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Investment of human resources in internal control systems and designation as the most admired firms: A corporate governance perspective

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Abstract: The purpose of this study is to examine the impact of investments in human resources for internal control systems on the likelihood of being selected as one of Korea's most admired companies, with a specific focus on the moderating role of corporate governance. Using data from non-financial firms listed on the Korean stock exchange between 2016 and 2021, the analysis reveals that both quantitative and qualitative aspects of human resource investment in internal control systems significantly enhance corporate reputation. Specifically, the number of employees dedicated to internal control functions and the inclusion of certified public accountants positively influence corporate reputation. Corporate governance is analyzed as a moderating factor. Results indicate that robust human resource investments in internal control systems significantly enhance corporate reputation. Furthermore, strong corporate governance amplifies this effect by fostering transparency, accountability, and stakeholder trust. The findings underscore the complementary roles of governance and human capital in improving financial transparency and corporate reputation. Firms aiming to boost their reputation should prioritize strategic investments in internal control personnel while strengthening governance frameworks to maximize effectiveness.
Keywords: *Admired firms, Corporate governance, Human resources of internal control system.*

1. Introduction

Since the early 2000s, multiple large-scale accounting fraud scandals have highlighted the global importance of financial information transparency and reliability. In response, regulatory measures such as the Sarbanes-Oxley Act (SOX) in the United States were implemented to strengthen internal control systems. Aligning with this global trend, South Korea formalized its internal control system through the Corporate Restructuring Promotion Act in 2001 and amendments to the External Audit Act in 2003. These measures aimed to enhance financial transparency by integrating internal control system evaluations into external audit processes. Since 2019, South Korea has further strengthened external audits of internal control systems to ensure their effective implementation and operational reliability.

Internal control systems play a critical role in improving the reliability of financial reporting and strengthening disclosure transparency. However, their effectiveness largely depends on the characteristics of the personnel involved in their operation. Ge and McVay [1] emphasize that adequate investment in human resources is essential for the proper functioning of internal control systems. South Korea has a unique regulatory requirement that mandates companies to disclose information about personnel responsible for operating their internal control systems, including the number of employees, their expertise, and work experience. This disclosure provides external stakeholders with valuable indicators to assess the effectiveness of these systems.

Building on prior studies, the human resources in the operation of internal control system significantly contribute to improved transparency and stakeholder trust [1, 2]. Specifically, this study empirically analyzes whether the human resource composition of internal control systems, which is

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considered to significantly contribute to enhancing corporate transparency, affects corporate reputation by measuring it in terms of quantitative characteristics centered on the number of personnel and qualitative characteristics focused on expertise.

Reputation serves as a critical measure of a company's sustainability [3, 4]. According to Cho, et al. [5] companies aiming to be recognized as Korea's most admired companies are evaluated across multiple dimensions, including customer value, shareholder value, employee value, and continuous technological innovation. Another key factor in enhancing corporate transparency and accountability is corporate governance [6]. Numerous studies have shown that strong corporate governance leads to increased corporate value and improved financial performance [7, 8]. Given these factors, investments in both internal control systems and corporate governance are expected to play a pivotal role in shaping corporate reputation.

Thus, the purpose of this study is objectives: first, to examine the impact of human resource investment in internal control systems on a company's designation as one of Korea's most admired companies, and second, to investigate how corporate governance strengthens this relationship. Using novel Korean data, we find that both quantitative and qualitative aspects of human resources in internal control systems positively affect a company's designation as one of the most admired companies. Additionally, strong corporate governance reinforces this relationship, highlighting the complementary role of governance and human resource investment in enhancing corporate reputation.

The remainder of this paper is structured as follows. The second part covers the literature review and the development of hypotheses. The third part outlines the methodology, including the data collection process and the research model. The fourth part presents the findings, and fifth part provides the conclusion.

2. Literature Review and Hypotheses Development

To promote the transparency of accounting information, numerous efforts have been made. Especially in Korea, auditors review the operational report prepared by management and attach the review results as a supplement, which offers only a limited level of assurance. However, as of 2019, new amendments of External Audit Act require the internal control system to be audited, which means rigorous audit that entails an in-depth examination of the financial statement preparation process as well as the design and operation of internal control [9].

Additionally, under the External Audit Act in Korea, companies are required to disclose characteristics of human resources, such as the number of personnel involved and their average months of experience, in their internal control system operation reports. This is a unique disclosure requirement specific to Korea, introduced with the aim of providing external stakeholders with information that can indirectly assess the effectiveness of each company's internal control system. Given that the effective operation of an internal control system largely depends on the competence of the relevant personnel and the level of investment, such information serves as a valuable basis for evaluating a company's internal control system.

South Korea is the only country that publicly disclose the data on human resources of internal control system. Therefore, most of the research on internal control systems largely focuses on the Korean context. The study of Ge and McVay [1] emphasize that the cause of internal control's material weakness lies in the insufficiency of human resources dedicated to internal control.

A considerable body of academic research has analyzed the impact of human resource investment in internal control systems on accounting transparency. For example, prior studies suggest that higher levels of investment in human resources for internal control systems are associated with a lower likelihood of reporting material weaknesses and accounting errors Ryu, et al. [10] higher accrual quality Yang and Yeo [2] and positive effects on credit ratings [9]. Building upon these prior studies, this research differentiates itself by examining whether adequate investment in human resources for internal control systems is substantively linked to the enhancement of financial reporting reliability.

Collectively, adequate investment in human resources for internal control systems is likely to play a crucial role not only in enhancing internal process efficiency but also in earning greater trust from external stakeholders, ultimately positioning the company as one of the most admired firms. To be the most admired companies in Korea, they are evaluated based on six core values, such as continuous technological innovation, customer value, shareholder value, employee value, and brand image [5]. These values indicate superior performance within peer groups and imply sustainability achieved through technological innovation and competitiveness [11]. In this regard, Kim and Baek [12] pointed out that as firms' reputation increase, the firm value is likely to increase. Similarly, Anderson and Smith [13] demonstrated that investments in admired companies tend to yield favorable performance. Antunovich and Laster [14] revealed that companies with higher reputational rankings outperformed those with lower rankings. This superior performance remained consistent even when controlling factors such as size, book-to-market value, and industry effects.

With this background, this study emphasizes that investment level in human resources for internal control systems can serve as a critical factor in enhancing financial reporting transparency and reliability, as well as improving internal process efficiency, thereby fostering greater trust from external stakeholders. Such effects are likely to strengthen the firm's reputation and value, ultimately playing a pivotal role in increasing the likelihood of the firm being designated as one of Korea's most admired companies. Hence, this study proposes the following hypothesis:

Hypothesis 1: The higher the level of investment in human resources for internal control systems, the greater the likelihood that the company will be recognized as one of Korea's most admired companies."

Various studies have demonstrated that robust corporate governance enhances corporate transparency and accountability, positively impacting firm performance and market value. Efforts to disclose corporate governance mandatorily have been internationally through initiatives such as the revision of the OECD/G10 Principles of Corporate Governance in 2015, the introduction of Japan's Stewardship Code in 2014. According to OECD Corporate Governance Factbook in 2017, 37 countries mandated disclosure of corporate governance [15]. Since 2019, South Korea has mandated KOSPI-listed companies with total assets exceeding 1.37 billion USD to disclose key corporate governance information to investors [16].

The Korea Corporate Governance Service provides a governance index, which is comprised of shareholders, board of directors, audit committee, stakeholders and market oversight. In detail, shareholders encompass shareholder rights, equitable treatment, and responsibilities. The board of directors includes its composition, appointment, operation, responsibilities, duties, evaluation, and remuneration. The Audit Committee refers to internal and external auditors. Stakeholders involve stakeholder participation in management oversight. Market oversight encompasses the market for corporate control, disclosure, and institutional investors [15, 17].

There are several studies that have explored the effect of corporate governance. Yoon and Oh [7] analyzed the relationship between corporate governance evaluation indices and managerial performance, finding that firms with strong governance achieved superior managerial outcomes. This aligns with Sohn [18] study, which also supported the positive link between corporate governance and firm performance. Black, et al. [8] in their analysis of the relationship between corporate governance evaluation index and market value for Korean firms, found that firms with higher corporate governance evaluation scores experienced increases in market value as measured by Kim, et al. [19] compared firms with adequate or higher governance grades to those with below-adequate grades. The study revealed that firms with excellent governance outperformed others in return on total assets (ROA), operating margin on sales, and economic value added (EVA), all statistically significant metrics. Fama and Jensen [20] investigated the role of outside directors, concluding that a higher proportion of such directors enhances firm value due to improved expertise and monitoring. Similarly, Sohn [18] examined the post-IMF crisis period in Korea, finding a significant positive relationship between corporate governance improvements and firm value. Ryu and Ji [21] explored the relationship between corporate governance and win-win growth, discovering that firms with higher governance levels, reduced controlling shareholder influence, and increased foreign investment ratios were more actively engaged in win-win growth initiatives.

These findings collectively underline the critical role of robust corporate governance in driving firm performance, market value, and sustainable growth. Prior studies have consistently demonstrated that firms with robust corporate governance structures outperform their peers in terms of financial performance, market valuation, and stakeholder trust [7, 8, 22]. Strong governance frameworks not only enhance managerial oversight but also create an environment conducive to the effective operation of internal control systems. Within this context, the quality of human resources dedicated to internal control systems emerges as a critical determinant of system effectiveness. Research has shown that adequate investment in human resources for internal control system reduces the likelihood of material weaknesses and improves financial reporting reliability [1, 10]. Furthermore, firms with high-quality personnel in internal control systems demonstrate superior accrual quality and operational efficiency [2]. When firms with strong corporate governance also prioritize the development of human resources for internal control systems, they are better positioned to achieve operational excellence and gain stakeholder trust. This synergy between governance and internal control capabilities is likely to enhance a firm's reputation and increase its chances of being recognized as one of Korea's most admired companies. Therefore, the second hypothesis is established as follows:

Hypothesis 2: Firms with higher levels of corporate governance are more likely to have their human resources of internal control system contribute to being designated as one of the most admired companies.

3. Methodology

3.1. Data Collection Process

Table 1 outlines the procedures undertaken to derive the final sample for hypothesis testing. To ensure sample homogeneity, this study focuses on non-financial industry firms from 2016 to 2021. Companies with fiscal year-ends other than December were excluded to maintain consistency in financial reporting. The human resource data of internal control system was manually collected from the publicly available business reports. Additionally, the sample was restricted to firms for which data on the designation of admired companies, obtained from Korea Management Association Consultants (KMAC), was available. Governance scores were sourced from the Korea Corporate Governance Service (KCGS), while financial data was retrieved from the Fn-Guide database. Firms lacking financial data and those operating within the financial industry were excluded from the sample. Additionally, the top and bottom 1% of values for dependent and independent variables were winsorized to mitigate the influence of outliers. Following these selection and cleaning processes, a final dataset comprising 829 firm-year observations was obtained.

Table 1.
The Data Description.

Firm-year observations from 2016 to 2021 with information on human resource internal control system, the most admired firms, and governance score with December fiscal year-end	2,537
Less:	
Missing data for control variables	1,708
Final observation	829

3.2. Research Model

The following regression model is employed to verify the relationship between human resources of internal control system and designation as the most admired firms. Equation (1) is designed with the purpose of testing such relationships, addressing the first hypothesis.

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To test the hypothesis, the level of human resource investment in the internal control system was measured based on the total investment in personnel responsible for the internal control system. In this study, the human resources of internal control systems is divided into two, oversight and operational bodies. The best practice guidelines for the internal control system state that the board of directors oversees the overall design and operation of the internal control system carried out by management, and the audit committee independently evaluates the internal control system to support its proper operation and improvement. Additionally, accounting, financial, IT and disclosure departments function as operational departments, which are explicitly distinct from the roles of the board of directors and audit committee. Therefore, it is necessary to examine the impact of human resource investments in the oversight and operational department personnel on the designation as the most admired companies.

In equation (1), AB implies the oversight bodies, including the audit committee and the board of directors, while OPER refers to the operational departments, such as accounting, finance, IT, and disclosure functions.

$$Respect_t = \beta_0 + \beta_1 AB1{,}2\ (OPER1{,}2)_t + \beta_2 Size_t + \beta_3 Lev_t + \beta_4 Roa_t + \beta_5 Invrec_t + \beta_6 Grow_t + \beta_7 Ocf_t + \beta_8 Loss_t + \beta_9 Da_t + IndD + YrD + \varepsilon \quad (1)$$

Where,

Respect = dummy variable, 1 if the firms are designated as the most admired firms, 0 otherwise; AB = AB1, AB2

(1) AB1 = the total number of personnel in internal control system in audit committee and board of directors;

(2) AB2 = the total number of CPA among internal control personnel in audit committee and board of directors;

OPER = OPER1, OPER2

(1) OPER1 = the total number of personnel in internal control system in accounting, financing, IT, and disclosure departments;

(2) OPER2 = the total number of CPA among internal accounting personnel in accounting, financing, IT, and disclosure departments;

Size = natural logarithm of total assets; Lev = total debt divided by total assets; Roa = net income/total assets; Invrec = ratio of accounts receivables; Grow = (total assets in the current year – total assets in the previous year)/total assets in the current year; Ocf = cash flow from operation/total assets; Loss = 1 if a company with loss, and 0 otherwise; Da = Discretionary accruals measured by the model in Kothari, et al. [23], described in equation (2); IndD = industry dummies; YrD = year dummies

The variable, Da is based on the discretionary accruals as suggested by Kothari, et al. [23] as described in equation (2).

$$\frac{Ta_t}{A_t} = \alpha_0 + \beta_1 \frac{1}{A_t} + \beta_2 \left(\frac{\Delta Sales_t - \Delta Ar_t}{\Delta Ar_t}\right) + \beta_3 \frac{Ppe_t}{A_t} + \beta_2 Roa_t + \varepsilon \ (2)$$

Where, Ta = Net income – cash flow from operations; A = Total assets; Sales = Sales revenue; Ar = Accounts receivable; Ppe = Plant, property, and equipment; Roa = Return on assets, Net income / total assets

Additionally, year dummies are introduced to control volatility stemming from specific economic conditions within a given year. To address industry-specific effects, the model also incorporates industry dummies.

The equation (3) tests the second hypothesis. The interaction term between AB(OPER) × Gov is the interest variable to test the effect of governance level.

$$Respect_t = \beta_0 + \beta_1 AB1{,}2\ (OPER1{,}2)_t + \beta_2 Gov_t + \beta_3 AB1{,}2\ (OPER, 12) \times Gov_t + \beta_4 Size_t + \beta_5 Lev_t + \beta_6 Roa_t + \beta_7 Invrec_t + \beta_8 Grow_t + \beta_9 Ocf_t + \beta_{10} Loss_t + \beta_{11} Da_t + IndD + YrD + \varepsilon \quad (2)$$

Where, Gov = Governance score; AB1,2(OPER1,2) × Gov = interaction variable of AB1,2 (OPER1,2) and Governance score; see equation (1) for the definition of other variables

4. Results

4.1. Descriptive Statistics and Correlation Matrix

Table 2 presents the descriptive statistics of the key variables. The mean value of Respect is 1.863 with a standard deviation of 0.110, suggesting that the data is distributed in a stable manner. The mean values of AB1, and AB2 are 2.937, and 0.258, respectively. Similarly, the mean values of, OPER1, and OPER2 are 10.038, and 0.423, respectively.

Table 2.
Descriptive Statistics.

Variables	Mean	Std	Q1	Median	Q3
Respect	1.863	0.110	1.798	1.870	1.939
AB1	2.937	2.855	2.000	2.000	3.000
AB2	0.258	1.068	0.000	0.000	0.000
OPER1	10.038	23.881	3.000	6.000	10.000
OPER2	0.423	10.212	0.000	0.000	0.000
Gov	4.325	0.459	4.060	4.205	4.477

Note: Variable definition: See variable definitions in equation (1)

Table 3 shows the Pearson correlation matrix for this study's main variables. The testing variables initially show a positive relationship with the most admired firms. However, this result does not account for the control variables that might affect the dependent variable.

Table 3.
A correlation matrix.

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Respect	1.000	0.211	0.084	0.226	0.088	0.236
		<.0001	0.005	<.0001	0.004	<.0001
(2) AB1		1.000	0.170	0.495	0.101	0.374
			<.0001	<.0001	<.0001	<.0001
(3) AB2			1.000	0.039	0.233	0.174
				<.0001	<.0001	<.0001
(4) OPER1				1.000	0.086	0.202
					<.0001	<.0001
(5) OPER2					1.000	0.061
						<.0001
(6) Gov						1.000

Note: Variable definition: See variable definitions in equation (1)

4.2. Regression Analysis

Table 4 presents the analysis results of the relationship between internal control personnel and the designation as a most admired firm. The analysis was conducted using logit model, with the key variables defined as AB and OPER.

Panel A examines the relationship with internal control system personnel (AB2). At the board and audit committee level, the coefficient of AB1 is 0.019, showing a statistically significant positive relationship at the 1% level. Similarly, the total personnel in operating departments dedicated to internal control system (OPER1) also exhibited a strong effect, with a coefficient of 0.023, statistically significant at the 1% level. These findings highlight that companies with robust internal control system personnel are more likely to gain external credibility, leading to a higher probability of being designated as a most admired company.

Panel B investigates the relationship between the number of CPAs within internal control system personnel (AB2) and the designation. The number of CPAs in the board and audit committee level (AB2) showed a coefficient of 0.041, indicating a statistically significant positive relationship at the 5% level. Similarly, the number of CPAs in operating departments (OPER2) also positively influenced the designation, with a coefficient of 0.014, statistically significant at the 5% level. This suggests that the presence of CPAs in operational departments enhances the effectiveness of internal control, contributing to the likelihood of being recognized as a most admired company.

These findings collectively demonstrate that the quantitative and qualitative aspects of internal control personnel play a crucial role in managing a company's reputation and increasing the likelihood of being designated as a most admired company [24]. Notably, the reinforcement of internal accounting and control expertise at both the audit committee and operational department levels enhances external trust, which significantly contributes to a company's reputation.

Table 4.
The result on the relationship between internal control operation personnel and the most admired firm designation.

Panel A. the number of personnel in internal control system				
Variables	**Coeff.**	**Wald x^2**	**Coeff.**	**Wald x^2**
Intercept	1.472	20.140***	1.759	27.960***
AB1	0.019	3.420***		
OPER1			0.023	6.610***
Size	0.014	5.040***	0.007	2.940***
Lev	-0.004	-5.080***	-0.003	-4.590***
Roa	0.119	1.830*	0.102	1.890*
Invrec	0.014	0.570	0.007	0.340
Grow	-0.014	-1.720	-0.013	-1.850*
Ocf	-0.052	-0.760	-0.043	-0.780
Loss	-0.019	-1.470	-0.016	-1.510
Da	-0.197	-2.540***	-0.174	-2.790***
IndD	included		included	
YrD	included		included	
Likelihood Ratio	15.03***		19.31***	
Pseudo R^2	0.139		0.168	
Panel B. CPA in internal control system				
Variables	**Coeff.**	**Wald x^2**	**Coeff.**	**Wald x^2**
Intercept	1.851	15.960***	1.612	14.320***
AB2	0.041	2.580**		
OPER2			0.014	2.170**
Size	0.005	1.270	0.010	2.550***
Lev	0.002	0.550	-0.010	-2.830***
Roa	0.097	0.620	0.006	0.050
Invrec	-0.012	-0.280	0.000	0.000
Grow	-0.028	-1.700***	-0.028	-2.430**
Ocf	0.072	0.380	0.133	0.860
Loss	0.022	0.970	-0.020	-1.020
Da	-0.086	-0.460	-0.052	-0.340
IndD	included		included	
YrD	included		included	
Likelihood Ratio	2.52***		5.53***	
Pseudo R^2	0.114		0.127	

Note: 1) *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
2) See equation (1) for variable definition.

Table 5 presents the result of analyzing the effect of corporate governance on the relationship between human resources of internal control system and designation as the most admired companies. Panel A provides insights into the impact of internal control system personnel. The interaction variable with governance (AB1 × Gov) shows a significant positive effect, statistically significant at the 1% level, indicating that the effectiveness of internal control system personnel is amplified under higher levels of governance. Similarly, for the number of internal control system personnel in operational departments such as accounting, funding, IT, and disclosure (OPER1), the interaction term (OPER1 × Gov) demonstrates a positive relationship, which is statistically significant at the 1% level, reinforcing the notion that these personnel contribute to reputation enhancement when paired with stronger governance.

Panel B examines the role of CPA among the internal control personnel. The interaction variable between CPA personnel and governance (AB2 × Gov) demonstrates a positive and significant at the 1% level. This finding suggests that CPA personnel, as highly specialized professionals, are more effective when supported by strong levels of governance. A similar pattern is observed for CPA personnel in operational departments (OPER2), with the interaction term (OPER2 × Gov), presenting significant positive at the 10%.

Overall, the results in Table 5 underscore the pivotal role of governance level (Gov) as a moderating factor in the relationship between internal control personnel and firm reputation. When supported by sufficient levels of governance, internal control personnel positively contribute to corporate reputation. Notably, quantitative and qualitative aspects of internal control system personnel emerge as key contributors to reputation enhancement under strong governance environments. These findings highlight the critical importance of not only strengthening internal control systems but also establishing robust governance structures that underpin these efforts.

Table 5.
The impact of governance level on the relationship between internal control system personnel and the most admired firm designation

Panel A. The number of personnel in internal control system				
Variables	**Coeff.**	**Wald x²**	**Coeff.**	**Wald x²**
Intercept	1.553	19.220***	1.758	25.510***
AB1	-0.047	-2.010**		
Gov	0.022	3.020***		
AB1*Gov	0.018	2.700***		
OPER1			0.020	5.330***
Gov			0.036	4.350***
OPER1*Gov			0.002	1.650***
Size	0.007	2.570***	0.002	0.950
Lev	-0.004	-4.440***	-0.003	-4.640***
Roa	0.117	1.720*	0.088	1.160
Invrec	-0.032	-1.320	-0.006	-0.260
Grow	-0.005	-0.810	-0.019	-2.640***
Ocf	-0.043	-0.610	0.023	0.350
Loss	-0.019	-1.400	-0.013	-1.140
Da	-0.151	-1.890*	-0.068	-1.120
Ind	included		included	
Yr	included		included	
Likelihood Ratio	15.46***		19.00***	
Pseudo R^2	0.18		0.21	
Panel B. CPA in internal control system				
Variables	**Coeff.**	**Wald x²**	**Coeff.**	**Wald x²**
Intercept	1.620	6.700***	1.620	6.700***
AB2	0.009	0.840		
Gov	0.036	2.050**		
AB2*Gov	0.013	1.830*		
OPER2			0.009	0.840
Gov			0.036	2.050**
OPER2*Gov			0.013	1.830*
Size	0.002	0.200	0.002	0.200
Lev	-0.043	-2.670***	-0.043	-2.670***
Roa	-0.181	-0.740	-0.181	-0.740
Invrec	0.028	0.280	0.028	0.280
Grow	-0.076	-3.200***	-0.076	-3.200***
Ocf	0.857	2.520**	0.857	2.520***
Loss	0.023	0.560	0.023	0.560
Da	0.513	1.450	0.513	1.450
Ind	included		included	
Yr	included		included	
Likelihood Ratio	5.04***		5.27***	
Pseudo R^2	0.44		0.45	

Note: 1) *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.
2) See equation (1) and (3) for variable definition.

5. Conclusion

This study examines the impact of human resource investment in internal control systems on a firm's likelihood of being designated as one of Korea's most admired companies, with a focus on the moderating role of corporate governance. Using data from non-financial firms listed on the Korean Stock Exchange from 2016 to 2021, the findings demonstrate that both the quantitative and qualitative aspects of human resources in internal control systems significantly contribute to enhancing corporate reputation. Specifically, the number of personnel dedicated to internal control functions and the inclusion of certified public accountants (CPAs) in these roles positively influence a firm's reputation.

Furthermore, the study highlights that strong corporate governance strengthens the relationship between human resource investment in internal control systems and firm reputation. Firms with robust governance structures are better equipped to maximize the effectiveness of their internal control personnel, thereby improving transparency, accountability, and stakeholder trust. These results underscore the complementary roles of governance and human capital in fostering sustainable corporate performance and reputation.

This study makes several contributions to existing literature. First, it provides empirical evidence on the importance of human resource investment in internal control systems, particularly in the context of financial transparency and corporate reputation. Second, it emphasizes the critical role of corporate governance in optimizing the effectiveness of internal control systems. Third, by leveraging the unique regulatory environment of South Korea, which mandates detailed disclosure of internal control personnel, this study offers practical insights for policymakers and practitioners seeking to enhance corporate accountability and stakeholder confidence.

However, this study has limitations. The analysis is restricted to Korean firms, which may limit the generalizability of the findings to other jurisdictions with different regulatory frameworks. Future research could explore similar relationships in diverse settings to validate the robustness of these findings. Additionally, while this study focuses on the quantitative and qualitative aspects of human resources, other factors such as organizational culture and technological advancements may also influence the effectiveness of internal control systems and warrant further investigation.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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