



A Study on Demand - Side Factors Affecting Internal Audit Effectiveness in Private Companies in Vietnam

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Abstract. This research aims to investigate effects of demand-side factors influencing internal audit effectiveness in private companies in Vietnam. Conducting a survey, 228 questionnaires were sent to managers, audit committee members, head of internal control department and external auditors of private companies in Vietnam to assess internal audit effectiveness and factors affecting its effectiveness. Through using qualitative and quantitative method, the results indicate that management support, interaction between internal and external auditor, supportive control environment, cooperation with audit committee and existence of follow – up process positively impact on internal audit effectiveness while two other factors cultural dimension and information and communication do not affect its effectiveness.

Keywords: Effectiveness · internal audit · Vietnam

1 Introduction

Internal audit plays an important role in the control system of the enterprise. Internal audit performs its role through a combination of assurance and advisory work. Assured work helps to inform top management and executives how the systems and processes designed to keep the business on track, while consultancy helps to improve those systems and processes as needed. When control procedures are fully established and operating effectively, they help to control risks and thus achieve its financial, operational, and strategic goals. Literature review pointed out that internal audit is recognized as a crucial function in the organization from the point of its competition enabling and value-adding role (Bhana, 2013; Coetzee, 2014; Odoyo, 2014; Carcello & Reid, 2017). Moreover, internal audit is viewed as a tool for evaluating and improving the effectiveness of risk management and control (Dicle and Usluer, 2016; Mihret, Mula, & James, 2010; Lenz and Hahn, 2015; Mucha, 2021). The necessity and importance of internal auditing is increasing because of the strengthening of corporate governance practices (Ioannou & Serafeim, 2012; Soh & Martinov-Bennie, 2015). Reviewed literature also shows that there are quite a lot of different approaches to investigate internal audit effectiveness and effective internal audit is influenced by a series of factors.

In Vietnam, Decree 05/2019/ND-CP of Vietnamese Governance dated on January 22nd, 2019, was issued, providing a legal framework on internal audit that stipulates the roles and responsibilities of the internal audit and related parties, in which demonstrates that the main objective of internal audit is to independently ensure and advise on the effectiveness and efficiency of corporate governance, risk management and internal control. The Decree 05/2019/ND-CP is considered a big step forward in corporate governance, towards the goal of ensuring the interests of investors and transparency of the market, as well as transforming the corporate governance model approaching to international practices. However, after a few years of application of the Decree 05/2019/ND-CP, some enterprises have not yet promoted the role of internal audit in corporate governance or some businesses are still confused in implementing, organizing, and operating internal audit therefore, internal audit effective is not high as expected. Moreover, through literature review there isn't much agreement on criteria on effectiveness of internal audit and most research only focuses on supply side - factors and ignores demand-side elements affecting its effectiveness. Therefore, in theoretical term, this article is an attempt to fill this gap by assessing effects of the demand-side factors influencing the IA effectiveness in a Vietnamese context. In practical term, the study attempts to measure internal audit effectiveness of Vietnamese private companies and give some recommendations for improving internal audit effectiveness.

2 Literature Review and Hypothesis Development

2.1 Internal Audit Effectiveness

Most studies address the factors affecting the effectiveness of internal audit, but do not provide actual indicators or measures used to quantify the effectiveness of internal audit. Turetken, Jethefer, and Ozkan (2020) systematized the sets of criteria for measuring the effectiveness of the internal audit function which offers two effective approaches:

- (1) Measure performance based on objectives: Accordingly, the effectiveness of internal audit is determined based on the following criteria:
 - Degree of completion of the internal audit plan
 - Time required to complete the audit plan
 - Rate of recommendations from the Internal Audit that are implemented
 - The time required to issue the audit report
 - The time required to resolve the internal audit's conclusions
 - Time required to perform the main audit's work
 - Number of conclusions made by the internal audit
 - Value of internal audit (weighing benefits and costs)
- (2) Measure performance based on perceived value: Basing on perceived value, effectiveness is measured according to perceived effectiveness, satisfaction level of stakeholders, added value (perceived value) for the organization created by internal audit. Perceived effectiveness can be detailed into the following criteria:
 - Improve the effectiveness of risk management
 - Improve the effectiveness of governance

- Evaluation findings consistent with established goals

Internal audit effectiveness measured by objectives often seemed as an objective method while measuring by perceived performance is considered as a subjective measure. Some studies supposed that measuring the effectiveness of internal audit based on the objectives is in the purpose of evaluating the efforts of the internal audit instead of the results of the internal audit achieved, while perceived effectiveness can provide more detailed information about the actual results of internal audit. In addition, effectiveness measured by the perceived efficiency is easier to conduct and collect information than the method using the objective one, so the studies using perceived efficiency are more popular than the objective measurement methods.

Therefore, in this research, perceived efficiency method is chosen to assess the internal audit effectiveness.

2.2 Factors Affecting the Internal Audit Effectiveness

Research on the factors affecting the effectiveness of internal audits is interesting by many researchers, however, there have not been many studies to systematize and classify factors into groups. These studies have just included some common factors such as: independence of audit, audit capacity, support of managers.... The fact that the factors have not been classified or grouped caused incomprehensive and incomplete assessment.

Turetken et al. (2020) was the first author who gathered all factors through reviewing related papers and classified these factors into 2 different groups: supply side and demand side group.

Supply side group includes following factors:

- Competence of internal auditor department
- Size of internal auditor department
- Organizational setting
- Scope Limitation
- Compliance with applicable standards
- Management training ground
- Auditee attributes
- Internal audit independence
- Internal audit objectivity
- Conduct risk consulting
- Outsourcing internal audit
- Quality of audit work
- CAE's leadership style

Demand side group includes following factors:

- Management support for internal audit
- Interaction between internal and external audit
- Cooperation with audit committee
- Information and communication
- Existence of a follow up process
- Supportive control environment

– Cultural dimensions

Moreover, through the review, most of the current studies focus on assessing the influence of supply-side factors on audit effectiveness, which leads to a narrow view and a somewhat optimistic assessment of the internal auditors (Lenz & Hahn, 2015). Besides, the demand-side perspective is important because it sheds light on the perceptions of assesses, external auditors, and other stakeholders of IAs (Lenz & Hahn, 2015).

Therefore, in this research the author will test the influence of demand - side factors on audit effectiveness and use the factors suggested by Turetken et al. (2020).

*** Management Support (MS)**

Management support is linked to hiring trained and experienced staff, providing sufficient resources, enhancing the relationship with external auditors, and having an independent internal audit department. Besides independence and autonomy, management support becomes critical to facilitate the internal auditors in conducting their duties (Mihret & Yismaw, 2007; Cohen & Sayag, 2010; Alzeban & Gwilliam 2014, Dellai & Omri, 2016; Drogalas, Karagiorgos, & Arampatzis, 2015; Baheri, Sudarmanto & Wekke, 2017; Ta & Doan, 2022). According to Sarens & De Beelde (2006), internal audit needs support of senior management to gain the general acceptance and recognition of its organizational structure.

Gramling, Maletta, and Schneider (2004); Ahlawat & Lowe (2004) Salameh, Al-Weshah, Al-Nsour, and Al-Hiyari (2011); Aikins (2011), Octavia (2013), Alzeban & Gwilliam (2014) and Appiah, Amaning, Ware and Kwarteng (2022) concluded that management support positively affect the IA effectiveness. Ahmad, Othman, Othman, and Jusoff (2009) stated that the support and commitment of the top management plays an important role, especially in the implementation of the audit recommendations. In the Ahmet Onay (2021)'s research, its results revealed that the most prominent driving force of IAE is management support.

The research supposes the following statement:

H1: Management support positively affect internal audit effectiveness.

*** Interaction Between Internal and External Audit (EA)**

Internal auditors and external auditors should be in coordination in their activities, respect each other and make use of each other's abilities (Sawyer, Dittenhofer, & Scheiner, 2005). By improving coordination and cooperation among internal and external auditors, they can both increase effectiveness and efficiency of audit activities and benefit from each other's work. Ho & Hutchinson (2010) believed that the main purpose of coordination and cooperation between internal and external auditors is to improve the effectiveness of audit and minimize the audit cost. Many academic studies have confirmed that lack of coordination between internal and external auditors and absence of collaboration affects performance of internal audit in developing countries negatively. Moreover, studies in literature (Soh & Martinov-Bennie, 2011; Lenz, Sarens, & D'Silva, 2014) have determined that collaboration with external auditors increases IAE in private sector enterprises. Appiah et al. (2022) pointed out that the external auditors' role is one of the main determinants of IAE. In other words, the coordination between internal and external audit in planning, exchanging information and reporting has a positive impact on the

internal audit effectiveness. In Saudi Arabia, Al-Twaijry, Brierley and Gwilliam (2004) showed that there was a lack of co-operation between internal and external auditors and then internal auditors had limited access to external auditors' working papers.

The research supposes the following statement:

H2: Interaction between internal and external audit positively affect internal audit effectiveness.

*** Cooperation with the Audit Committee (AC)**

The IA and audit committee are two different control bodies: IA operates within the organization, while the audit committee is established from the members of Board of Directors for monitoring and evaluation. However, they have similar goals in terms of maintaining, evaluating, and reporting on the internal control system of the organization (Arena & Azzone, 2009). The cooperation between the IA and the audit committee is important for both parties as it is considered to have an impact on the effectiveness of the IA activities through information and data sharing (Alshbiel, 2017; Bednarek, 2018). Arena & Azzone (2009) did the research using the sample of 153 Italian companies and pointed out that internal audit effectiveness increases when the audit committee is involved in the activities of the internal auditors. According to Prem & Golrida (2021), continuous interaction with audit committee members will help them to be focused on the organizational performance by improving the IA effectiveness. Lenz and Hahn (2015) pointed that the relationship between the IA and the audit committee is critical to IA effectiveness, when the audit committee consists of independent directors having finance and accounting expertise, the audit committee plays an active role in overseeing the IA function with a possibility of more frequent meetings and informal access from the from the CAE. Khelil, Hussainey and Noubbigh (2016) found that the coordination of IA and AC increases the morale of the chief audit executive to act more ethically, which ultimately increases the effectiveness of internal auditing. Oussii and Taktak (2018) pointed out that internal control quality is significantly and positively associated with audit committee's involvement in reviewing the internal audit program and results.

The research supposes the following statement:

H3: Cooperation with the Audit Committee positively affect internal audit effectiveness.

*** Information and Communication (CO)**

Information and communication factor refers to the identification, understanding, and exchange of information in an appropriate form and time frame to accomplish the IA objectives (Karagiorgos, Drogas, & Giovanis, 2011). Moreover, communications regarding the IA must include the predefined objectives and scope, as well as conclusions, recommendations, and action plans of the IA (IIA, 2017). The study of Dejnaronk, Little, Mujtaba, and McClelland (2016) considered communication to the IA stakeholders to take place both in verbal and written forms, including the audit report as a part of the communication to the management level. As noted by Cannon and Growe (2004), IT is required for the design, implementation, and control of many businesses processes. Abdolmohammadi, Burnaby and Hass (2006) argue that as the utilization of IT in companies is gradually becoming more sophisticated, internal auditors should move beyond

merely accepting technology and understand it and be able to implement it as a tool for effective auditing.

The research supposes the following statement:

H4: Information and communication positively affect internal audit effectiveness.

*** Existence of a Follow-Up Process (FU)**

Follow-up is the process by which internal auditors evaluate the adequacy, effectiveness and timelines of actions taken by management on reported observations and recommendations, including those made by external auditors and others. This process also includes determining whether senior management and/or the board have assumed the risk of not taking corrective action on reported observations (IIA, 2009). IA performance standard requires the chief audit executive to establish a follow-up process for monitoring the previously identified internal control deficiencies and ensuring that management actions have been effectively implemented or that senior management has accepted the risk of not taking any action. Oussii & Taktak (2018) revealed that internal control quality is significantly and positively associated with follow-up process.

The research supposes the following statement:

H5: Existence of a follow-up process positively affect internal audit effectiveness.

*** Supportive Control Environment (CE)**

According to the COSO (1994), the control environment is the 'sets the tone of an organization' and affects the employee awareness of the control. The environment in which management acknowledges the importance of controls and the structures that review their effectiveness can facilitate the communication with other employees, who often perceive an internal audit as a 'company police', and better understanding of the internal audit role by management (Barisic & Tusek, 2016). Barisic and Tusek (2016) concluded that the more supportive control environment a company has, the more effective internal audit it has. This means, there is a positive effect of supportive control environment on the IA effectiveness. Badara and Saidin (2014) suggested that the establishment of internal control system ensures the effective functioning of any entity, and then it is one of important factors considered affecting the IA effectiveness. Karagiorgos, Drogalas and Giovanis (2011), control environment is a major part of managing an organization which reflects the attitude and the policies of management in regard with the importance of internal audit in the economic unit. The factors that describe the supportive control environment are often operationalized using statements originating from the COSO framework. In other words, the control environment can be evaluated based on the following factors: Integrity and Ethical Values, Board and Audit Committee, Management Philosophy and Organizational Structure (COSO, 2013). The research supposes the following statement:

H6: Supportive control environment positively affect internal audit effectiveness.

*** Cultural Dimensions (OC)**

The organizational culture aspect has also been evaluated by some studies to assess the impact on the effectiveness of internal audit. Cohen and Sayag (2010) conclude that the

effectiveness of IA depends more on organizational characteristics than on the qualification and work setting of the IA staff. Culture has been pinpointed as an influencing factor of internal audit effectiveness (Dicle & Usluer, 2016; Endaya & Hanefah, 2013).

According to Ahmad, Othman, Othman, and Jusoff (2009), organizational culture characteristics that influence internal audit effectiveness includes inadequate support from top management, inadequate knowledge, and training on effective auditing approaches for internal auditors, and the degree of acceptance and appreciation of internal audit by management. Ojra, Opute, and Sabti (2020) presented that while internal audit would aid effective decision making and extendedly organizational performance - outcomes that are contingent on internal audit quality and internal audit effectiveness, the extent to which quality and effectiveness of internal audit can be achieved would depend on the national and organizational culture features that condition internal audit practices. Using Hofstede’s culture theoretical framework, Dicle and Usluer (2016) interviewed 192 internal auditors from 46 countries and concluded that internal audit was

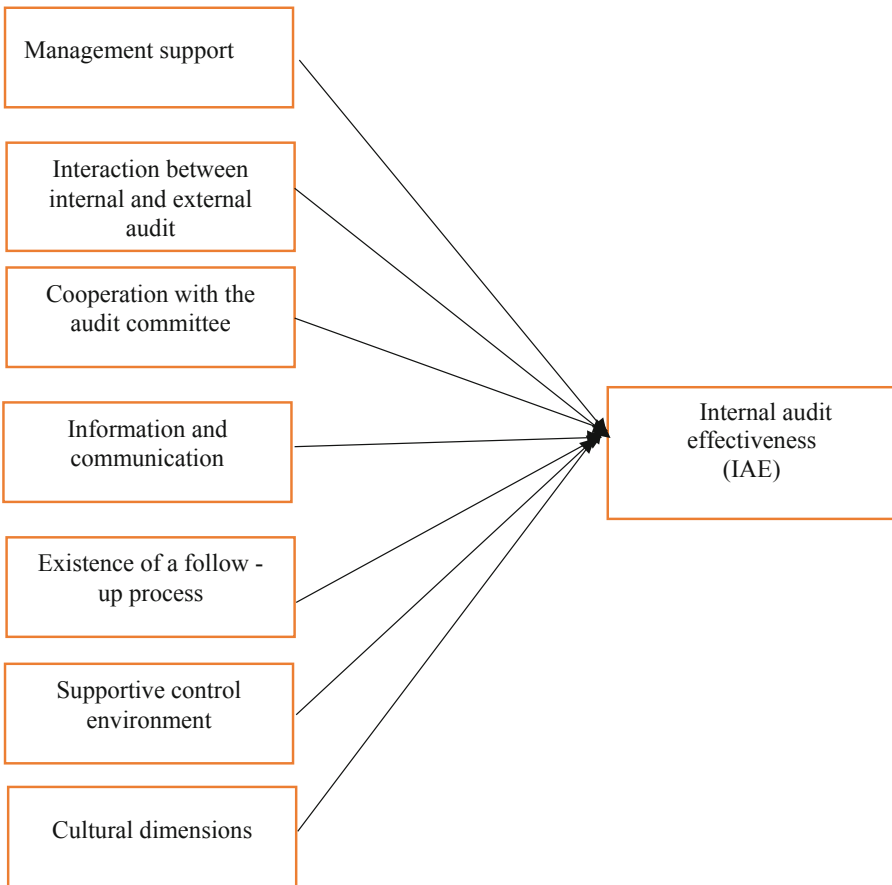


Fig. 1. Suggested research model. (Source: Suggested by the author)

ineffective in organizations in countries where masculinity and hierarchical structures did not allow subordinates to freely express their opinion against management decisions. Internal audit effectiveness was high when the managers of internal audit departments were part of the senior management team and had responsibilities or quality improvement programs. Similarly, Alzeban (2015) used Hofstede's theoretical framework to examine the impact of the dimensions of culture (power distance, uncertainty avoidance and individualism) on internal audit quality in Saudi Arabia. The result showed that high power distance and high uncertainty avoidance would lead to low internal audit quality. Lenz and Hahn (2015) identified factors affecting internal audit effectiveness including senior management support, internal auditors' skills and competencies, and organizational characteristics. Especially, Lenz and Hahn (2015) cited organizational culture as highly significant in the effectiveness of internal audit. Role ambiguity and conflict among individuals in the organization had a negative impact on internal audit effectiveness. Lack of trust was also identified as a critical issue. Within the context of internal auditing, the first three dimensions (power distance, uncertainty avoidance, and individualism) as conceptualized by Hofstede, Hofstede and Minkov (2010) have been used in almost all studies related to organizational culture. Therefore, in this research, the author also intended to use these three dimensions to describe the organizational culture factor, and through the literature review the hypothesis is suggested as follows:

H7: Cultural dimensions negatively affect internal audit effectiveness.

From literature review of internal audit effectiveness and the factors impact the internal audit effectiveness, the author suggests the model as follows (Fig. 1).

3 Methodology

3.1 Research Progress

The study used both qualitative and quantitative methods. Qualitative methods are used to explore the views of experts and researchers on groups of factors affecting the effectiveness of internal audits. Specifically, in this study, the author conducts in-depth interviews with 10 scientists, lecturers, and chief auditors of internal audit groups to identify and consult on groups of factors affecting the effectiveness of internal audit, correct and supplement observed variables measuring research concepts. Next, the author adjusts the scale; questionnaire; and then carries out a preliminary survey with 30 interviewees who are managers, audit committee members, head of internal control department and external auditors to edit questionnaire and scales.

The formal study was carried out using a quantitative method. The study conducts a survey with 300 managers, audit committee members, head of internal control department and external auditors to verify the measurement model, the theoretical model and the hypotheses in the model. Research methods are mainly used in the research such as: Cronbach's alpha reliability analysis, exploratory factor analysis, Pearson's correlation assessment, and regression analysis.

- Cronbach's alpha reliability analysis is used to check the correlation of total variables and evaluate Cronbach's Alpha coefficient. If Cronbach alpha ≥ 0.6 is acceptable scale; variables with a total correlation coefficient (Corrected item total correlation) less than 0.3 will be excluded (Nunnally & Bernstein, 1994).

- Exploratory factor analysis (EFA) is a quantitative analysis method used to reduce a set of interdependent measurable variables into a set of significant groups.
- Pearson's correlation test is used to determine whether or not there is a correlation relationship between independent and dependent variables.
- Multiple regression analysis is used to determine the influence of independent factors: Management support, Interaction between Internal and External Audit, Cooperation with the Audit Committee, Information and Communication, Existence of a Follow-up Process, Supportive Control Environment Cultural Dimensions on Internal audit effectiveness.

3.2 Sampling

In this study, the author selected a sample of managers, audit committee members, head of internal control department and external auditors working in Vietnamese private companies using a convenience sampling method. The author carried out a survey by sending a mail questionnaire directly to the internal auditors and from April to July 2022. The size of the samples was determined to ensure the reliability of the results of exploratory factor analysis (EFA) and multivariate regression models. According to Hair, Anderson, Tatham and Black (1998), for EFA exploratory factor analysis, the minimum size is 5 times the total number of observed variables in the scales. The article uses a questionnaire with 36 observed variables; therefore, the minimum sample size to be achieved is: $36 * 5 = 180$ observations. For that reason, the author uses a sample size of 300 questionnaires sent to managers at all levels and heads of departments. The results obtained 228 valid responses were included in the analysis to test the reliability of the scale measured by Cronbach alpha's index, perform exploratory factor analysis, and implement regression analysis to evaluate the influence of independent factors on the effectiveness of internal audit.

4 Results and Discussion

4.1 Cronbach's Alpha Reliability Test

The Cronbach's Alpha reliability test results for independent variables and dependent variables are shown in Table 1 listed below.

Accordingly, only 34 observed variables were used to perform the subsequent EFA.

4.2 Exploratory Factor Analysis

The exploratory factor analysis uses Principal Components extraction method by Varimax rotation. To evaluate whether an exploratory factor analysis is suitable for analysis in this case, the authors use the KMO and Bartlett's test. In the exploratory factor analysis, the KMO index (Kaiser-Meyer-Olkin) is used to examine the suitability of factor analysis. The KMO value must be between 0.5 and 1, and if the value is less than 0.5, factor analysis may not be appropriate for the data.

Independent Factors

Based on Table 3, the KMO coefficients independent factors was 0.786 (greater than 0.5).

Table 1. The results of Cronbach's Alpha reliability test

Factors	Variables	Cronbach's Alpha
<u>Independent variables</u>	<u>31 independent variables</u>	
Management support - MS	5 variables: MS1, MS2, MS3, MS4, MS5	0.807
Interaction between Internal and External Audit - EA	6 variables: EA1, EA2, EA3, EA4, EA5, EA6	0.846
Cooperation with the Audit Committee (AC)	5 variables: AC1, AC2, AC3, AC4, AC5	First time: 0.682 Second time: 0.826 (eliminating AC5)
Information and Communication (IC)	3 variables: IC1, IC2, IC3, IC4	0.821
Existence of a Follow-up Process - FU	5 variables: FU1, FU2, FU3, FU4, FU5	First time: 0.659 Second time: 0.832 (eliminating FU4)
Supportive Control Environment (CE)	4 variables: CE1, CE2, CE3, CE4	0.880
Cultural Dimensions (OC)	3 variables: OC1, OC2, OC3	0.808
<u>Dependent variables</u>	<u>5 variables</u>	
Internal audit effectiveness - IAE	5 variables: IAE1, IAE2, IAE3, IAE4, IAE5.	0.802

(Source: Processing data of SPSS software)

The result of Bartlett's Test showed that Sig = 0.00 (less than 0.05) (Table 2). Therefore, it is possible to reject hypothesis H0 (the correlation between observed variables is zero), or it can be concluded that the observed variables are correlated with each other overall.

Moreover, the results of factor analysis on 7 factors affecting the internal control effectiveness were all consistent. All factor scales had factor loading coefficients greater than 0.5, Eigenvalues = 1.370 (greater than 1) and Total variance extracted = 66.196% (greater than 50%).

Dependent Factor

After eliminating IE5, the factor loading coefficients smaller than 0.5, the results of the second time of exploratory factor analysis of dependent factor have a KMO coefficient = 0.786 with a significant Bartlett test value (sig < 0.05), so the analyzed data were completely consistent. All factor scales had factor loading coefficients greater than 0.5, Eigenvalues = 2.827 > 1; Total variance extracted = 70.675% > 50% (see Table 2).

4.3 Pearson's Correlation Assessment

Pearson's correlation test aims to determine the degree of correlation between the independent variable and the dependent variable and among the independent variables itself.

Table 2. Result of exploratory factor analysis

	Component							
	1	2	3	4	5	6	7	8
Exploratory factor analysis of independent factors								
KMO = .786								
Total variance extracted = 66.196%								
Eigenvalues = 1.370								
EA3	.792							
EA5	.758							
EA4	.740							
EA6	.738							
EA1	.732							
EA2	.687							
CE1		.862						
CE2		.849						
CE3		.807						
CE4		.759			.326			
MS3			.776					
MS1			.775					
MS2			.757					
MS4			.720					
MS5			.632					
FU2				.822				
FU5				.808				
FU3				.797				
FU1				.751				
IC2					.817			
IC4					.764			
IC3					.746			
IC1					.737			
AC2						.832		
AC4						.801		
AC3						.753		
AC1						.750		
OC2							.845	

(continued)

Table 2. (continued)

	Component							
	1	2	3	4	5	6	7	8
OC3							.811	
OC1							.801	
Exploratory factor analysis of dependent factor - IAE								
KMO = .786								
Total variance extracted = 70.675%								
Eigenvalues = 2.827								
IAE2								.926
IAE1								.916
IAE3								.888
IAE4								.586

(Source: Processing data of SPSS software)

Through the results in Table 3, with the significance level of 1%, the independent variables are all highly correlated with the dependent variable (IAE). Besides, among the independent variables there is a relatively large correlation between CE with IC, MS with IC; FU with AC, FU with OC, so it is suspected that multicollinearity may occur.

4.4 Multiple Regression Equation

To evaluate the influence of each factor on internal control effectiveness, the author uses a multiple regression model. Using SPSS 2.0 software, the results are as shown in Table 4.

The obtained results show that the significance level $\text{Sig} = 0.000$ is less than 5% and the $R^2 = 0.387$ (adjusted $R^2 = 0.367$), this means that 36.7% of internal audit effectiveness is explained by seven factors. In this case, the R square less than 0.5 is still acceptable because the study only assesses the effect of demand-side factors on internal audit effectiveness; and still other supply-side factors might influence IAE either.

Durbin-Watson coefficient = 1.809 (greater than 1) indicates that there is no auto-correlation between variables. The histogram of the normalized residuals (Fig. 2) shows that the residuals are normally distributed (mean = 0.00, Std. Dev = 0.984 which is close to 1), so it can be concluded that the hypothesis of normal distribution is not violated. Besides, by observing the extent to which the observed points are scattered around the expected line (Fig. 2), we see that the residual distribution completely coincides with a normal distribution, the observed points are quite close to the expected line. Therefore, it can be concluded that the residuals are normally distributed.

The results of the multivariate regression analysis are shown in Table 5 below:

Table 3. The results of Pearson's correlation assessment

		CE	EA	FU	AC	OC	MS	IC	IAE
CE	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	228							
EA	Pearson Correlation	.267**	1						
	Sig. (2-tailed)	.000							
	N	228	228						
FU	Pearson Correlation	.112	.092	1					
	Sig. (2-tailed)	.091	.165						
	N	228	228	228					
AC	Pearson Correlation	.185**	.059	.317**	1				
	Sig. (2-tailed)	.005	.375	.000					
	N	228	228	228	228				
OC	Pearson Correlation	.133*	.228**	.305**	.283**	1			
	Sig. (2-tailed)	.045	.001	.000	.000				
	N	228	228	228	228	228			
MS	Pearson Correlation	.193**	.171**	-.041	.169*	.065	1		
	Sig. (2-tailed)	.004	.010	.537	.011	.326			
	N	228	228	228	228	228	228		
IC	Pearson Correlation	.399**	.088	-.059	.116	.114	.349**	1	
	Sig. (2-tailed)	.000	.187	.376	.080	.085	.000		
	N	228	228	228	228	228	228	228	
IAE	Pearson Correlation	.381**	.376**	.283**	.351**	.302**	.341**	.175**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.008	
	N	228	228	228	228	228	228	228	228

***. Correlation is significant at the 0.01 level (2-tailed).*

**. Correlation is significant at the 0.05 level (2-tailed).*

(Source: Processing data of SPSS software)

The results also show that with significance of 0.005, management support, interaction between internal and external audit; cooperation with the audit committee; existence of a follow-up process and supportive control environment positively affect internal audit effectiveness while organizational dimension and information and communication do not impact internal audit effectiveness. Besides, VIF coefficients of all factors are less than 2, which proves that the possibility of multicollinearity between the independent variables is very low.

Table 4. Model fit assesment

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.622 ^a	.387	.367	.42178	1.809

a. Predictors: (Constant), IC, FU, EA, AC, MS, OC, CE

b. Dependent Variable: IAE

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.703	7	3.529	19.837	.000 ^b
	Residual	39.138	220	.178		
	Total	63.841	227			

a. Dependent Variable: IAE

b. Predictors: (Constant), IC, FU, EA, AC, MS, OC, CE

(Source: Processing data of SPSS software)

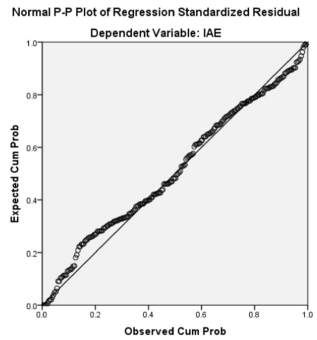
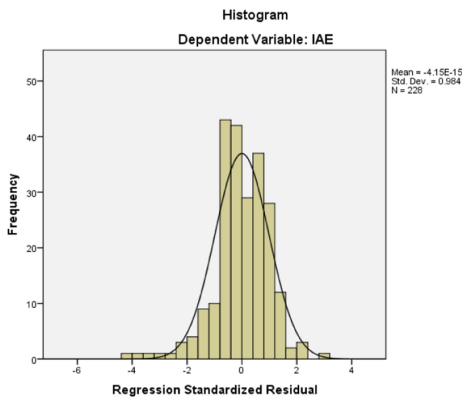


Fig. 2. Frequency plot of normalized residuals. (Source: Processing data of SPSS software)

Table 5. Analysis results of multiple regression model

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.720	.259		2.782	.006		
	CE	.145	.039	.225	3.731	.000	.764	1.310
	EA	.138	.034	.228	4.028	.000	.869	1.151
	FU	.125	.048	.152	2.619	.009	.823	1.215
	AC	.156	.050	.180	3.095	.002	.819	1.221
	OC	.085	.044	.112	1.927	.085	.822	1.216
	MS	.154	.037	.242	4.196	.000	.837	1.195
	IC	-.031	.043	-.044	-0.718	.474	.745	1.342

a. *Dependent Variable: IAE*

(Source: Processing data of SPSS software)

5 Conclusion

Based on the study of 228 samples, the empirical evidence points out that management support, interaction between internal and external audit; cooperation with the audit committee; existence of a follow-up process and supportive control environment positively affect internal audit effectiveness while organizational dimension and information and communication do not influence internal audit effectiveness. The results show that management support has the highest impact on internal audit effectiveness ($\beta = 0.242$), followed by interaction between internal and external audit ($\beta = 0.228$), supportive control environment ($\beta = 0.225$), cooperation with the audit committee ($\beta = 0.180$) and lastly by existence of a follow-up process ($\beta = 0.152$).

Management Support: The research result is quite consistent with previous studies, in which the management support is the most important factor affecting internal audit effectiveness (Ahmad et al., 2009, Cohen & Sayag, 2010; Alzeban & Gwilliam, 2014, Dellai & Omri, 2016; Drogalas et al., 2015; Baheri et al., 2017). The senior managers at all levels should support internal auditors to achieve their expectations, to perform their duties and responsibilities. Moreover, they should provide an adequate budget to perform audit plans and sufficient support and encouragement for training and developing internal auditors. Lastly, managers also need to respond reasonably to internal audit reports, and actively carry out recommendations suggested by internal auditors.

Interaction Between Internal and External Audit: The study points out that more regular interaction and cooperation with external audit can bring out higher effectiveness to internal auditing. Cooperation in terms of planning, exchanging information, and reporting could help to improve internal audit effectiveness and may reduce audit fees.

To improve this relationship and cooperation, internal audit should discuss their audit plan with external auditors, communicate with external auditor on their audit findings and on the other side, external auditors should assess internal audit process and work before relying on them.

Supportive Control Environment: Supportive control environment has proved to have a positive impact on internal audit effectiveness. This result is quite similar to the other research (such as Badara & Saidin, 2014; Karagiorgos et al., 2011; and Barisic & Tusek, 2016). To maintain a supportive control environment, the company should attempt to raise the awareness of managers and employees on the role of internal audit, give strong support and encouragement on their work; set up the company' structure in which internal auditors have their own rights to access the company's papers, information for auditing.

Cooperation with the Audit Committee: The research concludes that the stronger cooperation with the audit committee, the more effective the internal audit has. This statement is supported by other previous studies (Lenz & Hahn, 2015; Alshbiel, 2017; Bednarek, 2018; Prem & Golrida, 2021). Regular interaction and frequent meetings of audit committee with internal auditor may increase internal auditor effectiveness. Frequent meetings help audit committee members monitor and review the work of internal audit functions, establish a power base for IA function, and implement internal audit's recommendations, and finally increase IAE. Therefore, the audit committee is in charge of developing the duties, roles and responsibilities of the internal audit. The audit committee will have to approve the internal audit strategy, plan and budget developed and proposed by the person in charge of the internal audit. The audit committee should receive direct reports and be informed on the progress and results of internal audit implementation on a regular and continuous basis. Through interaction with the person in charge of Internal Audit and the approved internal audit plan, the audit committee will monitor the independence and objectivity of the internal audit with the auditee.

Existence of a Follow-Up Process: The study finds out that the existence of a follow-up process will increase the effectiveness of internal audit. The implementation of the internal audit's recommendations ensures that the unit's operations comply with legal regulations, detects errors in business operations, and most importantly, helps business owners improve the weaknesses of management system and corporate governance. In order to do that, the chief audit executive has to establish a follow-up process to oversee the previously identified internal control weaknesses and ensure that managers take active actions to perform internal audit suggestions.

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References

- Abdolmohammadi, M., Burnaby, P., Hass, S.: A review of prior common body of knowledge (CBOK) studies in internal auditing and an overview of the global CBOK 2006. *Managerial Auditing Journal*, 21(8), 811-821 (2006).
- Ahlawat, S. S., Lowe, D. J.: An examination of internal auditor objectivity: In - house versus outsourcing. *Auditing: A Journal of Practice & Theory*, 23(2), 147-158 (2004).
- Ahmad, N., Othman, R., Othman, R., Jusoff, K.: The effectiveness of internal audit in Malaysian public sector. *Journal of Modern Accounting and Auditing*, 5(9), 53-62 (2009).
- Aikins, S.: An Examination of Government Internal Audits' Role in Improving Financial Performance. *Public Finance and Management*, 11(4): 306-337 (2011)
- Alshbiel, S. O.: Internal Auditing Effectiveness Success Model: A Study on Jordanian Industrial Firms. In *Proceedings of the Second American Academic Research Conference on Global Business, Economics, Finance and Social Sciences*, 978-991 (2017).
- Al-Twaijry, A.A.M., Brierley, J.A., Gwilliam, D.R.: An examination of the relationship between internal and external audit in the Saudi Arabian corporate sector. *Managerial Auditing Journal*, 19(7), 929-944 (2004).
- Alzeban, A., Gwilliam, D. Factors Affecting the Internal Audit Effectiveness: A Survey of the Saudi PublicSector. *Journal of International Accounting, Auditing and Taxation*, 23(2), 74-86 (2014).
- Alzeban, A.: The Impact of Culture on the Quality of Internal Audit. *Journal of Accounting, Auditing & Finance*, 30(1), 57-77 (2015).
- Appiah, M.L, Tettevi, P.K, Amaning, N., Ware, E.O., Kwarteng, C.: Modeling the implications of internal audit effectiveness on value for money and sustainable procurement performance: An application of structural equation modeling. *Cogent Business & Management*, 9:1 (2022). DOI: <https://doi.org/10.1080/23311975.2022.2102127>
- Arena, M., Azzone, G.: Identifying Organizational Drivers of Internal Audit Effectiveness. *International Journal of Auditing*, 13, 43-60 (2009).
- Baheri, J., Sudarmanto., Wekke, I.S.: The effect of management support to effectiveness of internal audit for public universities. *Journal of Engineering and Applied Sciences*, 12(7), 1696-1700 (2017).
- Badara, Mu'azu., Siti Zabedah Saidin.: Empirical evidence of antecedents of internal audit effectiveness from Nigerian perspective. *Middle East Journal of Scientific Research*, 19, 460-471 (2014).
- Barisic, I., Tusek, B.: The Importance of the Supportive Control Environment for Internal Audit Effectiveness - The Case of Croatian Companies. *Economic Research-Ekonomska Istraživanja*, 29(1), 1021-1037 (2016).
- Bednarek, P.: Factors Affecting the Internal Audit Effectiveness: A Survey of the Polish Private and Public Sectors. In T. Dudyc, G. Osbert-Pociecha, B. Brycz (Eds.). *Efficiency in Business and Economics*, 1-16 (2018).
- Cannon, DM., Growe, GA.: SOA compliance: will IT sabotage your efforts? *Journal of Corporate Accounting & Finance*, 15(5), 31-37 (2004).
- Carcello, J.V., Reid, L.C.: Investor reaction to the prospect of mandatory audit firm rotation. *The Accounting Review*, 92(1), 183-211 (2017).
- Cohen, A., Sayag, G. The Effectiveness of Internal Auditing: An Empirical Examination of its Determinants in Israeli Organizations. *Australian Accounting Review*, 20(3), 296- 307, (2010).
- Committee of Sponsoring Organization. *Internal Control, Integrated Framework: Executive Summary-Framework-Reporting to External Parties- Addendum to "Reporting to External Parties"* (1994).

- Committee of Sponsoring Organization. Internal Control - Integrated Framework. Committee of Sponsoring Organizations of the Treadway Commission (2013).
- Dejnaronk, J., Little, H. T., Mujtaba, B. G., McClelland, R.: Factors Influencing the Effectiveness of the Internal Audit Function in Thailand. *Journal of Business and Policy Research*, 11(2), 80-93 (2016).
- Dellai, H., Ali, M., Omri, B.: Factors Affecting the Internal Audit Effectiveness in Tunisian Organizations. *Research Journal of Finance and Accounting*, 7(16), 2222-2847 (2016).
- Dicle, Ü., Usluer, T. The relationship between culture and effectiveness of internal auditing: an empirical study. *International Journal of Contemporary Applied Sciences*, 1(3), 32-54 (2016).
- Drogalas, G., Karagiorgos T. Arampatzis, K.: Factors associated with Internal Audit Effectiveness: Evidence from Greece. *Journal of Accounting and Taxation*, 7(7), 113-122 (2015).
- Endaya, KA., Hanefah, MM.: Internal audit effectiveness: an approach proposition to develop the theoretical framework. *Research Journal of Finance and Accounting*, 4(10), 92-102 (2013).
- Gramling, A., Maletta, M., Schneider, A., Church, B.: The role of the internal audit function in corporate governance. *Journal of Accounting Literature*, 23, 194- 244 (2004).
- Hair, J.F.J., Anderson, R.E., Tatham, R.L., Black, W.C.: *Multivariate Data Analysis*, 5th edition, Prentice Hall, Upper Saddle River, New Jersey (1998).
- Ho, S., Hutchinson, M.: Internal Audit Department Characteristics/Activities and Audit Fees: Some Evidence from Hong Kong Firms. *Journal of International Accounting, Auditing and Taxation*, 19(2), 121-136 (2010).
- Hofstede, G., Hofstede, G. J., Minkov, M.: *Cultures and organizations: software of the mind: intercultural cooperation and its importance for survival* (3rd ed.) McGraw-Hill Education, New York (2010).
- Institute of Internal Auditors (IIA): *The Role of Auditing in Public Sector Governance*. Altamonte Springs, FL: The Institute of Internal Auditors Research Foundation (2009).
- Institute of Internal Auditors (IIA): *International standards for the professional practice of internal auditing*. Institute of Internal Auditors (IIA) Report (2011).
- Karagiorgos, T., Drogalas, G., Giovanis, N.: Evaluation of the Effectiveness of Internal Audit in Greek Hotel Business. *International Journal of Economics Sciences and Applied Research*, 4(1), 19-34 (2011).
- Khelil, I., Hussainey, K., Noubbigh, H.: Audit committee – internal audit interaction and moral courage, *Managerial Auditing Journal*, 31(4/5), 403-433 (2016).
- Lenz, R., Sarens, G., D’Silva, K.: Probing the discriminatory power of characteristics of internal audit functions: Sorting the wheat from the chaff. *International Journal of Auditing*, 18(2), 126–138 (2014).
- Lenz, Hahn, U.: A Synthesis of Empirical Internal Audit Effectiveness Literature Pointing to New Research Opportunities. *Managerial Auditing Journal*, 30(1), 5–33 (2015).
- Mihret, D. G., Yismaw, A. W.: Internal Audit Effectiveness: An Ethiopian Public Sector Case Study. *Managerial Auditing Journal*, 22(5), 470–484 (2010).
- Mihret, D. G., Mula, J. M., & James, K. Antecedents and Organizational Performance Implications of Internal Audit Effectiveness: Some Propositions and Research Agenda. *Pacific Accounting Review*, 22(3), 224-252 (2010).
- Mucha, Boris.: Evaluation of the State of Implementation of the European Structural and Investment Funds: Case Study of the Slovak Republic. *Online Journal Modeling the New Europe*, 35, 4- 24 (2021).
- Nunnally, J., Bernstein, I.H.: *Psychometric Theory*. 3rd edition. McGraw-Hill. New York, USA (1994).
- Octavia, Evi.: The effects of implementation on internal audit and good corporate governance in corporate performance. *Journal Of Global Business and Economics*, 6, 77–87 (2013)
- Ojra, J., Opute, A.P., Sabti.A.: Influence of Culture on the Effectiveness of Internal Audit: A Literature Review. *International Review of Business Research Papers*, 16(2), 46– 65 (2020).

- Onay, A.: Factors Affecting the Internal Audit Effectiveness: A Research of the Turkish Private Sector Organizations. *Ege Academic Review*, Cilt 1(Sayı), 1- 15, (2018).
- Oussii, A. A., Taktak, N. B.: The Impact of Internal Audit Function Characteristics on Internal Control Quality. *Managerial Auditing Journal*, 33(5), 450 - 469 (2018).
- Prem., L.J. Golrida., K.P., (2021), Institutional Theory on Internal Audit Effectiveness the Case of India, *Iranian Journal of Management Studies (IJMS)* 2021, 15(1): 35–48
- Ta, T.T., Doan, T.N.: Factors Affecting Internal Audit Effectiveness: Empirical Evidence from Vietnam. *Internal journal of financial studies*, 10:37 (2022)
- Turetken, O., Jethefer, S., Ozkan, B.: Internal audit effectiveness: operationalization and influencing factors. *Managerial Auditing Journal*, 35(2), 238-271 (2020).
- Salameh, R., Al-Weshah, G., Al-Nsour, M., Al-Hiyari, A.: Alternative Internal Audit Structures and Perceived Effectiveness of Internal Audit in Fraud Prevention: Evidence from Jordanian Banking Industry. *Canadian Social Science*, 7(3), 40-50 (2011).
- Sarens, G., De Beelde, I.: The relationship between internal audit and senior management: A qualitative analysis of expectations. *International Journal of Auditing*, 10(3), 219–241 (2006).
- Sawyer, L. B., Dittenhofer, M. A., Scheiner, J. H.: Sawyer's Internal Auditing (5th Edition). The Institute of Internal Auditors, Florida (2005).
- Soh, D. S., Martinov-Bennie, N.: The internal audit function: Perceptions of internal audit roles, effectiveness, and evaluation. *Managerial auditing journal*, 26(7), 605- 622 (2011).

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