

How External Auditors Evaluate Internal Audit Effectiveness: An Experimental Study of the Case of Jordan

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Abstract

The key focus of this study is to investigate external auditor (EA) perceptions regarding factors that affect the effectiveness of internal audit function (IAF). The study evaluates the influence of internal auditor objectivity, competence, and work performance on the effectiveness of the IAF in Jordanian listed companies (JLCs), as perceived by senior Jordanian EAs. The study employs a mixed method comprising a survey-based factorial experiment in addition to semi-structured interviews. The results, based on 35 completed surveys and nine interviews with senior EAs show that work performance has the greatest influence on the perceived effectiveness of IAF. However, all variables were found to be of substantial influence, and the differences in influence between the three independent variables are relatively minor. The analysis also revealed moderate to large statistically significant interactive effects between independent variables, suggesting that EAs use configural decision-making when evaluating the impact of the three dimensions. In interviews, EAs put forward many reasons for the importance of the three study variables, with no clear consensus on the reasons behind the rankings of the three independent variables. The narrow differences between the effects of the independent variables, in addition to a lack of clear explanations for these differences, suggest that situational factors may be involved (e.g., risk, organization complexity, resource availability, etc.). Our results have direct implications for efforts to improve the perceived effectiveness of the IAF. Professional and regulatory authorities charged with increasing the effectiveness of the IAF need to consider all three dimensions in their policy decision-making, given that all three dimensions have considerable direct and interactive effects.

Keywords: Objectivity, Competence, Work Performance, Internal Audit Function, ISA 610.

Introduction

The effectiveness of internal auditors (IAs) is a topic that is increasingly being discussed in the media and other circles as people consider how 'failures' in internal auditing might have contributed to fraud and other financial problems. Various studies and standards of internal auditing have defined a number of factors that are considered to contribute to the effectiveness of internal auditing. Although the names and the number of these factors differ among the various sources, three such factors or dimensions, namely objectivity, competence and work performance, are key elements of both Section 610 of the International Standards on Auditing (ISA) and various national standards and include many of the elements previously examined in isolation. One of the duties of external auditors (EAs) is to evaluate the effectiveness of the internal audit function (IAF) in client organizations. As such, experienced EAs (external auditors) can be considered expert judges of the factors influencing the effectiveness of the IAF. The first key aspect of this study is evaluating the influence of the three dimensions (objectivity, competence and work performance) on the effectiveness of the IAF in Jordanian listed companies (JLCs), as perceived by Jordanian EAs. The research answers four primary questions: (1) What is the relationship between internal audit function effectiveness in Jordanian listed companies and their objectivity, competence and work performance, as perceived by EAs (external auditors)? (2) What are the reasons for these relationships? (3) To what degree are EAs aware of the influence of IAF objectivity, competence and work performance on EA evaluations of IAF effectiveness? (4) What are the reasons for the EAs' level of self-insight?

Edge & Farley (1991), Haron (1996), Felix et al (1998), Haron et al (2004) and Al-Twajjry et al, (2004), and other researchers have studied the three dimensions in their research to evaluate the strength of the IAF in developed countries such as the US and the UK. However, these studies might not be completely applicable to the case of Jordan, a developing country in the Middle East, with a high-context culture¹, smaller companies with majority shareholders such as family groups, widespread public perception of nepotism and corruption, and facing a lot of economic instability and fraud, even within its bigger companies (Abdullatif & Al-Khadash, 2010). It is possible that any or all of these factors could influence the way in which companies, IAs and EAs operate, hence the need for this current research.

The current study's theoretical model (see Figure 1 in the Research Model section) is primarily based on international auditing standards (e.g. ISA 610) that suggest that all auditors should aim for objectivity, competence and work performance in conducting audits. The model also explicitly includes both direct and interactive effects of the independent variables, thus taking into consideration a suggestion made by Gramling et al (2004), that the relative importance of an audit quality factor is likely to be contingent on the level of the other quality factors. The field of human information processing (HIP), particularly Judgement decision-making

¹ High -context culture refers to "a culture's tendency to use high context messages over low context messages in routine communication" Hall (1976). In a higher-context culture, many things are left unsaid, letting the culture explain. Words and word choice become very important in higher-context communication, since a few words can communicate a complex message very effectively to an in-group (but less effectively outside that group), while in a low-context culture, the communicator needs to be much more explicit and the value of a single word is less important.

studies, sets out the theoretical framework for this study's inquiries into EA self-insight and configural decision-making. HIP researchers such as Libby, Artman, & Willingham (1985) and Maletta and Kida (1993), have found that decision-makers who take into consideration their environment's risk factors are more likely to use complex and systematic configural decision processes (i.e., use more complex processes in higher risk situations).

This study employed a mixed method comparing a survey-based factorial experiment in addition to semi-structured interviews. The first method measures the influence of the three independent variables; the second helps confirm and explain the influence. The analysis of the quantitative data from the factorial experiment considers both the main and interactive effects of the three independent variables. Further the quantitative analysis compares EAs' stated beliefs about the influence of each of the independent variables to the weights revealed by the factorial experiment in order to gauge the accuracy of self-insight of the EAs. The analysis of the qualitative data from the semi-structured interviews provides contextual depth to the quantitative results and, through triangulation, enhances the validity of the study.

The main aim of this study is to evaluate the importance of IAF objectivity, competence and work performance on the perceived effectiveness of the IAF in JLCs. To achieve this main aim, the following sub-objectives were set for the study:

1. Examine the impact of objectivity on the perceived effectiveness of the IAF in JLCs, according to the EAs.
2. Examine the impact of competence on the perceived effectiveness of the IAF in JLCs, according to the EAs.
3. Examine the impact of work performance on the perceived effectiveness of the IAF in JLCs, according to the EAs.

In addition to these sub-objectives examining the main effects of the three independent variables, the study examines the interactive relationships between the three independent variables and the dependent variable, thus identifying cause-effect relationships that cannot simply be attributed to the sum of the effects of the three independent variables.

In this study, we considered the following definition for the effectiveness of the IAF: "The extent to which the designated objectives and functions of the internal audit are achieved properly, are unbiased, and are free from management pressure that may compromise the internal auditor's performance (ISA no. 402)." Examples of those designated IAFs are safeguarding assets against loss and theft, providing reasonable assurances that the financial and operating information are accurate and reliable, and ensuring the organization's compliance with laws and regulations (ISA no. 402).

Theoretical Perspectives

To understand how information interacts and improves decision-making we need to understand how individuals make decisions and what role data and information play in that process. To better understand this situation we need to understand what influences the

degree to which decision-makers use data to make decisions. The following sections review the theoretical background of judgement decision-making literature. A summary of the following aspects are given: (1) information processing; (2) main effects and configurability; (3) self-insight; and (4) the agency theory.

Human Information Processing

One of the reasons for focusing on judgement and decision-making in business is to gain an understanding of how individuals make decisions under risk, with such insights potentially improving decisions in business and public policy (Payne, 1982: p. 386). Most studies of judgement and decision-making in auditing focus on the nature and complexity of "how experienced auditors form judgements or make decisions while performing an audit task" (Solomon & Shields, 1995: p. 137).

Human information processing (HIP) and judgements in accounting and auditing decisions are fields of study within the wider area of behavioural decision theory (Libby, 1981; Trotman, 1996: p. 4). Trotman (1996), argued that judgement and decision-making studies in auditing are undertaken to understand how individuals make relevant decisions, with such understanding potentially improving business decisions. Moreover, Trotman (1996, p. 4) pointed out that there were three basic goals of investigations into judgement and decision-making in auditing: (1) evaluating auditor judgement quality; (2) identifying the process and factors involved in auditor judgements; and (3) testing cognitive process theories about how auditor decisions and judgements are made. Success in achieving the three goals presented by Trotman could enable auditors to better understand why some information requirements are more appropriate for particular audit settings (Libby & Luft, 1993).

Main Effects and Configurability

Judgement decision-making studies try to recognize the influences of key cues on the judgement decision and their contributions towards outcomes (i.e., independence of outcomes or interaction with influence). Configural information processing is defined by Brown & Solomon (1990: p. 19) as "cognition in which the pattern of stimuli is important to the subsequent judgement/decision." Moreover, Slovic (1972: p. 786) argued that "configurability means that the analyst's interpretation of an item of information varies depending on the nature of other available information."

Researchers such as Libby, Artman, and Willingham (1985), and Maletta and Kida (1993), have also found that decision-makers who take into consideration their environment's risk factors are more likely to use complex and systematic configural decision processes (i.e., use more complex processes in higher risk situations). However, as the complexity of configural decision processes increases, decision-makers become more likely to use simpler heuristic methods, i.e., beyond a certain level of complexity, decision makers increasingly consider the benefits of configural decision processing to be lower than the problems associated with such processes (McGhee, Shields, & Birnberg, 1978). According to Payne (1982), dimensional (i.e., configural) processing is more often used in decisions about choices rather than judgements. The relationship between risk and configural decision-making is particularly relevant to auditor decision-making in Jordan given the prominence of majority shareholders, such as family groups, in Jordanian Listed Companies.

Self-Insight

In the context of this study, judgement insight refers to how aware an auditor is of his/her own judgement formation processes. According to studies by Ashton (1974), Gibbins and Swieringa (1995), and Solomon and Shields (1995), auditors seem to have relatively high levels of self-insight, a characteristic not commonly found among financial analysts (Libby, 1981; Mear & Firth, 1987; Slovic et al., 1972). Both sets of studies (i.e., of auditors and analysts) utilized relatively experienced subjects, as recommended by Maines (1995), thus enhancing the validity of the comparisons between these studies. This relatively high level of self-insight is perhaps the result of the audit profession's auditing standards and consistency in auditor training (Libby, 1981; Pike, Sharp, & Kantor, 1988), although more experienced individuals usually demonstrate greater self-insight (Feldman & Arnold, 1978). All of these studies were conducted in developed countries, although one recent study revealed a high degree of self-insight among Jordanian financial analysts (Shbeilat, 2013).

In this study, self-insight is investigated by correlating and matching the objective outcomes obtained from cue usage (the eight scenarios of the factorial experimental questionnaire) against the subjective weightings which have also been gathered from the participants via the same instrument. It is important to perceive the level of self-insight because that helps improve understanding of the learning process (Libby, 1981) and improve the accuracy of judgement (Hooper & Trotman, 1996).

Agency Theory

It explains the relationship in which one party (the principal) determines the work while another party (the agent) carries out that work on behalf of the first party (Luypaert & Van Caneghem, 2014). Agency theory has, over time, become primarily focused on behaviour in businesses. Berle and Means (1932), discuss how the interests of managers and directors differ from those of the owners, but Jensen and Meckling are credited with first formalizing and naming the theory. According to Jensen and Meckling (1976), corporations are structured in such a way as to minimize the cost of ensuring that agents follow the principal's instructions and protect the principal's interests.

According to Imhoff (2003), the industrial revolution and the increased financing it required resulted in the development of capital markets and a separation between ownership and management. According to the agency theory, separation of ownership from management creates an opportunity for management to exercise the authority delegated them in ways that do not serve the interests of the owners, thus leading to the 'agency problem'. This created a need for an independent third party to provide owners with sufficient assurance that the financial reports produced by management disclosed all materially significant information (Imhoff, 2003; Arens et al. 2020; Leung et al., 2011; Al-Msiedeen, 2019). As such, auditors are part of the corporate governance system responsible for ensuring the quality of financial reports and helping monitor management (Beasley & Salterio, 2001; Al-Msiedeen & Al-Sawalqa, 2021). EAs are intended to improve investor and owner confidence in the quality of financial reports and the transparency of the company (Solomon, 2010). The importance of this role of EAs is such that procedures for improving their independence, objectivity, and professionalism can be found in most corporate governance codes (UNCTAD, 2006).

Literature Review

We reviewed the literature on audit effectiveness, auditor objectivity, competence, and work performance. The review covered 30 studies in addition to some discussion of various standards of internal and external auditing. Most of the studies that were conducted in the 1980s focused on the big accounting and auditing firms, and thus these studies were primarily about external audits instead of internal audits. The large audit firms that are the subject of the majority of these studies have a large number of auditors, which is distinctly different from the situation in Jordan, where audit firms are relatively small in comparison and even JLCs do not have large auditing departments.

Of the studies covered in this literature review, some but not all the studies tried to rank the three dimensions in order of importance in the context of determining IAF effectiveness (e.g., Brown, 1983; Schneider, 1984, 1985a, 1985b; Messier & Schneider, 1988; Maletta, 1993; Messier et al., 2011; Desai et al., 2010; Krishnamoorthy, 2002). Overall, these studies have shown that competence, objectivity, and work performance are important in assessing internal audit efficiency and effectiveness, even though there are differences in their order of importance between the various studies. A departure from the order of variables was Desai et al (2017), study which showed that there is no single factor that controls the external auditor's decision in evaluating the effectiveness of internal audit. Table 1 below summarizes the ranking of the three dimensions of the IAF in relation to the effectiveness of the IAF, as found in the studies covered in the literature review.

Table 1

The Ranking of the Three Factors of the IAF Effectiveness as Found in these Selected Studies

Researcher	Scope / Country	Objectivity	Competence	Work performance
Abdel-khalik et al. 1983	CPA firms, Canada	A	--	B
Schneider 1984	CPA firms, Columbus, Ohio, USA	C	B	A
Schneider 1985a	CPA firms, Columbus, Ohio, USA	B	A	A
Schneider 1985b	CPA firms, Atlanta, Georgia, USA	C	B	A
Messier and Schneider 1988	USA	B	A	C
Edge and Farley 1991	Australia	C	A	B
Maletta 1993	Big Six accounting firm, USA	B	A	C
Obeid 2007	Banking sector, Sudan	B	C	A
Al-Matarneh 2011	Banking sector, Jordan	C	B	A
Mohd-Razali et al. 2022	Malaysian public and private sector	A	C	B
Ashfaq et al. 2023	Pakistan	A	B	C
		3 A, 4 B, 4 C	4 A, 4 B, 2 C	5 A, 3 B, 3 C

A is the most significant factor, B is the second most significant factor, and C is the third most significant factor.

Table 1 shows that most studies place emphasis on work performance as the most significant factor of IAF effectiveness (Schneider, 1984, 1985a, 1985b; Margheim, 1986). On the other hand, Messier and Schneider (1988), Edge and Farley (1991), and Maletta (1993) all found competence to be the most significant factor in evaluating IAF effectiveness. The table also shows that objectivity was the most important factor in three studies. It is worth noting that the study by Abdel-khalik et al. (1983), examined five different factors but did not include the competence factor.

Given that work performance is the most highly ranked dimension of IAF effectiveness, and that adequate resourcing is a key aspect of the definition of this dimension, this implies that companies in Jordan, few of which have a large staff of IAs, might be found to have low IAF effectiveness.

The literature review brings to light variations in the definitions of the factors used in the studies of IAF effectiveness. In particular, competence and work performance might look, at first glance, to be very similar. A study by Margheim (1986) offers an insight into why competence is sometimes combined with work performance or not included at all. Margheim elected to combine competence and work performance in his study in order to avoid "unrealistic combinations" such as low competence and high work performance.

Given the stated importance of all three dimensions in auditing standards, the current research includes all three. Furthermore, the issue of avoiding 'unrealistic combinations' is not truly a factor in our research since our focus is on EA perceptions and judgements based on a wide range of combinations. We reduce confusion among EAs participating in our study by setting out a clear definition for each of the three dimensions. Moreover, we avoid creating an artificial relationship between any of the three dimensions by ensuring that their definitions do not overlap (i.e., they are distinctly different and none of the factors used to measure any one of the three dimensions can be confused with any other factor used to measure any other dimension).

In general, all the studies that investigated the effectiveness of IAs (e.g., Abdel-Khalik et al., 1983; Schneider, 1985a; Brown, 1983; Messier & Schneider, 1988; Edge & Farley, 1991; Maletta, 1993) suggest that they were effective, although the exact perceptions of performance varied depending on the observer (IAs themselves, EAs, etc.). One study (Haron, 1996) compared the effectiveness of IAs and EAs in the UK and suggested that EAs could rely on the work of IAs more than seemed to be the case in the US. This implies that it is not safe to generalize the conclusions about audit performance in one country to other countries.

Studies that discussed the benefits of the IAF suggested that the IAF could indeed offer various benefits to both the organization being audited and to EAs. Benefits included: improved organizational performance due to improved monitoring (Cohen & Sayag, 2010; Eden & Moriah, 1996); fraud detection (Coram et al., 2008a, 2008b); reduction in required time for audit planning (Abdel-Khalik et al., 1983; Felix et al., 1998; Davidson & Gist, 1996); reduction in audit costs (Krishnamoorthy, 2002; Felix et al., 1998); the IAF's ability to perform consulting and value creating activities (Stewart & Subramaniam, 2010; Arena, Arnaboldi & Azzone, 2006). This suggests that organizations without effective IAFs are missing out on many opportunities to positively impact their operational and financial results.

Research Model

The research model (see Figure 1) posits a dependent variable as perceived by the IAS no.610: DV) Relative effectiveness of the IAF

Prior research (e.g., Desai et al., 2010; Krishnamoorthy, 2002; Messier & Schneider, 1988) and professional literature (e.g., SAS No. 65) indicate that this assessment is made by evaluating the three dimensions of objectivity, competence, and work performance.

The independent variables of this study's research model are:

IV1) The objectivity of the IAF

IV2) The competence of the IAF

IV3) The work performance of the IAF

The research considers EAs' judgement as decision-makers regarding the effectiveness of the work of IAs. The study examines, through an experimental technique, the main and interactive effects of the three independent variables (objectivity, competence, work performance) on EA judgements regarding the dependent variable (relative effectiveness of the IAF). The experiment also examines EAs' self-insight into the influence of the three independent variables on their judgements regarding the dependent variable.

Figure 1: The dimensions of the IAF provided by ISA no.610

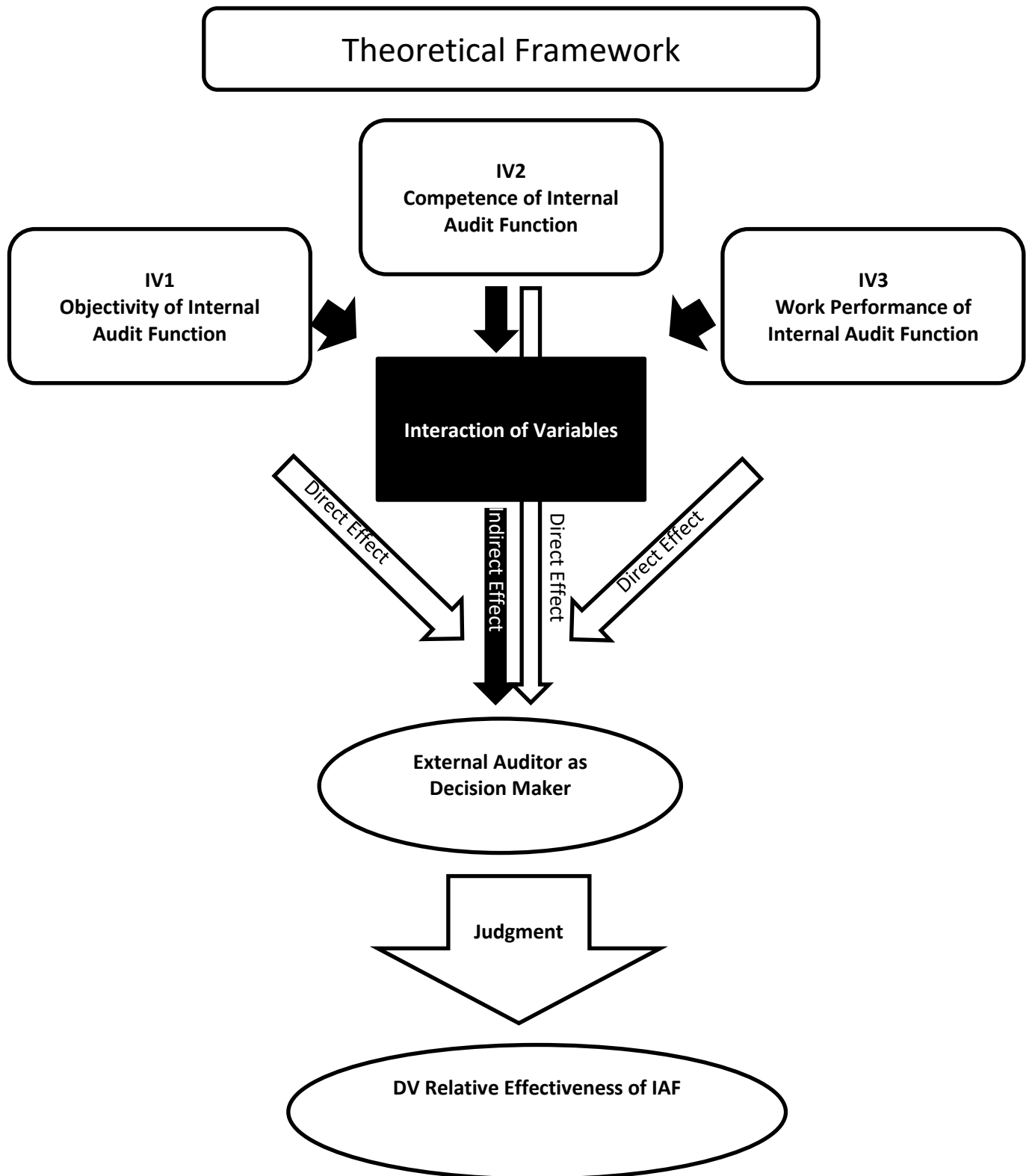


Figure 1: The dimensions of the IAF provided by ISA no.610

Research Questions and Research Hypothesis

The study examines, through an experimental technique, the relative weights of the independent variables and their interactions in influencing the dependent variable. These are set out as research questions as follows:

The first question relates to the main and interactive influence of the independent variables on the effectiveness of the IAF.

RQ.1 What are the relative main and interactive weights of:

- ❖ the objectivity of the IAF,
 - ❖ the competence of the IAF, and
 - ❖ the work performance of the IAF
- on the perceived effectiveness of the IAF?

The study also considers the degree of self-insight EAs have into their decision-making in evaluations of the effectiveness of the IAF and decisions to rely on the work of IAFs in JLCs.

RQ.2 What degree of self-insight do EAs demonstrate in their assessments of the influence of IAF objectivity, competence, and work performance on their evaluation of the effectiveness of the IAF?

This study also aimed to provide an in-depth understanding of how and why EAs perceive the influence of the three dimensions on IAF effectiveness in JLCs. This could be achieved by conducting in-depth semi-structured interviews with a concentration on 'how' and 'why' questions (Symon & Cassel, 1998; Yin, 2009). Silverman (2009), Symon and Cassel (1998) and Denzin and Lincoln (2005) argue that quantitative studies cannot answer 'how' and 'why' questions.

RQ.3 How and why does:

- ❖ the objectivity of the IAF,
- ❖ the competence of the IAF, and
- ❖ the work performance of the IAF

influence EA decision-making regarding IAF effectiveness.

Research Hypothesis

The way in which multiple variables interact to influence judgements has been examined in previous research into judgemental decision-making in auditing in developed countries (e.g., Ashton, 1974; Hofstede & Hughes, 1977; Brown & Solomon, 1990, 1991; Hooper & Trotman, 1996; Trotman, 1996). Configurality² is a related term that refers to cases in which the interpretation of a specific piece of information depends on other available information, i.e., the meaning of some information is at least partly determined on the basis of other information (Slovic, 1972: p. 786). Extensive research has been undertaken into configural assessment of information in financial valuation and advice (e.g., Slovic, 1969; Slovic, Fleissner & Bauman, 1972; Mear & Firth, 1987, 1990).

² Additionally, configural information processing is "cognition in which the pattern (or configuration) of stimuli is important to the subsequent judgement/decision" (Brown & Solomon, 1990: p. 19).

The study's three independent variables in combination could, hypothetically, influence the dependent variable in ways that cannot be determined from the sum of the individual impacts of the independent variables alone. For example, an EA could consider evidence of low levels of two of the three independent variables to be an indicator of high risk and might judge the dependent variable with extreme negativity, even if the third independent variable is exceptionally high.

The study hypothesizes that EAs' judgement decision-making regarding the dependent variable is configural; EAs look for and take into consideration both the individual (i.e., main effect) and interactive effects of the three independent variables when evaluating the dependent variable.

The hypothesis of this study can be stated as:

H1: EAs assess decision-making information configurally when considering the influence of IAF objectivity, competence, and work performance on the dependent variable.

Methodology

The study employs a mixed method: a survey-based factorial experiment in addition to semi-structured interviews. The experiment measures the influence of the three independent variables (O, C, and WP) on the dependent variable (E); the interviews help explain the influence. The analysis of the quantitative data from the factorial experiment considers both the main and interactive effects of the three independent variables on the dependent variable. Further quantitative analysis compares EAs' stated beliefs about the influence of each of the independent variables to the weights revealed by the factorial experiment in order to gauge the accuracy of self-insight of the EAs. The analysis of the qualitative data from the semi-structured interviews provides some contextual depth to the quantitative results and, through triangulation, enhances the validity of the study (Simnett & Trotman, 2018).

The population being studied in the current research is that of EAs employed in the 26 biggest audit firms located in Jordan. According to research (Naser & Nuseibeh, 2007; Abdullatif, 2013: p. 63), these large audit firms (that is large by Jordanian standards) are estimated to undertake the majority of audit work for clients who are JLCs. Since the study focused on the judgement of EAs in evaluating the effectiveness of the IAF in JLCs, we sought senior EAs with experience with a wide range of companies and who make such evaluations (i.e., auditors with job titles such as supervisor, senior auditor, manager, executive etc.). Interviewees were selected through a snowball sampling technique. All the selected EAs were located in Amman, which is by far the largest city in Jordan and the location of the head offices of the majority of audit firms in Jordan. As Heberlein and Baumgartner (1978), advise, we did not exercise any form of direct or indirect pressure, including financial incentives, on any of the selected EAs in order to obtain their participation.

A total of 17 audit firms were visited from the 26 largest audit firms. We sought survey participants from each of the major audit firms, contacting 90 external auditors. We obtained 35 usable survey responses and 9 interviews.

Experimental Treatments

To achieve the objectives of the study, the survey-based quantitative experiment follows a factorial design, and analysis of variance (SPSS) was used to analyse the data. The experimental treatments used data collected through self-administered survey instruments, sent by mail and addressed to the selected participants. The first page of the booklet carried introductory information highlighting the salience of the subject to respondents and instructions. The second and third pages carried the experimental treatments. The last two pages collected the self-reported weights as well as basic demographic data on the respondent, such as the position of the EA, years of experience, qualifications.

The experimental treatments were presented to subjects as a series of case scenarios. Subjects were presented with eight treatments (cases), that is a fully-crossed design of three factors. To facilitate understanding of the exercise and to assist subjects in conceptualising their typical benchmark case, the instrument introduction included an example layout containing neutral content. There were three variants of the survey instrument, the only difference in the variants being the order of presentation of cases to mitigate practice and carry-over effects (Keppel, 1982; Trotman, 1996). The case order for each of the three variants was assigned randomly. A copy of one of the variants of the instrument is shown in figure 2. Figure 2: An example of one of the Nine cases displayed in the experimental questionnaire.

Case 1	Better objectivity of the IAF Worse competence of the IAF Worse work performance of the IAF
Your assessment of the Effectiveness of the IAF (circle your answer)	
<u>Substantially Worse</u> Better	<u>Substantially</u>

Part A used a simple seven point scale from -3 (substantially lower effectiveness) to $+3$ (substantially higher effectiveness), with a central neutral point of reference labelled "Same", i.e., the same as in a typical IAF (Dillman, 2000). Each of the three dimensions of IAF effectiveness is given a rating of 'better' or 'worse' than the 'typical' case, where 'better' refers to a level of more than 7/10 and where 'worse' refers to a level of less than 3/10. In preparation for the MNOVA analysis, participants' responses indicated on this -3 to $+3$ scale were transposed to an interval scale from 1 to 7 (lower and higher effectiveness, respectively).

Part B of the questionnaire consists of four questions. In the first question, participants are instructed to indicate the relative importance of each of the three independent variables on their judgements (i.e., in their responses in Part A) regarding the dependent variable. These subjective weights enabled the researcher to collect data on the participants' self-insight regarding their judgement decision-making.

In the second question of Part B, participants are instructed to indicate how confident they feel that the three independent variables cover all the variables they consider when measuring the dependent variable, i.e., are there better variables for estimating the dependent variable? This allowed us to collect data on the validity of the study's independent

variables as measures for estimating the dependent variable. In the third question of Part B, participants are instructed to list other variables they use when evaluating the dependent variable. This allowed us to collect data that could be useful for further research. In the fourth question of Part B, participants are simply instructed to indicate any further information they would like to provide.

In-depth Interviews

The qualitative approach complements the experimental approach used in the first stage of this research by allowing the researcher to validate and explain the results of the quantitative analysis and to explore some of the implications. The interview method provides the opportunity not only to gather information on an event but also to explore interpretations and meanings and develop understanding of the motives and underlying actions (Creswell, 1998; Creswell & Creswell, 2017).

In the second stage of this study, data collection was through semi-structured interviews, a method appropriate for theory-informed research (Flick, 2002). Research participants are selected through the judgement sampling technique, also known as purposive sampling. This kind of sampling is the most common sampling technique. The judgement sample is selected as it is the most productive sample to answer the research questions (Marshall, 1996). The interview structure adopted is similar to that of Creswell (1998). Each interview, which ranged from 40 minutes to more than one hour in length, was audio recorded after obtaining each participant's consent. Through this approach, the researcher could identify and investigate the variables that are most important to the effectiveness of the IAF, as perceived by EAs.

The interviewees were asked six how and why questions regarding the importance of each of the three independent variables (Objectivity, Competence and Work Performance) in assessing the dependent variable (Effectiveness of the IAF). Respondents' interview replies allowed us to better interpret the findings of the quantitative experiment. The questions and instructions to the interviewer are provided in the Interview Protocol.

Findings

Weights of the Independent Variables in Evaluations of the Internal Audit Function Effectiveness

The research technique adopted in this study succeeded in measuring the relative main and interactive weights of the three hypothesized independent variables in terms of their influence on IAF effectiveness (the first research question). These weights were measured using objective and subjective techniques. For the objective technique, the 'Effect Size' was used to measure the influence of the independent variables (Coolican, 2009).

The results of the objective measure revealed that work performance had the greatest effect on IAF effectiveness. It accounted for 36.57% of the effect size when interaction terms are allocated back to their parent factors. The second-most influential factor was objectivity, which accounted for 33.01% of influence on IAF effectiveness. Competence of IAs had the least influence on perceived IAF effectiveness, with an effect size of 30.40%. Table 2 below shows the percentage of influence for statistically significant Effect Sizes of the independent variables in relation to their influence on IAF Effectiveness.

Table 2

Effect Sizes as a Percentage of Total Effect Sizes of Independent Variables on IAF Effectiveness

<u>Main Effects</u>		Percentage³
The work performance of the IAs		26.57%
The competence of the IAs		25.53%
The objectivity of the IAs		24.61%
<u>Interactions Effects</u>		
Significant interactions effects ⁴ at alpha 0.05	21.73%	
Sum of non–significant effects and interactions	<u>1.56%</u>	
Sum of effects of interaction		<u>23.29%</u> ⁵
		100%

Table 2 above shows that Work Performance is notably the main effective factor on perceived IAF Effectiveness, in the perception of EAs. This result is consistent with several studies that pointed out that ‘work performance’ is the most significant direct impact factor of IAF effectiveness (Schneider 1984, 1985a, 1985b; Margheim 1986). The majority of the interviewees in the current study agreed that Work Performance is a very important factor.

Significant Interactions

The objective measure revealed three large and statistically significant (at the 0.01% level) interactions related to influence on the perceived effectiveness of the IAF (the dependent variable), namely: Objectivity*Competence, Competence*Work performance and Objectivity* Competence *Work performance, the sum of these significant interactions accounting for approximately one fifth of the total effect size on the dependent variable.

There are a few relevant implications that can be drawn from the interviews regarding relationships between any of the independent variables:

- 1- One theme discussing the relative importance of objectivity suggests that the difficulty of determining the level of IA objectivity might make it less desirable as a measure of effectiveness (appears in one interview). This theme is related to another theme about the importance of work performance in evaluating IAF effectiveness: Work performance is easier to determine than objectivity (appears in one interview).
- 2- One theme regarding the importance of work performance suggests a link between work performance and competence: Weaknesses in work performance can't be compensated for by greater competence (appears in one interview)

Only the second point is directly supported by the findings regarding large, statistically significant interactions (i.e., Competence *Work performance).

³ The percentage of the total variability explained by both main and interactive effects.

⁴ According to Coolican (2009), an effect size equal to or greater than 14% is significant.

⁵ The total interaction effect percentage= Total Interactions Effects/ Sum of Effect size

Configurality

The Hypothesis (H1) of the study posits that Jordanian EAs process information configurally when considering the impact of objectivity, competence and work performance, thus taking into consideration both the individual (i.e., direct) and interactive effects of these variables on the dependent variable.

Several significant interactions between the study variables have been identified in relation to the influence on IAF effectiveness. These interactions accounted for approximately one-fifth of the effect on IAF effectiveness. Furthermore, the existence of 'large' statistically significant interactions between the study variables further confirms and supports the Hypothesis H1: EAs assess decision-making information configurally when considering the influence of IA objectivity, competence, and work performance.

This finding is consistent with studies of judgement decision-making across a range of fields in Jordan (Shbeilat, 2013; 2023; 2024; Al-Sukker et al, 2018) and in other countries (e.g., Hopkins, 2009; Ebert & Kruse, 1978; Mear & Firth, 1987; Nguyen & Ross, 2006; Slovic, 1972; Wood, 2002; Teoh & Lim, 1996), showing configural cue processing among financial analysts and similar professional groups. This suggests that the decision-making process for evaluating IAF effectiveness is relatively complicated as individual factors can influence the effects of the other factors. This also suggests that future research as well as plans to improve IAF effectiveness should consider how the three dimensions interact.

The existence of these significant moderate to large interactions, based on the perceptions of Jordanian EAs, sends a clear message to policy makers and Jordanian regulatory bodies, especially the JACPA (Jordan Association for Certified Public Accountants) which is responsible for issuing, revising and monitoring licensed audit firm compliance with rules and applicable standards. The message is that Jordanian EAs, in their judgement decisions, take into consideration the joint effects of these key factors, not just their individual effects. Therefore, the JACPA must not just focus on the most decisive factor in their enforcement program, but must realize that the complete environment, in the form of all three complementary factors, influence audit decisions. The JACPA must consider how these factors interact.

Self-Insight

This study is the first to establish the degree of self-insight among Jordanian EAs, and it revealed a high degree of self-insight into their decision-making processes. The ranking of the self-reported weights were the same as the ranking according to effect sizes, and the weights and effect sizes were very close.

This degree of self-insight demonstrated by Jordanian EAs is consistent with other studies in other countries using EAs, accountants (Solomon & Shields, 1995; Savich, 1977) and professional managers (Wood, 2002; Gibbins & Swieringa, 1995), all revealing relatively high degrees of self-insight among research subjects. The high degree of self-insight among EAs was attributed to the implementation of professional standards on auditing and to regular training performed by the professional associations (Libby, 1981; Pike, Sharp & Kantor 1988; Shbeilat, 2023). In contrast, the high degree of self-insight among professional managers was attributed to their professionalism and their high level of experience. Locally, one Jordanian

study revealed a high degree of self-insight among Jordanian financial analysts (Shbeilat, 2013).

It has been evidenced that financial analysts with more work experience demonstrate moderate degrees of self-insight in the U.S and New Zealand (Feldman & Arnold, 1978; Mear & Firth, 1987; Slovic et al., 1972). In this study, the experience of the survey respondents who completed the experiment ranged between 4 and 17 years, with a mean of 7.55 years. Those who were interviewed for the qualitative study had high levels of experience ranging between 10 and 17 years. The high level of subjects' experience, along with their professionalism, might be a possible explanation for the high degree of self-insight among Jordanian EAs.

Discussion of the Relationship between the Independent and Dependent Variables

The discussion of this study's findings begins with an examination of its quantitative and qualitative results in the context of key works in the relevant literature, focusing on the three posited factors influencing EAs' perceptions of IAF effectiveness.

The literature review examined EAs' evaluations of the quality of auditing, and considered several related variables identified in the profession literature (for example, Abdel-Khalik et al., 1983; Brown, 1983; Schneider, 1984, 1985a; Margheim, 1986; Messier & Schneider, 1988; Edge & Farley, 1991; Krishnamoorthy, 2002; Haron et al., 2004; and Al-Twaijry et al., 2004). The Jordanian literature on evaluating the IAF in Jordan has mostly explored the subject among particular groups of auditors (e.g., auditors working in government or universities) and revealed some relationships between the variables they studied (Thnaibat & Shunnaq, 2010; Al-Matarneh, 2011; Obaidat, 2007; Al-Nawaiseh, 2006; Al-Rahahleh, 2005; Al Farajat, 2003; Al-Sawalqa & Qtish, 2012;). Due to the scarcity of these studies and the differences among them in terms of the study samples, variables, approaches and results, few generalizable conclusions can be drawn from them.

This section discusses the results of the current study in respect of each of the three independent variables.

The Objectivity of Internal Auditors

It can be argued that auditors, whether internal or external, can never be totally independent and free of bias or other considerations (Duska, Duska, & Ragatz, 2011), suggesting that objectivity, too, can never be absolute. Auditors are, however, required by international audit standards to be free enough that their ability to express an unbiased audit opinion is not significantly compromised (Mcgrath et al., 2001). Guidelines drawing the broad outlines of what is meant by not having a significantly compromised ability to express an unbiased audit opinion are included within international audit standards. The standards also suggest safeguards to protect the independence of EAs.

IA objectivity was found to be a statistically significant positive factor influencing EA perceptions of the effectiveness of the IAF.

According to the subjective self-weightings reported by the participating EAs, objectivity was the least influential factor when it came to the evaluation of the effectiveness of the IAF (a mean 29.52% in comparison to 31.81% and 38.67% for competence and work performance respectively, out of a total 100%).

According to objective data [effect size], again, objectivity ranked as the least influential factor with a combined direct and indirect effect of 30.40% compared to 33.01% and 36.57% for competence and work performance respectively, in evaluations of IAF effectiveness.

In summary, both the objective and subjective measures agree that objectivity is the least important in evaluations of IAF effectiveness. Whilst objectivity is the least important of the three independent variables, it still explains a large proportion of the variability in the dependent variable and, as such, is important but less important than the other two variables.

In evaluations of IAF effectiveness, the third place ranking of objectivity, after work performance and competence, does not conflict with the majority of studies that conclude that work performance is the most significant factor of IAF effectiveness (Schneider, 1984; Schneider, 1985b; Edge & Farley, 1991; Al-Matarneh, 2011). However, this third place ranking for objectivity does contradict the findings of a study conducted by Abdel-khalik et al. (1983) that claimed that 'objectivity' was the most significant factor. In the case of Abdel-khalik, the study investigated five different factors⁶ but did not include the 'competence' factor.

The interviews revealed several themes regarding the importance of objectivity in evaluating IAF effectiveness, eight of which describe reasons why objectivity is important:

- 1- The impact of bias or influence on the audit process (appears in 6 interviews)
- 2- The essential duty of auditors to be objective (appears in 4 interviews)
- 3- The role of objectivity in reducing the likelihood that fraud would not be reported (appears in 2 interviews)
- 4- The importance of freedom from management interference (appears in 1 interview)
- 5- The role of objectivity in increasing disclosure (appears in 1 interview)
- 6- The increased need for objectivity in situations of risk (appears in 1 interview)
- 7- The impact of low objectivity in the corruption of information throughout the organization (appears in 1 interview)
- 8- The increased need for objectivity in large organizations with many powerful interests (appears in 1 interview).

One theme describes one reason why the importance of objectivity in evaluating IAF effectiveness might be reduced: the difficulty in determining the level of IA objectivity (appears in 1 interview).

Among the findings of the literature review were arguments that the lack of communication between IAs and EAs, and audit committees with insufficient authority and scope of work (i.e., low objectivity), have a negative impact on the reliability of financial reports (Altawalbeh, 2020; Alqatamin, 2018; Albawwat, & Al harasees, 2019; Abdullatif, 2006; Al-Saudi, 2007; Al-Awaqleh, 2008; Malkawi, 2008). Also in the discussion of the culture in Jordan it was suggested that there were often reasons to suspect that IAs were often not as

⁶ The Abdel-khalik study employed five different factors: "1-Integrated Test Facility, 2-Test Data, 3- Generalized Audit Software, 4-the level to which the internal auditing department reports (represents the independence and objectivity of IAF) and 5-the internal auditor's level of responsibility in reviewing changes in application programs."

independent/objective as they could be and, as outlined in the interview theme “Difficulty of determination”, it is difficult to identify those biases or omissions purely from a review of work performance.

The Competence of Internal Auditors

This study focuses on the definition of IAF competence provided by the Standards for the Professional Practice of Internal Auditing (SPPIA) and IIA standard number 1210. SPPIA defined Competence as “whether the internal auditors have adequate technical training and proficiency as internal auditors” (Para. 9 ISA 610, 2009: p. 630). According to IIA standard defined competence of IAFs under section no. 1210 – ‘Proficiency’, stating that “Internal auditors must possess the knowledge, skills, and other competencies needed to perform their individual responsibilities. The internal audit activity collectively must possess or obtain the knowledge, skills, and other competencies needed to perform its responsibilities” (IIA, 2011: p. 5).

The competence of the IAs was shown to be a statistically significant, positive factor influencing EA perceptions of the effectiveness of the IAF.

According to the subjective self-weightings reported by the participating EAs, competence was the second most influential factor when it came to the evaluation of the effectiveness of the IAF (a mean of 31.81% in comparison to 29.52% and 38.67% for objectivity and work performance respectively).

According to objective data [effect size], again, competence ranked as the second most influential factor (a combined effect of 33.01% in comparison to 30.40% and 36.57% for objectivity and work performance respectively) in evaluations of IAF effectiveness.

In summary, both the objective and subjective measures agree that competence is the second most important of the three factors in evaluations of IAF effectiveness.

The interviews revealed several themes regarding the importance of competence in evaluating IAF effectiveness, six of which describe reasons why competence is important:

- 1- The need for relevant or specific types of audit knowledge (appears in 5 interviews)
- 2- The impact of diversity of knowledge on the ability to understand a wider range of tasks and situations (appears in 3 interviews)
- 3- The impact of knowledge and experience on the ability to examine accounts for fraud and errors (appears in 2 interviews)
- 4- The impact of organization complexity on the need for diversity of knowledge (appears in one interview)
- 5- The need for knowledge in how to use modern control tools (appears in one interview)
- 6- The impact of knowledge on the procedural correctness of IAs’ work (appears in one interview).

One theme describes a reason why the importance of competence in evaluating IAF effectiveness might be reduced: procedure and IT limitations (appears in 1 interview).

The interviews revealed several themes regarding the importance of competence in decisions to rely on the work of the IAF, six of which describe reasons why competence is important:

- 1- The need for relevant or specific types of audit knowledge (appears in 5 interviews)
- 2- The impact of knowledge on auditors' ability to work in accordance with auditing standards (appears in 2 interviews)
- 3- The impact of knowledge on auditors' ability to work with and coordinate with EAs (appears in 2 interviews)
- 4- The impact of diversity of knowledge on the ability to work with EAs (appears in one interview)
- 5- The impact of knowledge about auditing and the client company on the credibility of the work of the IA (appears in one interview)
- 6- The impact of knowledge on the ability to examine company accounts (appears in one interview)
- 7- The impact of insider knowledge on audit planning (appears in one interview).

The Work Performance of Internal Auditors

This study adopted the definition of IAF work performance provided by the Standards for the Professional Practice of Internal Auditing (SPPIA) and IIA standard number 2240. SPPIA defined work performance as "due professional care", stating "Internal auditors must apply the care and skill expected of a reasonably prudent and competent internal auditor. Due professional care does not imply infallibility." (Pickett, 2010: p. 453) According to IIA standard number 2240 (Engagement Work Program), "internal auditors must develop and document working programs that achieve the engagement objectives" (IIA, 2010: p. 13).

The work performance of the IAF was shown to be a statistically significant positive factor influencing EA perceptions of the effectiveness of the IAF.

According to the subjective self-weightings reported by the participating EAs, work performance was the most influential factor when it came to the evaluation of the effectiveness of the IAF (a mean 38.67% in comparison to 29.52% and 31.81% for objectivity and competence respectively, out of a total 100%).

According to objective data [effect size], again, work performance ranked as the most influential factor (a combined effect of 36.57% in comparison to 30.40% and 33.01% for objectivity and competence respectively) in evaluations of IAF effectiveness.

In summary, both the objective and subjective measures agree that work performance is the most important in evaluations of IAF effectiveness.

The first place ranking of work performance in evaluations of IAF effectiveness is supported by the majority of relevant studies that concluded that work performance is the most significant factor in the assessment of IAF effectiveness (e.g., Schneider, 1984, 1985a, 1985b; Margheim, 1986; Obeid, 2007). However, those studies were not definitive because of the lack of evidence of cause and effect. Furthermore, these studies did not examine the Jordanian situation.

The interviews revealed several themes regarding the importance of work performance in evaluating IAF effectiveness, eight of which describe reasons why work performance is important:

- 1- The impact of professional care and attention on the ability to accomplish tasks, using resources and time efficiently (appears in 4 interviews)
- 2- The essential duty of auditors to practice professional care and attention (appears in two interviews)
- 3- Weaknesses in work performance can't be compensated for by greater competence (appears in one interview)
- 4- Auditing standards define and require work performance (appears in one interview)
- 5- Work performance is easier to determine than objectivity (appears in one interview)
- 6- A history of detecting fraud or significant financial misstatement is a form of work performance and is evidence of effectiveness (appears in one interview).

One theme describes one reason why the importance of work performance in evaluating IAF effectiveness might be reduced: weaknesses in work performance can be overcome if the team is well-organized (appears in 1 interview).

Other Independent Variables Not Considered

As a measure to confirm the internal validity of the experiment, survey respondents were instructed to (1) indicate how strongly they believed that IA objectivity, competence and work performance covered the full range of factors they consider when judging IAF effectiveness and (2) to suggest other important factors that might influence their judgements regarding the dependent variable.

The results were quite positive regarding respondents' confidence that the study's three independent variables (Objectivity, Competency and Work Performance) did cover the full range of variables that they would consider in evaluating the effectiveness of the IAF in JLCs.

A majority of respondents (74.3%) indicated that they are confident (i.e., a score of 5 or above) regarding the comprehensiveness of the study's independent variables when it came to evaluating the effectiveness of the IAF. None of the respondents indicated a level of confidence below 4 (neutral confidence). The overall mean of scores was 5.97, with a median of 6.0 and a mode of 6, demonstrating a high level of confidence.

These results indicate that the survey respondents did believe that IA objectivity, competence and work performance covered the most significant factors they consider when judging IAF effectiveness. However, the participants also suggested other variables that they felt might influence their judgement.

In summary, the suggested factors are:

- 1- Communication between IAs and EAs
- 2- Prior cases of fraud or significant financial misstatement identified
- 3- Expectation of future strategic financial transactions (e.g., merger)
- 4- Employee satisfaction
- 5- Actual IA Career paths in comparison to what is available in the job market

- 6- Job availability
- 7- Culture
- 8- Management support, and
- 9- Cooperation and the effectiveness of the relationship between IAs and EAs.

Given that the respondents did believe that the three dimensions did cover most important of the factors to be taken into consideration, their suggestion of other alternative factors is more difficult to interpret.

On examination, the suggested factors have been mentioned in studies of audit effectiveness as having an influence on auditor objectivity, e.g., culture (Zureigat, 2011), management support (Albrecht et al., 1988), career path (Cohen & Sayag, 2010); competence e.g., management support (Cohen & Sayag, 2010) and career paths that facilitate training and development; or work performance, e.g., job satisfaction. Some of the suggested factors can be considered factors that increase the risk of the external audit, e.g., prior cases of fraud, and future mergers and might conceivably change the way EAs make judgements (Spira & Page, 2003; Walker et al., 2003; Sarens & Beelde, 2006). Interestingly, the first suggested factor, communication between IAs and EAs, is not stipulated in the ISAs whereas it is stipulated in the Australian auditing standards. It should be noted that Jordan has adopted international auditing standards.

The high level of confidence in the comprehensiveness of the three independent variables suggests that, for the majority of respondents, the additional factors are either significantly less important than the three independent variables or that their relevance is situational (i.e., relevant in only some special situations). Alternatively, they might be considered sub variables of the three independent variables on which some respondents focused. Overall, it would seem that the three independent variables are suitable for evaluating the dependent variables. However, the additional factors could be the focus for further studies.

In conclusion, we acknowledge the importance of these alternative factors in evaluating internal audit effectiveness, but there is sufficient evidence to support the view that the three variables selected for this study are suitable for the purpose of internal validity. This study does indeed investigate the factors affecting the IAF as stipulated in ISA 610, namely the objectivity of the IAs, the competence of the IAs and the work performance of the IAs.

Summary and Conclusion

The results of the study show that the three hypothesized independent variables have a statistically significant influence on evaluations of IAF effectiveness. Work performance was found to be the most influential factor in evaluations of IAF effectiveness. Competence was found to be the second-most influential factor in evaluations of IAF effectiveness.

Three large, statistically significant (at the 0.01% level) interactions were identified between the independent variables. These interactions were Objectivity*Competence, Competence*Work performance and Objectivity* Competence *Work performance; the sum of these interactions accounted for approximately one fifth of the total effect size on the dependent variable.

The results suggest that efforts to improve the effectiveness of the IAF might be best focused on work performance, although the interactions suggest that competence (the second-most influential factor) and objectivity (the third-ranked factor) should not be ignored. The interactions suggest that evaluations of IAF effectiveness are either inherently complex or that the level of environmental risk in JLCs is causing EAs to use configural decision-making.

The interviews offer several explanations for the importance of the independent variables, and somewhat fewer explanations for what might reduce the importance of the independent variables. These explanations shed some light on the concerns of EAs regarding evaluations of IAF effectiveness, revealing areas to focus on (e.g., knowledge of account examination; diversity of knowledge; audit planning and documentation etc.).

The lack of clear explanations for the specific rankings of the independent variables suggests that situational factors may be involved (e.g., risk, organization complexity, resource availability, etc.). This suggests the need for further research into possible situational factors.

While the design of the interviews is well suited to generate information regarding the individual importance of each of the independent variables, it was not as suitable for generating information about the simultaneous interaction of the variables.

Management now have evidence that efforts to improve EA perceptions of IAF objectivity, competence and work performance can result in improved evaluations of IAF effectiveness. This might increase the likelihood of efforts to improve EA perceptions of these dimensions. Furthermore, as EAs can be considered experts on internal controls, EA interest in IAF objectivity, competence and work performance might encourage shareholders to invest in efforts to improve these three dimensions in order to better protect their assets.

Given the modest differences between the influences of the three dimensions, the choice over which dimension to prioritize is more likely to depend on company-specific factors. For example, a company which has very low IAF objectivity, in comparison to IAF competence and work performance, might consider focusing on improving IAF objectivity. It should be noted that improvements in perceived levels of IAF objectivity, competence and work performance might not require improvements in the real levels of these three variables. For example, better communication and cooperation between IAs and EAs may allay concerns about a client IAF's objectivity, competence and work performance, resulting in more positive perceptions.

An approach focusing on closing deficiencies in IAF objectivity, competence and work performance should improve EA perceptions of IAF effectiveness and, consequently, should improve EA evaluations of internal controls and audit risks and, ultimately, the likelihood of a positive auditor opinion on financial statements. An improved perception of IAF effectiveness could also help reduce the cost of audits: EA perception of a lower level of audit risk can result in a smaller scope of audit.

On a related front, company regulators and related professional bodies also have evidence of the importance of the three dimensions, evidence that can be used to better plan future internal audit regulations and improve the requirements and training for IAs. The

configurability of EA decision-making regarding IAF effectiveness also suggest that regulators and professional bodies should take a more holistic view of improving IAF effectiveness, taking into consideration all three dimensions of audit and, perhaps other factors.

So what do the results imply in regards to the theoretical framework? Identifying statistically significant positive relationships between the three dimensions and IAF effectiveness is evidence that the three dimensions' influence EA evaluations of IAF effectiveness. Furthermore, the quantitative findings confirm the suggestion of Gramling et al. (2004) that the relative importance of each of the three dimensions is contingent on the level of the other dimensions (i.e. EAs employ configural decision-making). The presence of statistically significant interactions between the three dimensions suggests that models of EA evaluations of IAF effectiveness would be incomplete and less accurate if they did not include all three dimensions. Furthermore, the lack of clear explanations for the rankings of the three dimensions suggests that the theoretical framework should be refined, perhaps including situational factors revealed by the current study's interviews findings, such as: risk; organization complexity; the availability of EA resources; knowledge of account examination; diversity of knowledge; audit planning and documentation; etc.

In terms of implications for agency theory in the Jordanian context, the evidence that EAs do consider IA objectivity, competence and work performance in evaluations of IAF effectiveness implies that, to some degree, EAs in Jordan take seriously their duty to protect the interests of shareholders. On a related front, company regulators and related professional bodies also have evidence of the importance of the three dimensions, evidence that can be used to better plan future internal audit regulations and improve the requirements and training for internal auditors. The configurability of EA decision-making regarding IAF effectiveness also suggest that regulators and professional bodies should take a more holistic view of improving IAF effectiveness, taking into consideration all three dimensions of audit and, perhaps other factors. Moreover, Management now have evidence that efforts to improve EA perceptions of IAF objectivity, competence and work performance can result in improved evaluations of IAF effectiveness. This might increase the likelihood of efforts to improve EA perceptions. Furthermore, as EAs can be considered experts on internal controls, EA interest in IAF objectivity, competence and work performance might encourage shareholders to invest in efforts to improve these three dimensions in order to better protect their assets.

Finally, the findings are relatively consistent with those of studies in advanced economies in regards to the three dimensions having an effect on audit effectiveness. Regarding the ranking of the three dimensions, there is no widespread agreement among studies conducted in advanced economies, although a slight majority of the research does rank work performance as the first dimension, as found in this paper. Due to the lack of similar studies, no comparisons can be made with other countries regarding configural judgement decision-making in the context of evaluations of auditor effectiveness, and further research into the effect of environmental risk on such evaluations is warranted.

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