

A Study on the Determinants and Impacts of Transparency in Public Institutions

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I

Introduction

In public institutions, the principal-agent problem is likely to occur easily due to the complicated governance structure, and transparency issues have been consistently raised because there are difficulties for an external party to access the management information. Public institutions with low transparency are more likely to have poor management efficiency and high incidence of corruption due to an opaque decision making mechanism. Improving transparency and preventing corruption in public institutions can mitigate the agent problem in public institutions and enable efficient allocation of resources, which can improve the performance and efficiency of public institutions in the long run. One of the ways to improve transparency is to disclose information on public institutions and, thereby, increase their transparency and accountability. Improving information disclosure and transparency in public institutions is strongly advised in the recommendations set out in the OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2005), and the importance continues to be emphasized in the Accountability and Transparency: a Guide for State Ownership (OECD, 2010) and the OECD Guidelines on Corporate Governance of State-Owned Enterprises 2015 (OECD, 2015).

Korea introduced the consolidated disclosure system to provide information on the management information of public institutions online at full scale via ALIO (All Public Information In-One) in December 2005, in compliance with the OECD Guidelines on Corporate Governance of State-Owned Enterprises (2005).¹⁾ Since then, ALIO has served as the key channel for information disclosure, through which information is publicly announced on such matters

as current designation status, institution status, employees and compensation, and financial information concerning all public institutions that are subject to information disclosure under the Act on the Management of Public Institutions. Information disclosure has increased in scope and frequency. Particularly, the current administration is using information disclosure as a main policy instrument for the innovation of public institutions. Based on the Government 3.0, the Park Geun-hye administration has set improvement in information disclosure on public institutions and communication with the public as its key policy instrument and goal. Especially since 2013, it has pushed forward with its normalization plan to eradicate lax management and reduce debts in public institutions. As a result, the scope of disclosure has been expanded drastically to include detailed relevant information in the ALIO system on an annual basis. The purpose of this measure is to collect detailed information on lax management and debts in public institutions that are the government's main policy targets and use the information for the evaluation of a given policy's effects on improvement in the matters concerned. The current administration has broadened not only the scope of information to be disclosed on ALIO, but also is making active efforts to bolster the information disclosure of public institutions by expanding the organization and budget of a government entity in charge of information disclosure and by employing the information disclosure mechanism of listed private companies.

As illustrated above, policy measures are expanding to improve the accountability and operational efficiency of public institutions with improvement in information disclosure and transparency. However, the analysis and research on the actual effects have not been done sufficiently. In particular, research is very scarce on the actual impact of enhanced information disclosure and transparency in public institutions. Recently, there have been many studies conducted on the evaluation of corporate transparency, the effects of corporate transparency and improved corporate governance, and the actual effect of information disclosure (Bae Hyun-hoe, 2012, Han Seung-hye et al., 2014, Jun Dae-sung and Jung Kwang-ho, 2011, Lee Jae-wan, 2015). Yet, research on the expansion of information disclosure and transparency of public institutions has

1) The ALIO System, the consolidated system for the management information disclosure of public institutions, can be accessed at <https://www.alio.go.kr>.

not been conducted so far. Considering that information disclosure of public institutions and transparency are being actively carried forward and demanded on an increasing scale, it seems that empirical research on determinants of transparency level and the effects of information disclosure is urgently needed to effectively design and improve policy measures.

The purpose of this study is to suggest future policy implications regarding the information disclosure of public institutions by analyzing the measurement of transparency level, determinants of transparency, and the effect of transparency in relation to the improvement of public institutions' transparency as the key policy instrument to manage public institutions. To this end, we aim to provide an improvement plan to enhance the quality of information disclosure by developing a model to measure transparency level of each institution, measuring it, and analyzing what causes a variation in the level of transparency among public institutions. Expected effects of this study are as follows. First, it can suggest ways to improve the transparency of public institutions by identifying factors that affect the enhancement of transparency in public institutions. Second, it can provide an objective basis for assessing the impact of improvement in information disclosure and transparency on the performance of public institutions. As such, we expect that this study would offer policy implications with regard to effective ways to expand information disclosure by analyzing the effects of improved transparency in public institutions.

II

Transparency Issues of Public Institutions

1 Transparency issues of public institutions

Lately, the OECD has been paying attention to corruption and transparency issues of state-owned enterprises (SOEs). The OECD (2014) points out that SOEs are playing a large role in domestic and global markets, but the risk of corruption is also very high. It attributes this to the fact that SOEs play the same role as public officials in the process of carrying out government functions delegated to them and that most SOEs are operated in certain industrial sectors where corruption is prevalent (OECD, 2014). According to the *OECD Foreign Bribery Report* (OECD, 2014), among 427 closed cases, in which bribes were offered to foreign civil servants, since the OECD Anti-Bribery Convention came into effect in 2014, 27% were employees of SOEs.

Opacity and corruption in public institutions may spill over to the public sector—including the government—as a whole. This, in turn, may escalate to the level of the entire country. To take a look at the Corruption Perception Index (CPI) by country, Korea is ranked 28th among 34 OECD countries, which means that it has the most serious level of corruption among the member countries. Recently, Korea is pursuing various nationwide efforts to eradicate corruption and to improve transparency in the public sector. Particularly, the current administration has pressed on with the Government 3.0 policy and the enforcement of the Improper Solicitation and Graft Act—the so-called *Kim Young-ran Act*—in 2016 in its efforts to promote transparency in the public

sector, to encourage active use of related information and, at the same time, to aggressively eradicating corruption throughout the society.

[Figure II-1] Public sector bribery in the OECD Foreign Bribery Report (2014)

PERCENTAGE OF OFFICIALS WHO TOOK THE BRIBE		PERCENTAGE OF BRIBES PROMISED, OFFERED OR GIVEN
27%	SCE official	80.11%
11%	Customs official	1.14%
7%	Health official	0.92%
6%	Defence official	2.93%
4%	Resource official	0.08%
4%	IO official	0.22%
4%	Tax official	0.21%

Source: OECD, *OECD Foreign Bribery Report*, 2014, p. 24.

<Table II-1> Korea's transparency ranking: Global Competitiveness Report 2015~2016

Items in the WEF's Global Competitiveness Report		Korea's ranking	
		2016 (Total 138 countries)	2015 (Total 140 countries)
Total ranking		26	26
Public sector transparency /corruption	Wastefulness of government spending	69	66
	Public trust in politicians	96	94
	Irregular payments and bribes	52	46
Government efficiency	Transparency of government policymaking	115	123
Private sector	Ethical behavior of firms	98	95
	Strength of auditing and reporting standards	62	72
	Efficacy of corporate boards	109	120

Source: World Economic Forum, *The Global Competitiveness Report 2016~2017*, 2016, pp. 224~225; Data reconstructed by the authors based on World Economic Forum, *The Global Competitiveness Report 2015~2016*, 2015, pp. 222~223.

2 Transparency System for Public Institutions

In general, the definition of transparency includes various concepts. The standard definition of transparency concerns reducing information asymmetry by disclosing internal information of a firm to the outside stake holders. In a narrow sense, corporate transparency is closely related to legal compliance/ethical management: i.e. compliance with laws and regulations and the prevention of corruption. In a broader sense, however, the concept encompasses various types of ethical management, such as corporate social responsibility activities.

The OECD Guidelines on Corporate Governance of State-Owned Enterprises states that SOEs should disclose financial and non-financial information in accordance with high-level accounting and auditing standards that apply to listed companies. Especially as for large and/or listed SOEs, it is stipulated that they should disclose the related information in accordance with high-level international standards. It also provides the following guidelines on transparency standards, consolidated annual report, external audit, and information disclosure in relation to transparency in information disclosure.

〈Table II-2〉 Standards of disclosure and transparency in the OECD Guidelines on Corporate Governance of State-Owned Enterprises

Detailed items of disclosure and transparency	Year 2015
Transparency standards	<ul style="list-style-type: none"> – Should observe high standards of transparency – Should be subject to the same standards as listed companies in accounting, auditing standards, disclosure, and compliance monitoring
Consolidated annual report	<ul style="list-style-type: none"> – The ownership entity should establish a consistent reporting system and publish a consolidated annual report on all SOEs. – Web-based communications are recommended to facilitate access by the general public
External Audit	<ul style="list-style-type: none"> – Financial statements on SOEs should be subject to independent external audit based on strict standards – Specific government-controlled audit cannot substitute for independent external audit
Information disclosure	<ul style="list-style-type: none"> – SOEs should report their financial and non-financial information at a level that is equivalent to internationally recognized standards of corporate disclosure – Should include areas of significant concern for the state as an owner and the general public – In particular, this includes SOE activities that are carried out for the public interest – Should take into account a given SOEs' capacity and size

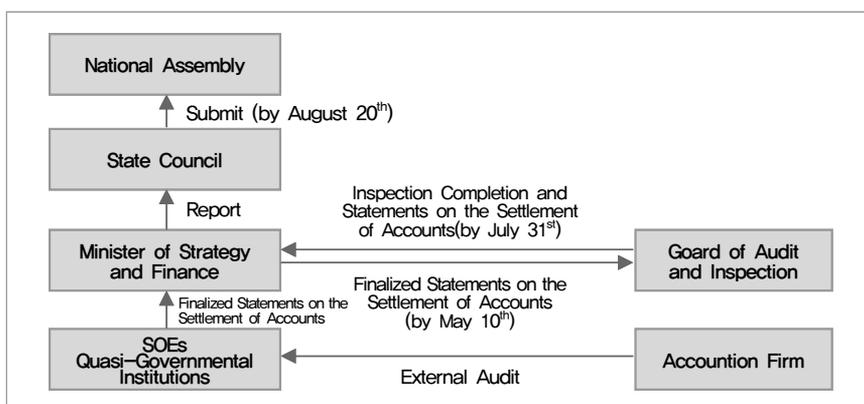
Source: 1. OECD, OECD Guidelines on Corporate Governance of State-Owned Enterprises, 2015 Edition, 2015, pp. 24~25.

2. Korea Institute of Public Finance, OECD Guidelines on Corporate Governance of State-Owned Enterprises, Rev. ed., pp. 23~24.

In Korea, SOEs are subject to the following standards and systems with regard to accounting, auditing and reporting procedures, individual disclosure, and consolidated disclosure. As for accounting standards, both SOEs and quasi-governmental institutions are subject to the International Financial Reporting Standards (IFRS). In contrast, accounting standards for non-classified public institutions are not specified in the Act on the Management of Public Institutions. As for the latter, standards for SOEs and quasi-governmental institutions apply in some cases. Or, various standards apply as per the characteristics of a given institution, including, accounting standards for non-public entities and independently developed accounting standards. Regarding

the audit and reporting procedures, SOEs and quasi-governmental institutions are required to have an external auditor examine a report on the settlement of accounts after the end of a fiscal year. In addition, SOEs and quasi-governmental institutions should prepare each required item of the statements on the settlement of accounts in accordance with Article 43, paragraph (1) of the Act on the Management of Public Institutions, submit the statements respectively to the Minister of Strategy and Finance and to the head of the competent government agency by the last day of February of the following year, and finalize the settlement of accounts by obtaining approval by the last day of March.

[Figure I-2] Auditing and Reporting Procedures for SOEs and Quasi-Governmental Institutions



Source: Heo Kyongsun and Jang Jee-in (2015), p. 22.

For the information disclosure of public institutions, all public institutions perform individual disclosure and consolidated disclosure in accordance with the Act on the Management of Public Institutions (hereinafter the Act). As for individual disclosure, public institutions should disclose the information of the last five years about the items set forth in the Act on its website. Also, they should have relevant documents available at their offices, and, upon a request for inspection or a copy of disclosed information, they should allow the public to inspect them or provide a copy or a reproduced material thereof. Meanwhile, the consolidated management information disclosure system, ALIO

(<http://www.alio.go.kr>) was introduced in 2005, and it has provided the public with consolidated information about public institutions online. The information disclosure of public institutions has since been expanded in terms of target institutions and items subject to disclosure. As of December 2016, all of the 321 public institutions have publicly announced 39 items concerning their financial and non-financial information of the past five years.

〈Table II-3〉 **Items on the consolidated information disclosure system, ALIO (as of 2016)**

Category	Items	Detailed items
I. General status	1. General status	
	2. Number of employees	
	3. Current status of executives	
	4. New employment and flexible hours arrangements	
	5. Annual salary of executives	
	6. Average monthly salary of employees and new employees	
	7. Business expenses spent by head of the institution	
	8. Welfare expenses	
II. Operation of the institution	9. Information on overseas business trips by executives	
	10. Current state of labor union membership	- Information on the unification of bargaining channels for multiple unions
		- Collective agreement
		- Wage agreement
	11. Rules of employment	
	12. Current state of disciplinary system	Disciplinary actions
13. Current state of litigation and litigation representative	Institution lawyer and legal advisor	
III. Major projects and management performance	14. Summary of Balance sheet	
	15. Summary of Income statement	
	16. Revenue and expenditure	
	17. Core businesses	
	18. Ongoing Investments	

〈Table II-3〉 Continue

Category	Items	Detail items	
III. Major projects and management performance	19. Capital and shareholders		
	20. Short- and long-term borrowings		
	21. Investment and contribution		- Employment status of retired executives
			- Detail of large-scale transactions
			- New facilities investment
	22. Annual endowments and grants		
	23. Cost estimation of managerial burden	- Other items related to managerial burden	
24. Tax payment status	- Details of final tax return		
IV. Internal and external evaluation	25. Audit report		
	26. Feedback from National Assembly		
	27. Feedback from Board of Audit and Inspection/competent agency		
	28. Results of performance evaluation		
	29. Feedback on performance evaluation results		
	30. Results of customer satisfaction survey		
	31. Results of auditor's performance evaluation		
V. Announcement	32. Articles of association, board meeting minutes and internal audit results		
	33. Management innovation practices		
	34. Recruitment announcement		
	35. Bidding Information	- Notice of tender	
	36. Research reports		
VI. Normalization of public institutions	37. Other information		
	38. Detailed information on the debt status of major overleveraged institutions		- Current state of system operation
			- Expenditure on union operation support
			- Commercial facility/equipment operating rights consigned to labor union
			- Separately agreed matters in collective agreement
39. 8 major employee benefits		- Matters agreed on other than collective agreement	

The information disclosure of public institutions is used as a key policy instrument for the innovation of public institutions. Based on the Government 3.0, the Park Geun-hye administration has set the expansion of information disclosure on public institutions and improvement in communication with the public as its key policy instrument and goal. Especially since 2013, it has pushed forward with the eradication of lax management and debt reduction. To this end, it has drastically expanded the scope of public disclosure to include detailed relevant information in the ALIO system on an annual basis. The purpose of this measure is to collect detailed information on lax management and debts in public institutions that are the government's main policy targets and use the information as basic resources for evaluating a given policy's effects on improvement in the matters concerned. Regarding lax management in public institutions, the eight major welfare items (i.e. special recruitment of family members of deceased employees, leave pay, severance pay, assistance in childcare and education expenses, medical examination, assistance in medical expenses and group insurance, assistance in expenditure for congratulations and condolences, and vacation and leave) are subject to public disclosure. In relation to debt reduction, 18 public institutions on the watch list are required to make public their debt information of the last fifteen years in detail.

Due to budgetary and organizational constraints, however, it has been pointed out that the ALIO-based consolidated information disclosure on public institutions lacks accuracy and timeliness (Heo Kyoungsun, 2010). To cope with the issue, the government has attempted various ways to improve the quality of information disclosed through ALIO. First, it bolstered the organization and budget of a government entity in charge of the information disclosure of public institutions to ensure systematic management of information. In order to improve the quality of publicly disclosed information and the usability of the ALIO system, it has also conducted an annual full-scale inspection on the consolidated disclosure of public institutions since 2014. In 2015, the ALIO system was completely reorganized to provide information in the same manner as listed companies.

In 2014, the total 296 public institutions were subject to the government's full-scale inspection on their information disclosed in the ALIO system. In 2016, the inspection was conducted with respect to 12 finance- and welfare-related

items out of the total 37 items included in the consolidated information disclosed by 311 public institutions. Based on the outcomes of the inspection, the list of institutions with high evaluation scores is posted on ALIO and the personnel in charge are awarded. In the case of an institution whose annual penalty points exceed 20, it is given a disciplinary warning; when the points exceed 40, it is designated as an institution that is negligent of public disclosure. In the case of SOEs and quasi-governmental institutions, 1 to 1.5 points are reflected in their management performance evaluation as per the results of inspection on their information disclosed on ALIO (Ministry of Strategy and Finance, 2016).

◀Table II-4▶ **Systemic improvement related to the consolidated information disclosure of public institutions**

Year	Improvement	Description
Jan. 2015	Dedicated organization established to manage the consolidated disclosure of public institutions	– Established a division in charge of management information under the Public Institutions Policy Bureau, Ministry of Strategy and Finance
2014	Annual full-scale inspection conducted on the consolidated disclosure of public institutions	– Conducted an annual full-scale inspection on all of the 295 public institutions by external experts such as accounting firms and labor law firms
Apr. 2015	Complete reorganization of the ALIO system to match disclosure standards used in the private enterprise information disclosure system (DART)	– Reorganized the ALIO system to match public disclosure standards used in the private enterprise information disclosure system (DART) for the purpose of strengthening its public monitoring function on public institutions

Source: The Ministry of Strategy and Finance, Press Release (May 22, 2014)

As for transparency and the information disclosure system for SOEs, Korea is more or less in compliance with the OECD guidelines considering such aspects as the adoption of the International Financial Reporting Standards (IFRS), mandatory external audit and the introduction of consolidated disclosure. However, information on SOEs' public service obligations (PSOs), business projects carried out by SOEs on behalf of the government, etc. needs to be disclosed separately as recommended in the OECD guidelines. Due to a variety

of disparate accounting standards applied to them, non-classified public institutions are distinguished from general companies that are subject to a uniform accounting standard (Jeon Kyu-an et al., 2015). In addition, there exists a variation in implementation among non-classified institutions even though standards for SOEs and quasi-governmental institutions apply to external audit and reporting procedures and practices for them.



III

Model for Measuring Transparency in Public Institutions

In this study, we present a model to measure transparency in consideration of the characteristics of public institutions. To that end, we have analyzed corporate transparency evaluation methods that are being actively used to assess listed companies in previous studies and developed a transparency measurement model that factors in the characteristics of public institutions-most of them are unlisted companies, and publicness is emphasized along with financial performance. In order to avoid arbitrary measurement, this model has also been designed to measure it in the process of answering questions based on the objective standar.

The main criteria for the development of evaluation indicators to measure management transparency encompass such elements as a given public institution's policy and commitment concerning transparent management, its organizational and systemic aspects, voluntary disclosure of proper and sufficient information, the accuracy and timeliness of information disclosed and the appropriateness of means used in disclosing the information, which can be identified from the perspectives of stakeholders including the general public and the government that are the primary users of such information. As for the basis of the evaluation indicators, we have mainly drawn upon the OECD Guidelines on Corporate Governance of State-Owned Enterprises 2015 (OECD, 2015). The Guidelines emphasizes that SOEs need to ensure transparency pursuant to the level of management transparency expected of listed companies. Accordingly, some of our evaluation indicators presented in this study are based on what listed companies are expected to do in that respect.

In line with these evaluation criteria, we tried to develop specific indicators

and criteria that can be commonly applied in the process of evaluating transparency regardless of distinctive characteristics of each type of public institutions—i.e. listed SOEs, unlisted SOEs, market-type SOEs, quasi-market type SOEs, quasi-governmental institutions and non-classified public institutions—and irrespective of whether a given institution is subject to management evaluation conducted by the Ministry of Strategy and Finance. Of course, contents and indicators for evaluating management transparency may need to be differentiated depending on each institution type's characteristics. However, we find it rather inefficient to develop and assess fine-grained evaluation indicators given that there is much to be desired about the current state of information disclosure practices and that the perception of management transparency is still poor. In this sense, we tried to exclude evaluation indicators that belong to areas where evaluation items may differ by institution as much as possible. In other words, indicators have been selected to evaluate transparency in areas that are common to various public institutions.

Basically, the structure of our management transparency measurement model specifies a comprehensive range of activities—from each public institution's policy to effectively ensure its transparency to the establishment of a dedicated organization, a wide array of public disclosure activities and indirect ways of performance evaluation—according to a set of procedures and stages to achieve the goal of transparency. Based on this structure, we have divided our evaluation model into three main levels in a taxonomic hierarchy—i.e. high-, mid- and low-level categories—and each level includes various indicators that can be used for objective evaluation within the scope of currently available data. Also, a weight—in the form of points allotted to each indicator—is assigned to each indicator. As for the results of the transparency evaluation of public institutions based on our model, we equipped our model with cross-sectional discriminating power by designing detailed survey questions with respect to each evaluation indicator so that the results of this study can be utilized in diverse aspects.

<Table III-1> presents the breakdown of each issue area and the number of survey questions used in our model for evaluating the transparency of public institutions. The evaluation model is first divided into additional point and penalty items. The additional point item is composed of 60 evaluation indicators, and the penalty item consists of 4 evaluation indicators. In total, 64 indicators make

up the evaluation model as a whole. Specifically, the additional point item is divided into three categories: i.e. an institution’s policy and commitment concerning management transparency; organizational and systemic aspects for the implementation of transparent management; and transparent information disclosure. And the penalty item deals with the opacity of information. As for the category of organizational and systemic aspects for the implementation of transparent management—which belongs to the additional point item—, it consists of indicators about the board of directors; an organization for internal audit; and an organization for external audit. And the category of transparent information disclosure is composed of indicators about information on the board of directors; audit-related information; management-related information; employee-related information; and general information.

〈Table III-1〉 Breakdown of each issue area and the number of survey questions used in the public institution transparency evaluation model

	High-level category	Mid-level category	Low-level category Number of survey questions
Additional point item	I. Policy and commitment concerning management transparency		8
	II. Organizational and systemic aspects for the implementation of transparent management	A. Board of directors	6
		B. Internal audit organization	8
		C. External audit organization	4
	III. Transparent information disclosure	A. Information on the board of directors	6
		B. Audit-related information	5
		C. Management-related information	7
		D. Employees-related information	7
		E. General information	9
	Sub-total		
Penalty item	IV. Opacity of information		4

Source: Composed by the authors

Information on transparency evaluation was obtained mainly from the website of the relevant institution. Of course, much information related to the transparency of public institutions is publicly disclosed in the consolidated management information disclosure system (hereinafter ALIO). Yet, ALIO contains only the mandatory items laid out in the designated established procedures, which leads to limitations in conducting a cross-sectional analysis based on the transparency level of public institutions measured with information posted on ALIO.²⁾ From the system, we collected information on the results of annual full-scale inspection on consolidated information disclosure by public institutions (non-disclosure, false disclosure, delayed disclosure and modification in disclosure) and follow-up actions (disciplinary warnings to institutions concerned and the designation of institutions concerned as ones that are negligent of information disclosure), and utilized the information for evaluating such aspects as a given institution's commitment to public disclosure (non-disclosure), the accuracy of information (false disclosure and modification in disclosure) and the timeliness of disclosure (delayed disclosure).

2) The information disclosure of a listed corporation consists mainly of periodic disclosure and on-demand disclosure. Periodic disclosure includes business reports, semi-annual reports and quarterly reports, which contain matters concerning the overall management of a corporation, such as financial conditions, management performance and information on business projects of the company for a given period of time. In contrast, on-demand disclosure is prepared with regard to major management information whenever occasions arise. It consists of the public disclosure of major management issues, inquired disclosure prepared by the relevant corporation in response to a request made by a stock exchange for information concerning rumours about its major management matters, verification of media reports on the corporation and a significant change in stock price or the volume of stock transactions, and voluntary disclosure that a listed corporation conducts at its discretion with regard to information other than major management matters. All types of information disclosure listed above are processed via the electronic disclosure system (DART). The biggest difference between the information disclosure of listed corporations and the consolidated information disclosure of public institutions lies in whether disclosure is autonomously conducted through a given disclosure system. In the case of public institutions, periodic disclosure and on-demand disclosure are executed through the public institution management information disclosure system (ALIO) in a similar fashion to the disclosure of listed corporations. For public institutions, all disclosure items are determined in advance by the consolidated disclosure standards for public institutions. That is, public institutions do not perform voluntary disclosure through the information disclosure system. If necessary, they conduct public disclosure voluntarily on their individual websites. In the situation, it is quite difficult to evaluate the transparency of information disclosed by public institutions based solely on such data considering that they disclose information in compliance with the pre-determined standards of consolidated disclosure. Consequently, it is essential to pay much attention to information that public institutions post autonomously on their individual websites so that we can conduct a cross-sectional assessment of information transparency.

Presented in the table below is the public institution transparency evaluation model developed in line with the background and purpose we have explained so far.

◀Table III-2▶ **Public institution transparency evaluation model**

I . Policy and commitment concerning management transparency

1. Are there regulations or documents that show the commitment of the institution or the head of institution concerning transparent management and corruption prevention?
A) No B) Yes
2. Do rules on the operation of the board of directors stipulate matters concerning transparent management and corruption prevention as part of the board 's authority and responsibilities?
A) No B) Yes
3. Have ethics regulations applicable to employees (e.g. ethics policy, ethics regulations of ethics and a code of ethics) been established and posted on the website?
A) No B) Regulations are in place C) Regulations are in place and available online
4. Has the institution introduced specific guidelines and manuals that are in accordance with regulations on ethical management?
A) No B) Yes
5. Does the institution operate its own internal reporting system (e.g. procedures for reporting violations, penalty for violations, systems concerning the protection and, evaluation of internal whistle-blowers and compensation, etc.) that can ensure transparent management, ethical management and corruption prevention?
A) No B) Yes
6. Is the institution running programs for practicing ethical management, transparent management corruption prevention (e.g. education, detailed practice programs, etc.)?
A) No B) Yes
7. Is contact information (phone numbers and e-mail addresses) of working-level staff and personnel in charge of information disclosure for transparency management available on the website?
A) No B) Yes
8. Does the institution publish and distribute materials that contain non-financial information, such as sustainability reports, social responsibility reports and environmental reports?
A) No B) Yes

II. Organizational and systemic aspects for the implementation of transparent management

A. Board of directors (BOD)

1. Have internal regulations on the operation of the BOD, which specify the composition, authority, responsibilities and operating procedures of the board, been established and posted on the website?
A) No B) Regulations are in place C) Regulations are in place and available online
2. Have regulations, which specify the role, authority, responsibilities and operating procedures of various expert committees, been established and disclosed on the website?
A) No B) Regulations are in place C) Regulations are in place and available online
3. Does the institution conduct its own evaluation on the activities of the BOD or individual directors and disclose the relevant information?
A) No B) Conducts evaluation C) Conducts evaluation and discloses the information
4. Does the BOD periodically adopt agenda concerning transparent management, ethical management and corruption prevention activities and review them?
A) No B) Yes
5. Are there an ethics management committee and a dedicated department in charge of ethics management?
A) No B) Yes
6. Have regulations on the management of compensation policy for the BOD, compensation assessment standards and procedures, and detailed items thereof been established and disclosed?
A) No B) Partially disclosed C) Entirely disclosed

B. Internal audit organization

1. Have regulations on the authority, role, responsibilities, audit scope and procedures of the internal audit committee—or auditor(s)—been established and disclosed?
A) No B) Regulations are in place C) Regulations are in place and available online
 2. Does the internal audit committee—or auditor(s)—hold the authority over personnel matters concerning internal audit department staff?
A) No B) Yes
 3. Do the auditor(s) or some members of the internal audit committee have professional knowledge related to accounting or finance?
A) No B) Yes
 4. Have the auditor(s) or the internal audit committee members received audit-related training/education at a specialized organization?
A) No B) Yes
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5. Has any of the internal audit committee member—or auditor(s)—ever received directly or indirectly compensation other than that which is given to directors (e.g. consultation, consulting contracts, etc.)?
A) No B) Yes
 6. Has a compliance officer(s) been appointed?
A) No B) Yes
 7. Have errors in prior period financial statements ever been corrected in the audit reports?
A) No B) Yes
 8. Has the institution made any corrections or amendments to errors posted in the ALIO system?
A) No B) 3 cases or less C) Over 3 cases

C. External audit organization

1. Are there regulations on the recommendation or selection of an external auditor(s)?
A) No B) Yes
2. Have regulation on the periodic replacement of an external auditor(s) been established, and has there actually been periodic replacement?
A) No B) Regulations are in place C) Performs periodic replacement
3. For the past 3 years, has there been any case in which the same external auditor failed to complete the period of a continuing auditing contract and the contract was terminated?
A) No B) Yes
4. Has the institution received any services other than consultation or audit from an external auditor(s)?
A) No B) Yes

III. Transparent information disclosure

A. Information on the board of directors (BOD)

1. Is information about the composition of the BOD disclosed on the website?
A) No B) Only basic information about the composition of the BOD is available online
C) Detailed information on board members' term, careers, etc. is available online
 2. Is detailed information on the operation of the BOD disclosed by meeting date on the website?
A) No B) Only basic information about meeting results is available online
C) Information on the convening of a meeting and its contents is available online
 3. Is information on the composition and current operation state of various expert committees disclosed on the website?
A) No B) Only the Information on composition is available online
C) Information on both composition and the current state of operation is available online
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4. Is information on whether individual directors voted “yes” or “no” during a board meeting disclosed by agenda item on the website?
A) No B) Yes
 5. Is the attendance rate of each board member disclosed on the website?
A) No B) Yes
 6. Are board meeting minutes, internal audit reports, etc. disclosed on the website?
A) No B) One item is available online C) All of them are available online

B. Audit-related information

1. Is information about the auditor(s) or the audit committee disclosed on the website?
A) No B) Only basic information about composition is available online
C) Detailed information on term and career of auditor/audit committee is available online
2. Is information on major activities carried out by the audit committee—or auditor(s)—disclosed on the website?
A) No B) Yes
3. Is information of the past 5 years about an external auditor(s) (e.g. accounting firm’s name, date of appointment, contract period, auditor’s opinion, etc.) disclosed on the website?
A) No B) Yes
4. Is information on an external auditor(s)’s auditing fees and non-auditing fees disclosed separately on the website?
A) No B) Yes
5. Is information on the term, major career, etc. of a compliance officer(s) disclosed on the website?
A) No B) Yes

C. Management-related information

1. Are summary financial statements, financial ratio, management performance, key performance indicators, etc. disclosed on the website?
A) No B) Yes
 2. Is information of the past 5 years about debt and a debt-to-equity ratio disclosed on the website?
A) No B) Yes
 3. Is detailed information of the past 5 years about investment activities disclosed by item on the website?
A) No B) Yes
 4. Are the contents, goals, and performance of annual major business projects disclosed on the website?
A) No B) Yes
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5. Is information on the gap between the business plan for the following year and actual performance disclosed on the website?
A) No B) Yes
 6. Are future business plans, management plans, investment plans, etc. disclosed on the website?
A) No B) Yes
 7. Are details of major transactions with other institutions or companies disclosed on the website?
A) No B) Yes

D. Employees-related information

1. Are details of each board director' compensation (including severance pay) disclosed on the website?
A) No B) Yes
2. Is information about a comparison between the annual compensation for the head of the institution compared and the average compensation for employees disclosed on the website?
A) No B) Yes
3. Are the details of business expenses spent by the head of the institution disclosed on the website?
A) No B) Yes
4. Is a calendar listing the schedule of the head of the institution disclosed on the website?
A) No B) Yes
5. Are information and reports on board directors' overseas business trips disclosed in detail on the website?
A) No B) Yes
6. Are regulations and performance of the employee's welfare system disclosed on the website?
A) No B) Either regulations or performance is disclosed C) All of them are available online
7. Is information on the ratio of new employees to the total number of employees, contingent workers, the percentage of the disabled, the percentage of women, employment support for the disabled and women, etc. disclosed on the website?
A) No B) Partially disclosed C) Entirely disclosed

E. General information

1. Are the articles of association disclosed on the website?
A) No B) Yes
 2. Is information on the external evaluation of the institution, such as public institution management evaluation, audit by the Board of Audit and Inspection and inspection by the National Assembly, disclosed on the website?
A) No B) Yes
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3. Is information on feedback from a recent inspection on information disclosed on ALIO and improvements thereof disclosed on the website?
A) No B) Only feedback is available online
C) Both feedback and relevant improvements are available online
 4. Once a whistle-blower's report is processed by the internal reporting system, is information on the outcomes (e.g. penalty on violators, etc.) disclosed?
A) No B) Yes
 5. Is information on performance regarding the handling of third party requests for information disclosed on the website?
A) No B) Yes
 6. Is information about social responsibility activities, such as employees' volunteer activities and contribution to community development, etc., systematically (annually) summarized and disclosed on the website?
A) No B) Yes
 7. Are the contents of collective agreement between labor and management and other separately agreed matters disclosed on the website?
A) No B) Yes
 8. Is information on the website provided in English (or in other foreign languages)?
A) No B) Yes
 9. Are important disclosure items, such as audit reports and financial statements, provided in English?
A) No B) Yes

IV. Opacity of information (penalty item)

1. Over the last 3 years, have there been any cases of illegal or unethical behaviors committed by the management, such as embezzlement and breach of duty?
A) No B) Yes
 2. What is the external auditor's opinion on the previous fiscal year?
A) Disclaimer of opinion B) Adverse opinion C) Qualified opinion D) Unqualified opinion
 3. Has the institution ever been subjected to follow-up measures due to its negligence after a recent inspection on information disclosed on ALIO?
A) No B) Disciplinary warning
C) Designation as an institution that is negligent of information disclosure and personnel actions concerning persons involved
 4. Recently, has the institution been designated as a negligent institution with regard to its information disclosure on ALIO for 3 consecutive years?
A) No B) Yes
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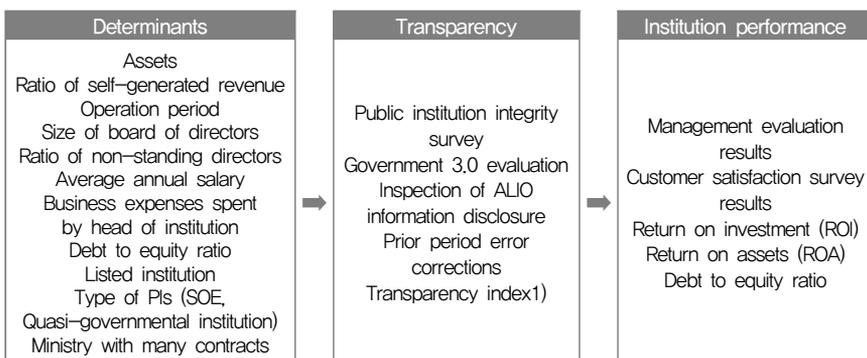
The evaluation model presented in this study bears significance in and of itself since it is the first model developed to evaluate the management transparency of public institutions in Korea. Nevertheless, there are limitations in fully guaranteeing integrity and completeness. Especially if one aims to conduct an evaluation that takes into account characteristics by institution, some problems could be mitigated by analyzing results measured by the model and classifying them by characteristic of institution. When awareness increases with regard to the necessity and importance of management transparency evaluation of public institutions in the future, we expect that the level of our evaluation model's completeness would be further improved if additional indicators are developed and supplement the existing model to reflect the characteristics of each type of similar public institutions based on the evaluation indicators presented in this study. In addition, it is necessary to continuously improve the current model by incorporating various stakeholders' opinions, environments, changes in practices and the system and feedback on evaluation results in the future.

IV

Analysis of Determinants and Effects of Transparency in Public Institutions

This study conducted an analysis of determinants of transparency in public institutions and the effects of such transparency by using data produced in the process of various evaluations and inspections on management information disclosure conducted in relation to the transparency of public institutions. Based on the model shown in the chart below, we analyzed various factors that previous studies have proven to affect transparency level and the effects of transparency on public institutions.

[Figure IV-1] Model for analyzing determinants and effects of transparency



Note: 1) The transparency index was calculated based on a combination of evaluation results including public institution integrity, the Government 3.0 evaluation, inspection on information disclosed on ALIO and prior period error corrections.

Source: Composed by the authors

The empirical analysis utilized a wide range of data that reflects the transparency level of public institutions, which included the results of the public institution integrity survey, the Government 3.0 evaluation results, the inspection on information disclosed on ALIO and the prior period error corrections in the financial statements of public institutions. However, it is difficult to say that they provide a comprehensive picture of transparency in a given public institution since because each of these variables emphasizes only one aspect of transparency in relation to public institutions. Therefore, we added to our model a composite index for the multi-dimensional measurement of transparency in public institutions in the following manner. First, we assigned a weight of 50% to both the public institution integrity score and the Government 3.0 evaluation, and tallied up the two values. Then, a weight of 10% was assigned to penalty points on the inspection of information disclosed on ALIO and the number of prior period error corrections, and subtracted these two values from the foregoing value. To standardize a variation among these individual indexes, each original value was converted with an average of 70 and a standard deviation of 10 and included in the composite formula.

Transparency index (TRP) = 50% x (Public institution integrity) + 50% x (the Government 3.0 evaluation) - 10% x (Penalty on the inspection of ALIO information disclosure) - 10% x (Prior period error corrections)

The determinants of transparency in a public institution include assets, the ratio of self-generated revenue, operation period, the size of the board of directors, the ratio of non-standing directors, average annual salary, business expenses spent by the head of the institution, a debt to equity ratio, listing status, the type of public institution (SOE, quasi-governmental institutions) and whether the ministry in charge of the institution holds many contracts, all of which are proven to have positive or negative effects on transparency level in previous studies.

As for the performance of a public institution, our model includes four variables—i.e. the results of public institution management evaluation, customer satisfaction survey results and two factors reflecting financial performance, such as return on investment (ROI) and return on assets (ROA), in order to incorporate non-financial aspects like publicness and customer satisfaction as well as financial performance.

〈Table IV-1〉 Variables and measurement method

	Name of variable	Measurement method
Transparency	Public institution integrity	Public institution integrity score (total: 10)
	Government 3.0 evaluation	Government 3.0 evaluation grade (A=4, B=3, C=2, D=1)
	Inspection of ALIO information disclosure	Penalty points on ALIO information disclosure
	Prior period error corrections	Number of prior period error corrections
	Transparency index	a composite calculated by including public institution integrity, Government 3.0 evaluation, inspection of ALIO information disclosure and prior period error corrections
Independent variables	Assets	Size of assets (unit: million won)
	Ratio of self-generated revenue	Ratio of self-generated revenue to total revenue (unit: %)
	Operation period	Operation period since foundation (unit: years)
	Size of board of directors	Number of standing and non-standing directors
	Ratio of non-standing directors	Ratio of non-standing directors to the total number of directors
	Average annual salary	Employees' average annual salary (unit: thousand won)
	Business expenses spent by head of institution	Business expenses spent by head of institution per year (unit: thousand won)
	Debt to equity ratio	Debt/equity
	Listing status	Listed institution=1; others=0
	SOE	SOE=1; others=0
	Quasi-governmental institution	Quasi-governmental=1; others=0
Performance	Ministry with many contracts	Ministries with which large-scale contracts are signed (i.e. Ministry of Trade, Industry and Energy, Ministry of Land, Infrastructure and Transport and Ministry of Science, ICT and Future Planning)=1; others=0
	Management performance evaluation results	Outstanding (S) = 6, Very Good (A) = 5, Good (B) = 4, Satisfactory (C) = 3, Poor (D) = 2, Very poor (E) = 1
	Customer satisfaction survey results	Customer satisfaction survey result (total: 10)
	Return on investment (ROI)	Income/equity
	Return on assets (ROA)	Income/assets

Source: Composed by the authors

In the case of independent variables, we collected data from the consolidated management information disclosure system, ALIO; and data concerning transparency-related variables was obtained from various sources. As for the public institution integrity evaluation, the Government 3.0 evaluation and the inspection of ALIO information disclosure, we collected data from press releases about evaluation/inspection results published by respective ministries in charge. Data related to prior period error corrections was obtained from Jeon et al. (2015). Performance-related data were also collected from various sources. In the case of management evaluation, we used data from press releases of ministries that conducted the evaluation. Data on the customer satisfaction survey was obtained from Korea Institute of Public Finance. Lastly, the return on investment (ROI) and return on assets (ROA) were calculated using the data from the ALIO System.

The basic statistics of each variable are shown in the following table.

〈Table IV-2〉 Basic statistics of transparency variables, independent variables and performance variable

	Name of variable	Number of institutions	Average	Standard deviation	Minimum value	Maximum value
Transparency	Public institution integrity	164	8.17	0.54	5.31	8.86
	Government 3.0 evaluation	114	2.51	1.13	1	4
	Inspection of ALIO information disclosure	344	9.52	8.93	0	46
	Prior period error corrections	344	0.88	3.79	0	38
	Transparency index	111	56.99	6.01	39.44	70.24
Independent variables	Assets	334	11.04	2.77	0	19.55
	Ratio of self-generated revenue	319	40.78	34.27	0	100
	Operation period	344	21.28	17.28	0.6	110.9
	Size of board of directors	344	7.76	4.99	0	29
	Ratio of non-standing directors	276	0.84	0.20	0.00	1.00
	Average annual salary	340	11.05	0.29	8.08	11.56
	Business expenses spent by head of institution	337	9.49	1.10	2.20	11.00
	Debt to equity ratio	331	7.56	55.60	-21.48	929.08
Listed institution	344	0.02	0.15	0	1	

〈Table IV-2〉 Continue

	Name of variable	Number of institutions	Average	Standard deviation	Minimum value	Maximum value
Independent variables	SOE	344	0.09	0.28	0	1
	Quasi-governmental institution	344	0.27	0.45	0.00	1.00
	Ministry with many contracts	344	0.31	0.46	0.00	1.00
Performances	Management evaluation results	114	3.68	0.96	1.00	5.00
	Customer satisfaction survey results	174	87.09	6.09	71.70	99.59
	Return on investment (ROI)	331	-3.76	110.87	-2000	77.73
	Return on assets (ROA)	330	-13.71	207.54	-3083.83	135.36

Source: Composed by the authors

According to the result of the analysis on the determinants of transparency in public institutions, we find that assets, the size of the board of directors, the ratio of non-standing directors, average annual salary, listing status, and institution type have a statistically significant effect on the transparency of a public institution. Also, the results suggest that public institutions with large assets have more prior period error corrections in their financial statements. Meanwhile, the size of the board of directors turns out to have a negative effect on the integrity of a public institution. Also, the higher percentage of non-standing directors is likely to lower the overall level of transparency in a public institution as well as the degree of integrity and a grade on the Government 3.0 evaluation. As for the average salary of employees at a public institution, the analysis results show that it has a positive effect on the integrity of the public institution. The listing status of an institution affects an increase in the number of prior period error corrections, which results in a lower transparency index value. The type of institution does have an impact on transparency level: SOEs and quasi-governmental institutions score relatively high in integrity compared to non-classified public institutions; and they record low penalty points with respect to the inspection of ALIO information disclosure inspection. However, they exhibit relatively more prior period error corrections.

〈Table IV-3〉 Analysis results on determinants of transparency in public institutions

	(1)	(2)	(3)	(4)	(5)
	Integrity	Government 3.0	ALIO information disclosure	Prior period error corrections	Transparency (TRP)
Assets	-0.04 (0.02)	0.06 (0.07)	-0.01 (0.33)	0.28* (0.15)	-0.44 (0.37)
Ratio of self-generated revenue	0.00 (0.00)	0.00 (0.01)	-0.02 (0.02)	-0.01 (0.01)	0.03 (0.04)
Operation period	0.00 (0.00)	0.01 (0.01)	0.04 (0.03)	-0.02 (0.02)	0.06* (0.03)
Size of board of directors	-0.04*** (0.02)	0.06 (0.05)	-0.08 (0.17)	0.05 (0.08)	0.10 (0.25)
Ratio of non-standing directors	-0.53** (0.26)	-1.51* (0.90)	4.56 (3.54)	1.46 (1.61)	-12.28** (4.94)
Average annual salary	0.65** (0.25)	-0.37 (0.74)	0.28 (2.19)	-1.08 (0.99)	5.30 (3.99)
Business expenses spent by head of institution	-0.04 (0.04)	0.10 (0.12)	-0.84* (0.51)	-0.09 (0.23)	0.37 (0.63)
Debt to equity ratio	0.00 (0.00)	0.00 (0.00)	-0.01 (0.01)	0.00 (0.00)	0.00 (0.01)
Listed institution	0.11 (0.21)	-0.63 (0.69)	-2.49 (3.34)	3.48** (1.52)	-9.18** (3.66)
SOE	0.75*** (0.14)		-1.68 (2.23)	4.54*** (1.01)	-2.96 (2.51)
Quasi-governmental institution	0.87*** (0.15)	0.46 (0.47)	-4.10*** (1.39)	1.65*** (0.63)	
Ministry with many contracts	-0.14 (0.09)	0.18 (0.25)	-1.09 (1.27)	0.61 (0.57)	0.51 (1.33)
Constant	1.96 (2.77)	4.74 (7.94)	13.81 (23.12)	8.34 (10.50)	6.60 (42.54)
Adjusted R ²	0.3557	0.1073	0.0511	0.1653	0.0998
Number of obs	136	106	259	259	103

Note: Significant at $p(0.1)$, ** Significance at $p(0.05)$, *** Significance at $p(0.01)$
Source: Composed by the authors

To look at the result of analyzing the effect of transparency of public institutions on performance, the transparency index (TRP) has a positive effect on the results of public institution evaluation: i.e. the higher the value of the

transparency index, the greater the statistical significance of an improvement in the management evaluation results. However, we find that the transparency index (TRP) is not statistically significant with regard to other performance variables, such as customer satisfaction, return on investment (ROI), return on assets (ROA) and a debt to equity ratio.

〈Table IV-4〉 Analysis of the effects of public institution transparency

	(1)	(2)	(3)	(4)	(5)
	Management evaluation	Customer satisfaction	Return on investment (ROI)	Return on assets (ROA)	Debt to equity ratio
Transparency (TRP)	0.07*** (0.02)	0.14 (0.10)	0.09 (0.25)	1.23 (5.72)	0.04 (1.63)
Assets	0.06 (0.06)	-0.38 (0.33)	0.59 (0.86)	-8.98 (19.65)	11.72** (5.61)
Ratio of self-generated revenue	-0.01** (0.01)	-0.03 (0.03)	0.07 (0.09)	-0.10 (1.99)	-1.21** (0.57)
Operation period	0.00 (0.01)	0.03 (0.03)	-0.08 (0.08)	-2.12 (1.90)	-0.50 (0.54)
Size of board of directors	0.07* (0.04)	0.24 (0.23)	-0.47 (0.56)	1.19 (12.92)	-9.59** (3.68)
Ratio of non-standing directors	0.17 (0.78)	-15.16*** (4.74)	11.36 (12.13)	-178.84 (278.31)	45.41 (79.40)
Average annual salary	-0.09 (0.62)	1.47 (3.55)	3.43 (9.53)	172.15 (218.48)	66.11 (62.33)
Business expenses spent by head of institution	0.03 (0.10)	0.43 (0.59)	0.22 (1.50)	22.18 (34.49)	5.45 (9.84)
Listed institution	-0.28 (0.58)	-0.36 (3.36)	5.63 (9.01)	179.30 (206.74)	14.44 (58.98)
SOE	0.63 (0.39)	5.82** (2.31)	-6.79 (6.00)	-109.88 (137.72)	15.30 (39.29)
Ministry with many contracts	-0.11 (0.20)	1.58 (1.20)	-0.87 (3.16)	-46.95 (72.39)	12.47 (20.65)
Constant	-0.72 (6.49)	72.22* (37.46)	-54.45 (100.44)	-1886.33 (2303.52)	-812.22 (657.20)
Adjusted R ²	0.201	0.297	-0.067	-0.045	0.050
Number of obs	103	94	103	103	103

Note: Significant at p(0.1), ** Significance at p(0.05), *** Significance at p(0.01)
 Source: Composed by the authors

V

Policy Implications

The purpose of this study lies in suggesting implications for future policy on the information disclosure of public institutions with respect to the improvement of transparency in public policies as a major policy instrument for the management of public institutions. To that end, we came up with a method to gauge transparency level and analyzed the both determinants and effects of transparency. In Chapter III of this study, we presented a model for measuring the transparency of a public institution in response to these policy needs. In Chapter IV, we conducted an empirical analysis on the determinants and effects of transparency level by drawing on resources produced in the process of diverse evaluations and inspections on the transparency of public institutions. Based on the analysis presented so far in this study, now let us turn to the following implications for further research and policy for transparency in public institutions.

First, the transparency of public institutions encompasses a very broad and diverse range of aspects, which not only concerns the improvement of information asymmetry within and outside public institutions by means of management information disclosure, but also covers legal compliance, ethical management, proactiveness in information provision and utilization, anti-corruption activities, social responsibility activities, etc. Therefore, to measure and improve the transparency of public institutions, it is necessary to capture and assess these diverse concepts and scopes in a comprehensive manner.

Second, we propose that a basic system for enhancing transparency in public institutions be appropriately applied. As presented in the OECD Guidelines on Corporate Governance of State-Owned Enterprises 2015 (OECD, 2015), there

are various institutional measures directly related to the transparency of public institutions, such as accounting standards, external audits, reporting and information disclosure system. By operating these institutional measures for achieving transparency appropriately, public institutions in Korea would be able to satisfy the basic requirement of providing internal information to the outside. Overall, Korea tends to be in line with the OECD guidelines (2015) in terms of systemic setting for transparency in public institutions. Yet, it is necessary to expand the scope of information disclosure to include information about public service obligations of SOEs, which operate for commercial purposes, and the implementation of national policy on behalf of the government. In addition, it is important to establish clear standards with regard to the application of transparency-related systems to non-classified public institutions. Currently, rules and regulations on transparency-related accounting standards, external audit, reporting and disclosure are set forth in the Act on the Management of Public Institutions; as for the rest of the system except for information disclosure, they apply to SOEs and quasi-governmental institutions. Meanwhile, non-classified public institutions are supposed to comply with rules and regulations applicable to SOEs and quasi-governmental institutions; however, since they are not obligatory, transparency-related systems concerning non-classified public institutions are operated in diverse ways, ranging from accounting standards to external audit and reports to ministries concerned. Yet again, these diverse practices are performed at various levels. Many non-classified public institutions are small in scale. Still, there are also large ones that exert a great impact in the sense that they provide nationwide services. For this reason, we find it necessary to lay out clear standards for non-classified public institutions.

Third, the consolidated management information disclosure of public institutions is available via the online system, ALIO. However, the results of full-scale inspection on management information disclosure suggest that the information provided on ALIO is insufficient or incorrect. In this sense, it is necessary to continuously improve the accuracy and appropriateness of information presented in the consolidated management information disclosure. To attain this goal, the government needs to conduct the inspection on a regular basis and implement continuous monitoring measures.

Fourth, it is important to utilize various systems to promote active information

disclosure, integrity and anti-corruption measures so that we can address diverse aspects of transparency in public institutions. Existing transparency-related systems are designed in line with a narrow conception of transparency in that they concern defining accounting standards, external auditing and reporting standards and public disclosure with regard to information to be disclosed by public institutions. Also, they are focused on passive and mandatory aspects of information disclosure. However, if we expand the concept of transparency, there are various systems that we can tap into so as to enhance the transparency level of public institutions. In particular, they include inspections by the government, the National Assembly, and the Board of Audit and Inspection for legal compliance/ethical management and the eradication of corruption; the integrity investigation of the Anti-Corruption and Civil Rights Commission's investigation on integrity and the Improper Solicitation and Graft Act for assessing the integrity and transparency of public institutions; and the Government 3.0 policy for actively developing contents to be disclosed and encouraging the diverse use of the disclosed information. This means that there exist many systems— other than conventional ways of disclosure—that can help measure the multi-dimensional level of transparency of public institutions in a comprehensive fashion and monitor improvements continuously by examining evaluations and inspection results from various perspectives for the enhancement of transparency among public institutions.

Fifth, while the existing transparency policy has focused on passive management information disclosure, the government should change its policy direction to encourage voluntary actions by public institutions in the future. In addition to mandatory management disclosures, many enterprises publish sustainability reports to actively disclose information on their businesses, activities, corporate governance, stakeholders and social responsibility activities. Apart from mandatory items for individual disclosure pursuant to the Act on the Management of Public Institutions, they also voluntarily disclose corporate information by means of their websites and corporate reports. Therefore, rather than gradually increasing the number of mandatory items to be disclosed by all public institutions, we need to consider inducing voluntary information disclosure and transparency improvement as a differentiated way to enhance transparency by each institution's capability and characteristics.

Sixth, it is crucial to identify the level of transparency in public institutions to attain the goal of improving their transparency. This is because measuring the level of transparency on a regular basis can help determine whether transparency is improving or deteriorating. Although a variety of inspections and evaluations are conducted to assess the transparency level of a country and a listed corporation, there is still much to be desired when it comes to public institutions that carry out major government policies and manage numerous investments and contracts for public projects. In this respect, the transparency measurement model for public institutions presented in Chapter III of this study would be useful for measuring the level of transparency in public institutions on a regular basis with the checklist of public institutions' various transparency-related activities. Also, the model can help drive institutional improvements in public institutions based on the measures presented in this study to improve transparency. They are widely used in the transparency evaluation of listed companies. In accordance with the OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2015), we should actively consider adopting these measures in relation to public institutions that are expected to maintain the level of transparency equivalent to that of listed companies .

Seventh, transparency in public institutions has been under-researched compared to its importance. To improve transparency, further studies needed to be continued to examine the determinants of transparency, including research on the measurement of transparency in public institutions. In this study, we conducted research about factors that affect the level of transparency of public institutions, but the analysis was not sufficient enough due to the limited availability of data. In particular, the amount of data that reflects the level of transparency is still less than desirable because the Government 3.0 evaluation and inspection on management information disclosure inspection have just started. When more data is accumulated and collected in the future, further analyses will be possible to understand the determinants of public institution transparency and the effects of such transparency on the performance of public institutions will be possible.

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