

CONTRIBUTORS TO AUDIT COMMITTEE EFFECTIVENESS: AN EXPERIMENTAL STUDY OF EXTERNAL AUDITORS' PERCEPTION

Mohammad K. Shbeilat *

* Faculty of Business, Tafila Technical University, Tafila, Jordan
Contact details: Faculty of Business, Tafila Technical University, P. O. Box 179, Tafila 66110, Jordan



Abstract

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Effective audit committees are the best guarantee of sound corporate governance (Levitt, 1999). Thus, the investigation of factors affecting audit committee effectiveness (ACE) is the main objective of this study. Specifically, it evaluates the impact of audit committee independence, financial literacy, authority, and diligence on ACE. A mixed method approach is adopted consisting of a fully crossed, within-subjects design to test the main and interactive weights of the four variables and eight in-depth interviews. The analysis of 55 survey-based factorial experiments reveals that financial literacy has the greatest effect on the external auditor's decision to assess the effectiveness of audit committees followed by diligence, independence, and authority. Additionally, three significant interactions were found indicating that external auditors process decision-making information configurally, which means that external auditors consider the combined effects of the posited factors. The interviews provide constructive explanations of the effects of the four factors along with their interactive effects. The insights gained from this study are useful to the board of directors, professional bodies, and regulators charged with developing corporate governance seeking the optimal composition of audit committees. These results are vital because they reflect the viewpoint of the external auditors, who are the most communicative and interactive with the audit committees.

Keywords: Audit Committee Effectiveness, Corporate Governance, External Auditor, Mixed Method, Within-Subject Design

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1. INTRODUCTION

Shareholders and stakeholders rely on certification by external auditors of the integrity of financial statements (Reguera Alvarado et al., 2019). Truly independent auditors are the best to provide such credible certifications. Therefore, looking to hire truly independent auditors starts from the stage of

their appointment and also depends on the body that deals and cooperates with them. These roles are entrusted to the audit committees based on best corporate governance practices. External auditors are the most important components of governance in terms of communication with audit committees as evident, for example, by the Sarbanes-Oxley Act (SOX), the Principles of Corporate Governance issued

by the Organization for Economic Co-operation and Development (OECD, 2015), Spanish Governance Code for Listed Companies (National Stock Market Commission, 2020), the Jordanian Corporate Governance (Jordan Securities Commission, 2017) and the UK Corporate Governance Code (Financial Reporting Council [FRC], 2018). The audit committee is the cornerstone in securing pillars of corporate governance due to the vital roles it plays in selecting and securing the external auditor's independence and maintaining the internal auditor's effectiveness. Therefore, establishing an effective audit committee is a crucial decision of the company board of directors to ensure the best communication with the auditors. International standard on auditing (International Auditing and Assurance Standards Board [IAASB], 2015) states that auditors must communicate key audit matters with those charged with governance who are usually members of the audit committee (Shbeilat, 2019). Thus, forming an effective audit committee results in a greater efficient communication process with external auditors and consequently enhances audit quality.

The former US Securities Commission chairman argued that "Qualified, committed, independent and tough-minded audit committees represent the most reliable guardians of the public interest" (Levitt, 1999, para. 3). This argument is reasonably justified by the vital tasks assigned to audit committees, such as overseeing the scope of the audit, reviewing external auditor's assessment of the internal control, and settling any disputes that arise between the auditor and the company's management (Shbeilat, 2018; Albawwat et al., 2021). Furthermore, audit committees have the authority to call for meetings with external auditors individually, i.e., without interference from the company's management.

DeZoort et al. (2002) synthesized empirical studies on audit committee effectiveness (ACE) to better direct future research in this area. They indicated that one of the most important limitations of their study is the overlap and interaction between the variables that affect ACE, accordingly, they recommended future studies to explore "how composition variables (e.g., independence, expertise) interact with authority variables ... and resource variables" (p. 68), and also they emphasized conducting mixed method research rather than focusing on merely "archival and survey methods in audit committee studies" (p. 69). In the same context, a relevant literature review by Malik (2014) recommended that "Future research should focus on how compensation interacts with other attributes of audit committees and what forms of compensation interact with independence and expertise to make audit committees most effective" (p. 113).

The vital role that the audit committee plays in ensuring the integrity of financial reporting has motivated this study to investigate the factors contributing to the ACE, which may be beneficial to regulators. Given that the contributors to ACE are interdependent, the effectiveness of the audit committee can be judged as high despite the low evaluation of some of its elements (DeZoort et al., 2002; Malik, 2014), thus, more empirical validation is needed to investigate whether Jordanian external auditors process the elements of ACE configurally. This study seeks to investigate audit committee

independence, financial literacy, authority, and diligence in addition to the potential interactions between these factors as contributors to the effectiveness of audit committees from an external auditor's perception. Moreover, this study combines factorial experimental questionnaires with semi-structured interviews to further validate the study findings and to shed light on the degree of self-insight of Jordanian auditors in their professional judgements. Configural information processing is linked to the self-insight of decision-makers. A higher level of self-insight indicates that decision-makers have higher levels of decision-making confidence, accuracy, and consistency. Gauging the level of self-insight can be "assessed as the correlation, overall cues, between a subject's cue usage and the importance rating subjectively attached to each cue (e.g., by allocating 100 points among the cues" (Solomon & Shields, 1995, p. 151). This paper is expected to provide valuable information for regulators, especially those responsible for developing corporate governance codes, on the optimal composition of audit committees.

The remainder of the paper is structured as follows. Section 2 provides a review of the relevant literature and presents the hypothesis and questions of the study. Section 3 provides an overview of corporate governance and the audit profession in Jordan followed by Section 4 where the research design, methodology, and justification of the study sample are provided. Section 5 discusses both quantitative and qualitative results, while Section 6 concludes the paper.

2. LITERATURE REVIEW

The existence of the audit committee is vital to the successful implementation of the supervisory and accountability functions regarding the performance of line managers and auditors (Ali et al., 2018). Effectively functioning audit committees helps improve the robustness of financial reporting and thus strengthen the pillars of corporate governance. However, the presence of the audit committee does not guarantee its effectiveness, therefore, it is necessary to focus on the composition, activities, and powers of audit committees to ensure their effectiveness (Shatnawi et al., 2019).

This study is based primarily on agency theory; the separation of corporate ownership from directors created an information gap needed by the shareholders who, in turn, authorized an external body to lend their companies' financial reports credibility. These selected independent auditors are perceived to provide an objective and unbiased report to users of the financial statements. The external auditor is first nominated by the audit committee and then formally elected during the general meeting of shareholders. Coordination between the audit committee and the auditor in matters of accounting and auditing to ensure the robustness of the financial statements continues until the auditor's report is written. Therefore, the audit committee is viewed to reduce information asymmetry between the preparers of the financial statements and its owners (Köhler, 2005). "In fact, from an agency perspective, the audit committee is

considered to be a monitoring mechanism in the area of the financial reporting process that attempts to reduce the principal-agent problem” (Oussii & Boulila Taktak, 2018, p. 37).

A literature review by Malik (2014) documented that the pre-SOX literature focused on investigating the impact of audit committee composition on its effectiveness, while the post-SOX literature focused on examining the relationship between audit committee independence and financial literacy on committee effectiveness. Jordanian corporate governance requires that all members of the audit committee be qualified and have experience in financial and accounting matters. For this study, financial literacy means possession of academic qualifications, financial training, and experience in the fields of accounting, auditing, and related fields. On the other hand, the independence of the audit committees is one of its most important pillars, as it is an indication of performing its work objectively and impartially. The Jordanian Corporate Governance defined independent members as:

“members who enjoy complete independence in exercising their duties, expressing their opinions, making decisions, and voting on the decisions of the company with all objectivity and impartiality with the aim of achieving its interests, so that independent members do not have any relationship with the company other than their membership in the Board of Directors” (Jordan Securities Commission, 2021, p. 6).

The authority of the audit committee is also linked to its effectiveness, and most importantly, the audit committees actually perform their responsibilities and not remain just written powers in their charter (Kalbers & Fogarty, 1993). The definition of the authority of the audit committee in this study has been adapted from the framework of DeZoort et al. (2002) to be consistent with Jordanian legislation, that the authority refers to the powers they derive from the board of directors, corporate law, instructions of corporate governance, directives of the securities commission, and stock exchange listing requirements. Examples of the most important and common powers of the audit committees are the nomination of both external and internal auditors, the authority to meet with both external and internal auditors without the presence of executive directors as appropriate, requests for clarifications from the executive management, especially with regard to the auditor’s observations and the right to seek the assistance of legal and technical experts from outside the company when necessary.

The frequency of audit committee meetings is the most appropriate and common proxy for diligent audit committees (Sharma et al., 2009; Raghunandan & Rama, 2007; DeZoort et al., 2002; Greco, 2011), thus the U.S. Securities and Exchange Commission and most advanced global corporate governance emphasized the importance of frequent meetings of the audit committee. In Jordan, audit committees must hold their meetings periodically, at least four times a year, and periodically meet with auditors without the presence of executive management at least once a year.

A review of the relevant literature in Jordan revealed the relative impact of the importance of

the characteristics of audit committees on the performance of companies and the audit profession. Alqatamin (2018) investigated the impact of audit committee characteristics on company performance (proxied by ROA: return on assets). Using a sample of 165 listed Jordanian non-financial companies covering the period 2014–2016, the regression results of Alqatamin’s (2018) study indicated that the size of the audit committee, gender diversity, and the independence of members have a positive impact on the company’s performance. Multiple regression analysis of 72 Jordanian listed companies covering the time period 2013–2016 revealed that the level of voluntary disclosure is positively affected by the presence of an independent and diligent audit committee (Altawalbeh, 2020). Alzoubi (2019) reported that the number of audit committee meetings with the head of the internal audit alleviates earnings management in Jordan. Alkilani et al. (2019) found that Jordanian listed companies whose audit committee members have accounting and auditing experience are more likely to obtain a modified audit opinion.

A meta-analysis of 58 prior studies by Inaam and Khamoussi (2016) found that experienced, diligent, and independent audit committees also mitigate earnings management practices. Similar results were found in Nigeria by Alhassan et al. (2019) who concluded that audit committee expertise is associated with fewer earnings management practices and a higher level of financial reporting quality.

The relationship between ACE and audit fees was investigated by Januarti et al. (2020), using a multiple linear regression analysis from a sample of Indonesian listed companies, the study found that both the independence of the audit committee and the number of its meetings are linked to a larger size of audit fees. The study justified this by the fact that a diligent and independent audit committee is exercising its supervisory role over the financial statements more effectively and that it is more interested in selecting qualified auditors.

In Oman, Raweh et al. (2021) found an interaction between the audit committee’s financial expertise and industry experience in reducing the need for additional audit efforts and time, which leads to less delay in preparing audit reports. The study concluded that “industry experts in AC [audit committee] significantly strengthen financial experts to reduce delays in audit reports” (p. 15). In Egypt, the panel data analysis of listed companies from 2016 to 2018 indicated a significant positive relationship between the audit committee’s financial expertise and corporate performance (proxied by ROE: return on equity) (ElHawary, 2021).

Draeger et al. (2022) found that powerful audit committees limit earnings management and contribute to the convergence between earnings announcement and audit completion, thus enhancing the reliability of financial statements. In Australia, Ali et al. (2018) measured ACE by investigating the effects of independence, diligence, size, and financial expertise. The study concluded that effective audit committees better hold auditors accountable, which contributes to increasing audit quality. Similar results were also reported in Malaysia by Kuan Pei See et al. (2020) who found a positive effect between audit committee diligence and independence on audit quality.

In Spain, de Andrés Suárez et al. (2013) investigated the role of the audit committee in improving the quality of financial reporting. The study found that the diligent audit committee in terms of frequency of meetings is positively associated with enhancing the quality of financial reporting. On the other hand, the results indicate that the presence of a dominant proportion of independent members (not fully independent) does not affect the effectiveness of the audit committee. The study attributed the reason for this to the fact that the audit committee, in order to be able to confront opportunistic managerial practices and reduce conflict of interests, must have additional characteristics such as having appropriate authority and powers, in addition to the presence of members who possess accounting and financial expertise. It should be noted here that Jordanian corporate governance does not require that all members of the audit committee be independent but rather requires the formation of the committee from non-executives and at least two independent members.

The above-mentioned literature showed the differential impact of the audit committee characteristics on the auditor's performance and the quality of financial reports, while this study experimentally examines the main and interactive weights of the audit committee's independence, financial literacy, authority, and diligence on ACE, in addition to identifying the reasons behind this effect qualitatively. Moreover, this study aims to verify whether the Jordanian external auditors process information configurally and to determine the degree of self-insight that the auditors have when evaluating the characteristics of the audit committee.

2.1. Research questions

The main and interaction effects of independent factors have been examined in previous experimental studies (Al-Sukker et al., 2018; Ngigi, 2014). Interaction between the study variables may result in other (new) factors having significant effects on the dependent variable (Wood, 2002). In addition, the variance between the subjective scale (self-reported weights) and the objective measure obtained from the experimental questionnaire, reflects the degree of self-insight demonstrated by the Jordanian external auditors. Thus, this study seeks to answer the following research questions:

RQ1: What are the relative main and interactive weights of audit committee independence/audit committee financial literacy/audit committee authority/audit committee diligence on external auditors' perceived assessment of audit committee effectiveness?

RQ2: What degree of self-insight do Jordanian external auditors display when evaluating audit committee effectiveness they deal with during the engagement?

RQ3: How and why do audit committee independence, financial literacy, authority, and diligence affect Jordanian external auditors on their assessment of audit committee effectiveness?

2.2. Research hypothesis

This study seeks to find out whether the Jordanian external auditors take into account the interaction between the posited independent variables in addition to their main impact on the dependent variables during their judgmental decision-making. Configural information processing refers to situations in which a decision maker's interpretation of an item of information may differ depending on the nature or levels of other information available (Brown & Solomon, 1991; Slovic et al., 1972). In fact, auditors' configural information processing and how variables interact to influence auditors' decision-making process have been previously examined (Leung & Trotman, 2005, 2008; Al-Sukker et al., 2018; Hooper & Trotman, 1996). For instance, Al-Sukker et al., (2018) concluded that Jordanian external auditors consider the influence of internal auditors' objectivity, competence, and work performance configural when deciding the extent of reliance on the work of the internal auditor.

This study hypothesizes that Jordanian auditors process their judgment decision-making configurally when evaluating ACE; this proposition means that auditors consider the main impact of each of the four posited independent variables as well as their interactive influence. Hence, the study hypothesis states that:

H1: Jordanian external auditors process audit committee characteristics configurally when assessing the extent of audit committee effectiveness.

3. CORPORATE GOVERNANCE IN JORDAN

The first instructions of corporate governance were adopted in 2009 for Jordanian shareholding companies. In 2017, the second version of corporate governance was issued, which obligated companies to issue a corporate governance report and appoint a corporate governance liaison officer (Jordan Securities Commission, 2017). Currently, the Jordan Securities Commission is working on issuing a new project for the governance of shareholding and private companies (Jordan Securities Commission, 2021). To keep pace with international standards of disclosure and transparency, the Jordan Securities Commission issued instructions to enhance compliance with disclosure, accounting, and auditing standards for listed companies in 1998; these instructions were modified in 2004 and 2019. The instructions regulate the mechanism for disclosing the preliminary, annual, semi-annual, and quarterly financial statements (Jordan Securities Commission, 2004). On the other hand, the Jordan Securities Commission has issued a list of auditors authorized to audit the entities subject to the supervision of the Jordan Securities Commission and updates it periodically (Jordan Securities Commission, 2019).

Jordanian listed companies have been obligated to form audit committees since the issuance of the instructions of accounting and auditing standards in 1998. Since then, the formation and powers of audit committees have evolved with the development of corporate governance in Jordan. The Jordanian corporate governance states that the audit committee shall consist of at least three non-executive members who are experts in

financial and accounting matters; provided that the majority of the members are independent and that the chairperson of the committee is one of the independent members.

Audit committees in Jordan have broad powers similar to those adopted in developed countries that apply best practices of corporate governance. The most important supervisory powers of the audit committee are to nominate both external and internal auditors, supervise their work, and act as a link between them and the company's executives. To further enhance the performance of the external auditor, the audit committee must meet with the auditor without the presence of any member of the executive management. This allows the committee to review the auditor's reports, observations, and recommendations related to the financial reports and to follow up on the executive management's response to them.

In 2020, the Jordan Securities Commission adopted the eXtensible Business Reporting Language (XBRL) as a means of electronic disclosure to keep pace with regulations adopted by most international regulators. The system aims to enhance disclosure, transparency, fairness, accuracy, and speed of the disclosed reports and to ensure equal opportunities for investors to access the necessary information. Entities subject to the supervision of the Securities Commission, including the auditors, shall provide it with financial and non-financial disclosures in Arabic and English in accordance with the electronic forms prepared for this purpose (Jordan Securities Commission, n.d.; Amman Stock Exchange [ASE], n.d.). Examples of disclosures related to the composition of the audit committee in a corporate governance report through XBRL are audit committee names, numbers, qualifications, and experience of committee members in accounting and finance. The governance report should also indicate whether the member is executive/non-executive, independent/non-independent, the number of audit committee meetings, and the number of meetings with the external auditor without company management present.

The first official law regulating the audit profession was issued in 1961. With the development of types of companies and their commercial and financial activities, the law was amended in 1964 and 1985. Under the Auditing Act of 1985, the Jordan Association of Certified Public Accountants (JACPA) was established which worked to implement international accounting and auditing standards (International Standard on Auditing, ISA). However, international accounting and auditing standards were officially adopted with the issuance of the Corporate Law of 1997 (International Federation of Accountants [IFAC], n.d.; Almarayeh et al., 2020). The current law regulating the audit profession is Law No. 73 of 2003. This law aims to advance the profession and adhere to international accounting and auditing standards, enhance academic and professional capabilities, adhere to the rules of professional conduct, and enhance the performance and independence of the auditor. As in most countries, to become a certified public accountant in Jordan, the applicant must 1) have a university degree in accounting or any of the related fields with 24 credit hours of accounting major, 2) pass the professional practice exam

successfully, and 3) undergo professional training under the supervision of a certified auditor. In addition, the auditor must provide evidence of continuing professional education equivalent to 20 hours annually (JACPA, n.d.-a).

4. RESEARCH DESIGN AND METHODOLOGY

This study uses a concurrent mixed approach in which data are collected and analyzed for both quantitative and qualitative methods simultaneously. Combining survey-based quantitative experiments with semi-structured interviews provides strong internal and external validity and enhances the reliability of study results. Triangulation of methods brings benefits to each other on the one hand and mitigates the deficiencies of each other on the other hand (Sekaran & Bougie, 2016; Creswell & Creswell, 2017; Bryman, 2006).

"Experiments are well-suited to studying causal relationships" (Shadish et al., 2002, p. 7). In a fully crossed, within-subjects design, the subjects serve as their own control, whereby the term "within" means that the researcher studies different conditions (scenarios) within the same group, i.e., each participant experiences all levels of the independent variable (Coolican, 2018). Combining an experimental study with a qualitative method gives the results of the study a high degree of power, allows researchers to infer causal relationships between study variables, and enhances the robustness of the study results (Montoya, 2022; Maxwell et al., 2017; Yin, 2014; Shadish et al., 2002).

In the quantitative side of this study, factorial experimental treatment was used to investigate the main and interactive effect of the independent variables on the perceived ACE. On other hand, semi-structured interviews were conducted with Jordanian external auditors to substantiate and help interpret the observed effect.

4.1. Unit of analysis and data collection

The population of this study consists of Jordanian certified public accountants whose contact information was obtained from the website of the JACPA (JACPA, n.d.-b). All the Big 4 audit firms and many large international audit firms operate in Jordan. Eighty experimental questionnaires were distributed by hand to a random sample of external auditors during the first quarter of 2022, and 55 usable questionnaires were collected and analyzed representing a 69% response rate, however, this sample size of participants dealing with experimental research, is justified when the participants are homogeneous and are proficient judges (Verma, 2015; Coolican, 1994). Coolican (1994) also added that a range size of 25-30 is desirable for expert participants dealing with within-subject experimental cases.

The decision to survey the external auditors in this study was made because they are the most involved in dealing with audit committees and are the ablest to judge their effectiveness. The external auditor's interaction with the audit committee begins with their nomination by the audit committee until the completion of the audit report. According to the ISA, external auditors shall communicate with the audit committee on key audit matters such as

the appropriate application of the International Financial Reporting Standards (IFRS) and reporting deficiencies in internal control; see ISAs 260, 265, and 701, for examples (IAASB, 2021). Furthermore, when disagreements in accounting treatments, policies, and estimates arise between the auditor and the company management, the audit committee acts as the liaison between them to solve the problem. Thus, the external auditor was considered the ablest to distinguish and judge ACE.

The experience of the auditors who filled out the questionnaires ranged from 4–25, with a mean of 14.3 and a median of 15. Sixty-nine percent of respondents have more than 10 years of audit experience. Regarding their qualifications, 42 (76%) of the respondents have a bachelor's degree and 13 (24%) have a master's degree. Thus, given the qualifications and experience of the respondents in auditing, they can be relied upon as expert judges to handle the experimental questionnaire and to provide objective data for assessing ACE.

4.2. The survey: Factorial experimental treatments

To address research questions 1 and 2 a survey-based factorial experiment was employed. This technique measures the main and interactive effect of audit committee independence, financial literacy, authority, and diligence on ACE and shows us the degree of self-insight that external auditors possess.

The four independent variables were manipulated to find out their relative influence on the dependent variable by designing a completely-crossed factorial experimental questionnaire that covers the sixteen possible scenarios [$2^4 = 16$]; “2” refers to the levels used that are “better” and “worse”, while “4” refers to the number of the independent variables. The 16 cases were displayed in the questionnaire randomly to mitigate the carryover effects (Trotman, 1996).

The design of the experimental survey consists of three main parts: Part A includes a clear definition of the study variables to minimize confusion among the participants followed by presenting the 16 scenarios (the objective judgment). The subjective measure is included in Part B, which requests auditors' subjective judgments (self-reported weight) by allocating 100 points to the four independent variables, based on the relative impact of each variable on ACE (Beckstead, 2007; Harries et al., 2000). Part C requests the relevant backgrounds of participants such as position, qualifications, and years of experience (see Appendix A). The analysis of the experimental treatments (Part A) provides evidence for the study hypothesis (*H1*) and addresses *RQ1*. On the other hand, matching objective measure results obtained from Part A with the results of the subjective measure (Part B) suggests the degree of self-insight that the auditors possess (*RQ2*). It should be noted that Part B of the questionnaire also asks participants to express their confidence that the four hypothesized variables are the main determinant of evaluating the effectiveness of the audit committee using the 7-point Likert scale. The scores obtained indicated a mean of 5.6 and a median of 6 reflecting relatively high confidence by the participants that the study model had succeeded in capturing the factors influencing ACE.

The design of the experimental questionnaire in this study was based on relevant studies that employed a survey-based factorial experiment (Al-Sukker et al., 2018; Ngigi, 2014; Shbeilat, 2013; Hopkins & Ross, 2013). Four questionnaires were distributed to two academics and two auditors to pre-test the prototype experimental questionnaire and their comments were considered. To facilitate understanding of the experiment, a typical scenario with a neutral answer was presented to them. Figure 1 provides an example of one of the scenarios used in the experiment, where ACE represents audit committee effectiveness and AC represents the audit committee. Data analysis and hypothesis testing were performed using ANOVA with the help of SPSS software.

Figure 1. Example of treatment presentation

Case 1	Worse	AC independence
	Better	AC authority
	Better	AC Financial Literacy
	Worse	AC diligence
Your perceived assessment of the ACE (circle)		
Substantially Worse		Substantially Better
-3	-2 -1 Same	+1 +2 +3

4.3. In-depth interviews

As mentioned earlier, qualitative data was collected and analyzed to provide an in-depth understanding of the impact of audit committee independence, financial literacy, authority, and diligence on external auditors' evaluation of ACE. Interviews with eight external auditors were conducted during the last quarter of 2021 and ranged in duration from 43 to 54 minutes. The experience of the interviewees ranged between 9–21 years. The interviewees were randomly selected based on the information provided on the JACPA's website (JACPA, n.d.-b). The main questions being asked during the interviews are derived from the third research question with additional prompts when necessary. The auditors were informed that their responses would be confidential and their consent was taken to manually record the interview. Interviews were arranged and the participants' consent was obtained by telephone. Appendix B presents the interview protocol of this study.

5. RESULTS AND DISCUSSION

The methodology used in this study succeeded in measuring the main and interaction effects of the posited independent variables on ACE through both the objective measure (effect size) and subjective measure (self-reported weights) in addition to finding three significant interactions as shown in Tables 1 and 2. The objective measure (calculated by using partial eta-squared) reveals that audit committee financial literacy has the greatest influence on the external auditor's decision in assessing ACE accounting for 28.68% of the total effect size, followed (almost closely) by the audit committee diligence, at 26.87%. The third influential factor is audit committee independence accounting

for 22.81%, followed closely by the least influential factor which is the authority of the audit committees accounting for 21.64% as perceived by external auditors. The results also showed two large and statistically significant interactions at alpha = 0.01

that are Financial literacy * Diligence and Independence * Financial literacy * Diligence in addition to one moderate statistically significant interaction at alpha = 0.05 between Financial literacy * Authority.

Table 1. Factor weightings on audit committee effectiveness

<i>Importance of factors affecting auditors' decision to evaluate audit committee effectiveness</i>					
	<i>Independence</i>	<i>Financial literacy</i>	<i>Authority</i>	<i>Diligence</i>	<i>Total</i>
Self-reported weights (subjective measure)					
Mean (%)	15.61	38.14	15.23	31.02	100
SD (%)	7.314	8.265	7.467	8.168	
Range order (%)	5-40	20-70	5-40	10-50	
Rank (n = 55)	3	1	4	2	
Effect size (objective measure)					
Main effects (%) ^	15.66	20.69	12.74	16.04	65.13 ^a
Interactions (%) ^^	7.2	10.98	5.86	10.83	34.87 ^b
Combined effects (%) ^^	22.81	28.68	21.64	26.87	100
Rank order (n = 55)	3	1	4	2	

Note: ^ The effect of size is computed by using partial eta-squared. ^^ The effects of the interaction are assigned to each factor involved in the interaction equally. ^^ The combined effects equal the sum of main effects + interactions. a. Total main effects % also equals total main effects divided by the sum of effect size (from Table 2). b. Total Interactions % also equals total interactions effects divided by the sum of effect size (from Table 2).

Table 2. The main and interactive effect size for the decision to assess audit committee effectiveness

<i>Factor</i>	<i>Effect size^a</i>	<i>p-value</i>	<i>Observed power</i>
Main effects			
Independence	0.532**	0.00*	1.00***
Financial literacy	0.703**	0.00*	1.00***
Authority	0.433**	0.00*	1.00***
Diligence	0.545**	0.00*	1.00***
Total main effects	2.213		
Interactions			
Independence * Financial literacy	0.04	0.340	0.17
Independence * Authority	0.07	0.143	0.36
Independence * Diligence	0.063	0.162	0.33
Financial literacy * Authority	0.111	0.022*	0.67
Financial literacy * Diligence	0.265**	0.002*	0.91***
Authority * Diligence	0.091	0.107	0.41
Independence * Financial literacy * Authority	0.053	0.265	0.22
Independence * Financial literacy * Diligence	0.340**	0.00*	1.00***
Independence * Authority * Diligence	0.034	0.424	0.14
Financial literacy * Authority * Diligence	0.055	0.223	0.24
Independence * Financial literacy * Authority * Diligence	0.063	0.166	0.32
Total interactions	1.185	—	—
Sum of the effect sizes (main & interactions)	3.398	—	—

Note: a. The effect size is computed by partial eta squared (using repeated measures techniques). * Significant at alpha = 0.05. ** Equal or exceeding 0.14 is considered a large effect size (Coolican, 2018). *** Exceeds 0.8 is considered a "gold" standard for power (Coolican, 2018).

Figure 2. Weights and ranks of factors' influence on the perceived audit committee effectiveness

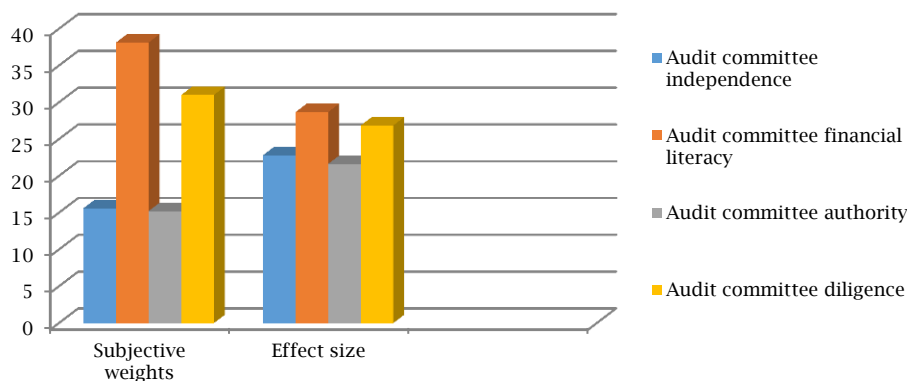


Figure 2 shows that both the subjective (self-reported weights) and the objective (effect size) measures, ranked the four independent variables in the same order suggesting that Jordanian external

auditors possess a high degree of self-insight. Identifying the degree of self-insight and its contributors is important to understand and enhance the cognitive learning process and

the accuracy of human judgment and decision-making (Libby, 1981). The degree of self-insight can be calculated by correlating objective findings obtained from the analysis of the factorial experimental questionnaires versus the subjective measure. The subjective measure is obtained by asking participants to allocate 100 points and distribute them among the four independent variables based on their importance in judging ACE. This high degree of self-insight is consistent with Gibbins and Swieringa (1995) and Al-Sukker et al. (2018); the latter found a high degree of self-insight among Jordanian external auditors in judging decisions to rely on the work of internal auditors according to the requirements of ISA 610. This high degree of self-insight can be attributed to the international auditing standards which are binding in Jordan and to the scientific and practical experience of auditors where JACPA requires its members to attend training workshops continuously, under JACPA supervision, equivalent to 20 hours per year.

Financial literacy gained the first rank among the study variables when evaluating ACE. Financial literacy means that members of an audit committee possess academic qualifications, financial training, and experience in accounting, auditing, and related fields. The interviews with external auditors revealed several key themes regarding financial literacy such as the need for an effective way of communication, a better understanding of accounting standards, supporting the auditor's opinion in the face of the company's management and the financial manager, especially when disagreements arise between auditors and senior management regarding the proper application of accounting transactions, policies, and estimates. This can only be done by having an audit committee with financial experience and accounting qualifications.

The interviews provided a reasonable and logical explanation for the importance of accounting expertise as one of the most important elements in increasing ACE. Auditors unanimously agreed that they sometimes suffer from a lack of understanding of accounting and auditing standards by members of the audit committee.

"We sometimes struggle when interpreting some standards and the best alternative measures that should be taken for members of the audit committee" (Interviewee C).

"Sometimes members [of the audit committee] pretend to understand our point of view, and then we notice that their interest in not issuing a qualified report is more than their interest in the integrity of the accounting procedures followed" (Interviewee A).

"Audit efforts and scope are greatly reduced when we deal with audit committees that have financial and accounting expertise" (Interviewee E).

With respect to diligence, the study defined it as the number of meetings held by the audit committee during the year, including meetings with the external auditor and the internal auditor or with any of the executive members, to perform its duties in accordance with the instructions of corporate governance and its approved charter. The interviewees demonstrated a set of prominent main themes regarding the audit committee's diligence, and thus, highlighted the importance of holding several meetings with the audit committee

to properly perform its supervisory tasks. The most important of which are: 1) follow up on the implementation of international accounting standards, 2) ensure effective communication about deficiencies in internal control, and 3) follow up on auditor's observations that must be addressed by company executives. Moreover, the interviewees stressed the importance of working under a well-designed audit committee charter to narrow and/or neutralize personal effects in all matters related to nominating and communicating with both external and internal auditors.

Interestingly, Independence is ranked third in the evaluation of the ACE and this may indicate that independence is still only formal (not true independence) from the auditors' point of view. A key theme obtained from the interviewees, which may provide a possible explanation for this finding, is that external auditors view the nature of family businesses in Jordan as losing the independence of audit committee members from its true meaning. They also pointed out that senior executives and board members are either family members, relatives, or close friends, so the point of independence is actually meaningless.

"The independence of the members of the Audit Committee from the executive management and from the rest of the members of the Board of Directors is only superficial and is not an independence in fact" (Interviewee D).

"True independence is a rare coin these days given the control of family ties and friendships in shaping directors" (Interviewee F).

It is worth mentioning that Jordanian corporate governance does not require that all members of the audit committee be independent, it requires that at least two members be independent. In fact, there is no agreement on the optimal proportion of independent members of the audit committee. Bronson et al. (2009) supported the US Sarbanes Oxley Act's (SOX) requirement of forming an audit committee of 100% independent members, they concluded that "the benefits of the independence of the audit committee are achieved only if the audit committee is completely independent" (p. 66). In Australia, Al-Lehaidan (2006) found the independence factor ranked first in the impact on audit quality among the 6 characteristics of audit committees (independence, activity, size, charter, expertise, and financial literacy). On the other hand, unlike SOX, many global corporate governance codes do not require 100% of independent audit committee members such as the Jordanian Corporate Governance (Jordan Securities Commission, 2017), the Spanish Good Governance Code for Listed Companies (National Stock Market Commission, 2020), and the Finnish Corporate Governance Code (Securities Market Association, 2020).

Moreover, the third rank of independence (albeit statistically significant) can also be attributed to the fact that independence is greatly influenced by friendships and social relationships. Bruynseels and Cardinaels (2014) found that friendships and personal relationships between CEOs and audit committees have a negative impact on audit quality. While He et al. (2016) found that social ties such as "alma mater connections, teacher-student bonding, or employer affiliation" (p. 63) between audit committee members and external auditors impair audit quality.

Finally, audit committee authority was the least influential factor affecting the ACE. Authority refers to the power derived from the board of directors, laws, corporate governance instructions, and relevant securities commission directives (DeZoort et al., 2002). The interviews revealed two main themes related to the importance of the authority of audit committees:

1) The importance of having clear and written authority in relation to conducting investigations with senior management. Participants B, C, D, G, and H justified the importance of this authority through their observations of the audit committee's reluctance to request and conduct the necessary investigations with the company's management in a timely manner, and this in turn limits the effectiveness of its oversight role.

"We often disagree with management about accounting policies, especially estimates and provisions because they are often used to manipulate earnings ... We, in turn, formally report to the audit committee. However, we are surprised at the length of time that the audit committees need to follow up on our observation" (Interviewee F).

2) Strengthening the role of the audit committee in the nomination, reappointment, and dismissal of external and internal auditors, in addition to giving them the power to determine their fees. These direct relationships with the audit committee improve the performance of auditors.

"The management still controls the appointment of the auditors. The Securities Commission would do well in its current project to make the decisions to appoint, remove and determine auditor fees in the hands of the audit committee" (Interviewee G).

The interviewees also indicated that routinely applied procedures reduce the efficiency of accessing necessary data when needed at the right time, and therefore the regulations need to be amended to become more clearly regarding strengthening the powers of audit committees to obtain financial information and legal advice promptly. Finally, participants B, C, D, F, G, and H pointed to a specific issue regarding the authority of the audit committee that might explain why it was ranked last. They pointed out that the powers of the audit committee in general are close to those of developed countries. Therefore, the most important is the ability of the audit committee to implement its powers and take its decisions in the interest of the company without being affected by the desires of the management, the board of directors, or major shareholders.

"The ability of the audit committee to carry out its supervisory role effectively is just as important as having those powers" (Interviewee H).

This remarkable comment by the interviewees provides additional evidence of the existence of potential interactions between the factors that influence ACE. Interviewees linked their assessment of the level of authority to the ability of the audit committee to implement that authority. In this study, the interaction between financial literacy and authority, albeit statistically moderate, may indicate that a qualified audit committee in accounting and auditing standards is more understanding of auditors' opinions and guidance on the appropriateness of accounting procedures. Thus, the committee will be more capable, courageous, and confident in using their powers properly.

6. CONCLUSION

The results of this study reflect the extent to which the auditors need to deal and communicate with a well-established audit committee, as the ultimate goal of the two parties is to ensure the robustness of the financial reports. This study experimentally examines auditors' perception of factors affecting the ACE. Specifically, the study investigates the main weights of audit committee independence, financial literacy, authority, and diligence, as well as identifies any potential interactions between these factors as contributors to ACE (RQ1). The study investigates the extent of the degree of self-insight possessed by Jordanian external auditors (RQ2). It helps understand how and why the posited factors affect external auditors' judgment regarding their assessments of the ACE (RQ3) and investigates whether external auditors process information configurally when assessing the level of ACE (H1).

The audit committee financial literacy had the most impact on ACE as perceived by the external auditors. The interviewees pointed out that a high level of education in accounting and finance with adequate experience ensures fruitful and smooth communication between the audit committee and external auditors. The participants confirmed, through their previous experiences, that they were comfortable when dealing with members with experience in auditing, accounting, and finance, because this necessarily guarantees fruitful cooperation with different departments, and thus the speed in completing the audit procedures. The second influential factor is the diligence of the audit committee which is expressed by holding adequate meetings and working orderly under a well-established agenda. The interviews emphasized the importance of the meetings held by the audit committee, especially those held with external and internal auditors, to hear their opinions and suggestions about the soundness of accounting procedures. The interviews emphasized the importance that the nature and number of meetings of the audit committee be commensurate with its supervisory and control tasks over the executive management. The interviews also revealed the necessity of having an approved charter to eliminate or reduce the possibility of potential human effects and personal benefit on their decisions, especially the decision of nominating the auditors.

Independence ranked third in terms of its impact on the ACE. Perhaps the reason for this, as the interviews showed, is that the dominance of family businesses, the close relationship between executives and directors, and social ties influence the formation of the board of directors and related subcommittees (Almarayeh et al., 2020; Alqatamin, 2018; Shatnawi et al., 2019). This, in turn, may empty the concept of independence of its actual value, making it merely formal independence and making auditors take into account the importance of additional factors other than independence to judge the ACE. With respect to the authority of the audit committee (the fourth influential factor), interviewees indicated that the authority depends on the strength of laws, corporate governance instructions, and the ability of members to use their authority independently. The point of a well-

designed audit committee charter should be more than just “window dressing”; it should enhance the positive impression of the members of the audit committee and contribute to encouraging them to use these powers.

The effect size of the interaction between the study variables was 34.87%, of which 21% had a strong power level at $\alpha = 0.05$ as shown in Tables 1 and 2. The presence of statistically significant main effect sizes for the four variables, as well as medium and large interactions, confirm a causal relationship between the independent variables and ACE. The finding of the interactions also confirms the hypothesis of the study (*H1*), that Jordanian external auditors process the posited characteristics of the audit committee (independence, financial literacy, authority, and diligence) configurally when assessing the extent of the ACE. That is, the auditor’s assessment of the ACE will be less comprehensive if it does not include these four factors. Configurality means “the integration of various pieces of information to arrive at an overall judgement” (Ganzach, 1997, p.954) so that the effect of one independent variable depends on the level of another independent variable(s) (Gramling et al., 2004). Given that Jordanian auditors process information configurally, regulators and those responsible for establishing best corporate governance practices must take into account the four characteristics of audit committees when amending or developing instructions for forming audit committees, in addition to regularly monitoring the extent to which companies comply with them.

It is noteworthy that the three significant interactions in this study include financial literacy, which confirms its importance as perceived by external auditors. The strong interaction between financial literacy * diligence was evident by Raghunandan and Rama (2007), who used a sample of 319 S&P firms and found a positive relationship between the proportion of the audit committee experience and the number of its meetings. Similar results were also found in Saudi Arabia and the United Arab Emirates regarding the positive relationship between financial experience among board members and the audit committee diligence (Aljaaidi & Bagais, 2021; Qasim, 2020). The other strong interaction between independence * financial literacy * diligence may indicate that an experienced, diligent, and truly independent audit committee is best placed to work with auditors in achieving the interests of the company and moving away from bias in favor of the company management. Finally, the last moderate interaction between financial literacy and authority may reflect the need for powers that enable the audit committee to stand by the auditors in case of disagreements with management as emphasized through interviews.

The interaction between audit committee characteristics was also confirmed in Spain by de Andrés Suárez et al. (2013) who found a relationship between independence, financial expertise, and the authority of the audit committee. Their study indicated that for the audit committee to work in the interest of the company rather than in the interest of the company’s management it “should be in a powerful position, both in terms of independence from the managerial team and in

terms of knowledge and skills” (p. 349). Thus, the results of this study are in line with agency theory, confirming that a well-established audit committee represents one of the most significant and effective pillars of corporate governance in protecting financial reporting systems.

The study also revealed that Jordanian external auditors possess relatively a high degree of self-insight as evidenced by the same ranking orders of the effect of the four independent factors for both the objective measure (effect size which was calculated by partial eta square) and the subjective measure based on their self-reported weights. This degree of self-insight is consistent with Al-Sukker et al. (2018) who found a high degree of self-insight among Jordanian external auditors when deciding on the extent of reliance on the work of the internal auditor. This relatively high degree of self-insight reflects auditors’ awareness and their high abilities in analyzing information and making decisions. Thus, the JACPA must maintain this high degree of self-insight by paying attention to the quantity and quality of the workshops and the continuous training of its members.

The findings contribute to the existing literature by providing additional evidence for understanding the factors contributing to the ACE from a developing country. The findings are important for policymakers that audit committee financial literacy is an important asset for ensuring the best communication between auditors and the audit committee, thus the study suggests that all members of the audit committee must be competent and well-educated in the fields of accounting and finance. Both qualitative and quantitative findings indicate that external auditors are aware of the importance of communicating with an effective audit committee during the engagement period, which starts from the auditor’s nomination to the issuance of the audit report. Accordingly, the auditors believe that cooperation in defining the scope of the audit and non-audit services, evaluating the effectiveness of internal control, and assessing the appropriateness of accounting policies needs to deal with members familiar with accounting standards. The study also recommended reviewing the regulations to increase the number of committee meetings during the year to match the size of their supervisory and control tasks. The study also emphasized the importance of having a truly independent audit committee capable of implementing its powers stipulated in laws and regulations.

This study comes with a set of limitations such as limiting its scope to the four posited factors influencing ACE. It should be noted here that Part B of the questionnaire also asks participants to suggest any other factors, other than study variables, that affect ACE. Only two answers were obtained, the committee size was mentioned eleven times (20%), and interestingly, the importance of a committee member having a CPA certificate was mentioned six times (11%). On the other hand, relevant literature showed that factors such as gender, committee size, social and political ties, audit committee chair tenure, and the presence of institutional investors also influence ACE (Bruynseels & Cardinaels, 2014; Alqatamin, 2018; Chijoke-Mgbame et al., 2020; Albawwat & Alharasees, 2019;

He et al., 2016; Shatnawi et al., 2019; ElHawary, 2021; Nipper, 2021; Malik, 2014). These factors were not addressed in this study due to methodological limitations related to the repeated measures design. Having more than 4 independent variables (say 5) with 2 levels produces 32 scenarios ($2 \times 2 \times 2 \times 2$) while having four variables with 3 levels produces 81 scenarios ($3 \times 3 \times 3 \times 3$), this high number of scenarios undoubtedly would jeopardize the response rate. The decision to limit the variables of this study to 4 independent variables at 2 levels resulted in 16 scenarios, which are acceptable for the participants in terms of the ease and simplicity of filling out the questionnaire and thus contributing to raising the response rate. The application of 4 dichotomous factors has been used in previous experimental research and has produced effective results (Ngigi, 2014; Hopkins & Ross, 2013; Shbeilat, 2013; Wood, 2002).

The decision to use external auditors as the study sample is justified in subsection 4.1. However, both financial managers and internal

auditors can be seen as one of the most important components that communicate and deal with audit committees from different angles. While the good governance instructions give the internal auditor a direct channel of communication with the audit committee, the financial statements prepared by the financial management/CFO must be approved by the audit committee to ensure their integrity before they are submitted to the board of directors, and thus both the CFOs and the internal auditor may have the ability to judge ACE. These limitations regarding the number of variables examined and the study sample do not affect the credibility of the results of this study but rather are intended to provide readers with the data surrounding this study, so the implications of the study are more reasonable. From another angle, these limitations provide a platform for future research on the influence of other factors on the effectiveness of audit committees. Further, it also allows researchers to survey the opinions of both internal auditors and financial managers in evaluating ACE.

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APPENDIX A: DATA COLLECTION — EXPERIMENTAL SURVEY

This questionnaire is part of study investigating contributors of the audit committee effectiveness of Jordanian listed companies as perceived by professional external auditors.

Your views will contribute greatly to the level and quality of information being gathered. Please complete all 3 parts of the questionnaire yourself.

Your responses and comments are strictly confidential. This questionnaire is anonymous unless you opt to provide contact details to receive a copy of the research report. No responses or comments will be individually attributed in any published report and any comments used will be de-identified. Participation in the study is entirely voluntary. The questionnaire should take less than 20 minutes to complete.

Please return the completed questionnaire in the envelope provided to: P. O. Box 410969 Jabal Al-Taj 11141 Amman, Jordan or you can send a soft copy to mohammad.shbeilat@ttu.edu.jo or shbeilat@yahoo.com. Alternatively, contact me at 00962776218846, to arrange for the survey collection.

Completion Instructions: Part A

Please read the following definitions in order to best visualize the scenarios presented:

- 1) *Audit committee independence* means “Members who enjoy complete independence in exercising their duties, expressing their opinions, making decisions, and voting on the decisions of the company with all objectivity and impartiality with the aim of achieving its interests, so that independent members do not have any relationship with the company other than their membership in the board of directors”.
- 2) *Financial literacy* means possession of academic qualifications, financial training and experience in the fields of accounting, auditing and related fields.
- 3) *Audit committee authority* refers to the powers they derive from the board of directors, corporate law, instructions of corporate governance, directives of the securities commission, and stock exchange listing requirements.
- 4) *Audit committee diligence* represented by the number of meetings held by the audit committee during the year, including meetings with the external auditor and the internal auditor or with any of the executive members, to perform its duties in accordance with the instructions of corporate governance and its approved charter.

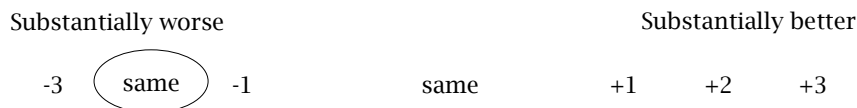
Part A: The exercise (16 cases)

You have presented 16 hypothetical audit committees effectiveness (ACE) scenarios. Each has different levels of audit committee (AC) independence, financial literacy, authority, and diligence. Please consider each in isolation relative to your typical assessment of each scenario on the effectiveness of audit committees. Please indicate your responses by circling one of the figures on each scale. Please take the time to complete all questions because, despite visual similarities, each is different and our analysis depends on having a complete set of responses.

Example: The response for your typical case would appear like this:

- Typical independence of AC
- Typical financial literacy of AC
- Typical authority of AC
- Typical diligence of AC

Your perceived assessment of the ACE (circle)



Part B

Please indicate the relative importance each of the four variables had on your judgments by allocating 100 points between them for each of the outcome measures (i.e., the column should total 100):

Audit committee effectiveness

- Audit committee independence _____
- Audit committee financial literacy _____
- Audit committee authority _____
- Audit committee diligence _____

Please indicate by circling a number on the scale below how confident you feel that the four factors together represent the major determinant of your assessment of the effectiveness of audit committees.

Lower confidence 1 2 3 4 5 6 7 Higher confidence

Please list other related factors that you think would be relevant to your assessment of the effectiveness of audit committees:

Part C

1. Please indicate your position (tick):

- A. Assistant/Junior External Auditor
- B. Senior External Auditor
- C. Manager
- D. Audit Partner

2. How many years have you worked as a licensed auditor? _____ years

3. Please indicate your qualification:

- A. Bachelor Certificate
- B. Master Certificate
- C. PhD
- D. Others, please specify: _____

Please indicate if you would like to receive a copy of a summary conclusions report. Yes/No
If you have answered "Yes" to the above, please provide your contact details:

Name _____
Position _____
Company _____
Telephone _____
Email _____

Thank you, your input is greatly appreciated

APPENDIX B: INTERVIEW PROTOCOL

- Welcome remark.
 - An explanation of the most important terms used in the study.
 - Provide an overview of the purpose and importance of the study.
 - Request unprompted impressions of how they evaluate their communications with the audit committee during the engagement.
1. How does your assessment of the audit committee independence affect your evaluation of the audit committee effectiveness?
 - Can you please tell me why the independence of the audit committee matters to your assessment?
 2. How does your assessment of the audit committee financial literacy affect your evaluation of the audit committee effectiveness?
 - Can you please tell me why the financial literacy of the audit committee matters to your assessment?
 3. How does your assessment of the audit committee authority affect your evaluation of the audit committee effectiveness?
 - Can you please tell me why the authority of the audit committee matters to your assessment?
 4. How does your assessment of the audit committee diligence affect your evaluation of the audit committee effectiveness?
 - Can you please tell me why the diligence of the audit committee matters to your assessment?

Thank you, Interviewee