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Impact Evaluation of Factors of Internal Audit on Intrnal Audit Effectiveness: The Moderating and Mediating Effect of Ethical Culture and Internal Controls

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ABSTRACT

The objective of this paper is to investigate the impact of independence, management support and external auditors' cooperation on Effectiveness of Internal Audit. It also investigates the moderating effect of ethical culture and mediating effect of internal controls, between major factors of internal audit (independence, management support and external auditors' cooperation) and Effectiveness of Internal Audit in private sector of Pakistan. Cross-sectional design was used in this study. Four hundred and eighty (480) questionnaires were distributed among the auditors in the chartered accountants' firms of Pakistan situated in Lahore on convenience basis. Sixty-one (61) indicators were measured on five-point Linkert scale from one which refers to strongly disagree to five which denotes strongly agree. PLS-SEM is used for the analysis of the data. The results show that there is positive relationship between two factors of internal audit (independence and external auditors' cooperation) and internal controls while the third factor, management support has no relationship. Moreover, the findings show that ethical culture has no moderating effect on the association between internal control system and internal audit effectiveness. Similarly, internal controls positively mediate the relationship between two factors of internal audit (independence and external auditors' cooperation) and Effectiveness of Internal Audit. Moreover, it demonstrates the value of independence and the collaboration of external auditors in enhancing the efficiency of internal auditing and business performance. The results of this study will direct business entities and other organizations to improve the internal controls for enhancing the effectiveness of internal audit and focus on independence of IAD and external auditors' cooperation with internal auditors as these factors are very important for getting results from internal audit department in order to achieve goals.

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1. Introduction

The importance of the internal audit department to an organization's governance structure is becoming more widely acknowledged. The concept "corporate governance" (CG) denotes to the board of directors' and audit committees' supervision functions to ensure the reliability of financial reporting procedures (Public Oversight Board, 1994). The CG literature identifies three monitoring instruments: internal auditing, external auditing and the directorship

(Al Matarneh, 2011; Anderson & Sullivan, 1993; Bataineh & Alrjoub, 2023; Sulaiman, Na'im Kamarudin, & Shahimi, 2022).

An important tool for enhancing an organization's governance procedures, risk management, and operations is internal audit (IA) (IIA, 2010). IA was initially largely utilised for asset protection, compliance assurance and financial control (Allegrini, D'Onza, Paape, Melville, & Sarens, 2006; Dellai & Omri, 2016; Ganji, Hosayni, Roozban, Mohamad Zadeh, & Nami Fard Tehrani, 2023; Mehamed & Abbas, 2022). IA has, nonetheless, grown in importance and influence over time.

Organizations can benefit from internal audit departments' assistance in assessing and enhancing corporate governance, risk management, and internal controls associated with reporting, operations, and compliance. Studies by Almaliki and Jasim (2022); Gramling, Maletta, Schneider, and Church (2004); PHAM and NGUYEN (2021); Walter and Guandaru (2012); Yee, Yeung, and Cheng (2008) have all emphasised this.

The literature provides a vast knowledge on the subject of effectiveness IA, as well as several systematic research reviews that argue over key elements (Mu'azu Saidu Badara & Siti Zabedah Saidin, 2013; Dittenhofer, 2001; Endaya & Hanefah, 2013; Fatimah & Ainulyaqin, 2022; Gramling et al., 2004; Joshi, 2021; Lenz & Hahn, 2015; Lenz, Sarens, & Jeppesen, 2018). Reading through the earlier literature confirms the value of internal auditing within a company. However, to the author's knowledge, no study has looked at the ethical culture as a moderator between internal controls and IA effectiveness, whether conceptually or empirically. This is true even though that several studies have been conducted on important internal audit characteristics, including competence, size, autonomy, management support, and the participation of independent auditors, and their effects on the efficiency of audit function and business performance. The present study attempts to do the same and assumes that the ethical culture would act as a mediator between internal control system and the efficacy of IA. This study's primary objective is to fill a gap in existing literature and then provide subsequent researchers an opportunity to thoroughly examine the relevant relationship.

1.1. Problem Statement

The idea of increasing value is not a great challenge for internal auditors, but there are a number of factors that make it harder today, including increased complexity that results in emerging and novel risks, serious risk failures that have reputation damage, regulatory, and financial ramifications, and an uncertain economic climate that forces organizations to work harder with fewer resources in order to increase shareholder value. As a result, there are currently five key challenges facing IAD: increased volatility and complexity in the compliance and risk landscape, stakeholders expecting insights into evolving risks, expectations to create value instead of just preserving it, demand to fill the technology gap, and creating a multi-disciplinary team capable of meeting these challenges. Highly efficient internal audit units use several techniques and approaches to address these issues and satisfy the higher stakeholder expectations. To meet the expanding need, more study is required to comprehend the numerous facets of internal audit.

1.2. Research Questions

1. How do the three IAD (Independence, Management Support and relation of External and Internal Auditors) key aspects affect Internal Controls?
2. Is the association between Internal Controls and Effectiveness of Internal Audit positively moderated by Ethical Culture?
3. Does Internal Controls effectively mediate the relationship between Effectiveness of Internal Audit and three main IAD components (Independence, Management Support, and Relation of External and Internal Auditors)?

1.3. Research Objectives

1. To ascertain how important IAD (Independence, Management Support, and Relation of External and Internal Auditors) factors affect Internal Controls?
2. To find out if Ethical Culture moderate the relationship between Internal Controls and Effectiveness of Internal Audit in a favorable way.
3. To determine if Internal Controls positively mediate the relationship between Effectiveness of Internal Audit and the three main IAD components (Independence, Management Support, and Relation of External and Internal Auditors)?

Hypothesis 1: Internal Controls and Internal Audit Effectiveness are positively correlated
Hypothesis 2: Internal controls and independence have a beneficial relationship.
Hypothesis 3. Management Support and Internal Controls are positively correlated.
Hypothesis 4: Relationships and internal controls have a beneficial relationship.
Hypothesis 5: Internal controls act as a mediator in the association between independence of internal auditors and effectiveness of internal audit department.
Hypothesis 6: Internal controls mediates the association between relationships of external and internal auditors and the effectiveness of internal audit**.**
Hypothesis 7: Internal controls act as a mediator in the association between support of management and effectiveness of internal audit.
Hypothesis 8: Ethical Culture moderates the association between Internal Controls and Effectiveness of Internal Audit.

1.4. The Scope of Study

This study takes into consideration only the firms of chartered accountants duly registered with the institute of chartered accountants of Pakistan and situated in Lahore. Respondents were taken from these firms as mostly these firms provide outsourcing services of internal audit to the private sector. Moreover, there are maximum experienced professionals in these firms and Government regulatory, enforcement agencies and autonomous bodies hire these firms for professional advice on different issues and other services.

The remaining paper will proceed in this way: Section 2 contains literature review, operationalization of variables, Conceptual framework and hypothesis building; Section 3 contains methodology; Section 4 contains results; Section 5 contains discussions and section 6 contains conclusion

2. Literature Review

2.1. Introduction

IA contributes significantly in the achievement of the goals of the entity and the strategies for implementation for the accomplishment of goals. In addition, the IAF is in charge of assisting the audit committee and management in making decisions(Fatimah & Ainulyaqin, 2022; Hutchinson & Zain, 2009; Joshi, 2021). Similar to external audit, internal audit ensures the accuracy, truthfulness, and integrity of operational and financial data generated by various units of the firm, on the basis of which significant business decisions are taken at all the management levels.

2.2. Effectiveness Of Internal Audit

Internal audit means an independent service to assess internal controls of organization, processes, its corporate practices, and methods. It supports in getting compliance with different laws applicable to an organization (IIA, 2017).

Moreover, because the objectives of the audit function are aligned with the audit committee's duties of financial reporting monitoring, IA aids in the efficient functioning and operations of the audit committee. (Fatimah & Ainulyaqin, 2022; Goodwin & Kent, 2004; Goodwin & Yeo, 2001; Joshi, 2021). Internal audit is a used to boost up the internal governance processes (Collier & Gregory, 1996; Goodwin, 2003).

Al-Shammari and Al-Sultan (2010) mentioned the following objectives of internal audit function:

1. IAF ensures that the internal control systems and accounting system are appropriate for the facility and proposes system improvements.
2. IAF assesses procedures and plans to check defects or weaknesses in the procedures and systems that are being used by the concern and to advise modifications and improvements.
3. IAF evaluates the employees' adherence to the company's rules and processes, keeps track of their implementation, and explains them to the workforce.
4. The IAF develops and implements methods that stop manipulation and fraud, identify fraud, and reduce losses brought on by negligence or misuse to ensure the safeguarding

of assets and created funds.

By spotting overlaps in control and operating procedures and making suggestions to increase their efficacy and efficiency, the department of internal audit plays a significant part in improving the control environment within a company. Moreover, it serves as an early alert system, seeing problems and delivering fixes right away, enhancing responsibility within the business. The extent to which IAD assists the organisation in achieving its specified objectives serves as a gauge of IAD's effectiveness. Examining whether subsequent audits revealed any underlying problems will help establish this perceived efficacy. Determining the influence of the drivers of IA efficacy tests the overall effectiveness of IAD. Principles including evaluating and enhancing governance procedures, risk management effectiveness, and ensuring that audit results are in line with predetermined goals are used to measure stakeholders' perceptions of IA effectiveness (Alzeban & Gwilliam, 2014; Mu'azu Saidu Badara & Siti Zabedah Saidin, 2013; Bataineh & Alrjoub, 2023; Dellai & Omri, 2016; Dittenhofer, 2001; Mehamed & Abbas, 2022; Sulaiman et al., 2022).

2.3. Internal Controls

The rules and practises that an organisation employs to make sure that its processes are successful, efficient, and in compliance with relevant laws and regulations are referred to as internal controls.

There is a significant amount of literature on internal controls, which can be broadly classified into the following categories:

1. The Conceptual framework: This literature focuses on defining internal controls, their components, and their importance in achieving organizational goals. This literature also covers the different forms of internal controls, such as detective, preventive and corrective controls.
2. Implementation: This literature focuses on the practical aspects of implementing internal controls. It covers topics such as risk assessment, control design, control testing, monitoring, and reporting.
3. Evaluation: This literature focuses on the evaluation of internal controls. It covers topics such as internal control audits, internal control assessments, and internal control evaluations.
4. Internal controls' effects on organizational performance are the main topic of this body of work. It discusses issues including how internal controls affect operational effectiveness, how internal controls affect compliance, and how internal controls affect financial performance.

Internal control systems (ICs) are important for companies because they help ensure that business operations run effectively, information is reliable, and the company is compliant with laws and regulations (Chalmers, Hay, & Khlif, 2019; Fatimah & Ainulyaqin, 2022; Joshi, 2021; Lawson, Muriel, & Sanders, 2017). Inadequate ICs also prevent managers from missing difficulties with their systems, allowing them to solve operational problems, adapt to changing conditions, and make timely modifications and choices. Ultimately, effective ICs result in improved company performance (Chalmers et al., 2019; McNally & Tophoff, 2014).

Companies implement internal controls (ICs) as safeguards against fraud and other possible threats to their operations. They are included in the governance and management structures of the business. Companies have begun to concentrate more on enhancing their ICs in order to boost control effectiveness and satisfy shareholders since fraud and business failures have grown (Chalmers et al., 2019; Sutton, 2006).

2.4. Internal Audit Independence

The independence of an IAD is crucial for its capability to perform its responsibilities in an impartial manner. Protection system must be used to ensure the IAD can operate independently, as a lack of independence can hinder its effectiveness. The role of the IA department within the entity, as well as its rights of access and scope of internal auditing, should be clearly defined to promote IA independence. Previous research has highlighted the negative impact of a lack of independence on IAD performance, particularly in developing countries. It has been recommended that IAD report to the uppermost authority within the entity to ensure

recommendations are implemented and to address concerns over reporting lines and communication (Ahmad, Othman, Othman, & Jusoff, 2009; Alzeban & Gwilliam, 2014; D'Onza, Selim, Melville, & Allegrini, 2015; Dejnaronk, Little, Mujtaba, & McClelland, 2016).

2.5. Management Support for Internal Audit

Although the internal audit department may have maximum independence and autonomy, but it is possible that it may be unable to perform its duties effectively without the support of management (Al-Twaijry, Brierley, & Gwilliam, 2003; Alzeban & Gwilliam, 2014). The backing of top management is particularly crucial during the implementation of audit recommendations, which makes management support a significant factor in determining the effectiveness of the internal audit function.

Considering the relevance of audit function for effective governance, top management has changed its expectations for external auditing in light of this function's importance (Carcello, Hermanson, & Raghunandan, 2005). With the help of management, the internal audit division is able to get the necessary funds for hiring, educating, and developing its workforce (Alzeban & Gwilliam, 2014; Cohen, 1992). ISPPIA also emphasise how important it is for IAD to report to high management and issue a warning that performance may be hampered by financial constraints.

The effectiveness of IAD is reportedly dependent on managerial support, according to prior study. According to Ahmad et al. (2009), the size of the department of internal auditing was the most crucial component for IAE in the Malaysian government sector, with managerial support coming in second. The authors demonstrated that internal audit recommendations were more likely to be implemented with management support, which also ensured sufficient resources for the department. Similarly, Mihret and Yismaw (2007) reported that lack of management support negatively affected IAD in the public sector of Ethiopia, as auditees perceived it to be unimportant without senior management's endorsement. Van Gansberghe (2005) study on IAD in the public sector of Uganda, Malawi, Kenya, and Ethiopia also emphasized the need for management's support to ensure the effectiveness of IAD. According to Baltic and Yilmaz (2006), giving IAD budget allocation authority will increase the department's effectiveness because senior management may otherwise cut funds if it feels threatened. However, if management does not follow the suggestions of the IAD, the department's efficacy may be severely harmed (Van Gansberghe, 2005), as adopting these recommendations is seen as a powerful sign of the success of internal audit.

2.6. Relationship Between Internal and External Auditors

Positive outcomes for businesses and external stakeholders have been regarded as being critically dependent on effective coordination and collaboration between external and internal auditors. To guarantee high-quality audits and avoid needless duplication of work, this may entail sharing ideas and reports, planning together, and exchanging information (Alzeban & Gwilliam, 2014; Mu'azu Saidu Badara & Siti Zabedah Saidin, 2013).

Professional standards highlight the relevance of the partnership between auditors inside and outside a company. For instance, ISPPIA place a strong emphasis on the need to develop a professional working relationship between the audit teams and coordinate actions by exchanging information and harmonising them. This helps internal auditors accomplish their goals and offers the business superior services. When the independent auditor can depend on the internal auditor's work, the information supplied by the internal audit function to the independent auditors can assist the auditor in providing an excellent audit opinion and encourage higher resource efficiency (ISPPIA, 2017).

Academic studies have repeatedly shown that efficient collaboration enhances the efficacy, economy, and efficiency of audits and makes it possible for management to provide high-quality public services. Contrarily, a major problem that compromises the effectiveness of both internal and external audits in the public sector of developing nations has been highlighted as a lack of coordination between internal and external auditors (Brierley & Brierley, 2001; Gwilliam & El-Nafabi, 2002). For instance, research by Dandash and Al-Mohaimeed (2007) showed that the efficiency of external auditors in Saudi Arabia was hampered by a lack of collaboration between audited organisations and the General Audit Bureau (GAB), particularly

during the discussion and application of GAB recommendations. GAB reports from 2008 and 2010 also said that persistent financial mistakes and irregularities were a result of a lack of collaboration between GAB and audited entities.

2.7. Ethical Culture

An ethical culture refers to shared values, norms, and beliefs that promote ethical behavior in a work environment (Kaptein, 2008; Treviño & Weaver, 2003), while ethical climate refers to the perception of ethical behavior or the wanted level of attending client interests (Victor & Cullen, 1988). Ethical culture is guided by various factors like role modeling of managers, rewards, and punishments, and has a stronger association with ethical behavior than ethical climate (Heugens, Van Oosterhout, & Kaptein, 2006; Kaptein, 2011). Some scholars argue that these two concepts overlap. Ethical culture is crucial in understanding how norms and values can impact individual employees in an organization (Denison, 1996).

According to Verschoor (1999), the ethical culture of an entity affects the reliability of its internal control over financial reporting (ICFR). Employees at organisations with strong ethical standards tend to develop and maintain internal controls more rapidly, according to research by Rae, Subramaniam, and Sands (2008). Also, a supportive and sanctioned ethical atmosphere promotes organisational fairness and employee pleasure (Bies, 1986; Homans, 1982). Conversely, the absence of such virtues may lead to disobedient behavior that can compromise internal controls. Dietz, Ostrom, and Stern (2003) argue that repeated incidents of unfair treatment in the workplace may engender negative feelings toward the entity and result in workplace deviance. Similarly, Valentine, Godkin, and Lucero (2002) found a positive correlation between the corporate ethical environment and employee commitment to the entity's values, attitudes, and practices. Therefore, it is hypothesized that a more ethical work environment will lead to greater adherence to entity rules and regulations.

3. Methodology

Methodological framework can be derived from a review of the related literature, which offers the researcher with a clear guideline of how a specific phenomenon is likely to behave (Remenyi, Williams, Money, & Swartz, 1998).

3.1. Research design

Cross-sectional design is used which means data were gathered at one time. Research design gives importance to the evidence attained to empower the researcher response the research questions as clearly as possible.

3.2. Population, survey questionnaire and measures of variables

Our population is the firms of chartered accountants duly registered with the institute of chartered accountants of Pakistan and situated in Lahore. Respondents were taken from these firms on a convenience basis. This is why because most of these firms provide outsourcing services of internal audit to the private sector and there are maximum experienced professionals in these firms. Moreover, Government regulatory, enforcement agencies and autonomous bodies hire these firms for professional advice on different issues and other services.

Our Questionnaire was adopted (Alqudah, Amran, & Hassan, 2019; Alzeban & Gwilliam, 2014). In total, 480 survey questionnaires were circulated on a convenience basis. Respondents were asked the degree of their agreement with 15 items of ethical culture, 9 items of relationship of external and internal auditors, 6 items of management support, 9 items of independence, 7 items of internal controls and 15 items of Effectiveness of Internal Audit.

4. Discussion

4.1. Assessment of Reflective Measurement Model

4.1.1. Composite Reliability

The internal consistency of the construct was calculated using the measure of composite reliability (CR). All indicators' loadings for reflective constructions were tested using the advised cutoff value of 0.5, and Table 4.1 demonstrates that every indication was loaded into its own construct. The loadings of the items vary from 0.561 to 0.957, which shows that the constructs account for more than 50% of the variation of the observed variable. Items having loadings below 0.5 were gradually eliminated until an internal consistency cutoff value of significance was reached. The latent reflecting constructs' CR values vary from 0.788 to 0.947, which is higher

than the 0.7 recommended cutoff point. This suggests that the internal consistency of all the constructs was quite good.

4.1.2. Convergent Validity

The average variance extracted (AVE) was computed to assess convergent validity. According to Table 1, all salient variables had AVE values that were more than the threshold of 0.5, extending from 0.49 to 0.899. While AVE values more than 0.5 are regarded as suitable, this means that the variables explained well over 50% of the variation of their own items. As a result, the findings show convergence validity.

Table: 1 Convergent Validity

Constructs	Items	Loadings	Alpha	CR	AVE
Ethical Culture	**EC1**	**0.858**	**0.964**	**0.968**	**0.667**
	EC2	0.845			
	EC3	0.822			
	EC4	0.816			
	EC5	0.813			
	EC6	0.702			
	EC7	0.775			
	EC8	0.826			
	EC9	0.814			
	EC10	0.858			
	EC11	0.829			
	EC12	0.823			
	EC13	0.814			
	EC14	0.831			
	EC15	0.817			
Effectiveness of Internal Audit	**IAE1**	**0.909**	**0.974**	**0.977**	**0.795**
	IAE2	0.922			
	IAE3	0.859			
	IAE5	0.901			
	IAE6	0.914			
	IAE7	0.852			
	IAE10	0.905			
	IAE11	0.909			
	IAE12	0.832			
	IAE14	0.895			
	IAE15	0.906			
Internal Controls	**IC1**	**0.677**	**0.834**	**0.879**	**0.551**
	IC2	0.633			
	IC4	0.804			
	IC5	0.776			
	IC6	0.766			
	IC7	0.781			
Independence	**IND1**	**0.833**	**0.935**	**0.946**	**0.663**
	IND2	0.863			
	IND3	0.851			
	IND4	0.818			
	IND5	0.871			
	IND6	0.858			
	IND7	0.844			
	IND8	0.784			
	IND9	0.559			
Management Support	**MS1**	**0.946**	**0.959**	**0.967**	**0.833**
	MS2	0.841			
	MS3	0.945			
	MS4	0.948			
	MS5	0.84			
	MS6	0.947			
Relationship	**RE1**	**0.818**	**0.935**	**0.946**	**0.661**
	RE2	0.772			
	RE3	0.838			
	RE4	0.81			
	RE5	0.839			
	RE6	0.867			

RE7	0.762
RE8	0.742
RE9	0.86

Note: Average variance extract (AVE), Composite Reliability (CR) (IAE4, IAE8, IAE9, IAE13, IC3)

4 items of Effectiveness of Internal Audit and 1 item of internal controls was deleted.

4.1.3. Discriminant Validity

To evaluate discriminant validity, 2 methods were used: one is cross-loadings and the other is Fornell-Larcker criterion. First, the standardized loading estimates of items were analyzed, and indicators with loadings less than 0.5 were removed, according to (Chin, 1998; Joseph & Newman, 2010). Moreover, every item of a construct must be loaded onto its own construct. A construct should have higher variance with its own items than with other variable in the model, according to the Fornell-Larcker criterion (Fornell & Larcker, 1981). To satisfy this requirement, the diagonal values presented in table, which are the square root of the AVE, must be bigger than the off-diagonal values, which represent correlation of constructs (Collins, Joseph, & Bielaczyc, 2016). All diagonally placed values were higher compared to the other correlation coefficients between the constructs, as seen in Table 2. As a result, the measuring model demonstrated strong construct-level discriminant validity. Table 3 demonstrates that the outer loadings of items of the same construct were higher than the cross-loadings of other variables, all of which were greater than 0.5. This suggests that all items were well loaded on their own respective variable, and no cross-loadings existed among the items.

Table: 2 Fornell-Larcker Criterion

	EC	IAE	IC	IND	MS	RE
EC	**0.817**					
IAE	0.295	**0.892**				
IC	0.53	0.42	**0.742**			
IND	0.452	0.715	0.679	**0.814**		
MS	0.879	0.222	0.505	0.404	**0.912**	
RE	0.504	0.19	0.904	0.419	0.498	**0.813**

Note: Diagonal values in bold are the square roots of AVE while the off-diagonal signify the correlation

EC-Ethical Culture; IAE-Effectiveness of Internal Audit; IC-Internal Controls; IND-Independence; MS-Management Support; RE-Relationship.

Table: 3 Cross-Loadings

	EC	IAE	IC	IND	MS	RE
EC1	0.858	0.235	0.48	0.372	0.74	0.468
EC2	0.845	0.254	0.446	0.383	0.794	0.444
EC3	0.822	0.209	0.477	0.35	0.788	0.464
EC4	0.816	0.229	0.483	0.378	0.831	0.465
EC5	0.813	0.221	0.475	0.368	0.732	0.446
EC6	0.702	0.209	0.361	0.348	0.538	0.33
EC7	0.775	0.276	0.417	0.366	0.666	0.395
EC8	0.826	0.222	0.416	0.397	0.684	0.393
EC9	0.814	0.286	0.348	0.359	0.658	0.301
EC10	0.858	0.233	0.471	0.37	0.738	0.455
EC11	0.829	0.256	0.446	0.372	0.768	0.445
EC12	0.823	0.205	0.475	0.348	0.782	0.466
EC13	0.814	0.224	0.477	0.375	0.725	0.442
EC14	0.831	0.221	0.414	0.394	0.682	0.396
EC15	0.817	0.288	0.348	0.354	0.659	0.309
IAE1	0.276	0.909	0.374	0.633	0.228	0.178
IAE2	0.247	0.922	0.388	0.675	0.19	0.17
IAE3	0.264	0.859	0.37	0.608	0.172	0.17
IAE5	0.28	0.901	0.378	0.632	0.226	0.173
IAE6	0.262	0.914	0.396	0.674	0.201	0.181
IAE7	0.263	0.852	0.363	0.607	0.17	0.164
IAE10	0.282	0.905	0.367	0.629	0.231	0.172
IAE11	0.255	0.909	0.372	0.662	0.187	0.162
IAE12	0.257	0.832	0.353	0.574	0.169	0.165
IAE14	0.266	0.895	0.366	0.637	0.213	0.156
IAE15	0.246	0.906	0.393	0.671	0.189	0.176
IC1	0.403	0.509	0.677	0.844	0.375	0.42

IC2	0.342	0.626	0.633	0.784	0.31	0.36
IC4	0.417	0.185	0.804	0.359	0.406	0.818
IC5	0.43	0.187	0.776	0.338	0.385	0.772
IC6	0.378	0.172	0.766	0.313	0.4	0.838
IC7	0.381	0.174	0.781	0.356	0.362	0.81
IND1	0.33	0.603	0.552	0.833	0.295	0.34
IND2	0.391	0.657	0.562	0.863	0.344	0.346
IND3	0.364	0.598	0.527	0.851	0.308	0.326
IND4	0.395	0.636	0.506	0.818	0.357	0.306
IND5	0.396	0.636	0.52	0.871	0.346	0.317
IND6	0.415	0.598	0.581	0.858	0.363	0.376
IND7	0.403	0.509	0.677	0.844	0.375	0.42
IND8	0.342	0.626	0.633	0.784	0.31	0.36
IND9	0.256	0.293	0.374	0.559	0.257	0.269
MS1	0.788	0.181	0.439	0.35	0.946	0.446
MS2	0.817	0.238	0.489	0.393	0.841	0.467
MS3	0.78	0.17	0.443	0.353	0.945	0.449
MS4	0.794	0.186	0.44	0.353	0.948	0.441
MS5	0.816	0.245	0.49	0.395	0.84	0.462
MS6	0.784	0.175	0.437	0.35	0.947	0.441
RE1	0.417	0.185	0.804	0.359	0.406	0.818
RE2	0.43	0.187	0.776	0.338	0.385	0.772
RE3	0.378	0.172	0.766	0.313	0.4	0.838
RE4	0.381	0.174	0.781	0.356	0.362	0.81
RE5	0.411	0.189	0.73	0.357	0.405	0.839
RE6	0.373	0.103	0.717	0.321	0.379	0.867
RE7	0.46	0.136	0.651	0.342	0.492	0.762
RE8	0.464	0.148	0.64	0.364	0.447	0.742
RE9	0.383	0.085	0.712	0.315	0.382	0.86

4.2. Heterotrait-Monotrait Ratio

Two methods are used to calculate the discriminant validity while using HTMT: one is criterion approach and the statistical test approach. According to the criterion approach, the HTMT ratio should not be greater than 0.85 or 0.90. If the HTMT ratio exceeds these thresholds, it indicates a lack of discriminant validity. Table 4 displays the HTMT ratio values for all constructs, and they were all not greater than 0.90, meeting the threshold value of HTMT < 0.90 (Gold, Malhotra, & Segars, 2001). Therefore, the results suggest that discriminant validity was achieved for all constructs.

Table: 4 HTMT Ratio

	EC	**IAE**	**IC**	**IND**	**MS**	**RE**
EC						
IAE	0.301					
IC	0.595	0.463				
IND	0.476	0.74	0.761			
MS	0.91	0.226	0.56	0.425		
RE	0.537	0.198	1.021	0.449	0.525	

4.3. Assessment of Structural Model (SEM)

After establishing the measurement model, we moved to test the hypotheses of study using bootstrapping in PLS-SEM. The value of R^2 for each endogenous latent variable, along with the significance and level of the path coefficients, were used to assess the structural model's predictive ability (Collins et al., 2016; Esposito, Lindenberg, & Van den Broeck, 2010; Henseler, Ringle, & Sinkovics, 2009). Table 5 shows the values of R2 of each endogenous variable in this study.

According to Cohen (1992) guidelines, standard values of R2 are 0.26 or above are for substantial, 0.13 are above are for moderate and 0.02 or above are for weak respectively. Table 4.5 shows that the exogenous constructs Independence, Management Support, and Relationship contributed 92.8% of the variance in Internal Controls, while Internal Controls contributed 18.5% of the variance in Effectiveness of Internal Audit. This meets the criterion of substantial R2 for endogenous constructs with three or more exogenous constructs, as recommended by Henseler et al. (2009).

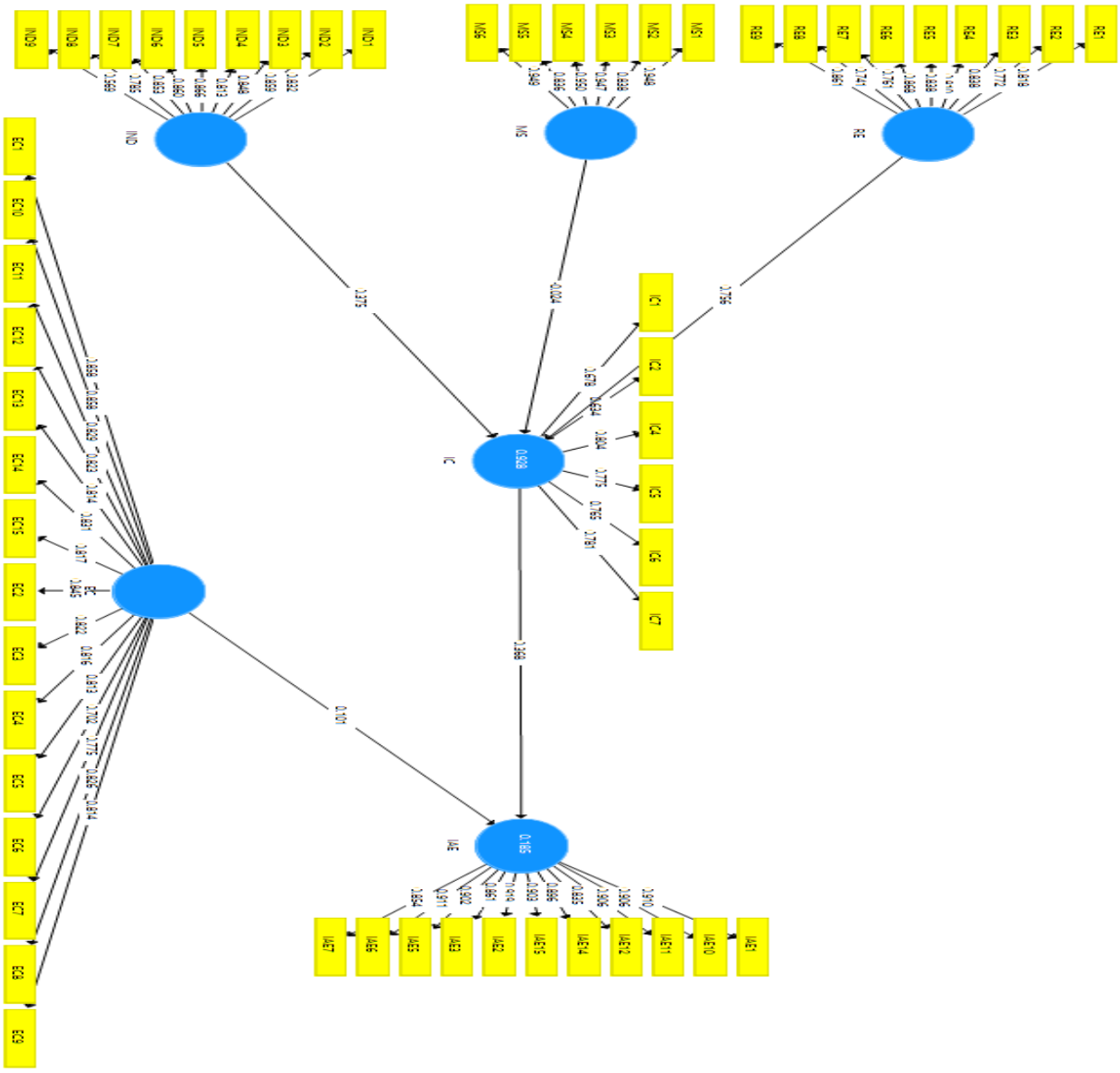

Figure: 1 Measurement Model Assessment

Table: 5 Coefficient of Determination

	R Square	Effect Size
Internal Controls	0.928	Substantial
Effectiveness of Internal Audit	0.185	Moderate

To further evaluate the predictor constructs, the study used Cohen's effect size (f2). As Internal Controls and Effectiveness of Internal Audit had multiple exogenous constructs, the relative effect sizes of each exogenous construct were calculated using Smart PLS 3. The study found that the f2 values of Independence, Management Support, Relationship, and Internal Controls had small to moderate effect sizes, which was reasonable considering the complexity of the factors that affect Effectiveness of Internal Audit. This indicates that the model fitted the data well. Table 6 presents the f2 values for each exogenous construct.

Table: 6 Effect Size

	F2 Internal Controls	Effect	F2 Effectiveness of Internal Audit	Effect
IND	1.509	Large	--	--
MS	0.006	No Effect	--	--
RE	5.514	Large	--	--
IC	--	--	0.119	Small

4.4. Direct Relationship-Path Analysis

The PLS-SEM bootstrapping was used to assess the path coefficients for the hypotheses.

Hypothesis 1: Internal Controls has a positive association with Effectiveness of Internal Audit

The PLS-SEM bootstrapping analysis demonstrated a statistically substantial positive association between Internal Controls and Effectiveness of Internal Audit, with a path coefficient of 0.368 (t= 5.426, LL= 0.262, UL= 0.48, $p < 0.05$). Therefore, Hypothesis 1, which stated that Internal Controls have a positive relationship with Effectiveness of Internal Audit, is supported by the results.

Hypothesis 2: Independence has a positive association with Internal Controls

The results of the PLS-SEM analysis and bootstrapping showed a positive and substantial association between Independence and Internal Controls. The path coefficient (β) was found to be 0.375, with a t-value of 11.358, lower limit (LL) of 0.323, upper limit (UL) of 0.428, and p-value less than 0.05. Based on these findings, it can be concluded that Hypothesis 2 is supported.

Hypothesis 3: Management Support has a positive association with Internal Controls.

The study found that there is no evidence to support Hypothesis 3, which suggests a positive relationship between Management Support and Internal Controls. The results showed a non-significant negative association between these two variables (β = -0.24, t= 1.321, LL= -0.055, UL= 0.004, $p > 0.05$).

Hypothesis 4: Relationships has a positive relationship with Internal Controls.

The results showed a significant and positive association between Relationship and Internal Controls, which supports Hypothesis 4. The path coefficient was estimated to be β = 0.756, with a t-value of 25.714 and confidence intervals between 0.708 and 0.804 at a significance level of $p < 0.05$.

Table: 7 Results of Direct Relationship

		Beta	SE	T Values	P Values	LL	UL	Decision
H1	IC -> IAE	0.368	0.068	5.426	0.000	0.262	0.48	Supported
H2	IND -> IC	0.375	0.033	11.358	0.000	0.323	0.428	Supported
H3	MS -> IC	-0.024	0.018	1.321	0.094	-0.055	0.004	Not Supported
H4	RE -> IC	0.756	0.029	25.714	0.000	0.708	0.804	Supported

4.5. Testing the Mediating Effect

According to the results presented in Table 8, it can be concluded that two of the indirect effects were found to be significant at a 0.05 level of significance, while one of the indirect effects was found to be insignificant.

Hypothesis 5: Internal Controls mediates the association between Independence and Effectiveness of Internal Audit department.

According to the bootstrapping analysis shown in Table 8 and Figure 2, the indirect effect (β = 0.138) was found to be significant with a t-value of 4.201. The 95% Boot CI interval for the indirect effect, as suggested by Preacher and Hayes (2008), did not cross zero, indicating that there is mediation. Therefore, the results suggest that Internal Controls acts as a mediator in the relationship between Independence and Effectiveness of Internal Audit, supporting Hypothesis 5 (β = 0.138, t = 4.201, $p < 0.05$).

Hypothesis 6: Internal Controls mediates the association between Relationship and Effectiveness of Internal Audit department.

According to the bootstrapping analysis presented in Table 8 and Figure 2, the indirect effect (β = 0.278) was found to be significant with a t-value of 5.882. Moreover, the indirect effect 95% Boot CI: [LL = 0.203, UL = 0.358] did not contain a zero value, indicating that there is mediation. Therefore, the results suggest that Internal Controls mediate the relationship between Relationship and Effectiveness of Internal Audit department, which supports Hypothesis 6 (β = 0.278, t = 5.882, p < 0.05).

Hypothesis 7: Internal Controls mediates the association between Management Support and Effectiveness of Internal Audit.

Based on the results presented in Table 8 and Figure 2, it was found that the indirect effect (β = -0.009) was not significant, with a t-value of 1.29. The 95% Boot CI: [LL = -0.023, UL = 0.000] interval contains a zero, which indicates that there is no mediation. Consequently, the study found that there is no evidence to support Hypothesis 7, which suggests that Internal Controls does not mediate the association between Management Support and Effectiveness of Internal Audit. (β = -0.009, t =1.29, p < 0.05).

Table: 8 Indirect Effects

		Beta	SE	t Values	P Values	LL	UL	Decision
H	IND -> IC -> IAE	0.138	0.033	4.201	0.000	0.091	0.203	Supported
H	RE -> IC -> IAE	0.278	0.047	5.882	0.000	0.203	0.358	Supported
H	MS -> IC -> IAE	-0.009	0.007	1.29	0.099	-0.023	0.000	Not Supported

4.6. Testing the Moderating Effect

Table 9 presents the findings of the research looking at the moderating impact of ethical culture. The table provides information on the hypotheses testing related to the interaction terms.

Hypothesis 8: Ethical Culture moderates the association between Internal Controls and Effectiveness of Internal Audit department.

The interaction term (IC*EC) was non-significant (β = -0.003, t = 0.53; LL = - 0.125, UL = 0.078), indicating that Ethical Culture is not moderating the association between Internal Controls and Effectiveness of Internal Audit. Hence, Hypothesis 8 was not supported.

Table: 9 *Moderating Effect*

		Beta	SE	t Values	P Values	LL	UL	Decision
H	IC*EC -> IAE	-0.033	0.063	0.53	0.298	-0.125	0.078	Not Supported

4.7. Interaction Term

4.7.1. Contributions/Implications of the Research

Subsequent research in this area will be significantly impacted by the study's conclusions. First of all, this research demonstrates that internal control systems have a considerable influence on the elements that contribute to internal auditors' success in attaining their objectives. In order to improve the effectiveness of internal audit, stakeholders and decision-makers should take into account how crucial internal controls are for the business. As well as enhancing the autonomy and support of management of internal auditors, policymakers should put an emphasis on policies that foster collaboration between external and internal auditors by providing resources and tools. These actions can enhance the general efficacy of internal audit procedures in businesses.

4.7.2. Limitations and Future Research

Future researchers should take a look at the study's shortcomings. First off, as a moderator variable, the study solely took ethical culture into account. Future academics might benefit from looking at how other elements like technology and job satisfaction affect internal audit effectiveness. Furthermore, because the study only looked at Pakistan's private sector, it is important to use caution when extrapolating the findings to other industries or nations. Moreover, the study's cross-sectional approach, which collected data at a single moment in time

and could not have adequately captured changes over time, may have produced biassed results by relying primarily on data from Chartered Accountants companies with offices in Lahore.

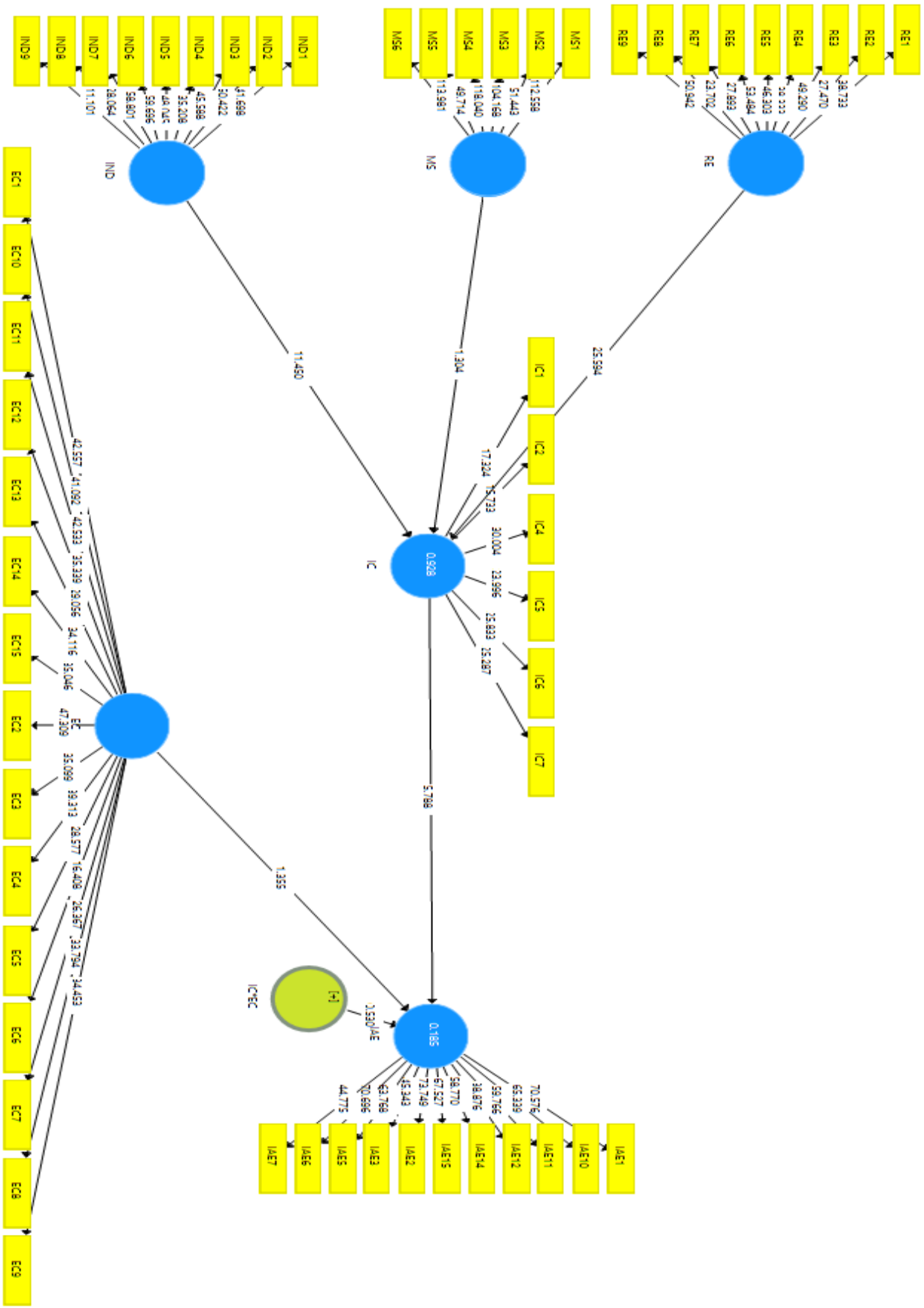

Figure: 2 Structural Model Assessment

5. Conclusion

The goal of this research work was to investigate the connection between internal audit effectiveness factors and internal control system, with ethical culture acting as a moderator. Alzeban and Gwilliam (2014) approach, which incorporates top management support, IAD independence, and external auditors' collaboration as independent variables, was used in the study. It was further explained using the Resource-Based Theory that improved performance and effectiveness depend on having access to enough resources, including managerial assistance and independent and cooperative external auditors. Three models—direct effects, indirect impact, and interaction effects—were examined in the study using the PLS-SEM methodology. Internal controls and the effectiveness of internal auditing, as well as autonomy and internal controls, were all shown to have positive relationships in the direct impact model, whereas management support was not shown to be relevant. Also, it was discovered that internal controls and external auditors' collaboration had a beneficial relationship. According to the indirect impact model, internal controls moderate both the link between external auditors' collaboration and internal audit effectiveness as well as the relation between independence and internal audit effectiveness. Internal controls, however, are not a mediator in the link between top management and internal audit effectiveness. A substantial moderating influence of ethical culture on the link between internal controls and the effectiveness of internal auditing was not discovered by the interaction effect model, to sum up. Overall, under the moderating effect of ethical culture, the study sheds light on how internal audit effectiveness determinants affect internal auditor effectiveness.

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