVE STATISTICS ON THE STUDIES EXAMINED IN THE SAMPLE

Research Method Used by the Sampled Studies	Number of Studies	ACE Was Measured Based on Input Factors		ACE Was Measured Based on Output Factors	
		U.S.-based	International	U.S.-based	International
Archival data	39	9	30	0	0
Conceptual	2	1	1	0	0
Interviews	7	2	4	0	1
Survey-based	8	1	6	0	1
Total	56	13	41	0	2

Clearly there has been a significant amount of research related to ACE in the international environment in the past two decades where 43 (or nearly 77%) of the 56 studies were based on the data collected from companies operating in foreign financial reporting environments that were not regulated by the SEC and were not directly impacted by the provisions of SOX or the Dodd-Frank Act. While most (96%) of the studies from both the U.S. and other countries examined ACE based on input factors, only about 4% of the studies examined ACE based on AC's output.

Input Measures of ACE Studied in the Last Two Decades Since the DeZoort et al. (2002) Study

An examination of the ACE literature from the last two decades showed that researchers continued to study ACE with reference to similar factors as those identified by DeZoort et al. (2002), namely, AC's financial and/or non-financial expertise, AC members' independence, integrity and objectivity, authority given to the AC and its responsibilities, the level of influence that the AC carried in the company, the amount of resources and the level of access to management and other assistance that were available to the AC, and finally the motivation of or incentive for the AC to perform diligently as well as the perseverance of the AC in fulfilling its assigned duties based on the number of meetings held by it. At the same time, some of the recent studies tried to measure ACE with new variables such as gender diversity on the AC, or the AC's ability to ask challenging and probing questions to management. In some cases, the studies used variations of previously used variables; for example, independence or financial expertise of the AC chair as against that of one or more members of the AC, proportion of AC members with financial expertise as against the existence of just one financial expert, how structured the AC meetings were as against simply the number of meetings held by the AC during the year, or the percentage of AC members who attended the meetings as against just the number of members on the AC. More details about such studies were presented before in Table 1. In general, there was an increase in the number of measurement variables that were used to examine some of the input factors of ACE as shown in Table 3 below and discussed in the following sections.

TABLE 3
INPUT MEASURES USED TO ASSESS ACE IN THE CURRENT SAMPLE COMPARED WITH
MEASURES IDENTIFIED IN DEZOORT ET AL. (2002) RESEARCH

Dimension of ACE Measured	Measures Used By the Recent Studies to Assess Each Element of ACE	Measures Identified by the DeZoort et al. (2002) Research
AC Composition – Expertise	Presence of AC chair with financial expertise	At least one AC member possessed expertise in accounting or finance
	At least one member with prior AC experience	Number of AC members with accounting and auditing expertise
	Industry expertise on the AC	If AC members were CPAs
	% of AC members who were financial experts and % of AC members who were non-financial experts	If AC members' responsibilities matched with their level of skills related to accounting and auditing
	Financial sophistication of AC members	
	Variability in expertise and diversity of skills in the AC	
	Ongoing development of AC members	
	Presence of members with multiple directorships	
AC Composition - Independence of AC Members	Independence of the AC chair [#]	AC had inside or outside directors
	Proportion of AC members who joined the board after the current CEO's appointment	AC members had financial links to the company because of their roles as consultants or lawyers
	Tenure of AC members who joined the board after the current CEO's appointment	AC members had family-based or financial ties to management
	Proportion of “inside” versus “outside” directors on the board [#]	Percentage of AC members who were independent
	Presence of only non-executive directors on the AC [#]	
	Stock-ownership percentage of AC members [#]	
	AC's ability to challenge management	
	Family members dominating the board [#]	
AC Composition - Objectivity and Integrity	No conflict of interest for the individual members of the AC [#]	AC members' integrity and objectivity were not explored sufficiently
	Integrity (without defining it)	
AC's Authority and Responsibilities Given to It	How clearly the AC's role was defined by a charter within the company	AC's authority as derived from a written document
	AC's role and responsibilities were governed by the laws and governance code, where applicable, of the region [#]	AC's perceived responsibilities such as overseeing the work of auditors and financial reporting
	Whether the AC actually oversaw the work of internal and external auditors	AC's authority over the hiring and dismissal of internal auditors

[#] Only applicable in the case of international studies where the provisions of SOX were not applicable.

Dimension of ACE Measured	Measures Used By the Recent Studies to Assess Each Element of ACE	Measures Identified by the DeZoort et al. (2002) Research
AC – Influence in the company	Powers assigned to AC by the board of directors	AC's authority as derived from the support from top management
	AC was set up voluntarily or mandatorily under a legal obligation [#]	Whether corporate governance in the company was more a making of top management or the board
AC Resources – Size of AC	Number of members on the AC	Number of members on the AC
AC Resources – Access to Management and Auditors	AC reviewed audited financial statements with management [#]	Amount of support it received from both internal and external auditors
	AC received a copy of the internal auditor's report and management's response to it [#]	How well-designed the communications between the internal auditor and the AC were
	AC's ability to review and monitor the internal audit function and oversee the external audit process [#]	AC's ability to communicate with internal and external auditors in the absence of management
AC Diligence – Incentive and Motivation to Act with Diligence	How AC members were appointed and inducted into the process [#]	
	How AC members were compensated [#]	
	AC's willingness and commitment to do due diligence and fulfill their duties	
	Whether AC members committed appropriate amount of time to AC-related tasks	
	Whether AC members received high quality agenda material prior to each AC meeting	
	How structured the AC meetings were	
	How well committee members were prepared prior to meetings	
	Number of AC positions occupied by the AC members in different entities	
	Gender diversity on the AC	
	Proportion of foreign members on the AC in the case of an international study	
	Percentage of independent AC members who attended meetings during the year [#]	
	Periodic rotation of AC members	
	AC member retention	
	Internal politics/dynamics in the AC	
	Existence of open and effective relations among the stakeholders of AC	
	Members' tenure on the board	
	Frequency of AC's meetings	Frequency of AC's meetings

AC Diligence – Perseverance	Whether AC meetings allowed sufficient time to discuss the issues	Whether the AC made voluntary disclosures
	Substantiveness of AC’s meetings	Duration of AC meetings
	Activities performed by the AC	
	AC handled its diverse objectives	
	AC’s ability to exercise the chair's power since the chair typically sets the tone for the activities of the AC	
	AC’s ability to ask probing questions	

Only applicable in the case of international studies where the provisions of SOX were not applicable.

AC’s Expertise

In the ACE-related studies examined in the current research, more studies used AC expertise than any other factor in assessing ACE in their sample, perhaps because it is still easy to determine the members’ expertise based on publicly available data about their qualifications and prior and current work experience. However, compared to the prior studies as summarized by DeZoort et al. (2002), the research in the recent decades considered several newer measures of AC expertise.

For example, Zhang et al. (2007), Lee (2008), and Hashim and Amrah (2016) measured AC’s expertise based on the proportion of AC members who were financial experts and not just based on the presence of at least one financial expert that was a statutory requirement. Ferreira (2008) considered diversity of skills in the committee because it “enhance[d] a committee’s effectiveness by providing a wider range of perspectives and knowledge to oversee company performance, strategy, and risk” (p. 97). Other new measures of AC expertise included presence of industry expertise on the AC (Dhaliwal et al., 2010; Kang et al., 2011) as against just financial expertise that was typically studied by the past ACE-related research; “financial sophistication” of AC members that examined the combined effect of AC members possessing both higher levels of accounting education and more accounting experience (Lary & Taylor, 2012); variability in expertise on the AC and ongoing professional development of AC members that would help them “maintain” their professional skills (Purcell et al., 2014); presence of at least one AC member with prior AC experience (Agyei-Mensah, 2019); and the financial expertise of the AC chair (Krishnamoorthy et al., 2023), which was different from having a non-chairing member with financial expertise since AC chairs commanded more influence in the AC. Certainly, diversity of skills and variability in industry expertise could enable AC members to bring different viewpoints and perspectives to oversee the company’s financial reporting and auditing processes. Also, unlike the prior literature, the recent literature looked beyond the existence of just one or more AC members who possessed expertise that could become outdated if not supported by the AC members’ efforts to maintain their skills (Purcell et al., 2014). Interestingly, Sharma and Iselin (2012) had claimed that when AC members held directorships in multiple companies, their time would be “spread too thinly” thus affecting their ability to perform their watchdog duties. However, Al-Musali et al. (2019) who used existence of multiple directorships as one of the measures of ACE in their study asserted that multiple directorships enhanced the knowledge base of AC members that helped in performing their oversight abilities and caused AC members to be more thorough in their work.

AC’s Independence

Independence of AC members was the second-most examined measure in the last two decades’ research about ACE. After the passage of SOX, independence of AC members was mandatory in the U.S. environment; hence, measuring it again to assess ACE was redundant. The only U.S.-based study that considered independence as a relevant characteristic of ACE assessed it based on new measure called *audit committee co-option* that was measured based on the percentage and tenure of AC members who joined the board after the CEO was appointed because the CEO’s possible involvement and influence in the selection of board members was hypothesized and eventually found to negatively associated with ACE (Cassell et

al., 2018). In addition, Vera-Muñoz (2005), in describing the concept of ACE in the post-SOX era, emphasized AC's ability to "challenge" management when warranted as an indicator of ACE.

Many of the studies held in the international environment continued to use independence of the AC as a factor associated with ACE and measured it based on whether family members dominated the company board (Jaggi & Leung, 2007); the proportion of "inside" versus "outside" directors on the board (Ferreira, 2008); the stockholdings of individual AC members in the company (Song & Windram, 2004; Kang et al. 2011); independence of AC members from the management team which would allow the AC to be able to challenge management (Suarez et al., 2013); presence of only non-executive directors on the AC (Safari, 2017); percentage of AC meetings attended by independent members (Rani, 2018); and the independence of the AC chairperson (Al-Musali et al. 2019; Ashfaq & Rui, 2019), which was different from the independence of other AC members since an independent AC chairperson could exercise a higher level of authority in the functioning of the AC (Jensen, 1993 as cited in Al-Musali et al., 2019).

One of the observations of the DeZoort et al. (2002) study was that most of the prior research on AC's independence was based on visible data such as AC members' lack of ties with the company without assessing their independence *in mind*. However, Gendron and Bedard (2006), and Bananuka et al. (2019) used interviews and survey questionnaires, respectively, to assess AC's independence and thus potentially reduced the weakness of relying on the outwardly appearance of AC's independence.

AC's Integrity and Objectivity

The variables AC integrity and AC objectivity were not very popular in the studies, perhaps because of the measurement difficulty since only two international studies used these two variables in judging ACE. Ferreira (2008) used a questionnaire survey with AC members in a sample of public and private companies and governmental and nonprofit entities in South Africa to examine AC's performance while claiming that directors who were otherwise independent had to be "objective" as indicated by a lack of conflict of interest concerning the matter being discussed by the AC. Offiong and Ewa (2013) studied ACE in Nigerian banks and considered integrity to be an important factor in the composition of their ACs, although the authors did not define how integrity was measured in the research. Overall, these two measures of ACE remained relatively unexplored in the recent research about ACE.

AC's Authority and Responsibilities

In the sample examined in this research, the oversight responsibility of an AC was measured based on the existence and content of its charter, i.e., how clearly the AC's role was defined within the company (Kang et al. 2011, Safari 2017, Oussii & Taktak 2018), and on whether the AC's role and responsibilities were governed by the laws and governance code of the region (Magrane & Malthus, 2010; Dobroteanu et al., 2011) since those studies were conducted in foreign reporting environments. The U.S.-based research on ACE did not use the existence of an AC charter as a measure of ACE because both the NYSE and Nasdaq already required their listed companies to have an AC charter. Instead, the measure used in the U.S.-based studies was whether the AC oversaw the work of external auditors (Beasley et al., 2009) as was required by sections 301(2) and 204 of SOX since SOX defined the purpose of an AC as overseeing the accounting and financial reporting processes and audits of a public company. Moreover, while the DeZoort et al. (2002) study showed the focus of AC's authority and responsibility on overseeing the work of internal auditors, the recent research about ACE focused more on AC's authority concerning the hiring of and overseeing the work of external auditors as was mandated by Section 301(2) of SOX.

AC's Influence in the Company

The previous research summarized in DeZoort et al. (2002) study examined AC's influence in the company based on whether the AC enjoyed support from the top management or the board because, prior to SOX, U.S. public companies were not *legally* required to have ACs made entirely of independent board members. As against that, in the ACE-related research examined in the current study, the influence that the AC exerted within a company was measured based on a different variable, namely, the powers assigned to the AC by the board of directors (Cohen et al., 2010), which was more appropriate since SOX defined the

AC as a committee of board of directors, which implied that the AC was to derive its powers directly from the board and not from management. Another measure used when the study was conducted in an international setting was whether the formation of the AC was voluntary or legally required (Suarez et al., 2013) because a legal requirement would give the AC a more solid foothold in the company's corporate governance.

Resources Available to AC

As indicated by the number of its members, the AC's size was still an important measure of resources available to the AC because close to 40% of the studies examined in this research continued to evaluate AC's resources based on its size. The number of members on the AC was always considered important because having a sufficient number of members on the AC would allow it to fulfill its responsibilities without putting too much burden on individual AC members (DeZoort et al., 2002), and also to have a sufficient balance of views within the AC (Ferreira, 2008) as well as have enough manpower to achieve the various diverse objectives of a typical AC (Baldacchino et al. 2021), which would not be easy if the AC was small in size. Having a reasonable number of members on the AC would also allow it to function effectively by making it more likely that a sufficient number of members were present at each meeting even if all AC members were unable to attend every single meeting.

In their synthesis of the prior ACE-related research, DeZoort et al. (2002) claimed that "support from the external and internal auditors [was] vital to ACE" (p. 59), and that support from internal auditors including ongoing interactions with them was important for the AC to function effectively. In the current research, Crawford et al. (2008) also considered the ability of the AC to review and monitor the internal audit function, oversee the external audit process, monitor and remain engaged with the risk management strategy of the entity, oversee the financial reporting process of the entity, and monitor the corporate governance framework when assessing ACE in Scotland. Access to management and internal auditors was considered an indicator of ACE. It was measured as such in another international study (Contessotto & Moroney, 2014) based on whether the AC received a copy of the internal auditor's report and management's response to it. Since the AC's responsibility concerning the work of internal and external auditors was a *mandate* of SOX, which required a U.S.-based company's AC to ensure that the internal audit function was working effectively within the company in addition to overseeing the work of external auditors, none of the U.S.-based studies of ACE considered interactions between AC and external and internal auditors as a measure of resources available to the former in carrying out its functions. Also, Sections 204 and 301 of SOX empower the AC of a U.S. public company and provide it with the necessary resources to enable it to perform its oversight role in the company, because of which use of available resources as a measure of ACE in U.S.-based public companies was redundant.

Motivation of AC to Act Diligently

This was one dimension of ACE where the biggest change was seen in its measurement in recent studies. DeZoort et al. (2002) had summarized two elements of AC diligence based on the previous research where the first element, namely, the motivation of or incentive for the AC to act diligently, was recognized as being difficult to measure because it involved an intangible concept such as the willingness of AC members to act diligently. As a result, there were no definite measures of this aspect of AC diligence in the prior research. As against that, the recent research of the last two decades assessed this aspect of AC diligence using several new measures not previously identified in DeZoort et al. (2002) research.

For example, in assessing AC's incentive and motivation to act diligently, Gendron and Bedard (2006) examined how AC meetings were structured (e.g., with a formal agenda), how well members were prepared for the meetings by remaining sufficiently informed in advance of the meeting, and how much time was devoted to reviewing financial reports. Ferreira (2008) surveyed ACs in South Africa to study if there was a periodic rotation of members on the AC since a periodic rotation could bring in new members on the committee who could objectively review the work of the members they replaced and maintain impartiality and professional skepticism in the work of the AC. Beasley et al. (2009) examined how members were selected to be on the AC which could potentially affect their motivation to work objectively and the AC's

willingness and commitment to act with due diligence. Dhaliwal et al. (2010) studied AC members' tenure on the committee. They found a positive association between lower tenure of AC members and ACE, thus concurring with Sharma and Iselin (2012) who also claimed that directors with longer tenure on the board would experience impairment of their independence. However, at the same time, Geng et al. (2021) took a favorable view of the tenure of AC members on the board because "audit committee members with long board tenures have more experience and commitment to the [organization], which enables them to provide more effective oversight ..." (p. 598).

Magrane and Malthus (2010) studied in their New Zealand-based sample how AC members were appointed and remunerated, the tenure of AC members, and whether there were open and effective relationships among the stakeholders of AC, all of which could impact their motivation to act diligently. Purcell et al. (2014) focused on issues such as retention of AC members, and power struggles within the AC resulting in domination by certain members of AC, which could affect the dynamics within the AC. Contessotto and Moroney (2014) studied whether AC members received high quality agenda material before each AC meeting, which could affect the quality of their participation in the meeting, and also studied if AC members committed appropriate amount of time to the AC's tasks. Alqatamin (2018) and Ashfaq and Rui (2019) observed gender diversity on AC claiming that women brought a different perspective to the AC, and cited prior research that showed positive association between the presence of women on the board and the firm's performance. Al-Musali et al. (2019) considered the percentage of AC members who attended AC meetings for the year since it showed how active and committed the members were in their performance. Ashfaq and Rui (2019) also examined the proportion of foreign members on AC, although it showed a negative association with ACE. Phornlaphatrachakorn (2020) studied the willingness of AC members to work together which could ultimately affect ACE. Finally, Khoo et al. (2020) examined AC members' memberships in multiple ACs and claimed that it would impact their motivation to work more effectively because their reputation was at stake. Thus, unlike the past research summarized in the DeZoort et al. (2002) study that did not find any definite measures of AC's motivation to work diligently, the recent research examined in the current study used a variety of measures of motivation of the AC to act diligently.

Perseverance Shown by AC

The other element of AC diligence, namely perseverance, was examined in the prior research using a small set of measures as shown in Table 3, with frequency and duration of AC meetings during the year being the most commonly used measures. Many recent studies still focused on using the frequency of AC meetings to observe AC diligence as summarized in Table 1. A significant number of these studies were conducted in an international environment.

Yet, in contrast to the prior research, the perseverance of AC was examined with several more measures in the recent research on ACE. Other measures of AC's perseverance included AC's ability to ask probing or challenging questions to management (Vera-Munoz, 2005; Gendron & Bedard, 2006); the substantiveness of AC meetings (Cohen et al., 2010) where the AC was not just acting symbolically but instead was exercising its powers in reality as conferred upon it by SOX; the amount of time allowed by the AC for a discussion of the issues raised and the amount of time that was committed by the AC members to the committee's tasks (Contessotto & Moroney, 2014); types of activities performed by the AC in addition to its formal meetings (Ariningrum & Diyanty, 2017); whether the AC handled its diverse objectives such as appointment and oversight of external auditors, monitoring the financial reporting process, and engaging in risk management oversight without being overwhelmed (Baldacchino et al., 2021); and AC's ability to exercise the chair's power since the chair typically sets the tone for the AC's activities (Coetzee et al., 2023).

The prior research had also measured AC's perseverance based on whether the AC made a voluntary disclosure to investors. Since the SEC (1999a) made it mandatory for AC disclosures to appear in the proxy statement of a public company, voluntary disclosure by the AC was no longer a relevant measure of AC's diligence; hence, the recent research based on U.S.-based ACs did not use such a measure.

Output Measures of ACE Found in the Current Sample

In addition to examining the indicators of ACE based on various input factors, a few studies conducted in international settings also examined the existence of ACE based on the output of the AC's work. For example, van der Nest (2008) assessed ACE based on how well the AC performed in key areas of its functions such as risk management oversight, governance, financial reporting, internal control, and supporting the external audit function; so, the AC was considered ineffective if it failed to adequately perform in one of the above areas of its responsibility. Also, Tumwebaze et al. (2022) studied ACE in Ugandan financial services firms and assessed ACE based on whether the AC's recommendations and decisions resulted in improved societal and environmental welfare.

CONCLUDING REMARKS

The topic of ACE is important because even with a large-sized AC that has full access to all the constituencies within the company and whose members enjoy complete independence in thinking and are of highest moral character, there is no 100% assurance that the AC will be highly effective in discharging its responsibilities unless the members can meet frequently enough as a group and exercise due diligence in carrying out the committee's responsibilities (BRC 1999). There are some inherent limitations to the effective functioning of the AC in that the members are often located at a distance from one another and hence not all of them may be able to meet as often as necessary. Besides, financial literacy differs from financial expertise, and not all AC members may have the required financial, industry-related and firm-specific expertise to understand the complexities of the company's business activities and their financial consequences. Educational credentials in accounting and finance may not always result in accounting and financial *expertise* depending on each AC member's work experience. Furthermore, for the large part, AC members depend on the information management provides them (DeZoort et al., 2002). And above all, the level of diligence exercised by individual AC members and by the AC as a group, which is a key element of ACE, is hard to observe and measure (*ibid.*). Therefore, it is not surprising that researchers and the accounting profession have periodically studied ways to assess and possibly enhance ACE.

The past four years have shown us great uncertainty and business disruption because of the Coronavirus pandemic and its lingering effects, and have made it vital for ACs to focus on areas of responsibility such as risk assessment and management, compliance with the ever-evolving SEC disclosure rules, newer issues with the financial statement presentation and disclosure of key items, and risks of fraud. Under such circumstances, factors such as AC's expertise, objectivity, motivation and incentive to work diligently, and AC members' determination to work collectively as a team to fulfill their watchdog responsibilities have become very important. It also means that the research interest in assessing ACE will grow as researchers try to determine what variables closely proxy for ACE.

Some of the variables examined in the past century, such independence of AC members, presence of a financial expert on the AC, the existence of an AC charter, and the AC's ability to independently access assistance from external advisors, are not relevant anymore in studying ACE since these are now constants in the equation to measure ACE. At the same time, the ACE-related research of the past two decades has once again demonstrated that certain variables such AC members' integrity and objectivity remain significantly unexplored because of the continued difficulty in measuring them. Further, other limitations of the prior research that were highlighted by DeZoort et al. (2002) such as, not giving enough attention to the group dynamics in the AC or not examining the ability of AC members to work together as a team, the amount of "actual support" received by an AC from the company's board of which it is still a subcommittee, and the AC members' independence *in mind* as against independence *in appearance* are still comparatively unexplored. Most importantly, in the post-Dodd Frank Act period, the role of the AC in overseeing risk assessment and risk management practices seems to have remained relatively invisible in the recent ACE-based research. Last but not least, the technological innovations of the past twenty years have introduced newer challenges in the corporate world such as (i) handling vast amounts data securely, (ii) maintaining data privacy, (iii) protecting against cybersecurity violations, (iv) assessing the risks of controls when

dealing with external service providers, and (v) being up-to-date with the fast-evolving use of AI in the financial reporting and auditing processes.

With such background, there is now a heightened need for AC members to demonstrate not just their accounting expertise but also their industry knowledge based on the company where they serve on the AC, and to acquire and practice a variety of other skills that are supplementary to that knowledge in carrying out their duties. So, just possessing an accounting certification or working in a C-level financial position may not be sufficient if all of that expertise is related to a company or an industry that is very different from the business of the company where the AC member serves. Furthermore, how well the AC members maintain the currency of their accounting and industry expertise will also play a role in the determining ACE. In addition, to prove their role as true corporate overseers, ACs must be able to show, in a measurable way, their inherent motivation to act conscientiously, not just to protect their own reputation but to serve and protect the interests of those who rely on their oversight of the financial reporting process. For example, if serving on the ACs of multiple companies in the same industry is expected to increase the expertise of an AC member but also increase their workload and make it impractical for them to attend many of the AC meetings, then the published number of AC memberships and directorships for individual members is not going to help judge how effectively the AC is or is not functioning without knowing if its members can devote enough attention to their committee responsibilities. In such cases, the researchers may have to gather data by using methods such as experiments or interviews when judging how effectively the individual AC members can work together and perform their responsibilities.

Suggestions for Future Research

With some of the statutory changes that happened in the past two decades, the terms “AC expertise” and “AC diligence” may take a completely new meaning, thus offering new opportunities for research in the area of ACE. Researchers will have to explore new measures of AC expertise such as the how well the AC members have retained and updated their expertise after initially securing the position on the AC. While independence in appearance may be observed based on the publicly available information, independence in mind and thinking will have to be assessed using interviews and/or questionnaire surveys, which was not observed in the sample used in the current study where less than 15% of the studies used surveys and nearly 70% of the studies relied on archival data. Archival data are publicly available and hence are easy to obtain; but such data also come with their own limitation of being too general at times and not targeting on the specific measure of interest. For example, the published information about the composition of an AC may provide one view of the AC’s gender diversity; however, more useful information about the AC members’ motivation to act diligently based on their gender diversity may be found through data collected by interviews or with an experiment study, where feasible. Finally, similar to what DeZoort et al. (2002) suggested, research to understand the overlap among the different proxies of ACE such as independence and motivation, integrity and perseverance, expertise and influence, would be useful, which has not yet happened adequately in the recent research, and thus it provides new possibilities for future researchers.

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