

KOREA INSTITUTE OF PUBLIC FINANCE

KIPF

Policy Research Series

2019 June Vol.1

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Impact of Coverage Expansion on Fiscal Sustainability of Healthcare System in Korea: On Four Major Diseases*

Woohyeon Kim, Eunbyeong Lee,
Dae hwan Kim, and Yoon Kim**

I. Introduction

Korea's public coverage rate (the percentage of the current health expenditure (CHE) covered by public health insurance) is famously lower than that of other countries. According to the OECD's Health Statistics 2018, the out-of-pocket payment paid by Korean patients accounted for 33.3 percent of the country's CHE (as of 2016, the OECD average was 20.3 percent), which puts the country ahead of most countries except for Latvia (45.0 percent), Mexico (40.4 percent), and Greece (34.3 percent). To address this issue, the Korean government has pursued National Health Insurance (NHI) Coverage Expansion Policies since 2005. The policies are aimed at enhancing the breadth and level of NHI coverage while lowering the health expenditure borne by the people. However, the coverage rate of Korea's

* This report is a summary of the *Impact of Coverage Expansion on Fiscal Sustainability of Healthcare System in Korea: On Four Major Diseases*, a 2018 report published by the Korea Institute of Public Finance.

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public insurance, NHI, has hovered around the same level since reaching 64.5 percent in 2006. In 2016, NHI reported a coverage rate of 62.6 percent (see 2016 NHI Medical Expenditure Survey).¹ Among the many factors that could explain the stagnation of the coverage rate, many researchers have pointed to increased usage of non-covered healthcare services. In August 2017, the government announced a comprehensive and ambitious Coverage Expansion Policy (the so-called Moon Jae-in Care, or Mooncare). The policy seeks to radically reduce the burden on Koreans by converting previously non-covered services to covered services.

In recognition of concerns regarding the long-term financial sustainability of NHI, this study projects the medium and long-term financial effects of Moon Jae-in Care by estimating medium- and long-term health expenditures using a microsimulation model and component-based model.

This study consists of the following chapters. Chapter II provides an overview of previous and current coverage expansion policies. Chapter III evaluates the theoretical impact of expanded coverage on the usage and provision of healthcare services and reviews previous empirical literature on the issue. Chapter IV empirically analyzes the impact of the 2013-2016 Coverage Expansion Policy for Four Major Diseases on healthcare utilization and expenditure. The policy is widely considered a watered-down version of the 2018-2022 NHI Coverage Expansion Policy. Chapter V uses the microsimulation model to predict healthcare utilization in the future and simulates the impact of the Coverage Expansion Policy on the number of visit days. Chapter VI uses the component-based model (OECD model) to construct a projection model and estimates the financial impact of the Coverage Expansion Policy. Chapter VII explores strategies and policy agendas required for stable implementation of the Coverage Expansion Policy. Lastly, Chapter VIII lays out the conclusion of this study and its implications for coverage expansion policies.

1 Based on the definition of the NHI coverage rate used by the National Health Insurance Service (NHIS) [$\{\text{NHI benefits} \div (\text{NHI benefits} + \text{statutory patient contributions} + \text{patient contributions for non-covered services})\} \times 100$]

II. Introduction to NHI Coverage and Coverage Policies

1. Overview and Evaluation of Korea's NHI Coverage Expansion Policies

A total of four plans were implemented to expand the medium-term coverage of Korea's NHI (see Table 1). The first plan, the 2005-2008 Medium-Term Coverage Expansion Plan, set the target coverage rate at 71.4 percent.² The second plan, the 2009-2013 Medium-Term Coverage Expansion Plan, set the target rate at 80 percent. From the third plan on, the government did not set a separate target for the coverage rate. Instead, the government expected that the coverage rate would increase to around 68 percent by 2018 if the plans were properly implemented. Under the latest Moon Jae-in Care (2018-2022), the government projects that the coverage rate will rise to around 70 percent by 2022.

Table 1 Key Elements and Financial Requirements of NHI Coverage Expansion Policies

Expansion policy	Key elements	Financial requirement ¹⁾	Financial sources (cumulative) ²⁾
1st (2005-2008)	<ul style="list-style-type: none"> - The first medium-term coverage expansion plan. Aimed to raise coverage rate from 61.4% in 2014 to 71.5% in 2008 - Reduce copayments for financially demanding severe diseases (from 20% to 10%) - Exempt inpatients under the age of six from copayments 	KRW 3,500 billion	KRW 2.6 trillion (new)
2nd (2009-2013)	<ul style="list-style-type: none"> - Raise coverage rate to 80% by 2013 - Further reduce copayment for cancers and cardiac / cerebrovascular diseases (from 10% to 5%); provide insurance coverage for high-priced services (MRI, ultrasound) - Reduce burden on vulnerable groups with copayment caps for different income levels and expand coverage for assistive devices for people with disabilities - Expand childbirth-friendly coverage such as financial assistance for pregnancy and childbirth and expand coverage for congenital diseases in young children - Expand insurance coverage for dental and oriental medicine services 	KRW 3,878 billion	KRW 9.9 trillion
3rd (2014-2018)	<ul style="list-style-type: none"> - Cover essential healthcare services for each stage of life cycle - Reduce and manage high-priced non-covered services - Enhance healthcare support for vulnerable groups - Expand covered services for four major diseases; improve on three most used non-covered services 	KRW 7.4-7.5 trillion	KRW 24 trillion
Moon Jae-in Care	<ul style="list-style-type: none"> - Raise coverage rate to 70% by 2022 - Reduce and prevent non-covered services; provide coverage for three previously non-covered services - Reduce health expenditure of vulnerable groups: reinforce copayment caps and strengthen the medical social safety net 	KRW 30.6 trillion	-

Notes: 1) NHI Coverage Expansion Policy by Year

2) Republic of Korea Government, NHI Coverage Expansion Policy, August 11, 2017

Sources: 1. MOHW, 2014-2018 NHI Medium-Term Coverage Expansion Plan (Full Text), December 2015, p. 163

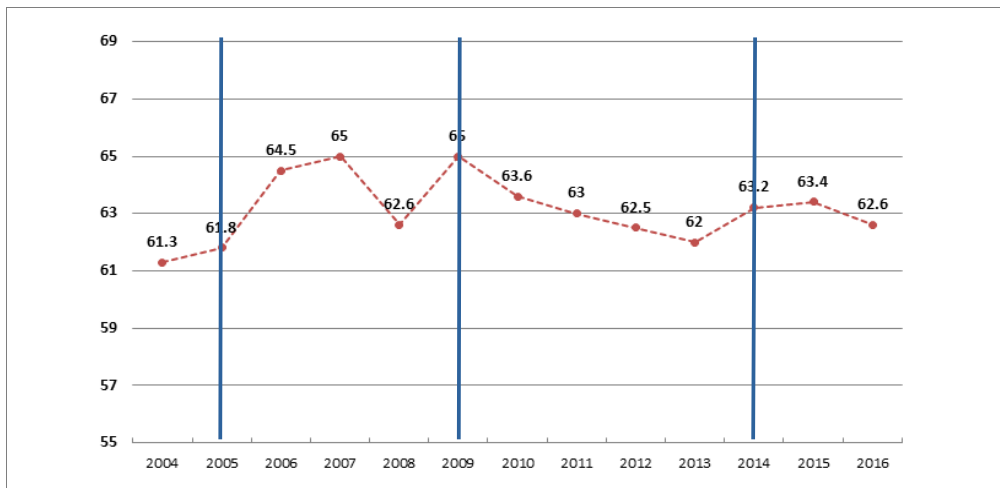
2. MOHW Press Release (October 27, 2008) "Korean Government to Reduce Healthcare Burden by Expanding NHI Coverage"

² Based on the NHI definition of coverage rate.

We can verify whether implementation of the Coverage Expansion Policies raised the country's coverage rate by a large margin by looking into the changes in the coverage rate, defined as $100(\%) - \text{the percentage of copayments in the total medical expense for services covered by NHI}$. The result is shown in Figure 1. In the years when the Coverage Expansion Policies were launched, that is, in 2005, 2009 and 2014, the coverage rate increased by one or two percentage points from slightly above 60 percent. In addition, in years other than the years of the plans' adoption, the coverage rate decreased. The plans had been expected to maintain or raise the coverage rate over time. However, the coverage rate did not increase and remained slightly above 60 percent for more than ten years.

Figure 1_Changes in NHI Coverage Rate in Korea

(Unit: %)

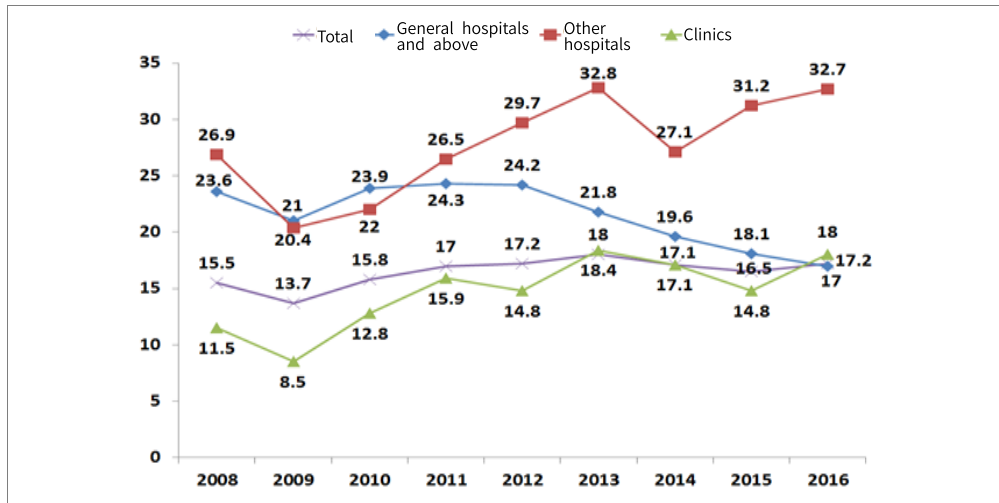


Source: MOHW Press Release, Annual Medical Expenditure Surveys

The stagnation of the coverage rate was attributed to the “balloon effect” of the expansion policies, which means that out-of-pocket payments for non-covered services increased while out-of-pocket payments for covered services decreased. According to the 2016 NHI Patient Medical Expenditure Survey, the percentage of expenditure on non-covered services in the total health expenditure increased from 15.5 percent in 2008 to 17.2 percent in 2016. As for expenditure by type of medical institution, while the percentage of non-covered services decreased at general hospitals or tertiary medical institutions, the percentage rose at other hospitals and clinic-level medical institutions (see Figure 2).

Figure 2_Percentage of Non-Covered Services in Total Healthcare Expenditure by Type of Healthcare Institution

(Unit: %)



Source: NHIC, 2016 NHI Patient Medical Expenditure Survey

For the last few years, the government committed substantial financial resources to raising the coverage rate for the four major diseases. As a result, the coverage rate for the four major diseases increased by 2.6 percentage points, from 77.7 percent immediately before the adoption of the policy in 2012 to 80.3 percent in 2016. The percentage of non-covered services in the total health expenditure decreased by 3.9 percentage points, from 15.6 percent in 2012 to 11.7 percent in 2016. Despite the substantially high coverage rate for the four major diseases, the percentage of copayments and expenditures on non-covered services remains at around 20 percent, which represents a huge burden for low-income households. In addition, the findings show that the Coverage Expansion Policies designed to provide expanded coverage for specific groups, diseases, or covered/non-covered services and lower out-of-pocket payments failed to achieve substantial outcomes. Empirical studies on the impact of the Coverage Expansion Policy for the Four Major Diseases have also reported the low impact of the policies (Kim and Shin, 2017) or their insufficiency in reducing catastrophic health expenditures by households.

To overcome the limitations of the previous Coverage Expansion Policies, the NHI Coverage Expansion Policy, announced by the government in August 2017, was designed to provide full coverage for all non-covered healthcare services rather than coverage for specific diseases and establish mechanisms to prevent excessive health expenditure. The government

announced the main direction of the policy and its expected financial requirement of up to KRW 30.6 trillion over the next five years, and then the government conducted a detailed review of the plan and began phase-by-phase implementation of the policy, scheduled until 2022. The government also lowered out-of-pocket payments and covered previously non-covered services for children, women, the elderly, and people with disabilities. The government also started considering and providing coverage for 3,800 non-covered services for medical services and materials. Of the three major non-covered services (care by physician of choice, superior patient rooms, and caregiver services), which totaled KRW 4.3 trillion in 2012, the fees for care by physician of choice were abolished, and superior patient rooms for two or three patients came under coverage.

The MOHW announced that the financial requirement over the next five years would be KRW 30.6 trillion, and Table 2 shows the expected requirements for specific items. The previous policies failed to produce satisfactory results despite the massive financial inputs ranging between KRW 3 trillion and 7 trillion. Under these circumstances, an aggressive financial input coupled with a strong drive for successful implementation is likely to result in expanded coverage. However, the current estimation of the financial requirements does not readily allow for verification by policymakers, experts, and the academia, which has resulted in disagreements over the size of financial requirements. The National Assembly Budget Office estimated the amount that NHI would finance over a ten-year period until 2027. According to the office, the amount of additional financial input required by the Coverage Expansion Policy is between KRW 30.6 trillion and 30.8 trillion for the 2017-2022 period and between KRW 51.4 trillion and 52.5 trillion for the 2023-2027 period (Kim, 2017). The Research Center for Healthcare Policy, a subsidiary of the Korean Medical Association, announced a statement refuting the government's estimation in which the center claimed that the minimum financial requirement for the period until 2022 was KRW 34,634.7 billion (Research Center for Healthcare Policy, 2017). While these estimates may serve as a reference for policy designers and implementers, the findings beg careful interpretation. The prices (fees) of key healthcare services and covered / non-covered services included in the estimates have not been determined, and the findings do not account for the reasonable impact of changes in healthcare utilization caused by price changes. Therefore, the confidence intervals of these estimates are inherently wide.

Table 2_ Estimated Financial Requirements of NHI Coverage Expansion Policy (MOHW)

(Unit: KRW 100 billion)

	2017	2018	2019	2020	2021	2022	Total
New	4,834	32,018	9,658	6,915	6,305	5,905	65,635
Cumulative	4,834	37,184	50,590	60,922	71,194	81,441	306,164
Preliminary / selective benefits	2,098	11,952	16,733	21,774	26,818	31,123	110,498
Three major non-covered services	1,401	9,390	13,742	15,856	17,980	20,115	78,484
New DRG and other fee schedule changes	-	937	1,800	2,475	3,217	4,289	12,718
Reduce burden on vulnerable groups	1,335	9,997	12,858	14,740	16,403	18,341	73,673
Income level-specific copayment caps	-	3,860	4,374	4,957	5,617	6,369	25,177
Expand eligibility for catastrophic health expenditure support	-	1,048	1,083	1,120	1,160	1,204	5,615

Source: National Assembly Budget Office, Financial Estimation for NHI Coverage Expansion Policy [organized by the National Assembly Budget Office based on MOHW, NHI Coverage Expansion Policy (August 9, 2017) and other MOHW materials]

III. Literature Review

1. Literature Review:

Impact of Coverage Expansion on Fiscal Sustainability of Healthcare System in Korea: On Four Major Diseases

Of the policies implemented over the last decade, after coverage expansion emerged as a key issue for Korea's healthcare policy in 2005 (Choi et al., 2014), two policies stand out—Benefit Expansion Policy and the Coverage Expansion Policy for the Four Major Diseases. The Benefit Expansion Policy is a disease-by-disease approach aimed at expanding coverage for severe and costly diseases. The program reduces out-of-pocket payments for covered inpatient or outpatient services borne by patients diagnosed with severe or costly diseases such as cancers, rare or incurable diseases, cerebrovascular diseases, cardiac diseases, tuberculosis, severe burns, severe trauma, or severe dementia.

However, one would be hard-pressed to find evidence that Benefit Expansion Policy improved access to healthcare. Choi and Jung (2012) reviewed the Year 1 (2005) and Year 4 (2008) data from the Korean Welfare Panel Study to select 182 households that benefited from Benefit Expansion Policy and 182 non-beneficiary households through propensity score matching. Then, Choi and Jung used the difference-in-difference model to analyze their financial capacity and healthcare burden and determine whether their health expenditures

were excessive. The researchers did not find any significant reduction in healthcare burden or excessive health expenditures between the control group and the treatment group. Kim et al. (2014) reviewed the 2009 and 2010 Korea Health Panel Study to identify the impact of the reduced copayment rate for cancer patients (from 10 percent to 5 percent) on their healthcare utilization and burden. The authors performed a difference-in-difference model analysis using liver disease patients as the control group. However, the authors failed to identify any significant change in the outpatient and inpatient copayments, number of visits, or excessive health expenditures. The lack of changes was attributed to the lack of unmet needs of severe disease patients or the impact of the policy set off by the increased burden of non-covered healthcare services. Choi et al. (2014) reviewed the Year 2 (2009) and Year 4 (2011) data of the Korea Health Panel Study, which looked into patients' unmet healthcare needs and used a difference-in-difference model with a control group consisting of diabetic and high blood pressure patients to analyze the impact of the Benefit Expansion Policy on patients' unmet needs. They also concluded that the Benefit Expansion Policy failed to improve their unmet needs.

One of the reasons suggested for the program's failure to reduce the healthcare burden was an increase in the usage of non-covered healthcare services. Benefit Expansion Policy only applied to copayments for covered services. For this reason, the increased usage of non-covered healthcare services translated into an increased burden for the patients, which may have undermined their access to healthcare. In response, when the newly inaugurated administration announced the 2013-2017 Medium-Term Coverage Expansion Policy in 2013, the policy included the Coverage Expansion Policy for the Four Major Diseases, aimed at gradually expanding coverage for previously non-covered healthcare services for the four major diseases.

An impact assessment of Moon Jae-in Care (2018-2022) is not yet possible, as it is still in the development phase. However, some recently published literature analyzed the impact of the Coverage Expansion Policy for Four Major Diseases, which is the closest to Moon Jae-in Care among the previous Coverage Expansion Policies. The Health Insurance Review and Assessment Service (2018) is the latest report that analyzed the policy's impact on healthcare utilization and expenditure. The Coverage Expansion Policy for Four Major Diseases, which can be described as a minor version of Moon Jae-in Care, expanded coverage for 672 services between 2013 and 2016. The majority of the expansion took place between 2015 and 2016. The available data covers the period between 2009 and 2016, which means data before and after policy implementation (2009-2012 and 2013-2016) can be compared. However, no data

is available on non-covered services, and the 7-year period is not long enough to analyze the policy's impact on health.

The analysis showed that the usage of essential services and previously covered services with expanded coverage increased by 45 percent (tests and imaging: 45 percent; others: 26 percent) after the coverage expansion. Out-of-pocket payments have been declining at an increasing rate since the adoption of the policy. Out-of-pocket payments declined by KRW 207.8 billion in 2015 and by KRW 504.1 billion in 2016. However, the report's findings on the decrease in out-of-pocket payments do not seem to represent accurate figures, as the report did not actually compare payments for the same services before and after the policy's adoption. Instead, the report assumed that patients' out-of-pocket payments declined by 35 percent because the fee for a covered service changed to 65 percent of the service's customary price before coverage.

Table 3_ Use of Essential Benefits Before and After the Coverage Expansion Policy

(Unit: number of items, %)

Category	Before expansion	After expansion	Rate of change
Total	11,517,509	16,732,872	45
Testing and imaging	11,515,063	16,729,791	45
Others	2,466	3,081	26

Notes: 1. Medical acts

2. Based on the actual usage of the services. It does not match the estimated number of uses of essential services with expanded coverage.

Source: HIRA (2018), p. 52, Table 29

Table 4_ Changes in Use of Essential Benefits and Out-of-Pocket Payments Before and After Coverage Expansion

(Unit: number of services, %)

Year of coverage expansion (no. of expanded services)	Category	Year tracked				Rate of change
		2013	2014	2015	2016	
2013 (4)	Number of uses	215,633	1,079,531	1,173,064	1,098,200	0.9
	Decrease in out-of-pocket payment	25,612	171,514	186,812	187,281	4.5
2014 (26)	Number of uses	-	69,595	99,220	188,723	90
	Decrease in out-of-pocket payment	-	21,225	39,897	75,097	88
2015 (151)	Number of uses	-	-	3,266,900	7,524,327	-
	Decrease in out-of-pocket payment	-	-	207,847	504,051	-

Table 4_Changes in Use of Essential Benefits and Out-of-Pocket Payments Before and After Coverage Expansion(continued)

(Unit: number of services, %)

Year of coverage expansion (no. of expanded services)	Category	Year tracked				Rate of change
		2013	2014	2015	2016	
2016 (167)	Number of uses	-	-	-	428,612	-
	Decrease in out-of-pocket payment	-	-	-	16,709	-
Total	Number of uses	215,663	1,149,126	4,539,184	9,239,862	-
	Decrease in out-of-pocket payment	25,612	192,739	434,556	783,138	-

Notes: 1. Data on 9,161,757 patients (patient overlap allowed across services)

2. Used estimates for essential services with expanded coverage.

3. Medical acts

4. Decline in out-of-pocket payments was calculated based on the 65 percent ratio assumed between customary prices and coverage prices.

Source: HIRA (2018), p. 44, Table 19.

Kim and Shin (2017) also analyzed the impact of the Coverage Expansion Policy for Four Major Diseases on health expenditure (out-of-pocket payments). The authors used the 2012 and 2014 Korea Health Panel Study data and estimated the impact of the 2013 policy using the difference in differences method combined with propensity score matching. The researchers expected that after the adoption of the policy, the treatment group would spend less on non-covered services and out-of-pocket payments than the control group. However, the empirical analysis did not identify statistically significant results. This seems to be attributable to the fact that the number of services with extended coverage was limited in the first year of the policy's adoption (2013), and it takes time for a policy to produce clear outcomes.

IV. Impact of Coverage Expansion Policies on Healthcare Use and Expenditure

The purpose of this chapter is to calculate the financial resources and additional premiums required to reach the target coverage rate set by Moon Jae-in Care. However, in any policy, predicting its financial requirement is never an easy task. If the policy has not been fully implemented or is in its early phase, the data required for prediction may not be available. In this case, the only way to predict the requirement is to analyze the impact based on assumptions. However, predictions made on assumptions produce quite different, and even

unrealistic, results depending on how the assumptions are defined.

On the other hand, if a similar policy is already in place, the existing policy may be used to estimate the impact of the new policy even before implementation. Relying on an existing policy is by no means perfect. However, not only does the approach offer the benefit of minimizing the assumptions required, but it allows for a relatively reasonable estimation by minimizing unrealistic assumptions and assumptions arbitrarily defined by the researcher.

Considering the above, this study uses the Coverage Expansion Policy for Four Major Diseases, which is perceived as a minor version of Moon Jae-in Care, to estimate the financial resources required to expand the coverage of NHI. As the impact of Moon Jae-in Care cannot be currently analyzed, this study seeks to use alternative data for the analysis. However, NHI data are aggregate data, not individual-level data. Use of such data is limited to arriving at independent or partial effects of expanded coverage on health expenditure. The NHI data contains information on the population of patients diagnosed with the four major diseases who benefit from Benefit Expansion Policy. In other words, the NHI data provides information on all patients diagnosed with the four major diseases in Korea, which can ensure highly reliable findings for the analysis in this study.

1. Analysis with NHI Data

A. Data

Each year, the NHIS publishes the National Health Insurance Statistical Yearbook, which contains statistics on the population of patients covered by the Benefit Expansion Policy (for the four most common serious diseases). The yearbook has a separate chapter that details the number of patients, number of visit days, number of days of covered treatment, benefit payments, and number of treated patients related to the application of Benefit Expansion Policy by age and sex.

This study used data from the National Health Insurance Statistical Yearbooks for years 2012 to 2016. It used statistics for all patients covered by the Benefit Expansion Policy. The rationales for using the 2012-2016 data are as follows. First, the most recent data available are 2016 data. Second, as the coverage of non-covered services under the Coverage Expansion Policy for Four Major Diseases began in 2013, the data for the previous year, 2012, is required to assess the policy's impact in 2013 and going forward.

B. Technical Statistics

Table 5 below shows the treated patients covered by Benefit Expansion Policy and changes in medical expenses and benefits.

Table 5_Patients Covered by Benefit Expansion Policy: Number of Visit Days and Number of Covered Treatments

(unit: number of persons, number of days)

Category		Number of treated patients	Number of visit days	Number of days of covered treatment	Medical expenses	Benefits
2012	Total	1,553,478	37,050,537	335,616,017	8,286,105,168	7,649,682,105
	Male	717,972	18,321,350	141,051,932	4,532,124,562	4,189,381,418
	Female	835,506	18,729,187	194,564,085	3,753,980,605	3,460,300,686
2013	Total	1,658,480	44,469,391	362,975,149	8,771,765,364	8,091,727,549
	Male	765,498	21,553,244	152,243,785	4,782,225,888	4,417,407,233
	Female	892,982	22,916,147	210,731,364	3,989,539,478	3,674,320,313
2014	Total	1,754,674	47,382,850	388,237,024	9,599,245,223	8,856,788,715
	Male	812,519	22,886,115	163,760,658	5,229,645,061	4,832,177,019
	Female	942,155	24,496,735	224,476,366	4,369,600,159	4,024,611,698
2015	Total	1,825,700	49,231,515	399,244,968	10,616,797,284	9,756,573,134
	Male	851,553	23,826,998	170,857,950	5,814,176,345	5,356,675,496
	Female	974,147	25,404,517	228,387,018	4,802,620,939	4,399,897,638
2016	Total	1,902,581	52,469,513	420,485,572	12,028,136,413	11,019,985,270
	Male	891,158	25,186,868	182,491,239	6,534,136,797	6,005,259,970
	Female	1,011,423	27,282,645	237,994,333	5,493,999,614	5,014,725,300

Source: NHI and HIRA (2012-2016)

The number of patients covered by Benefit Expansion Policy increased each year, going from 1,553,478 in 2012 to 1,902,581 in 2016. This number is on the rise across both sexes, with the number of female patients exceeding male patients each year. This gap is attributable to gaps in the prevalence rates across ages, rather than the gap between sexes. As females enjoy longer life expectancies than males, they comprise the absolute majority of the aged population, resulting in the higher number of severe disease patients among women. According to Statistics Korea, women's life expectancy is 85.2 years, which is 6.2 years longer than men (79.0). Older populations report a higher prevalence of severe diseases and higher mortalities. In addition, the continued rise of the number of patients covered by Benefit Expansion Policy has resulted in a rapid increase in the number of visit days and the number

of days of covered treatment.

The medical expenses covered by the Benefit Expansion Policy in 2012 totaled KRW 8,286.1 billion, which rose to KRW 12,028.1 billion in 2016. The amount of medical expenses and benefit payments is growing at a fast rate across both sexes, which is attributable to the rapid growth of the number of patients covered by Benefit Expansion Policy, as discussed above. Interestingly, even though women comprise the majority of patients covered by Benefit Expansion Policy, men account for a larger percentage of the total medical expense and benefit payments. In other words, a male severe disease patient pays a higher amount of medical expenses than a female severe disease patient.

C. Findings

The only information regarding Benefit Expansion Policy in the National Health Insurance Statistical Yearbook is the information on medical expenses and benefit payments. Therefore, medical expenses were divided into different types (medical expenses, benefit payments, expenses for non-covered services, and total medical expense) using the coverage rate announced by the NHIS.^{3,4} The budget for the Coverage Expansion Policy, in particular for coverage of previously non-covered services, began to significantly increase in 2015. As can be seen from Table 6, the coverage rate for the four major diseases began to increase in 2015.

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- 3** Since 2004, the NHIS has been conducting surveys on the out-of-pocket medical payments of NHI patients. The NHIS also reports the NHI coverage rate each year under the title “Survey on Medical Expenses Incurred by NHI Patients.” The NHIS collects data on the medical expenses of outpatients and inpatients in June and December from a sample group of healthcare providers (see 2016 Survey on Medical Expenses Incurred by NHI Patients). The coverage rate calculated based on this information does not represent data compiled from an entire population. However, it is used in various research projects and policy designs as the only source of information on the expenses of non-covered healthcare services.
 - 4** The overall NHI coverage rate and the coverage rate for the four major diseases were calculated using data from the Survey on Medical Expenses Incurred by NHI patients. However, as the government does not collect data on non-covered services, the rates are far from perfect. However, there is currently no alternative other than the data published by the NHIS.

Table 6_Changes in Coverage Rate for Four Major Diseases

(Unit: %)

Year	2012	2013	2014	2015	2016
Coverage rate	77.7	77.5	77.7	79.9	80.3

Source: NHI and HIRA (2012-2016)

The total medical expense consists of benefit payments (the part of covered medical expenses paid for by the NHIS), expenses on non-covered services, and copayments. First, the copayments in Table 7 can be calculated by deducting the amount of benefit payments from the medical expenses. The total medical expense can be calculated by dividing the benefit payments by the coverage rate in Table 6, as the coverage is the percentage of the NHIS copayments in the total medical expense. Finally, the expenses on non-covered services can be calculated by deducting the benefit payments and the copayments from the total medical expense.

Table 7_Amount of Medical Expenses by Type

(unit: KRW 1,000)

Category	National Health Insurance Statistical Yearbook data			Calculation	
	Medical expenses	Benefit payments (NHIS copayment)	Copayment	Total medical expense	Expenditure on non-covered services
2012	8,286,105,168	7,649,682,105	636,423,063	9,845,150,714	1,559,045,546
2013	8,771,765,364	8,091,727,549	680,037,815	10,440,938,773	1,669,173,409
2014	9,599,245,223	8,856,788,715	742,456,508	11,398,698,475	1,799,453,252
2015	10,616,797,284	9,756,573,134	860,224,150	12,210,980,143	1,594,182,859
2016	12,028,136,413	11,019,985,270	1,008,151,143	13,723,518,394	1,695,381,981

Notes: 1. Copayments are calculated by deducting benefit payments from medical expenses.

2. Total medical expense is calculated by dividing medical expenses by the coverage rate in Table 6.

3. Expenditure on non-covered services is calculated by deducting benefit payments from total medical expense.

Source: organized by the authors using data from the NHIS and HIRA (2012-2016).

During the period shown in the table, the amount of benefit payments, copayments, and total medical expense grew at a fast rate. Interestingly, expenses on non-covered services declined after a period of increase. Given that the data represents aggregate figures for all patients, the decline of expenses on non-covered services constitutes a significant change. The decline can be understood as a result of the coverage of previously non-covered services, which is one of the ways to expand coverage under the policy.

An estimation of the changes in different types of medical expenses requires data on individual patients. The expansion of coverage for the four major diseases between 2012 and

2016 was accompanied by an increase in the number of patients and the amount of medical expenses. If the number of patients is not considered, increased medical expenses may be interpreted as the result of expanded coverage. In addition, medical expenses should be converted to real values adjusted for the inflation rate. Korea reports the highest growth rate of medical expenses among the OECD countries.

Table 8 represents changes in real medical expenses⁵ per patient by expense type. The per-patient medical expenses changed in a similar way to the total expense. An individual's expenses on non-covered services declined, unlike the other types of expenses. Other expenses grew at a moderate rate. However, the growth rate soared when expenses on non-covered services began to decrease. Such gaps among different types of medical expenses seem to be the result of the coverage of previously non-covered services under the Coverage Expansion Policy for the Four Major Diseases.

Table 8_Health Expenditure per Patient by Type

(unit: KRW 1,000)

Year	Benefit payments	Copayments	Expenditure on non-covered services	Total medical expense
2012	4,812	400	981	6,193
2013	4,785	402	987	6,174
2014	4,985	418	1,013	6,416
2015	5,344	471	873	6,688
2016	5,849	535	900	7,285

Source: organized by the authors using data from the NHIS and HIRA (2012-2016)

Table 9 shows findings on the impact of changes in the coverage rate for the four major diseases on different types of medical expenses between 2013 and 2016, which are calculated with a more general approach. The authors calculated the changes in the coverage rate in the 2013-2014 period, the 2014-2015 period, and the 2015-2016 period, and they also calculated the average growth rate across the three periods. The findings show that the coverage of previously non-covered services and the expanded coverage for the four major diseases drove down the expenses on non-covered services, while the benefit payments (NHIS copayments), copayments, and total medical expense increased.

⁵ Real health expenses were calculated using the inflation rate announced by the National Index (www.index.go.kr).

Table 9_Impact of Changes in Coverage Rate on Medical Expense Changes and Growth Rates

(unit: KRW 1,000, %, %P)

Year		Benefit payments	Copayments	Expenditure on non-covered services	Total medical expense	Coverage rate
Difference	2012-2013	-27.17	1.78	6.31	-19.08	-0.20
	2013-2014	200.17	15.77	25.79	241.73	0.20
	2014-2015	358.81	53.27	-139.66	272.42	2.20
	2015-2016	505.45	63.96	26.73	596.13	0.40
Growth rates	2012-2013	-0.56	0.45	0.64	-0.31	-
	2013-2014	4.18	3.92	2.61	3.92	-
	2014-2015	7.20	12.75	-13.79	4.25	-
	2015-2016	9.46	13.57	3.06	8.91	-
	Average	5.07	7.67	-1.87	4.19	0.65

Source: calculated by the authors

Specifically, a 0.65 percentage point increase in the coverage rate for the four major diseases raised benefit payments (NHIS copayments) by 5.07 percent, copayments by 7.67 percent, and the total medical expense by 4.19 percent. However, expenses on non-covered services declined by 1.87 percent. When applying changes in medical expenses brought on by changes in the coverage rate for the four major diseases, a one percentage point increase in the coverage rate raises the burden on the NHIS by 7.80 percent. As the main financial sources of the NHIS consist of insurance premiums and taxes, the one percentage point increase raises the financial burden on Koreans by 7.80 percent.

Table 10_Changes in Medical Expenses per 1 Percentage Point Coverage Rate Increase

(Unit: %)

Category	Covered expenses	Copayments	Expenditure on non-covered services	Total medical expense
	7.80	11.80	-2.87	6.45

Source: calculated by the authors

V. Medium and Long-Term Financial Impact of NHI Coverage Expansion Policies Via Microsimulation

1. Necessity of Healthcare Microsimulation

Astolfi, Lorenzoni, and Oderkirk (2012) categorized the models used for prediction of future healthcare expenditures into macro-level models, component-based models, and microsimulation models, and they discussed the suitability of different models for different period lengths. They argued that as factors that may affect health expenditures do not significantly change over less than two years, macro-level models are suitable for such short-term estimation. However, medium-term estimations typically use the models that only consider a few key demographic factors and their impact on expenditure (e.g., component-based models). These methods are used to divide the entire population into sex or age cohorts and apply the changes in the average health expenditure and population of each cohort (the EU model) or estimate the total healthcare expenditure considering various factors such as population (health expenditures by the deceased and the living), income, and residual (new techniques, institutional factors) (OECD Model) (Lee, 2018). Lastly, long-term analysis of changes in health expenditure requires information on various factors such as the dynamic changes of key factors, long-term demographic trends, and changes in individuals' behaviors towards institutional changes, along with reasonable assumptions or estimations regarding the information. Such analysis requires a model in which the analysis focuses on individuals, the impact of micro-level factors on healthcare expenditure are identified and estimated, and the findings are incorporated through long-term simulations.

This chapter seeks to describe the microsimulation process performed to estimate healthcare utilization using Korean data for the following reasons. First, demographic changes in the Korean society are likely to have a long-term impact on the country's healthcare expenditure in the future. Therefore, the analysis needs to use a model that is relatively suitable for estimating healthcare expenditure in consideration of the long-term effects of related phenomena. Second, the microsimulation model is suitable for arriving at a more sophisticated estimation of the effects of policy changes in the future under counterfactual conditions by focusing on individuals as the unit of analysis and considering the individuals' behaviors in different environments. In cases where a policy change occurs that may affect the healthcare expenditure, the model is highly useful, as it allows researchers to understand the resulting changes on healthcare expenditure in advance. In the course of discussions on the

additional financial requirement for the Coverage Expansion Policy, discussions on the long-term projection of NHI fund after 2022 have been limited by issues with available data and the reliability of the available models. These circumstances seem to warrant the use of the microsimulation model, which is suitable for long-term projections and highly useful for healthcare policies.

Many countries use microsimulation models to project social security and healthcare finances. Widely known microsimulation models worth considering include the Future Elderly Model used in the United States, Canada's Population Health Model, and the Swedish Microsimulation Model (SESIM).⁶ This chapter constructs an analysis model by benchmarking the SESIM. The SESIM was developed by the Swedish Ministry of Finance in 1997 for assessment of the country's education system. The model has been used to project long-term public finances considering the various factors that affect public financial expenditures. In the SESIM model, each individual in the sample goes through various modules, including ① population, ② education, ③ labor, ④ assets and dwelling, ⑤ taxes and transfer income, ⑥ in-kind benefits, and ⑦ health and long-term care, which change and finalize the status of each factor. Then, the same process is repeated at the beginning of the next year.

Klevmarken & Lindgren (2008) explained the structure of the model and the construction of each model in detail, and they argued that the model can be used in future projections across various social security areas in Sweden such as sick leave, early retirement, relocation of residence, income changes of the baby boom generation, assets, usage of inpatient healthcare services, and long-term demand for care among the elderly. Based on this model, Ko et al. (2016) adjusted the SESIM model to construct modules for population, childbirth, death, household composition, education, labor, assets, public pension and tax, and they developed a microsimulation model capable of estimating the impact of social security policies on medium- and long-term finances. However, Ko et al. (2016) did not discuss the SESIM healthcare service modules that estimate health conditions and healthcare service usage of the population. This study attempts its own estimation model and develops a simulation model to estimate visit days, which represents the health status and healthcare utilization of the Korean population in the future.

⁶ For an overview of the characteristics and analysis method of each microsimulation model, see Astolfi, Lorenzoni & Oderkirk (2012); Ko et al. (2014); and Jung et al. (2015).

A. Estimation Model for Healthcare Expenditure⁷

This section discusses the basic model to estimate the number of visit days and individual health status. The model was estimated using data from the Korea Health Panel Study. The Panel data contains detailed information on healthcare utilization and diseases, as well as information on income, education, marriage status, and childbirth statistics of households and their members. The data is suitable for use in a microsimulation model that simulates household socioeconomic situations until a future point in time. Panel data is available for years 2008 to 2015. This study used the data between 2010 and 2015. The Panel began to collect information on “self-reported health status” and “restriction of activities by diseases/injury,” in 2010 and the 2015 data were the most recent data available.

This study aimed to develop the health index to reasonably define and quantify the health status of individuals and to construct a model to estimate individuals’ health status from the present to a point of time in the future. To this end, this study relied on the estimation of changes in health status as explained in the work of Klevmarken and Lindgren (2008). This estimation was used to project healthcare expenditure in the SESIM. To represent individuals’ health status, this study used three variables – their self-reported health status, restriction of activities by diseases or other physical injuries, and diseases that individuals were currently suffering from.⁸ Based on the work of Klevmarken and Lindgren (2008) and Stegmüller (2013), we used the dynamic ordered probit model with the Bayesian method to explain and simulate individuals’ health status.

As variables that may affect the health index, this study used the following information on household members collected by the Korea Health Panel: sex, age, educational background, marital status, type of NHI membership, disability, and household income quintile.⁹ It should be noted that additional surveys by the Korea Health Panel targeted

⁷ The model for healthcare expenditure was developed by benchmarking the SESIM and the model structure and results explained in Klevmarken & Lindgren (2008). In addition, the model was estimated using the Bayesian dynamic ordered probit model developed by Stegmüller (2013).

⁸ For information on diseases that affect individuals’ health status, this study relied on the Elixhauser Comorbidity Index.

⁹ The designs, module compositions, and information used in microsimulation models vary from country to country, seemingly depending on the healthcare system of each country and the data used in the simulation model estimation. The variables used for the estimation of the health index and the number of visit days were selected considering the data available from Klevmarken & Lindgren (2008), Ko et al. (2016) and the Korea Health Panel Study.

household members aged 18 or older. Therefore, the data on self-reported health status and restriction of activities by diseases or injuries can be secured only for an age group of 18 years or older. Data on health status, the number of inpatient care days, and the number of outpatient visit days are confined to samples aged 18 or older. Thus, this study is limited in that it is impossible with the current model to use the Korea Health Panel Study data to estimate the healthcare utilization of all Koreans including those under 18 years of age.¹⁰ The number of visit days (days with inpatient care and outpatient visits), which is one of the outcome variables of the estimation, was estimated with the zero-inflated negative binomial model to reflect individual heterogeneity and consider the high percentage of samples who did not visit medical institutions.

B. Simulation Process

To estimate the number of visit days and individuals' health status to a point of time in the future, each explanatory variable of the model for future healthcare services needs to be updated until that point in the future. The sample group will go through demographic changes in the future, as some individuals leave the sample due to death and as the newborn children of others enter the sample. Therefore, to account for births, deaths, individuals' health status, and the number of visit days in the sample group, we need to use a reasonable model and assumptions to update sample group information on sex, age, educational background, marital status, type of NHI membership, disability, and income quintile. The model is updated for each year (discrete model), assuming that the 2015 sample group represents the overall population (population model). The model is constructed as a dynamic model that goes through a dynamic aging process in which individuals' socioeconomic information changes over time.

A simple behavioral equation was estimated for some information based on variables from previous literature and data, and the estimated parameters were used to update the model for each year in the future. For instances when the above approach was not applicable, we estimated a transition matrix that represents the pattern of change in the information during the Panel's analysis period, using the matrix to update the model for each year.¹¹

¹⁰ However, the future simulation of demographic changes and the socio-economic variables of the population covers the overall population. Only the future estimation of healthcare service usage is restricted to samples aged 18 or older due to the limitation of available data.

¹¹ Due to various restrictions, including the limited research period, use of available data, and useful reference

C. Reflection of Effects of Coverage Expansion Policy

An ideal situation would be the model endogenously reflecting the process of how the Coverage Expansion Policy raises the NHI coverage rate and how the raised coverage rate affects the usage of healthcare services. However, as is discussed in detail in Chapter IV, the Coverage Expansion Policy for the Four Major Diseases in 2013 is the only coverage expansion policy worth considering. The policy is fundamentally limited in that variation in the coverage rate is confined to specific severe diseases.¹²

A practical approach worth considering at present would be, once the estimation model for the future number of visit days is constructed, to estimate the impact of expanded NHI coverage on the number of visit days (elasticity) using other data and to exogenously incorporate the data into the model. In other words, using the method in Chapter IV and the changes in the coverage rate for the four major diseases, this approach verifies the average change in the number of visit days caused by a one percent increase in the NHI coverage rate. Then, the findings are used to investigate the change in the number of visit days in a hypothetical scenario in which the government achieves the 70 percent coverage rate. The ultimate change in healthcare utilization is estimated from changes in the per capita number of visit days by exogenously incorporating the changes in healthcare utilization caused by the Coverage Expansion Policy.

Chapter IV uses data on the “Status of Services Covered by the Benefit Expansion Policy for Severe Diseases by Age and Gender” in the number of visit days to identify annual changes in the per capita number of visit days for the four major diseases, as well as changes in the coverage rate for the diseases in the same period.

A calculation of annual changes in the per capita number of visit days and changes in the coverage rate for the four major diseases shows that, as seen in Table 11, a 0.65 percentage point increase in the coverage rate raised the per capita number of visit days by 0.883, or 3.71 percent. Therefore, a one percentage point increase in the coverage rate raises the per capita number of visit days by 1.358 days, or 5.70 percent. This study uses the findings to linearly extrapolate the changes in the per capita number of visit days caused by the growth of the coverage rate to the target rate.

literature, only a number of key modules were estimated using the behavioral equation. In subsequent research, we plan to review the modules processed with the transition matrix and estimate a more precise behavioral equation.

12 If the Moon Jae-in administration’s NHI Coverage Expansion Policy produces positive effects and results in significant changes in coverage rates, then the variation can be used in future research.

Table 11_Coverage Rate for Four Major Diseases and Changes in the Number of Visit Days per Patient

(Unit: number of days, %, %p)

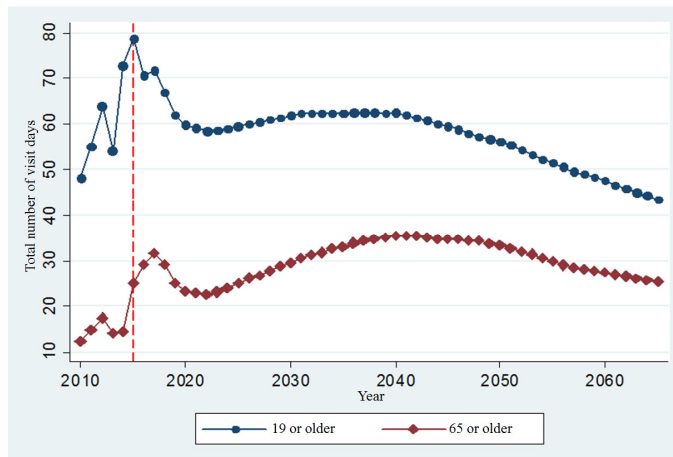
	Number of visit days change	Number of visit days rate of change	Four major diseases coverage rate change
2012-2013	2.874	12.32	-0.20
2013-2014	0.143	0.55	0.20
2014-2015	-0.082	-0.31	2.20
2015-2016	0.597	2.27	0.40
Average	0.883	3.71	0.65

Source: calculated by the authors

2. Findings

Figure 3_Simulation Result on Number of Visit Days in Age Groups 19 Years or Older and 65 Years or Older

(Unit: ten million days)



Note: The data ahead of the red line (2015) are the actual data from the Korea Health Panel, and the data behind the red line represent the estimates from the simulation.

Source: organized by the authors

The authors projected the number of visit days for the 2016-2065 timeframe by comprehensively considering the future sample compositions until 2065 estimated by the simulation, changes in variables, health status updates, and estimated number of visit days until 2065.

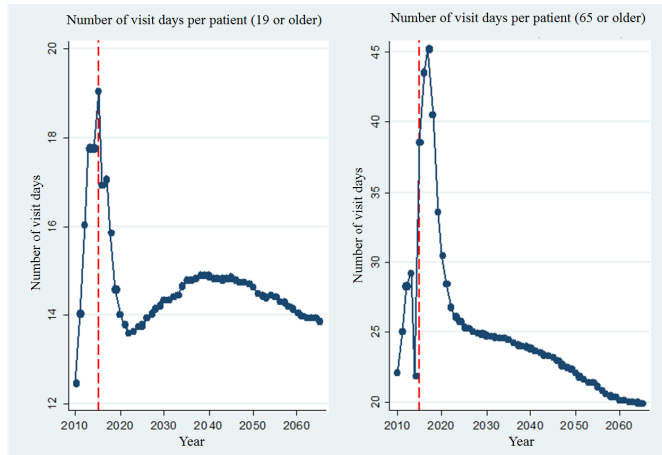
The authors compared the actual data for 2010-2015 from the Korea Medical Panel with the number of visit days from the simulation. The former reported an average of 621,400,000 visit days for samples aged 19 years or older, while the number projected by the latter was 30.9 percent lower at 429,290,000. However, according to the Korea Medical Panel data, the average number of visit days between 2010 and 2015 was 163,440,000 in the 65 or older group, and the 2065 simulation predicted a 55.0 percent higher number of days at 253,380,000. In addition, in 2040 and later, the total number of visit days decreased in age groups of both 19 years or older and 65 years or older.

The decline in the total number of visit days after 2040 is especially interesting because the finding defies previous predictions that healthcare utilization would exponentially grow on account of demographic changes caused by low birth rates and population aging, resulting in an increased percentage of elderly people. In the 19 or older group, one of the possible causes of the decrease in the total number of visit days is the decline of the 19 or older population. At the same time, as shown in Figure 4, the simulation showed a slight decline in the per capita number of visit days in and after 2040.¹³ A back-of-the-envelope calculation shows that the per capita number of visit days in the 19 or older population will decrease by 1,117 between 2040 and 2065. Considering the estimated size of the 19 or older population in 2065 (31,520 thousand), the finding represents a decrease of 35,200 thousand days. The total number of visit days would decrease by 183,640 thousand between 2040 and 2065. The changes in the per capita number of visit days, when excluding the impact of the population size change, explain around 19.2 percent of the decrease in the total number of visit days. Therefore, while the decrease in population size explains a significant part of the decrease in the total number of visit days, changes in some of the other variables in the model would partially contribute to the changes in the number of days.

13 This report uses the number of visit days (number of days with inpatient care and outpatient visits) as one of the key indicators of healthcare use. An anonymous advisor has helped the authors verify that an analysis using the number of outpatient visit days and the number of inpatient care days as outcome variables shows a similar decline around the same point. The authors plan to expand the model analysis to include specific healthcare usage variables such as the number of outpatient visit days and the number of inpatient care days, together with the number of days of medicine administration, and use the average fees and the estimated fees of each outcome variable (outpatient visits, inpatient care, and medicine administration) so that the findings on healthcare usage can be interpreted from a healthcare finance perspective.

Figure 4_Simulation Result on Number of Visit Days per Patient in Age Groups of 19 or Older and 65 or Older

(Unit: ten million days)



Note: The data ahead of the red line (2015) are the actual data from the Korea Health Panel, and the data behind the red line represent the estimates from the simulation.

Source: organized by the authors

Table 12_Estimation Results for the 19 or Older Population and Number of Visit Days (2040 vs 2065)

(Unit: number of days)

Year	Projection for the 19 or older population	Average per patient projected number of visit days	Projected total number of visit days
2040	41,584,269	14.739	612,929,540
2065	31,515,734	13.622	429,291,730

Note: Estimates for the 19 or older population

Based on the above simulation results, the authors defined three scenarios to understand the impact of the NHI Coverage Expansion Policy on the NHI coverage rate. The first scenario assumes that the current Coverage Expansion Policy (Moon Jae-in Care) achieves its target coverage rate of 70 percent by 2022 (Scenario 1). In the second scenario, the policy's effect is realized over a longer term, achieving the 70 percent coverage rate in 2035 (Scenario 2). Lastly, the third scenario assumes reaching the target rate in 2055 (Scenario 3). All three scenarios assume a linear, continuous growth of the coverage rate until it reaches the target rate, and the NHI coverage rate in 2015 is 63 percent.¹⁴ Table 11 shows that a seven percentage point increase in the coverage rate raises the number of visit days by 39.95 percent. The scenarios

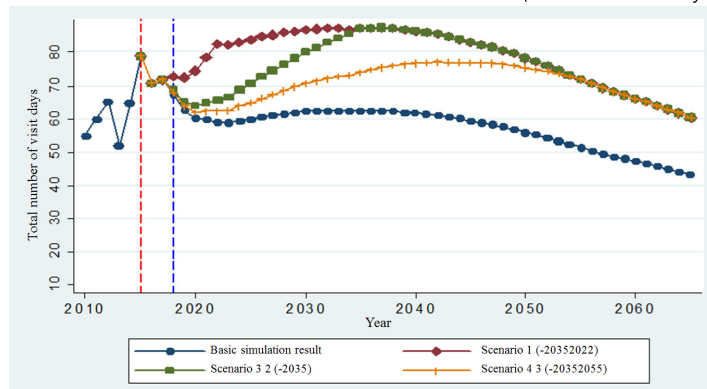
¹⁴ The actual NHI coverage rate in 2015 was 63.4 percent (NHIS, Survey on Medical Expenses Incurred by NHI Patients).

evenly distribute the increase across the period until 2022, 2035, and 2055, respectively.

As can be seen from Figure 5 and Figure 6, by analyzing the scenarios that exogenously incorporate the increase in the number of visit days caused by the target coverage rate of 70 percent, a 39.95 percent increase in the number of visit days can be verified. In the long term, affected by the increase in the NHI coverage rate, the number of days will increase at different rates in the respective scenarios. However, the number of visit days is expected to be commonly affected by the decrease in the total number of visit days starting in 2040. Though the simulation shows that the per capita number of visit days in 2065 is 13.63 days per year, when accounting for the impact of the Coverage Expansion Policy, the per capital number of visit days increases by 6.13 days, reaching 19.75 days. This finding suggests the need for parallel implementation of the long-awaited service delivery reform in the healthcare sector and improvement of the service fee system focused on service quality. In other words, as the population decrease in the long term is expected to raise the insurance premiums borne by each patient, the healthcare burden needs to be mitigated by controlling healthcare utilization. In addition, as noted above, the exogenous incorporation of the increased usage of healthcare in the simulation model is based on the expanded coverage under the policy for the four major diseases. Therefore, under a Coverage Expansion Policy that covers both minor and severe diseases, the increase in healthcare utilization may exceed the simulated estimates.

Figure 5_Scenario Simulation Result of Number of Visit Days in 19 or Older Group between 2016 and 2065

(Unit: ten million days)

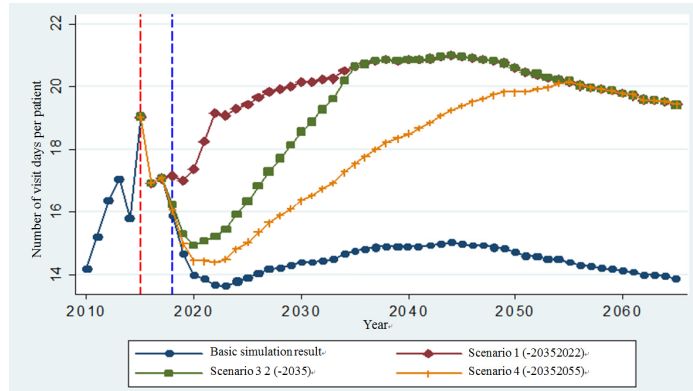


Notes: 1. Estimated number of visit days in the 19 or older population
 2. The red dotted line represents 2015. The data ahead of the line represent actual data from the Korea Medical Panel Studies. The blue dotted line represents 2018, the starting year for the Coverage Expansion Policy scenarios.

Source: organized by the authors

Figure 6_Scenario Simulation Result on Per Capita Number of Visit Days in the 19 or Older Group between 2016 and 2065

(Unit: number of days)



Notes: 1. Estimated number of visit days in the 19 or older population
 2. The red dotted line represents 2015. The data ahead of the line represent actual data from the Korea Medical Panel Studies.
 The blue dotted line represents 2018, the starting year for the Coverage Expansion Policy scenarios.

Source: organized by the authors

VI. Medium- and Long-Term Financial Effect of NHI Coverage Expansion Policy: Based on the Component-Based Model

Chapter VI develops the 2018 KIPF models for medium and long-term financial projection of NHI using the component-based model, which facilitates calculation and international comparison. Then, it uses the models to analyze the medium- and long-term financial effect of the 2018-2022 Coverage Expansion Plan.

1. Development of KIPF Models for Medium- and Long-Term Financial Projection of the NHI

The Korea Institute of Public Finance (KIPF) models are distinguished by the fact that, while we rely on the OECD model employed by the 2060 Long-Term Financial Projection announced by the Ministry of Economy and Finance in 2015, we propose a variety of rationales for assumptions and premises. First, the KIPF attempted a model based on the ratio of public health expenditure to the GDP, updated the macro-level data, and used actual data

on death-related health expenditure unlike the 2015 model.

The KIPF developed two models. Model A projects the ratio of CHE to GDP as the 2015 model did and multiplies the ratio with the ratio of public health expenditure to CHE and the ratio of NHI expenditure to public health expenditure to calculate the NHI expenditure. While the 2015 model assumes that the ratio of public health expenditure to CHE would reach up to 70 percent by 2055, the KIPF model lowers the target level to 65 percent by 2065. The reason for the adjustment was that the ratio of public health expenditure remained between 55 and 60 percent throughout the implementation of the first three Coverage Expansion Policies starting in 2005. The KIPF model plans to raise the ratio upon the adoption of more ambitious expansion policies such as Moon Jae-in Care.

Under the 2015 model, when calculating the per capita death-related costs, the population group is divided into 5-year age and sex groups. In addition, under the assumption that the members of the 90 or older group will pass away in a year, the medical expenditure of this group is assumed to be a death-related health expenditure. The death-related costs of persons below 60 are calculated by multiplying by an adjustment coefficient of 2.5, and the costs are assumed to decline proportionally between the age of 60 and 90. The per capita survivor costs are calculated by deducting the death-related costs from the total medical expense and dividing the resulting value with the number of survivors. However, the KIPF model uses the NHIS' all-population data to derive the actual death-related costs and the survivor costs by age and sex. The findings reveal an over-projection of the death-related costs under the existing model.

To cite another distinguishing feature, while the existing models assume that the annual mortality rate is fixed at the 2013 rate until 2065, the KIPF model assumes a gradual decrease in mortality rate by age and sex based on the future mortality rate (2018-2065) announced by the Statistics Korea Future Population Survey.

Model B projects NHI expenditure by multiplying the ratio of public health expenditure to GDP with the ratio of NHI expenditure to public health expenditure, which is the approach employed by OECD (2006) and OECD (2013). Basing a projection on the public health expenditure, which constitutes a part of the total healthcare expenditure, offers the benefit of reducing the number of steps in applying assumptions. However, as the ratio of public health expenditure is not a parameter but a projection result, incorporation of the impact of the Coverage Expansion Policy is somewhat limited.

Table 13 Comparison of 2015 NHIS Model and 2018 KIPF Models

	NHIS Model (2015): 2016 Long-Term Financial Projection	KIPF Model (2018)
Models	<ul style="list-style-type: none"> - OECD method (2006): 2013-2060 - Estimates total healthcare expenditure-to-GDP ratio with population, income, and residual factors, and applies CHE-to-total healthcare expenditure ratio and NHI expenditure-to-public health expenditure ratio - The public health expenditure-to-total healthcare expenditure ratio increases from 53.4 percent in 2013 to 70 percent in 2055 and plateaus [Assumption 1] - The NHI expenditure-to-public health expenditure ratio remains at 73.3 percent, which is the 2009-2013 average [Assumption 2] 	<ul style="list-style-type: none"> - OECD method (2006): 2018-2065 - Model A: Estimates CHE-to-GDP ratio with population, income, and residual factors, and projects NHI expenditure considering the NHI expenditure-to-public health expenditure ratio - Model B: Based on public health expenditure-to-GDP ratio - Public health expenditure-to-total healthcare expenditure increases to 65 percent between the reference year and 2065 [Assumption 1] - NHI expenditure-to-public health expenditure remains at 75 percent, which is the 2013-2017 average [Assumption 2]
(1) Population factor	<ul style="list-style-type: none"> - Calculation of death-related costs: Calculated by sex group and five-year age group using assumptions [Assumption 5] - Mortality rate fixed at the 2013 rate until 2065 [Assumption 3] - Death-related costs and survivor costs fixed at the 2013 level [Assumption 4] - Calculation of survivor costs: death-related costs deducted from total costs [Assumption 6] 	<ul style="list-style-type: none"> - Calculation of death-related costs: Calculated by sex and age Based on actual all population data [Assumption 5] - Mortality changes each year until 2065 [Assumption 3] - Per capita death-related costs and survivor costs fixed at the 2017 level [Assumption 4] - Calculation of survivor costs: Uses actual all population data on survivors' annual healthcare expenditure [Assumption 6]
(2) Income factor	<ul style="list-style-type: none"> - Based on income elasticity of 1, uses 0.8 in sensitivity analysis [Assumption 7] 	<ul style="list-style-type: none"> - Based on income elasticity of 0.8, uses 1 in sensitivity analysis [Assumption 7]
(3) Residual factor	<ul style="list-style-type: none"> - Residual converges from 2.86 percent in 2013 to 1 percent in 2055, when the public expenditure-to-total healthcare expenditure ratio reaches 70 percent [Assumption 8] 	<ul style="list-style-type: none"> - Residual remains at, or declines from, 2.7 percent, which is the 2007-2017 average [Assumption 8]

Table 13 provides a comparison of the 2015 model and the 2018 KIPF model. The 2015 model and the 2018 models are similar in terms of income elasticity and the calculation of residual factors, but the population factors were largely updated in the 2018 model. The model analyzes a total of eight scenarios created by the combination of three factors (population, income, and residual) with two-option variables for each. The variable for the population factor is whether healthy aging applies, the variable for the income factor is whether income elasticity is 1 or 0.8, and the variable for the residual factor is whether the residual converges to 1 percent due to spending efficiency policy. Of the eight scenarios, the authors chose Scenario 8 as the reference scenario (healthy aging applies; income elasticity is 0.8; no policy intervention for spending efficiency). Scenario 8 was selected as the reference scenario for the following reasons: the NHI cohort data confirmed healthy aging in Korea, the recent literature largely agrees on an income elasticity of 0.8, and policy intervention for spending efficiency has not produced any major outcomes.

The reference scenario (Scenario 8) predicted an NHI expenditure-to-GDP ratio of

between 10.4 and 11.1 percent by 2065. There exist significant gaps between the projections of the respective scenarios. According to Scenario 1, which was the reference scenario for the 2015 model, the NHI expenditure-to-GDP ratio reaches between 11.0 and 12.1 percent by 2065. In Scenario 6, which is the most cost-restrictive scenario across all factors, the NHI expenditure-to-GDP ratio increases to between 6.3 percent and 6.9 percent.

Table 14_2018 KIPF NHI Expenditure Projections: Model A

	#1	#2	#3	#4	#5	#6	#7	#8
Healthy aging	×	×	×	×	○	○	○	○
Income elasticity	1	0.8	1	0.8	1	0.8	1	0.8
Policy intervention	○	○	×	×	○	○	×	×
Expenditure-to-GDP ratio (%)								
2020	3.8	3.7	3.8	3.8	3.7	3.6	3.7	3.6
2030	6.0	5.4	6.2	5.6	5.5	5.0	5.7	5.2
2040	8.4	7.2	9.5	8.1	7.3	6.3	8.3	7.1
2050	10.6	8.5	13.4	10.7	8.7	6.9	11.0	8.8
2060	11.8	8.8	17.2	13.0	9.4	7.1	13.8	10.4
2065	12.1	8.8	19.2	14.0	9.6	6.9	15.2	11.1

Table 15_2018 KIPF NHI Expenditure Projections: Model B

	#1	#2	#3	#4	#5	#6	#7	#8
Healthy aging	×	×	×	×	○	○	○	○
Income elasticity	1	0.8	1	0.8	1	0.8	1	0.8
Policy intervention	○	○	×	×	○	○	×	×
Expenditure-to-GDP ratio (%)								
2020	3.8	3.7	3.8	3.7	3.7	3.6	3.7	3.6
2030	5.9	5.3	6.1	5.5	5.4	4.9	5.6	5.1
2040	8.1	6.9	9.2	7.9	7.1	6.0	8.0	6.8
2050	10.0	8.0	12.8	10.3	8.2	6.5	10.5	8.4
2060	10.9	8.1	16.3	12.2	8.7	6.5	13.1	9.8
2065	11.0	8.0	18.0	13.1	8.7	6.3	14.3	10.4

2. Analysis of the Impact of the 2018-2022 Coverage Expansion Plan on Medium- and Long-Term NHI Finances

This section uses the 2018 KIPF models to analyze the impact of the 2018-2022 Coverage Expansion Policy (Moon Jae-in Care) on the medium- and long-term finances of the NHI.

As a coverage expansion policy lowers the health expenditure borne by the people and raises the part covered by the government, such policy is expected to push medium- and long-term NHI expenditures.

The government announced that it would commit KRW 30.6 trillion over the next five years. Therefore, the financial requirement for the next five years is assumed to be KRW 30.6 trillion. For this reason, the medium- and long-term projection in this section covers only the period between 2023 and 2065. This time frame indirectly incorporates an assumption that the Coverage Expansion Policies will continue after Moon Jae-in Care. In Model A, KRW 30.6 trillion / 5 is applied to each year of the 2018-2022 period, and then two parameters are adjusted. The public health expenditure-to-CHE ratio is assumed to reach 70 percent in 2065 rather than 65 percent, and the residual is raised from 2.7 percent (2007-2017 average) to 3.7 percent (2005-2017 average). As the ratio of public health expenditure is a projection outcome in Model B, only the residual is adjusted. When compared with the data before Moon Jae-in Care, the above analysis estimated an increase in the NHI expenditure-to-GDP ratio by 1 to 4 percentage points in 2065.

Table 16_2018 KIPF NHI Expenditure Projections Accounting for Moon Jae-in Care

(Unit: Expenditure-to-GDP percentage)

	#1	#2	#3	#4	#5	#6	#7	#8
Healthy aging	×	×	×	×	○	○	○	○
Income elasticity	1	0.8	1	0.8	1	0.8	1	0.8
Policy intervention	○	○	×	×	○	○	×	×
<Model A>	Total healthcare expenditure GDP		Public health expenditure Total healthcare expenditure			NHI expenditure Public health expenditure		
2020	4.2	4.1	4.2	4.1	4.0	3.9	4.0	3.9
2030	6.6	6.0	6.9	6.3	6.1	5.5	6.4	5.8
2040	9.6	8.2	11.1	9.5	8.4	7.2	9.8	8.3
2050	12.4	10.0	16.6	13.4	10.2	8.2	13.7	11.0
2060	14.1	10.6	22.6	17.0	11.3	8.5	18.2	13.7
2065	14.6	10.6	25.8	18.9	11.6	8.4	20.6	15.0
<Model B>	Public health expenditure Total healthcare expenditure		NHI expenditure Public health expenditure					
2020	4.1	4.0	4.1	4.0	4.0	3.9	4.0	3.9
2030	6.6	6.0	6.8	6.2	6.0	5.5	6.3	5.7
2040	9.5	8.1	10.9	9.3	8.3	7.1	9.5	8.2
2050	11.9	9.6	16.0	12.9	9.8	7.9	13.2	10.6
2060	13.1	9.8	21.6	16.3	10.5	7.9	17.4	13.1
2065	13.3	9.7	24.6	18.0	10.5	7.7	19.6	14.4

The OECD model poses the following limitations. To incorporate policy effects into the OECD model, the parameters and residual should be adjusted, which relies on the arbitrary decision of the researcher. For example, in the case of the Coverage Expansion Policy, the public health expenditure-to-total healthcare expenditure ratio and the residual were adjusted for Model A. Here, the extent of the adjustment is arbitrarily determined by the researcher. In addition, if the residual includes factors related to coverage, adjusting both the residual and the ratio of public health expenditure may result in a double counting, that is, an overestimation. The residual includes all factors other than the population and income factors (new techniques, institutions, and policies). If a significant portion of the residual is related to coverage, a 1 percent residual may be viewed as an indication that coverage has been sufficiently expanded and expansion is no longer required. That is, the Coverage Expansion Policy has been fully incorporated. Therefore, if the residual cannot be divided into disparate factors, performing the analysis based on the residual assumption after excluding the part related to coverage will prevent over-projection of the effect of the expansion policy.

VII. Policy Implications for Expansion of NHI Coverage

1. Tasks

A. Task (1): Full Coverage of Non-Covered Services and Appropriate Service Fees

One of the key strategies for expanded coverage under Moon Jae-in Care is to provide full coverage of non-covered but medically required services and ensure appropriate service fees. To sever the structural links between the low NHI service fees and the balloon effect of non-covered services, full coverage should be provided at the same time as the ensuring of appropriate service fees.

Given these characteristics of NHI service fees, it would not be advisable to raise service fees across all services. It would not be conducive to improving the balance between areas of healthcare service or removing the compensation blind zones. Alternatives include raising the fees starting with services with fees lower than the service costs and raising fees for services that have not been appropriately compensated such as infection control.

Table 17_Financial Requirement for Service Fee Raise Options

(Unit: KRW 100 million)

	Surgery	Treatment	Functional tests	Clinical laboratory	Imaging	Inpatient care	Examination	Others	Emergency administrative fee	Total
Medical expense										
Hospital										
Tertiary	7,463	7,687	4,463	16,161	14,917	10,922	5,318	2,226	1,145	70,302
Secondary	4,908	9,498	3,663	14,020	11,165	13,045	8,484	963	1,882	67,628
Primary	3,739	14,411	1,861	4,964	4,005	9,205	8,375	179	104	46,843
Total	16,110	31,596	9,987	35,145	30,087	33,172	22,177	3,368	3,131	184,773
Clinic										
Internal medicine	997	9,257	1,732	5,537	1,047	726	35,238	840	0	55,374
Surgery	3,555	13,164	4,718	2,357	2,828	1,092	29,046	97	0	56,857
Other	12	10	14	54	525	1	147	1	-	764
Total	4,564	22,431	6,464	7,948	4,400	1,819	64,431	938	0	112,995
Total	20,674	54,027	16,451	43,093	34,487	34,991	86,608	4,306	3,131	297,768
Service fee raise options: 30% of diseases and services compatible with institution type										
10% raise	620	1,621	494			1,050	2,598			6,383
20% raise	1,240	3,242	987			2,099	5,196			12,765
30% raise	1,861	4,862	1,481			3,149	7,795			19,148
Service fee raise options: 30% of diseases and services compatible with institution type – 20% raise: Fee raise by institution type										
Hospital										
Tertiary	448	461	268			655	319			2,151
Secondary	294	570	220			783	509			2,376
Primary	224	865	112			552	503			2,255
Total	967	1,896	599			1,990	1,331			6,783
Clinic										
Internal medicine	60	555	104			44	2,114			2,877
Surgery	213	790	283			66	1,743			3,095
Other	1	1	1			0	9			11
Total	274	1,346	388			109	3,866			5,983
Total	1,240	3,242	987			2,099	5,196			12,765

Source: organized by the authors

Another possible approach would be to raise service fees in a way that contributes to the healthcare delivery system while improving compensation for inpatient services and surgeries. Yet another possible approach is to raise the fees for inpatient care for patients with severe diseases or highly difficult surgeries at tertiary hospitals while raising fees for inpatient services for patients with minor diseases at secondary general hospitals and raising fees for simple procedures at primary hospitals. If the percentage of diseases and surgeries compatible with each type of medical institution is 30 percent, and if the fees for surgeries, treatments, functional tests, inpatient services, and examination are raised by 20 percent, the total financial requirement will be around KRW 1.28 trillion (see Table 17).

Determining the percentage of diseases and surgeries compatible with different types of medical institutions is a matter requiring a consensus among stakeholders, as well as a medical decision. Even though there are some diseases and surgeries that should clearly be treated or performed at a tertiary hospital, there are services and diseases in grey areas that cannot be readily assigned to a specific type of institution. According to the Superior General Hospital Designation Criteria, DRG class A is defined as a disease compatible with tertiary hospitals. Based on the 2016 NHI and healthcare benefit claim data, inpatients at tertiary hospitals with DRG class A accounted for 27 percent in internal medicine departments and 38 percent in surgery departments.¹⁵ DRG class C is compatible with secondary general hospitals, primary hospitals, and clinics with less than 300 hospital beds. In those general hospitals, primary hospitals, and clinics, DRG class C diseases and surgeries accounted for 38 percent and 61 percent in internal medicine departments and 23 percent and 52 percent in surgery departments.¹⁶ To determine the diseases and surgeries compatible with each institution type, the DRG class A-B-C categorization needs to be revised while engaging in discussions to arrive at a social consensus among the stakeholders.

As of 2010, the cost financing ratios of NHI service fees for inpatient services, examination, surgeries, treatments, and functional tests were found to be between 75 and 85 percent (Shin et al., 2012). In the years that followed, the MOHW continued to raise service fees with low cost financing ratios to improve the balance of NHI service fees between different areas, which raised the ratios to between 80 and 85 percent. For this reason, a 20 percent increase in NHI service fees for institution-compatible diseases and surgeries was expected to raise the cost financing ratios beyond 100 percent. Also worth considering is the reduction of service fees for diseases or surgeries not compatible with the medical functions of each institution type. According to behavioral economic theories, medical institutions are expected to respond more sensitively to cuts than raises. Therefore, we need to consider raising fees first and, when the different fees are introduced for different medical functions, starting to reduce service fees.

This approach tells us that in the course of raising service fees under Moon Jae-in Care to make up for the loss of profits from non-covered services, the government can pursue a reform of Korea's healthcare delivery system through a systematic service fee raise. Proposing a detailed plan for service fee raise aimed at delivery system reform would be beyond the scope

¹⁵ analyzed by the authors

¹⁶ analyzed by the authors

of this study. However, such an approach is well within the reasonable range. For example, deciding which service fees to raise based on the compatibility of individual items of surgeries and treatments with different types of medical institutions, cost financing ratios, and amount of services provided would not be an unreasonable task, despite the obvious amount of time and effort required.

B. Task (2): Preliminary Coverage and Reform of Health Technology Assessment System

Preliminary coverage means temporary coverage of medically essential non-covered services. As explained above, it is a temporary measure aimed at expanding coverage. Coverage is not provided for medically non-essential services, services for which the effect has not been substantiated (e.g., nutrient shots), and substitutable services with low cost-effectiveness (e.g., LASIK and robot surgery). However, even services that have not been proven to be effective or are highly expensive (e.g., high-priced anticancer drugs) have a high chance of being covered by the NHI if they are medically essential or there is no alternative diagnosis or treatment. Determining which non-covered services are medically essential is a grueling process that requires determination of the safety, effects, cost-effectiveness, and social demand of individual services. It is also difficult to determine the fees and coverage criteria for high-priced services or services with significant medical impact.

Those services that lack definite evidence of their effects or cost-effectiveness, or services with low cost-effectiveness, are categorized as preliminarily covered services rather than fully covered services. Preliminarily covered services require higher patient copayments than fully covered services. When an inpatient uses fully covered inpatient services, a 20 percent patient copayment rate applies. On the other hand, the government plans to set the patient copayment rate for preliminarily covered services at 50, 70, or 90 percent depending on the effects, economic feasibility, and cost-effectiveness of the services. This will minimize cases where the NHIS provides more benefits for preliminarily covered services than fully covered services. After a pilot application and assessment period, preliminarily covered services will be reclassified as fully covered services or non-covered services.

First, preliminary coverage shares similar characteristics with the Coverage with Evidence Development (CED) (MOHW Press Release, 2018). The success of the CED program requires criteria for accurate coverage decisions, a transparent decision-making process, clearly defined decision makers, a high level of assessment and research design, and systems for public research grants (Trueman et al., 2010). These factors would also be essential for the

success of preliminary coverage in Korea. Second, a review of the operating principles of preliminary coverage shows that it is based on a value-based insurance design, which determines patients' burden based on the value of each healthcare service. According to Olberg et al. (2014), value-based insurance design is a demand-side healthcare reform strategy, as it seeks to lower patients' burden for high-value services. In other words, value-based design induces patients to seek high-value healthcare services as a natural response to a high healthcare burden, thereby ensuring efficient delivery of healthcare services and raising the quality of the services at the same time. According to an empirical study, value-based insurance design raised usage of high-value healthcare services and improved patients' compliance with treatment, while reducing the usage of low-value services (Chernew, 2007; Look, 2015). However, it should be noted that the effects and economic feasibility of healthcare services can be represented by continuous values. If so, it may be more advisable to consider multiple levels of patients' burden rather than applying a single threshold.

C. Task (3): Review System Reform and Health Expenditure Management

Propensity analysis-based peer review is a program that analyzes the service propensity of medical institutions using indicators based on medical evidence and uses the findings to conduct a peer review based on the medical records of medical institutions exhibiting unusual medical behaviors. The program is aimed at preventing provision of medically unnecessary services while ensuring the autonomy of healthcare professionals.

To this end, professional associations and other entities need to develop indicators for usage monitoring and criteria for appropriate usage based on consideration of medical indications and disease groups. Use monitoring may require patients' past data on service use. For example, in principle, MRI testing for a patient with back pain is recognized only when the patient has received 12 weeks or more of conservative treatment. Applying the indicator "percentage of MRI testing for patients with back pain" requires information on whether the patient visited hospitals or clinics for back pain. Use monitoring may also require collecting clinical information on the status of some patients such as their blood test results. However, not all healthcare services need to be monitored in this way. Monitoring indicators would be required for frequently provided services, high-priced services, and key services that seriously affect patients' health status. In addition, indicators designed to monitor the appropriateness of patients' service usage can make up for the shortcomings of indicators designed for medical acts.

If these indicators point to a possible excessive service provision by a hospital or a clinic, the institution should be reviewed for its medical records in lieu of claim statements. The program should be supported by step-by-step procedures that include regional and professional peer review committees, a review and feedback process for abnormal institutions, on-site consulting, and medical expense adjustment.

To ensure the clinical autonomy of healthcare professionals while preventing excessive service provision under expanded coverage, HIRA needs to depart from the past practice of applying rigid coverage criteria and adopt a peer review program based on propensity monitoring. Reasonable management of medical expenses requires criteria and systems designed to ensure medical service provision informed by medical evidence.

D. Task (4): Enhanced Management of Non-Covered Services

Even if all essential services are covered by NHI, we still need a mechanism designed to manage the provision of non-covered services. Without such a mechanism, we cannot expect to resolve the balloon effect. However, Korea has yet to develop a system to monitor non-covered service provision around the clock. Management of non-covered services consists of two aspects – management of non-covered provision of covered services (arbitrary non-covered service)¹⁷ and management of medically non-essential non-covered services.¹⁸ The management requires two elements – prior consent requirement for non-covered services, which is aimed at managing non-covered provision of covered services, and a ban on the provision of mixed services, which is aimed at deterring the increased provision of non-essential non-covered services.

Even though the government prohibits arbitrary non-covered provision of covered services, the practice continues unabated to date. Arbitrary non-coverage means providing services beyond the coverage criteria set by the NHIS and having the patient pay for the full medical expense to avoid the curtailing of the medical expense. Arbitrary non-coverage may occur either because the patient demanded it or because provision of services beyond the coverage criteria was medically required for the patient. For example, a patient with a headache demanding an MRI test would fall under the first case.

¹⁷ Preventing increase in non-coverage due to criteria violation.

¹⁸ Preventing increased provision of non-essential non-covered services such as manual therapy and nutrient shots.

The prior consent requirement for non-coverage is a requirement that a medical institution must obtain the patient's prior consent when providing NHI-covered services without insurance coverage. If the patient does not consent, the institution may not provide the services without insurance coverage, in other words, have the patient pay for the full medical expenses. The prior consent requirement not only applies to provision of services beyond the coverage criteria but also to non-covered services subject to prohibition of the mixed provision of services.

The consent requirement protects patients' rights by ensuring that they make an informed decision on whether to provide consent. Requiring patients' prior consent can deter non-covered provision of services for financial gains rather than medical reasons. In addition, under the requirement, if a patient demands provision of services beyond the coverage criteria, the medical institution can legally provide the services without insurance coverage, in which case the patient will have to pay for the full medical expense.

Coverage expansion through preliminary coverage is a necessary condition for resolving the balloon effect, but it is not sufficient. Korea has yet to develop an institutional means of controlling the emergence or spread of new non-covered services in essential areas where NHI coverage should apply.

Patient copayment to non-covered medical expenses is not consistent. Providers are practically prohibited from providing some non-covered services along with covered services. For example, in cases where a patient receives healthcare services for the purpose of plastic surgery or non-covered physical checkup, the entire medical expense is not covered. This constitutes a de-facto prohibition of mixed service provision. However, when a similar non-covered service such as robot surgery is provided along with covered services such as inpatient care, the latter are covered by the NHI. These discrepancies show the lack of consistency in non-coverage management. For better management of non-coverage, the implicit prohibition of mixed service provision needs to be made systematic and official.

VIII. Conclusion and Policy Implications

The purpose of this study is to analyze the impact of the Coverage Expansion Policy (Moon Jae-in Care) adopted in 2018 on medium- and long-term healthcare finance. In addition to these data restrictions, this study is limited by some practical issues. The study began in the first year of the implementation of Moon Jae-in Care, and the policy's specific directions and details are still being developed. The ideal data for analysis, if any, has not yet been accumulated.

Despite these practical limitations, Chapter IV attempted an empirical analysis of the impact of the expanded coverage rate on individuals' non-covered expenditures, out-of-pocket payments, and benefit payments by looking into the 2013-2016 Coverage Expansion Plan for the Four Major Diseases. Using the data on changes in NHI benefit payments and changes in the coverage rate for the four major diseases between 2013 and 2016, this study proposed that a one percent increase in the coverage rate will raise the NHI's benefit payment by 7.8 percent. In addition, this study used the microsimulation model and the component-based model to provide long-term projections of NHI until 2065 and looked into changes in the total health expenditure by taking into account the effects of the Coverage Expansion Policies under various assumptions.

The findings of this study are limited in the following respects. First, this study estimated the medium- and long-term financial effects of the 2018-2022 Coverage Expansion Plan. However, the estimated effects were provided in the early stage of the policy and, for this reason, relied on certain assumptions and premises. The financial effects may change as the policy itself changes and evolves. Therefore, the authors plan to reanalyze and compare the financial effect of the policy after the policy's completion in 2022 using the actual accumulated data. Second, this study did not specifically estimate changes in price elasticity for patients caused by the Coverage Expansion Policy. As discussed above, none of the available micro-level data distinguished between non-covered and covered services. Although it was not attempted in this study, a possible approach would be to estimate price elasticity from previously non-covered services that have been indirectly included in the coverage or free-of-charge services such as free vaccination where patients do not contribute. The authors leave those tasks for future research. Third, this study relied on the component-based model and the microsimulation model for its medium- and long-term financial projections. Each of the models requires extensive research and updates. Further research is required to refine the models and provide projections that minimize errors.

Despite these limitations, the authors expect that the assessment of the financial effect of Moon Jae-in Care and the proposal for the policy's future direction contained in this study will inform implementation of the plans for medium- and long-term financial stabilization.

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A Study on Usage of Performance Information under Performance Management System of Budgetary Programs in Korea*

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I. Introduction

In recent years, Korea has seen a rise in demand for expanded government expenditure to cope with various issues such as low birth rate, ageing population, low economic growth rate, and income polarization. Although tax revenue has been increasing for years, it is not nearly enough to satisfy these rising fiscal demands across various sectors of Korean society. The situation has given strength to the argument that Korea needs to enhance the efficiency of its fiscal expenditure.

In the mid-2000s, the Rho Moo-hyun administration launched a series of fiscal reforms aimed at allowing government bodies to self-direct their budgetary programs, while the fiscal authorities determined the direction of fiscal management and distribution of the government's financial resources. The reforms introduced several performance evaluation systems of budgetary programs designed to grant responsibility and autonomy to government

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bodies for performance-based management of their budgetary programs. The performance evaluation systems of budgetary programs play crucial roles in enhancing the efficiency of fiscal expenditure. However, many commentators have pointed out limitations in the feedback function of these programs.

Granted, budgets are outcomes of political processes; feedback from performance evaluation systems of budgetary programs is bound to have limited influence. However, as Korea continues its efforts to achieve efficient fiscal expenditure, it behooves us to review whether the performance evaluation systems of budgetary programs are providing timely and useful information regarding budgets and program operation.

Thus, in this study, we sought to identify various issues with the feedback function of Korea's performance evaluation systems of budgetary programs and provide suggestions for specific ways to produce and apply information regarding the fiscal performance of government programs. To this end, we reviewed the original purpose and role of the performance evaluation systems of budgetary programs and solicited opinions of officials of the fiscal authorities and other government bodies and experts who participated in evaluations on our key findings.

II. Characteristics of Performance evaluation systems of budgetary programs and Importance of Feedback

1. Definition and Significance of Performance evaluation systems of budgetary programs

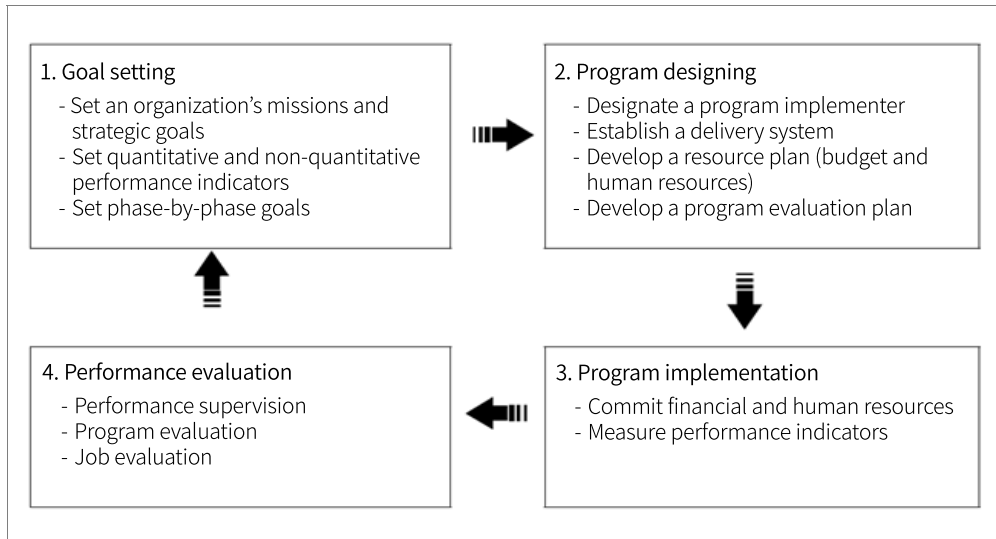
To define *performance evaluation systems of budgetary programs*, we first need to understand the background of their adoption. Starting in the late 20th century, developed countries faced declining economic growth rates, which were coupled with rapid increases in government expenditure caused by efforts for an economic boost and expansion of government functions. Governments were pressured to increase expenditure but were unable to significantly increase fiscal revenue. In response, developed countries have looked for ways to improve the efficiency of their budgetary programs. Government programs are characterized in part by the diversity of their goals and the difficulty in quantifying their outcomes. For this reason, their evaluations tend to focus on inputs, processes, and procedures rather than performance and efficiency. Such input-centered budget management has not provided government bodies

with sufficient motivation or information for maximizing their performance. However, macro-level changes in national economies and government budgets motivated a shift from input-centered fiscal management to outcome/efficiency-centered management.

Against this backdrop, developed countries began to adopt performance budgeting, which improves the efficiency and accountability of fiscal expenditure by allowing government bodies to self-direct their programs while distributing financial resources based on the outcomes of those programs. Performance budgeting requires a performance management system capable of measuring the outcomes of budgetary programs and using findings to manage programs.

Ko et al. (2004) described the performance management system as a process of setting strategic and performance goals, designing and implementing programs, assessing whether the target outputs and outcomes are achieved, and feeding the findings back into the decision-making process. Ko et al. broke down the system into four phases. The first is goal setting, which involves establishing the mission and strategic goals of an organization, quantitative and nonquantitative performance indicators, and phase-by-phase goals. The second phase is program designing, which is about designating the program's implementer, establishing a delivery system, and developing a resource plan (budget and human resources) and a program evaluation plan. The third phase, program implementation, involves committing financial and human resources and measuring performance indicators. Finally, the performance evaluation phase looks at performance indicators, using various evaluation tools such as performance supervision, program evaluation, and job performance evaluation. The findings of the evaluation are used to adjust performance goals and revise program designs.

Figure 1_Performance Management System



Source: Ko et al. (2004), p. 40, Figure 2-3

Therefore, *performance evaluation* can be defined as measuring program outcomes against program goals and performance indicators defined in the performance management system. In addition, to revise program designs and adjust performance goals based on the findings of program evaluation, we need to analyze the causality between the evaluated programs and the changes observed. Hong (2015) defined *evaluation* as determining the success of a policy or program and using systematic means to collect evidence about the causes of successes or failures.

Fiscal performance evaluation can then be defined as a program designed to measure the outcomes of a government-funded program based on program goals and performance indicators and to identify the causality between government inputs and program outcomes. The ultimate goal of a performance evaluation systems of budgetary programs is to help improve the efficiency and productivity of budgetary programs by applying the results of performance evaluation to budgetary program implementation and how resources are committed to those programs.

The significance of performance evaluation systems of budgetary programs can be also understood in terms of the principal-agent model. Under this model, the financial authorities (or the people) can be understood as the principal, and the government bodies running the

program are agents. Typically, government bodies have more information about programs than do financial authorities, which results in asymmetry between them. For example, government bodies know better than financial authorities whether a program is likely to produce outcomes or how much effort is being committing to a program. Such asymmetry results in potential moral hazards for government bodies, which may lead to wasteful budgeting.

One of the ways to address this asymmetry is performance budgeting, in which government bodies receive rewards (i.e., budgets) based on the outcomes of their programs. In this sense, performance budgeting can be understood as connecting program outcomes to budget distribution to prevent moral hazards at government bodies.

To summarize, performance evaluation systems of budgetary programs serve two purposes: (a) measuring the outcomes of budgetary programs against program goals and applying the findings to budget distribution and program operation to increase efficiency and (b) preventing moral hazards within government bodies. A performance evaluation systems of budgetary programs should allow the government to review the efficiency of its spending and use the findings to determine the direction of budget distribution. Such a program should also improve the operation and delivery system of budgetary programs and enhance the accountability of personnel and divisions tasked with them. The purpose of applying program evaluation results back to program budgeting and operation lies in managing budgetary programs based on outcomes and outputs rather than processes and inputs. These purposes require project implementers with autonomy as well as accountability.

2. Performance evaluation systems of budgetary programs in Korea

Korea's financial crisis in the late 1990s created a need for expanded fiscal expenditure. However, it became increasingly difficult to expect rapid economic growth. The situation warranted efforts to improve the efficiency of the government's fiscal expenditure. In response, the government set out to reform its fiscal system. After years of preparation that began in the late 1990s, the Korean government launched four major fiscal reforms in the late 2000s. Consisting of a medium-term expenditure framework, top-down budgeting, performance budgeting, and a digital budget accounting system, these reforms tasked financial authorities with determining the basic direction of fiscal management, distributing financial resources across various sectors, and allowing government bodies to self-direct their budgetary programs under the plans established by the financial authorities. Performance budgeting, in particular,

grants autonomy to government bodies while holding them accountable for the operation of their programs. The Korean government adopted the reforms to maximize the outcomes of its budgetary programs in a situation where it cannot expect increased revenue.

As a part of performance budgeting, the performance evaluation systems of budgetary programs involve program selection, program evaluation, and feedback. As of 2018, Korea has three performance evaluation systems of budgetary programs in place, Performance Goal Management System (PGMS), Core Program Evaluation System (CPES), and In-Depth Evaluation System (IES), adopted under the National Finance Act. According to Article 1, the act is aimed at establishing a framework for efficient, performance-focused, and transparent financial management and sound fiscal operations. As the performance evaluation systems of budgetary programs operate under the National Finance Act, they aim to contribute to efficient and performance-oriented fiscal management. Specifically, Article 8(1) of the act requires each central government body to establish a performance management system. Article 8(6) provides the basic framework for performance evaluation systems of budgetary programs by stipulating that the Ministry of Economy and Finance (MOEF) may conduct an evaluation of major budgetary programs and reflect the findings in its fiscal management.

Of the three performance evaluation programs, the PGM is a monitoring program that measures and manages program performance against performance indicators and performance goals. The program was first applied to selected government bodies in 2003. The program uses a relatively simple process to produce performance information by defining the performance goals and indicators of target programs and measuring their performance based on whether and to what extent the performance targets have been met.

The KPE replaces two previous evaluation programs: self-assessment of budgetary programs (SABP) and integrated evaluation of budgetary programs (IEBP). In the KPE, the MOEF selects key programs to be evaluated and analyzes their performance through interviews with experts, on-site surveys, and beneficiary satisfaction surveys. The IEBP was a meta-evaluation program in which each government body reviewed its own programs using a prescribed checklist and where the MOEF verified and monitored whether the government bodies complied with the evaluation procedures and criteria. However, under the program, all under-performing programs were uniformly subject to a 10 percent budget cut, which proved incongruent to improving autonomy and accountability of government bodies. It was also noted that meta-evaluation is not particularly suited to improving program performance. For these reasons, the government dropped the meta-evaluation approach in 2018, and the MOEF no longer intervenes in the process or results of the SABP by government bodies.

Instead, the government adopted the KPE in which the MOEF, the Korean Institute of Public Finance (KIPF), and external researchers form an evaluation group to improve program performance through onsite inspections and other activities.

The IES was adopted in 2006. It employs objective and scientific methods to produce in-depth performance information regarding the appropriateness, efficacy, and efficiency of evaluated programs. The program was first applied to individual programs before it was expanded to evaluate program groups.

Table 1 summarizes the history of the performance evaluation systems of budgetary programs. Korea adopted a pilot performance budgeting program in 1999, and performance evaluation systems of budgetary programs, starting with the PGM, in 2003. The SABP was adopted in 2005 to supplement the PGM. The IES was adopted in the following year along with enactment of the National Finance Act, which completed the current structure of the performance evaluation systems of budgetary programs. The Korean government subsequently launched efforts to align the performance management system with its program budgeting system. As for the SABP went through several changes including changes in the selection process for target programs and the adoption of a meta-assessment system in 2015. In 2018, the meta-assessment system was replaced by the KPE, where government bodies take control of their assessment.

Table 1_History of Performance evaluation systems of budgetary programs in Korea

Date	Description
January–February, 1999	<ul style="list-style-type: none"> • Adopted performance budgeting and developed implementation plan (A pilot program was launched with 16 selected government bodies.) • Developed performance indicators for each government body (management diagnosis of government organizations)
March–April, 2000	<ul style="list-style-type: none"> • Published the performance plans of 16 institutions selected for the pilot program • Announced the plans for another pilot project for the 2001 budget based on the budget planning guidelines (selected 12 more bodies for the pilot project, bringing the total to 28)
June 2001	<ul style="list-style-type: none"> • Announced the preparation guidelines for the 2002 performance plans and the 2000 performance reports. (selected 11 more bodies for the pilot project, bringing the total to 39)
May 2003	<ul style="list-style-type: none"> • Adopted the PGM to achieve performance-centered fiscal management
May–November 2004	<ul style="list-style-type: none"> • Announced the implementation guidelines for the 2004 performance management programs • Adopted a program budgeting system focused on policies and performance
2005	<ul style="list-style-type: none"> • Adopted the Self-Assessment program to supplement the performance management programs
2006	<ul style="list-style-type: none"> • Adopted the IES with enactment of the National Finance Act
2007	<ul style="list-style-type: none"> • Merged performance plans and performance management implementation plans
2008	<ul style="list-style-type: none"> • Submitted performance plans to the National Assembly for the first time
2009	<ul style="list-style-type: none"> • Separated performance plans and performance management implementation plans
2010	<ul style="list-style-type: none"> • Submitted performance reports to the National Assembly for the first time • Launched efforts to align the performance management system with the program budgeting system • Expanded the KEP to evaluate program groups
2011	<ul style="list-style-type: none"> • Starting with Fiscal Year 2011, required the program descriptions and budget information in performance plans to match those provided in budget plans
2013	<ul style="list-style-type: none"> • Submitted summary analysis reports for government performance plans and performance reports to the National Assembly, starting with 2014 performance plans
2014	<ul style="list-style-type: none"> • Aligned the performance management system (performance goals-management system) with budgetary or government- funded programs and program activities • Included tax expenditures on program activities in performance plans starting with 2015 performance plans • Launched a pilot project for the Performance Information Board (PI Board)
2015	<ul style="list-style-type: none"> • Changed the evaluation method for SABP from program-by-program review and inspection to meta-evaluation
2018	<ul style="list-style-type: none"> • Replaced meta-evaluation with the KPPE

Source: Present study, based on Park, Oh, and Won (2015), Table II-1, and National Assembly Budget Office (2018), Table 1-78

3. Feedback Issues with Performance evaluation systems of budgetary programs: Previous Research

A. Previous Research on the Feedback Function of the Performance evaluation systems of budgetary programs

As mentioned, the performance evaluation systems of budgetary programs aim to achieve performance-centered fiscal management. A well-established feedback process design is

required to apply the outcomes of budgetary programs back to fiscal management. However, the performance evaluation systems of budgetary programs have posed various issues regarding their feedback aspect. Ha (2011) noted that, while performance-centered fiscal management can improve technical efficiency, performance information is costly and time intensive to produce and is difficult to measure accurately. As shown in Table 2, input-centered management of budgetary programs is easier to understand and makes it easier for the financial authorities to control total expenditure. However, it does not provide much information about program outcomes, which makes it less helpful to improving efficiency. It is also unsuitable for management of long-term programs. Output- or outcome-centered fiscal management makes it easier to improve efficiency and produce information more directly related to policy decisions. However, such information requires significant time and cost to produce, and information on program costs is required to measure efficiency. An output- or outcome-based approach may motivate the government to focus only on programs that more readily lend themselves to performance and cost measurement.

Table 2_Pro Pros and Cons of Budget Management Methods

	Pros	Cons
Input-centered approach	<ul style="list-style-type: none"> • Easier to understand; incurs less cost • Easier to control total expenditure • Control oriented 	<ul style="list-style-type: none"> • Difficult to improve efficiency • Not flexible • Short-term perspective
Output-centered approach	<ul style="list-style-type: none"> • Improves efficiency • Ensures accountability 	<ul style="list-style-type: none"> • Distorts focus • Causes issues with measurement • Requires excessive amount of information • Requires cost measurement
Outcome-based approach	<ul style="list-style-type: none"> • Easier to redistribute resources • Facilitates policy decisions and adjustments • Based on long-term projections 	<ul style="list-style-type: none"> • Causes issues with measurement • Causes issues with accountability • Requires excessive amount of information • Requires cost measurement

Source: OECD (2005), as cited in Ha (2011), p. 289, Table 2-15

Ha (2011) also emphasized that a budget process is political by nature and argued that it is impossible to plan budgets based on only performance information. While performance budgeting is a reasonable approach, it cannot replace the political aspect of budgeting. In addition, the government cannot be expected to prioritize policy areas while relying solely on the information produced by performance budgeting.

Part et al. (2012) provided a more detailed description of the issues regarding performance information. They found that, while the PGM makes it easier to produce performance information, it is difficult to accurately estimate the effects of a budgetary program because

changes in performance indicators may be affected by a variety of factors. As a result, it is difficult to apply performance information back to budgeting. However, the IEBP IES uses a wider range of data and scientific analysis methods, which allows for more accurate estimation of the performance of budgetary programs. However, it is difficult to apply the IES results in a timely manner because of the significant time and cost. Park et al. were more lenient toward the SABP program in that it is posited between the PGM and the IES in terms of production of performance information, so the information from self-assessment can be applied back in a timely manner.

According to Park et al. (2012), under the current evaluation system, government bodies are given autonomy, held accountable for their budgetary programs, and evaluated based on the performance of their programs. In this sense, the use of outcome indicators makes more sense than the use of input indicators. They also mentioned that, while outcome indicators require additional evaluation for accurate interpretation, the use of outcome indicators has been increasing across the world.

Park et al. (2012) also stressed the importance of defining evaluation groups for appropriate feedback of evaluation results. To incorporate performance information into budget planning processes, policies and programs with similar purposes need to be grouped. In addition, according to the authors, experiences in various countries prove the relative difficulty of producing performance information for distribution of resources among different areas or sectors. Therefore, for micro-level resource distribution, evaluation groups need to be adjusted.

Park et al. (2012) argued that budgetary programs for a centralized evaluation system should be evaluated in a single framework to incorporate the evaluation results into high-level budget adjustment. However, they noted that over-centralization of evaluation reduces the scope of evaluator discretion and makes it difficult to consider the special nature of each government body or program. A separate evaluation organization is necessary for more proficient evaluation. Establishing such an organization may undermine the feedback process by increasing the distance between the evaluators and the organizations to which the evaluation results are applied. In addition, a separate evaluation organization may not be effective in Korea, as Korean government officials are required to transfer to other offices after serving for a certain period. Another important aspect of performance evaluation is how performance information is tied to budget planning. One of the ways to enhance feedback and achieve effective evaluation is to adjust budget allocations solely based on performance results. However, such a lack of flexibility may cause resistance from government bodies in the course of evaluation and feedback.

Table 3 Summary of Discussions on Performance evaluation systems of budgetary programs in Park et al. (2012)

Issue	Description
Performance measurement method	<ul style="list-style-type: none"> • PGM: Easy to produce performance information, but difficult to estimate the effects of a budgetary program and to apply performance information back to budget planning • IES: Capable of objective and scientific estimation of program performance, but requires significant time and cost and is difficult to apply performance information in real time • SABP: Government bodies self-assess their program performance using a checklist, posited between the PGM and the IES in terms of production of performance information
Performance indicators	<ul style="list-style-type: none"> • Compared with process-based indicators, outcome-based performance indicators require additional evaluation to interpret. However, it is widely used across the world as it is consistent with the purpose of performance budgeting.
Evaluation group	<ul style="list-style-type: none"> • To improve the feedback process, policies, programs, and activities with a similar purpose need to be categorized into a single evaluation group. • Experiences of various countries demonstrate the difficulty in producing performance information for macro -level resource distribution. • The system needs to be improved for accurate performance measurement and feedback on multi-government body programs where it is difficult to pinpoint the responsible party.
Decentralization	<ul style="list-style-type: none"> • A centralized evaluation system allows for more systematic and consistent evaluation, but it reduces the scope of evaluator discretion.
Competency of performance management organization	<ul style="list-style-type: none"> • A centralized evaluation (performance management) system mostly relies on a separate evaluation organization, which results in improved evaluation competency. However, relying on a separate organization makes it difficult to apply evaluation results back to budget planning. • As Korean government officials move through multiple offices throughout their career, it is difficult to ensure the accountability and expertise of a separate evaluation organization.
Use of performance information	<ul style="list-style-type: none"> • Raising the quality of performance information is crucial for achieving effective feedback. However, the next best option would be to mechanically adjust a budget based on performance information.

Source: Part et al. (2012), Chapter 4

Kim (2013) pointed out two issues with the performance management system of budgetary programs : lack of connection with program budgeting and lack of harmonization with top-down budgeting. Proper measurement of performance information and cost information requires systemic classification of the evaluated programs. Such classification should inform performance indicators and cost information. Normally, program classification should be carried out as a part of program budgeting. However, the current budgeting system simply lists the programs carried out by government bodies, which limits connection with the performance evaluation systems of budgetary programs. Kim found that, even when the performance information produced by the SABP is reflected in budget plans, the Korean National Assembly often revises the plans during budget deliberation, which undermines the efficacy of the performance evaluation systems of budgetary programs. As for top-down budgeting, Kim argued that the efficacy of performance evaluation is undermined by some government bodies that do not comply with spending limits.

Kim (2013) also listed issues intrinsic to performance evaluation systems of budgetary programs, such as the number of budgetary programs subject to evaluation; selection of budgetary programs subject to evaluation; lack of resources for evaluation; lack of connection with preliminary evaluation programs; lack of periodic and continuous monitoring systems; lacking reliability of fiscal performance evaluation results; and lack of interest in program implementation. He also noted the lack of incentives for accurate and effective feedback on government bodies. For example, some government bodies exaggerate their performance to win a higher budget. In addition, according to Kim, the National Assembly does not involve itself in the production of performance information except for receiving performance plans and reports. Such lack of interest and participation from the National Assembly disrupts the flow of performance management.

For the causes of these issues, Kim (2013) listed the following: lack of coordination between performance staff and budget staff in the financial authorities; redundancy and lack of connection among the performance evaluation systems of budgetary programs, which results in lack of support from government bodies implementing the programs; and effectiveness of evaluation result feedback undermined by lack of interest and participation from the National Assembly. He also claimed that the feedback function of the performance evaluation systems of budgetary programs is undermined by inflexible evaluation programs and lack of expertise in performance management, efforts to ensure reliability by disclosing evaluation results, and public interest in the performance evaluation systems of budgetary programs.

B. Previous Research on the Use of Performance Information

Choi and Lee (2016) conducted a questionnaire survey to identify the factors that affect the use of performance information. They argued that the use of the information is required to achieve the purpose of performance management: improving programs, achieving reasonable resource distribution, and ensuring accountability. They categorized possible factors affecting the use of performance information into three groups: management factors, organizational characteristic factors, and external environment factors. Then they asked public officials in 40 central administrative bodies to provide their opinions and found that management factors are the most affected by participation and interest of organization members. In addition, the authors argued that the use of performance information is influenced by performance indicators, leader interest, quality of performance information, performance culture, and interest of the National Assembly.

Kang (2008) also conducted a questionnaire-based survey to analyze the factors that affect public official perception of the use of performance evaluation results. Based on the responses from public officials at central administrative bodies, Kang concluded that the use of evaluation results is significantly affected by organizational culture stressing reasonableness and development, performance-centered communication, meaningful performance indicators, and manager leadership. Park, Jang, and Choi (2013) used the information from their questionnaire-based survey to empirically analyze the factors affecting local government use of performance evaluation. The authors analyzed institutional factors, organizational environment factors, and personal factors. While all factors affected the use of performance information, each had a different impact on different areas of performance information use. They attributed the findings to the fact that organizational members have different perceptions regarding performance information, and that different areas use different performance information. They also found that the statutory requirement to use evaluation results had a positive impact on the use of performance information.

C. Other Research

Tirole (1994) performed an economic analysis of incentive structures in public organizations. He described the characteristics of budgetary programs considering that, unlike private enterprises that pursue a single goal of profit maximization, government bodies pursue a wide range of goals and missions. As private enterprises seek to maximize their profits, the performance of their businesses can be objectively quantified, whereas the performance of budgetary programs often does not lend itself to objective quantification. The performance of a budgetary program can be defined depending on its goals, meaning the weights of different objectives may affect the results of performance evaluation. For most budgetary programs, it is difficult to find similar or comparable businesses in the private sector, which makes it next to impossible to compare the performance of budgetary programs. In addition, in a democratic society, the fate of an administration depends on election results because the government is an agent of the people. Therefore, the important factor is the preference of the principle (i.e., the people). Unlike the pursuit of maximum profit, which is a constant in the business world, the people's preferences regarding government are varied and change over time, which makes it difficult to clearly define the goals of budgetary programs or to devise long-term plans.

These characteristics of government and budgetary programs have many implications for evaluating the performance of budgetary programs and applying evaluation results back to

the programs. The lack of comparable businesses causes difficulty in accurately measuring the performance of budgetary programs. This factor fundamentally restricts the provision of a strong performance-based incentive structure. In other words, in the absence of a comparable business, it is difficult to grant sufficient rewards to high-performing programs or ensure accountability for under-performing programs. Budgetary programs pursue a variety of goals, the achievement of which is measured against, again, a variety of performance indicators. Some indicators are quantifiable, and others are not. If the two groups of indicators conflict with each other, care is advised when defining them. In budgetary programs, unquantifiable indicators often take on greater importance. Therefore, relying solely on quantitative indicators may undermine the performance of programs measured with quality indicators. To address these difficulties, the design and implementation processes of each program should be monitored.

III. Questionnaire Survey

1. Overview

In this study, we conducted a questionnaire-based survey to identify the perceptions of public officials and experts regarding the status of feedback under the current performance evaluation systems of budgetary programs, related issues, and their causes. We selected respondents from public officials with experience in overseeing budgeting and evaluation under the performance evaluation systems of budgetary programs or implementing programs subject to performance evaluation or experts who participated in evaluation of budgetary programs. The questionnaire asked about the respondents' perceptions of the current status and problems of each fiscal performance evaluation program. The survey was conducted online (via email) for three weeks, from October 10–31, 2018. A total of 145 public officials and 38 experts sent their responses.

Table 4_Survey Overview

Dates	October 10-31, 2018
Method	Online (email) survey
Targets	Public officials and private experts with work experiences related with performance evaluation systems of budgetary programs
No. of samples	183 (145 public officials and 38 experts)

Source: Present study

A. Respondent Characteristics

Table 5 summarizes the characteristics of the 145 public officials and 38 experts who responded. Around 70 percent of the respondents were responsible for works related to the performance evaluation systems of budgetary programs in 2018 or were currently in charge of said works. Around 80 percent of the respondents rated their expertise with the performance evaluation systems of budgetary programs at average or higher. The majority of respondents were in charge of the PGM, the SABP, or general management of budgetary programs.

Table 5_ Characteristics of the Respondents

(unit: number of respondents, %)

Respondent characteristic		No. of respondents	Percentage
Total		183	100.0
Affiliation	Public official	145	79.2
	Expert	38	20.8
Time of latest experience regarding performance evaluation systems of budgetary programs (based on the end date of the relevant works)	2018 or present	128	69.9
	2016–2017	29	15.8
	2014–2015	16	8.7
	2013 or earlier	10	5.5
Self-rating of expertise in performance evaluation systems of budgetary programs	Low	40	21.9
	Average	91	49.7
	High	52	28.4
Relevant program (multiple choices allowed)	PGM	82	44.8
	SABP	75	41.0
	KPE	50	27.3
	IES	44	24.0
	General management	57	31.1
	Others	6	3.3

Source: Present study

The majority of public officials was grade 5 or 6, and a large number worked for economic government bodies. A higher percentage of respondents worked on performance evaluation for less than one year, while 21 percent of public officials worked on performance evaluation for three years or longer. We also found that high percentages of public officials were responsible for works related to the PGM and the SABP.

Table 6_ Characteristics of the Public Official Respondents

(unit: number of respondents, %)

Public official		No. of respondents	Percentage of public official respondents
Total no. of respondents		145	100.0
Grade	8 or lower	2	1.4
	7	25	17.2
	6	50	34.5
	5	57	39.3
	4 or higher	11	7.6
Responsibilities (multiple choices allowed)	Budget coordination	59	40.7
	Evaluation coordination	45	31.0
	General management of budgetary programs	51	35.2
	Others	11	7.6
Affiliated body	Economic bodies	98	67.6
	Social policy bodies	6	4.1
	Administrative bodies	17	11.7
	Other bodies	24	16.6
Duration of work	Less than 1 year	53	36.6
	1 year or longer, less than 2 years	42	29.0
	2 years or longer, less than 3 years	19	13.1
	3 years or longer, less than 4 years	15	10.3
	4 years or longer	16	11.0
Relevant program (multiple choices allowed)	PGM	77	53.1
	SABP	69	47.6
	KPE	33	22.8
	IES	22	15.2
	General management	50	34.5
	Others	5	3.4

Note: Economic bodies (Korea Communications Commission; Fair Trade Commission; Financial Services Commission; Nuclear Safety and Security Commission; Ministry of Science and Technology; Ministry of Agriculture, Food, and Rural Affairs; Ministry of Trade, Industry, and Energy; Ministry of Environment; Ministry of Land, Infrastructure, and Transport; Ministry of Oceans and Fisheries; National Agency for Administrative City Construction; Saemangeum Development and Investment Agency; Korea Meteorological Administration; Ministry of SMEs and Startups; Korean Intellectual Property Office; Rural Development Administration, National Tax Service; Korea Customs Service; Public Procurement Service; Statistics Korea; and Ministry of Food and Drug Safety) Social policy bodies (Ministry of Education; Ministry of Culture, Sports, and Tourism; Ministry of Employment and Labor; Ministry of Gender Equality and Family; and Cultural Heritage Administration) Administrative bodies (Human Rights Commission, Ministry of Public Safety and Security, Ministry of Personnel Management, Ministry of Government Legislation, Ministry of Patriots and Veterans Affairs, Anti-Corruption and Civil Rights Commission, Ministry of Foreign Affairs, Ministry of Unification, Ministry of Justice, Ministry of National Defense, Ministry of the Interior and Safety, Supreme Prosecutors' Office, Military Manpower Administration, Defense Acquisition Program Administration, and National Police Agency)

Source: Present study

Most of the private experts had been in business for five years or longer, and 42 percent of the experts had been working for 15 years or longer. Unlike the public official group, high percentages of expert respondents had experiences with the KPE and the IES. The findings seem to reflect that the two evaluation programs require expert participation.

Table 7_ Characteristics of the Private Expert Respondents

(unit: number of respondents, %)

Public official		No. of respondents	Percentage of public official respondents
Total no. of respondents		38	100.0
Period of work	Less than 5 years	3	7.9
	5 years or longer, less than 10 years	14	36.8
	10 years or longer, less than 15 years	5	13.2
	15 years or longer	16	42.1
Relevant program (multiple choices allowed)	PGM	5	13.2
	SABP	6	15.8
	KPE	17	44.7
	IES:	22	57.9
	General management	7	18.4
	Others	1	2.6

Source: Present study

B. Characteristics of Survey Questions

Our survey was aimed at examining the respondents' perceptions of the current status of the feedback function of the current performance evaluation systems of budgetary programs, issues with the programs, and their causes. We asked them to provide their opinions about the status and issues of the feedback aspect of each fiscal performance evaluation program. Respondents who answered that feedback was not working properly were asked to suggest the cause of the problem. Each question was designed based on a five-point Likert-type scale from "strongly disagree" to "strongly agree."

The questionnaire consisted of two sheets. Sheet 1 had questions applicable to all four programs. Sheet 1 was divided into three sections: 1.1 Feedback Issues; 1.2 Status and Necessity of Feedback; and 1.3 Causes of Feedback Issues. In the first two sections, the respondents were asked to provide answers for each of the four programs. The questions were designed so that each respondent could answer regardless of experiences with specific programs. Meanwhile, respondents were instructed to answer the questions in 1.3 Causes of Feedback Issues only if they chose "strongly disagree," "disagree," or "neither agree nor disagree" to Question 16, "The feedback of evaluation results is working properly in general." For this reason, only some of the respondents answered questions in Section 1.3. Sheet 2 consisted of questions regarding the characteristics of each program. However, the findings regarding these questions lie outside the scope of the present study.

Table 8 provides an overview of the survey questions. Please see the Appendix for the specific questions and structure of the questionnaire.

Table 8_Composition of the Survey Questions

Category	Area	Questions
Sheet 1. All programs	1.1 Feedback Issues	Identify issues with feedback of evaluation results from each program based on the following criteria: <ul style="list-style-type: none"> • Public disclosure of evaluation results, follow-up measures, and performance • Development of effective follow-up measures • Use of evaluation results in budget planning and budget deliberation by the National Assembly • Incorporation of evaluation results in program improvement or prioritization • Quality and accuracy of evaluation results • Improvement of program performance or organizational performance following evaluation
	1.2 Status and Necessity of Feedback	<ul style="list-style-type: none"> • Necessity of feedback in performance evaluation systems of budgetary programs • Status of feedback
	1.3 Causes of Feedback Issues	<ul style="list-style-type: none"> • Overlap of evaluation programs • Unclear purpose of evaluation • Excessive workload • Insufficient budget or data • Insufficient experts • Lack of incentives for decision-makers to consider evaluation results • Lack of incentives to improve the quality of evaluation results • Lack of legal basis for feedback of evaluation results • Lack of congruence between evaluation results and the current budget system • Inappropriateness of incorporating evaluation results
Sheet 2. Specific programs	2.1 PGM	<ul style="list-style-type: none"> • Appropriateness of the program classification system • Current status of measures against under-performing programs • Ways to reform programs subject to performance management • Ways to reform performance plans and performance reports
	2.3 KEP	<ul style="list-style-type: none"> • Appropriateness of the number of target programs and the frequency, period, process, and schedule of evaluation • Meaningfulness of onsite survey • Methods of proper management of joint onsite survey teams • Cooperation from government bodies • Appropriateness of evaluation groups and performance indicators • Appropriateness of disclosure of evaluation results
	2.4 IES	<ul style="list-style-type: none"> • Necessity of IES • Appropriateness of program selection • Clarity of evaluation criteria, guidelines, and manuals • Sufficient manpower, budget, information, and data • Sufficient incentives and commitment on the part of the Ministry of Economy and Finance • Cooperation from government bodies • Expertise and objectivity of evaluation researchers • Appropriateness of evaluation methods • Use of evaluation results by government bodies • Benefits of IES

Source: Present study

2. Key Findings

A. All Programs

Before discussing the findings regarding questions for specific performance evaluation systems of budgetary programs, this section briefly discusses the findings on the necessity and status of feedback, related issues, and their causes. For improved reliability of the survey findings, we focus on the answers provided by respondents with work experiences related to the programs.

1) Status and Necessity of Feedback on Performance evaluation systems of budgetary programs

The majority of respondents believed that feedback is required for each of the performance evaluation systems of budgetary programs. When “strongly disagree” was 1 and “strongly agree” was 5, the average score for each performance evaluation systems of budgetary programs was higher than 3.5.

Table 9 Perceptions Regarding the Necessity of Feedback of Performance evaluation systems of budgetary programs

(unit: number of respondents, %, points)

Question	Category	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Average score on five-point scale
Necessity of feedback	PGM	2.4	7.3	34.1	43.9	12.2	3.56
	SABP	1.3	2.7	33.3	50.7	12.0	3.69
	KPE	2.0	2.0	12.0	56.0	28.0	4.06
	IES	2.3	0.0	18.2	50.0	29.5	4.05

Note: The above figures represent responses to Question 15, “Feedback of evaluation results is required for the operation of the performance evaluation systems of budgetary programs” for each of the four programs.

Source: Present study

However, the respondents reported a lower average score for the questions asking about the status of feedback on performance evaluation systems of budgetary programs. The average score of Question 16, “Feedback of evaluation results is working properly in general,” was higher than 3, indicating largely positive perceptions. However, the score was lower than the average of the question about the necessity of feedback. This finding suggests that the current status of feedback falls short of the ideal.

Respondents reported averages scores over 3 for most of the questions about the current status of feedback on performance evaluation systems of budgetary programs. However, a review of the average scores of specific questions showed areas where the feedback function is not working properly. First, across all evaluation programs, the respondents gave fewer points to the question asking whether the results of program performance evaluation were being incorporated into the performance evaluation of public officials in charge of the programs. Regardless of whether it was desirable to incorporate program evaluation results into performance evaluation of public officials, the results of program performance evaluation were not reflected in the performance evaluation of public officials in charge of the programs as much as in other evaluation areas.

Table 10 Perceptions about the General Status of Feedback on Performance evaluation systems of budgetary programs

(unit: no. of respondents, %, points)

Question	Category	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	5-point scale average
Feedback is working properly	PGM	1.2	12.2	52.4	25.6	8.5	3.28
	SABP	4.0	10.7	42.7	33.3	9.3	3.33
	KPE	4.0	14.0	32.0	42.0	8.0	3.36
	IES	4.5	15.9	36.4	36.4	6.8	3.25

Note: The above figures represent responses to Question 16, "Feedback of evaluation results is working properly in general" for each of the four programs.

Source: Present study

For three of the four evaluation programs (other than the PGM), a higher percentage of respondents provided positive answers to questions asking whether program evaluation results were being incorporated into budget plans than to other questions. In addition, for the PGM and SABP, the percentages of positive answers were higher for the following questions than others: disclosure of evaluation results, follow-up measures, and implementation results; use of evaluation results in budget deliberation by the National Assembly; and key decision-maker commitment to incorporating evaluation results. For the IEBPIES, the questions about disclosure of evaluation results, follow-up measures, and implementation results received a smaller percentage of positive answers.

Table 12 summarizes the findings regarding the cause of issues related to the feedback for evaluation results. Across the four evaluation programs, the respondents pointed out that the feedback issues were caused by lack of incentive for key decision-makers to use evaluation

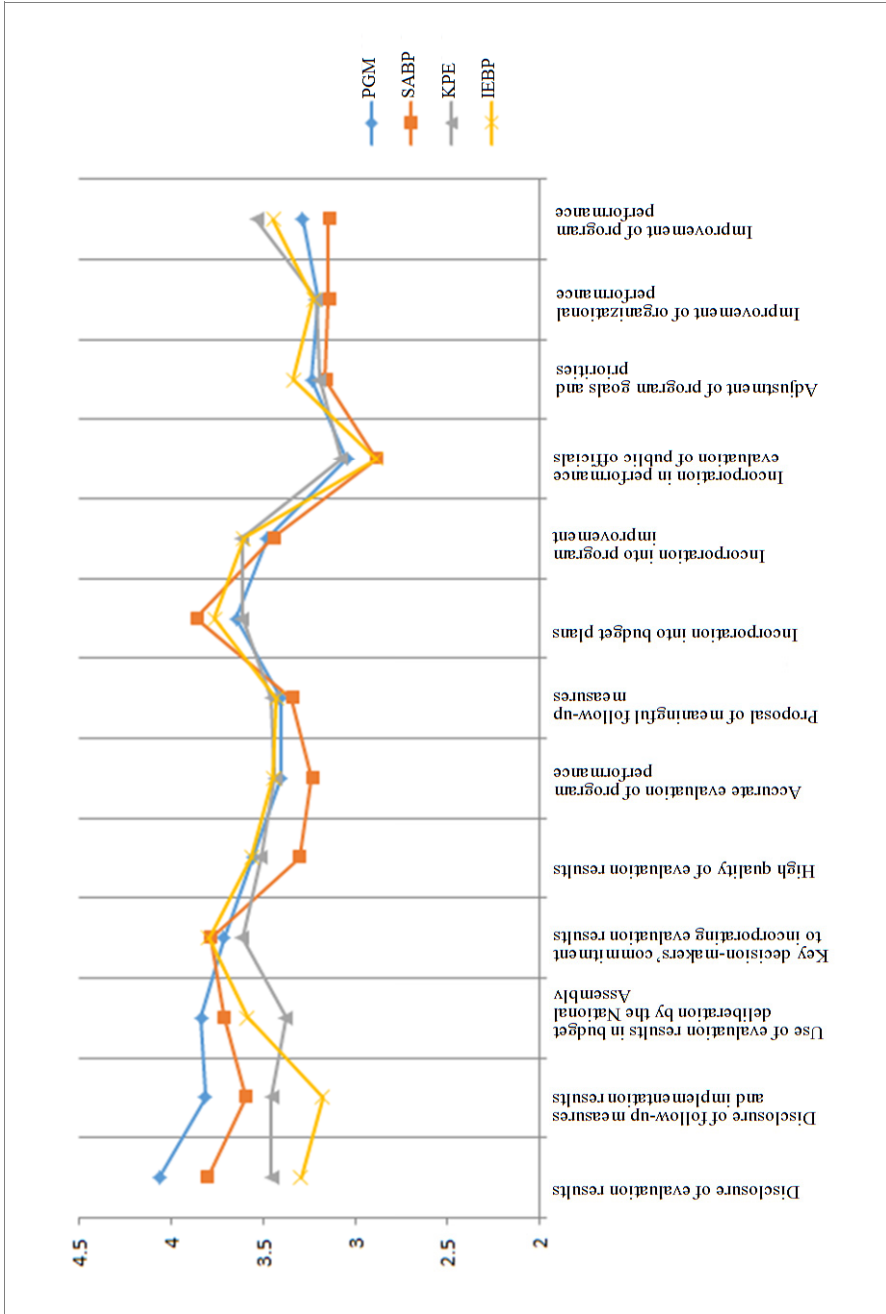
results. Many respondents also agreed with the lack of incentives to produce high-quality evaluation results, and fewer respondents agreed with the lack of an evaluation budget. Some respondents agreed with the need for a more legal basis for the KPE and the IES. For the IES, many respondents pointed out the need for cooperation in securing data required for evaluation.

Table 11_ Average Scores of Questions about the Status of Feedback on Performance evaluation systems of budgetary programs (5-point scale)

	(unit: points)												
	Disclosure of evaluation results	Disclosure of follow-up measures and implementation results	Use of evaluation results in budget deliberation by the National Assembly	Key decision-maker commitment to incorporating evaluation results	High quality of evaluation results	Accurate evaluation of program performance	Proposal of meaningful follow-up measures	Incorporation into budget plans	Incorporation into program improvement	Incorporation into performance evaluation of public officials	Adjustment of program goals and priorities	Improvement of organizational performance	Improvement of program performance
PGM	4.07	3.82	3.84	3.72	3.56	3.41	3.41	3.65	3.48	3.05	3.24	3.21	3.29
SABP	3.81	3.60	3.72	3.79	3.31	3.24	3.35	3.87	3.45	2.89	3.17	3.15	3.15
KEP	3.46	3.46	3.38	3.62	3.52	3.44	3.46	3.62	3.62	3.08	3.20	3.22	3.54
IES	3.30	3.18	3.59	3.80	3.57	3.45	3.43	3.77	3.61	2.89	3.34	3.23	3.45

Note: See the Appendix for specific questions
Source: Present study

Figure 2_Average of Scores of Questions about the Status of Feedback on Performance evaluation systems of budgetary programs (5-point scale)



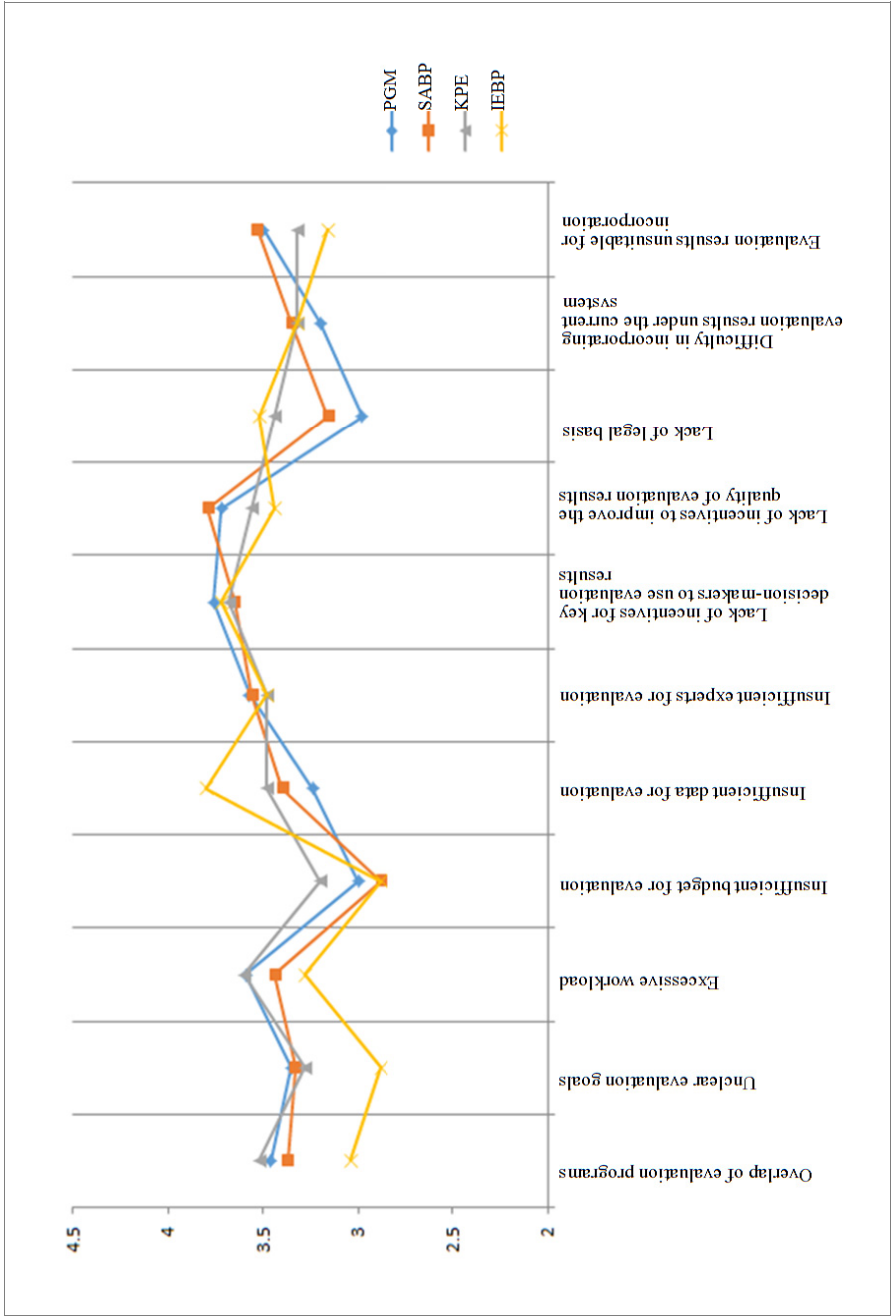
Source: Present study

Table 12_ Average Scores of Questions about the Causes of Feedback Issues on Performance evaluation systems of budgetary programs (5-point scale)

	Overlap of evaluation programs	Unclear evaluation goals	Excessive workload	Insufficient budget for evaluation	Insufficient data for evaluation	Insufficient experts for evaluation	Lack of incentives for key decision-makers to use evaluation results	Lack of incentives to improve the quality of evaluation results	Lack of legal basis	Difficulty incorporating evaluation results under the current system	Evaluation results unsuitable for incorporation
PGM	3.46	3.35	3.59	3.00	3.24	3.57	3.76	3.72	2.98	3.20	3.50
SABP	3.37	3.33	3.44	2.88	3.40	3.56	3.65	3.79	3.16	3.35	3.53
KEP	3.52	3.28	3.60	3.20	3.48	3.48	3.68	3.56	3.44	3.32	3.32
IES	3.04	2.88	3.28	2.88	3.80	3.48	3.72	3.44	3.52	3.32	3.16

Note: See the Appendix for specific questions
Source: Present study

Figure 3_Average Scores of Questions about the Causes of Feedback Issues on Performance evaluation systems of budgetary programs (5-point scale)



Source: Present study

IV. Suggestions for Enhancement of the Feedback Function on Performance Evaluation Systems of Budgetary Programs

As mentioned above, a performance evaluation systems of budgetary programs should improve the efficiency of budgetary programs and the accountability of public officials in charge of the budgetary programs. Fulfilling these roles requires meaningful feedback of evaluation results. However accurate the evaluation results, they are meaningless if they are not aptly applied to the operation and budget of the relevant programs.

However, feedback of evaluation results goes beyond mere production and delivery of evaluation results and requires higher-quality results, compatibility with evaluation periods and feedback periods, and an environment where officials in charge of budgetary programs can acknowledge and incorporate evaluation results. There are other prerequisites pertaining to various aspects of performance evaluation, such as selection of programs to evaluate, organization of evaluation teams, selection of evaluation methods, definition of performance indicators, and selection of feedback methods.

This section provides an overview of general prerequisites for enhancement of the feedback function of the performance evaluation systems of budgetary programs based on the literature and survey findings discussed above.

1. Purposes and Methods of Evaluation

A performance evaluation systems of budgetary programs is an ex post facto inspection of the outputs and outcomes of that program. However, budgetary programs lack comparable businesses against which to accurately measure program performance. In fact, most programs do not readily lend themselves to quantitative measurement of their performance. It should be noted that, to prevent moral hazards at the organization in charge of budgetary programs, the planning and execution of the programs must be evaluated before their completion. Thus, fiscal authorities need to clearly define the purpose of performance evaluation and, if needed, operate the evaluation programs in a mutually complementary manner.

Different purposes require different evaluation methods. To evaluate a program's implementation and goal attainment, we need to define performance indicators and use them to monitor the program on a regular basis from the outset. In addition, a clearer understanding of the causality between the inputs and outputs of a program requires program evaluation

methods informed by objective data and scientific methods. Therefore, financial authorities need to define the purpose and functions of evaluations required by the current performance management system and to use such definitions to develop appropriate evaluation methods.

2. Clarification of Budgetary Program Goals and Selection of Budgetary Programs to Evaluate

Improvement of feedback efficacy requires a clear definition of the goals pursued by budgetary programs. Not all changes caused by a budgetary program can be considered in evaluating the performance of the program. Such evaluation should only consider the changes aligned with program goals. Kim (2013) also defined performance as the level of the organization's attainment of its goals. Therefore, proper measurement of performance and feedback of the evaluation results require program goals aligned with the missions and strategic goals of the organization.

Feedback of evaluation results is also affected by the methods and criteria for selection of target budgetary programs to evaluate. Targeting smaller units of budgetary programs excessively would increase the number of programs to evaluate, in which case meaningful evaluation and feedback would require a significant expansion of the evaluation workforce and budget and increase the definition of criteria for selecting specific budgetary programs to evaluate. In addition, targeting small units of programs would make it difficult to substantiate the causality between program goals and program performance, which would increase the difficulty of feedback of evaluation results. When a budgetary program shares goals with other programs, the other programs may have to be analyzed as well. However, if the evaluation programs target large groups of budgetary programs (as does Korea's current program budgeting system), it may be difficult to identify the specific party to be held accountable as each program group evaluated involves numerous organizations. Also, Korea's IES evaluates randomly selected program groups. However, if the selected programs are incompatible with the program budgeting system, it may increase difficulty of feedback for evaluation results. If budgetary programs are not selected based on clearly defined criteria, it may undermine the efficacy of performance evaluation and feedback. Therefore, appropriate budgetary programs should be selected based on clearly defined criteria based on the nature of the budgetary programs and the purpose of evaluation.

3. Definition of Performance Indicators

Meaningful feedback of evaluation results requires performance indicators aligned with the purpose of evaluation and the goals of the budgetary programs to be evaluated. Performance indicators so aligned ensure accurate measurement of performance, produce more useful performance information, and ultimately improve feedback efficacy.

The fundamental purpose of performance evaluation systems of budgetary programs lies in improving the efficiency of budgetary programs and ensuring the accountability of relevant public officials for performance of the budgetary programs. For this reason, outcome or output indicators are more suitable as performance indicators than input or process indicators. As mentioned, input or process indicators may be needed to prevent moral hazards at government bodies that implement budgetary programs. Output indicators allow evaluators to evaluate the direct effects of a budgetary program. However, they are not as closely related with the ultimate purpose of the evaluated program as are outcome indicators. Therefore, relying on such indicators may undermine the efficacy of performance evaluation and feedback. Outcome indicators are most closely aligned with the ultimate goals of the evaluated program, but it may be difficult to isolate the effect of the evaluated program from the other external factors.

Performance measurement with performance indicators and targets allows evaluators to monitor the performance of the evaluated program and determine whether its goals have been achieved. However, a specific program's contribution to performance targets cannot be identified without additional evaluation. Therefore, while performance evaluation with performance indicators helps government bodies monitor the status and influence of their budgetary programs, such an approach is not suitable for budget distribution by the financial authorities. Performance indicators also are not suitable for close examination of the planning, execution, and operation of budgetary programs.

One of the ways to overcome these weaknesses is a checklist-based program review. Compared with performance indicators, a checklist provides a more systematic framework for reviewing the planning, execution, and operation of budgetary programs. It also allows for faster production of performance information. However, checklist reviews create room for subjective opinions of the evaluators and are limited in identifying the causality between the ultimate results of the evaluated programs and their planning and execution.

However, as Tirole (1994) noted, focusing on measurable performance indicators when evaluating budgetary programs with multiple goals may undermine the attainment of nonquantitative goals such as improvement of the quality of public services. Therefore,

evaluators need to define performance indicators capable of ensuring efficient operation of the evaluated programs when the evaluation results are applied back to the budgetary programs.

4. Evaluation Governance

When designing the governance structure of performance evaluation systems of budgetary programs, we need to consider the relationship between central fiscal authorities and government bodies tasked with budgetary programs. Under Korea's top-down budgeting, budgeting and performance evaluation are inevitably centralized. However, as Kim (2013) explained, inflexible operation of the performance evaluation programs that do not consider the characteristics of each government body may undermine the efficacy of the evaluation by discouraging government bodies from actively involving themselves in performance evaluation. Therefore, we need to examine whether the centralization of performance evaluation has had any negative influence and analyze the coordination between the performance evaluation organizations and the budgeting organizations within the financial authorities. A separate evaluation organization is inevitably required to ensure professional implementation of performance evaluation. However, lack of coordination between the two organizations will undermine the feedback function, which will result in the undermining of evaluation efficacy. Another possible recourse is to maintain the feedback function by mechanically incorporating evaluation results into budget plans. However, such an approach would not be a comprehensive solution. The Korean government needs to look into whether the efficacy of evaluation and feedback is undermined by any lack of coordination between organizations. If so, the government needs to consider allowing members of budgeting organizations to participate in the evaluation of budgetary programs. Such is the case with the United States Office of Management and Budget (OMB).

A system must be developed that expands the National Assembly's role in the performance evaluation systems of budgetary programs. If the National Assembly continues its practice of deliberating on budget plans without considering the results of performance evaluations, the performance evaluation programs will not be able to serve their intended purposes. Therefore, the Korean government needs to develop a way to ensure that the National Assembly assumes certain roles within the performance evaluation system and respects the results of performance evaluations.

Another issue requiring our attention is the overlap between evaluation programs. Given the multi-faceted nature of budgetary programs, it is evident that the government needs to

evaluate the performance regarding those programs and incorporate the evaluation results back into the programs. However, excessive overlap between evaluation programs may result in conflicts when feeding back evaluation results. It may also disrupt the operation and management of budgetary programs by increasing the evaluation workload. Therefore, evaluation programs need to be adjusted for different purposes of evaluation, and the overall work volume of performance evaluation needs to be reduced.

5. Organizational Culture and Evaluation Competency

Previous studies about the use of performance information pointed out that the use of performance information in an organization is affected by the interest that its leadership and members take in performance evaluation. Such organizational culture is affected by the culture shared by the country's public officials. However, an organization's culture can also be changed by providing its leadership and members with the right incentives. For example, inflexible performance evaluation may discourage members of a government body from taking interest in the evaluation and feedback of the body's budgetary programs. Low-quality performance indicators or evaluation results may also undermine the participation of the relevant organization's members by undermining the efficacy of evaluation. In such cases, adopting more flexible evaluation programs and improving the quality of evaluation results may incentivize the organization's leadership and personnel to take more interest in evaluation results and feedback.

Another important factor for the operation of the performance evaluation systems of budgetary programs is to build evaluation-related competence. Korea, in particular, requires its public officials to transfer to other offices after several years, which may work against their evaluation competency and accountability. Therefore, the Korean government needs to verify whether performance evaluation and feedback are undermined by low evaluation competency and take necessary actions such as the reinforcement of evaluation training and the assignment of evaluation tasks to professionals.

V. Conclusions

In the mid-2000s, Korea launched four major fiscal reforms to improve the efficiency of its fiscal expenditure. It consisted of a medium-term expenditure framework, top-down budgeting, performance budgeting, and a digital budget accounting system. The reforms

aimed to task the financial authorities with determining the basic direction of fiscal management, distributing financial resources across various sectors, and allowing government bodies to self-direct their budgetary programs under the plans established by the financial authorities. Performance budgeting, in particular, grants autonomy to government bodies while holding them accountable for the operation of their programs. The Korean government adopted the reforms to maximize the outcomes of its budgetary programs in a situation where it cannot expect increased revenue. As a part of performance budgeting, the performance evaluation systems of budgetary programs involve program selection, program evaluation, and feedback. As of 2018, Korea has three performance evaluation systems of budgetary programs in place: Performance Goal Management System (PGMS), Core Program Evaluation System (CPES), and In-Depth Evaluation System (IES).

However, findings from various previous studies indicate that the feedback function of the performance evaluation systems of budgetary programs may not be working properly. Feedback of evaluation results requires performance information, which takes a significant amount of time and cost to produce, and it does not allow for accurate measurement. Furthermore, due to the political nature of budgeting, there is no guarantee that the hard-earned performance information will be fully used in the course of budget planning. Improving feedback efficacy requires a comprehensive consideration of various factors including means of measurement, performance indicators, units of evaluation, evaluation governance, and the evaluation competency of the relevant personnel.

To understand the current status and issues of feedback in the performance evaluation systems of budgetary programs based on previous studies and expert opinions, we conducted a questionnaire-based survey targeting public officials and experts with recent experiences in performance evaluation. The findings show that, while the feedback function is working relatively well, it falls short of the expectations of the respondents. The respondents pointed to the lack of incentives for using evaluation results as one of the main causes of feedback issues, in addition to the lack of incentives to improve the quality of evaluation results.

To address these feedback issues, the Korean government needs to clearly define the purpose and methods of each evaluation program and operate the evaluation programs in a mutually complementary manner. The government needs to clarify the goals of the evaluated programs as well as the purpose of the evaluation programs and ensure that appropriate budgetary programs are selected based on the purpose of the evaluation. After selecting the budgetary programs to evaluate and clarify the purpose of evaluation, suitable performance indicators should be defined. Outcome or output indicators would be ideal in this context, and

the government may consider relying on monitoring or a checklist review depending on the characteristics of a specific program. In Korea, evaluation programs are bound to be centralized, which is more reason to leave room for flexible operation of the evaluation programs depending on the characteristics of the budgetary program. The government may also consider involving members of budgeting organizations in performance evaluation to facilitate coordination between evaluation organizations and budgeting organizations. In addition, a system is required to enhance the National Assembly's roles and participation in the performance evaluation systems of budgetary programs. Finally, the Korean government needs to develop ways to encourage organizational leaderships and members to raise their interest and competency in performance evaluation.

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Survey Questionnaire

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Survey Questionnaire Regarding Feedback on Fiscal Performance Evaluation Programs Performance evaluation systems of budgetary programs

Dear Sir or Madam:

This questionnaire is for our research project regarding the feedback methods for performance evaluation systems of budgetary programs. In this survey, we seek to identify issues regarding feedback in Korea's performance evaluation systems of budgetary programs (Performance Goal Management System, Self-Assessment of Budgetary Programs, Core Program Evaluation System, and In-Depth Evaluation System) and develop possible improvements.

Your accurate and candid answers will provide important information for development of performance evaluation systems of budgetary programs in the future. We thank you for your participation in advance.

In this survey, the researchers do not have any access to your personal information. We sincerely ask you to answer all questions candidly. Your answers will contribute to improving Korea's performance evaluation systems of budgetary programs.

October 2018

Senior Researcher: Heewoo Kang, Korea Institute of Public Finance and Korean

Instructions

1. For this questionnaire, the term “performance evaluation systems of budgetary programs” means the four evaluation programs under the National Finance Act: Performance Goal Management System (PGMS; performance plans and reports), Self-Assessment of Budgetary Programs (SABP), Core Program Evaluation System (CPES), and In-Depth Evaluation System (IES).
 - PGM involves preparing performance plans that define the performance goals and indicators for each program, submits performance reports to evaluate whether performance targets have been met, and incorporates the evaluation results into fiscal management.
 - In SABP, government bodies assess their own program performance in accordance with prescribed guidelines and indicators, and under-performing programs are subject to restructuring or are required to report plans for performance improvement. (It replaced the previous the Integrated Budgetary Program Evaluation in 2017; Currently, government bodies perform self-assessments without meta-evaluation by the Ministry of Economy and Finance).
 - KPE monitors the status of key programs selected by the Ministry of Economy and Finance and evaluates their outcomes through in-depth expert interviews, onsite surveys, beneficiary satisfaction surveys, and other means.
 - The IES is an ex post facto evaluation program in which the Ministry of Economy and Finance reviews key budgetary programs for appropriateness, efficacy, and efficiency through external experts.
2. For this questionnaire, the terms “evaluation results” and “performance information” collectively refer to all information regarding inputs, processes, and outputs of budgetary programs produced through the performance evaluation systems of budgetary programs.
3. This questionnaire consists of two parts: Part 1. Performance evaluation systems of budgetary programs in General and Part 2. Specific Performance evaluation systems of budgetary programs. Please answer the questions based on your experience and knowledge.

0	Preliminary Questions
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1. What is the performance evaluation systems of budgetary programs related with your current or previous works? (multiple choices allowed)

- ① PGM (performance plans and performance reports)
- ② SABP
- ③ KEP
- ④ IES
- ⑤ General management of budgetary programs
- ⑥ Others

I	Performance Evaluation Systems of Budgetary Programs in Genera
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The following statements are about the current status and issues of feedback in the performance evaluation systems of budgetary programs.

Statement	Program	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
2. Evaluation results are transparently disclosed to the public.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
3. Follow-up measures and implementation results are transparently disclosed to the public.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
4. Evaluation results are used in budget deliberations by the National Assembly.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
5. Public officials in charge of programs and key decision-makers incorporate evaluation results in their works.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤

Statement	Program	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
6. The quality of evaluation results is high.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
7. The performance of programs is accurately evaluated.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
8. Evaluations are followed up with meaningful measures.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
9. Evaluation results are incorporated into future budget plans.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
10. Evaluation results are incorporated into program improvement (e.g., improvement of delivery system)	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
11. Program evaluation results are incorporated into performance evaluation of public officials in charge of the programs.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
12. Program goals and priorities are adjusted based on evaluation results.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
13. The performance of the organization in charge of the programs improved after evaluation.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
14. Evaluation improved the performance of the programs.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤

The following statements are about the issues and necessity of feedback on performance evaluation systems of budgetary programs.

Statement	Program	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
15. Feedback of evaluation results is required for operation of the performance evaluation systems of budgetary programs.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
16. Feedback of evaluation results is working properly in general.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤

The following statements are about the causes of feedback issues in the performance evaluation systems of budgetary programs. (Answer only if you chose ①, ②, or ③ for the last question.)

Statement	Program	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
17. Performance evaluation systems of budgetary programs overlap with other performance evaluation systems of budgetary programs.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
18. The purpose of evaluation is not unclear.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
19. The evaluation workload is excessive.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
20. Evaluation budget is not sufficient.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤

Statement	Program	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
21. Data for evaluation are not sufficient.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
22. There are not enough evaluation experts.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
23. Key decision-makers of budgetary programs do not have sufficient incentives to utilize evaluation results.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
24. There are not enough incentives for producing high-quality evaluation results.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
25. There is not sufficient legal basis for feedback of evaluation results.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
26. It is difficult to incorporate evaluation results under the current system.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤
27. Evaluation results are not suitable for incorporation into budgeting or program operation.	PGM	①	②	③	④	⑤
	SABP	①	②	③	④	⑤
	KPE	①	②	③	④	⑤
	IES	①	②	③	④	⑤

1-1-4. If you are affiliated with a government body, how long did you perform (or have you performed) the related works?

(year(s) month(s))

1-2. If you are affiliated with a government-funded or private research institute, please specify your years of service. (Please specify the number of years:)

1-3. If you are affiliated with a higher education institute such as a university, specify your years of service. (Please specify the number of years:)

2. When were you last responsible for works related to the performance evaluation systems of budgetary programs (based on the end of the relevant works)?

- ① 2018 to present
- ② 2016-2017
- ③ 2014-2015
- ④ 2013 or earlier

3. How would you rate your level of expertise with the performance evaluation systems of budgetary programs?

- ① Very low ② Low ③ Average ④ High ⑤ Very high

The Effect of the Corporate AMT on Horizontal Equity in Korea

Hag-Soo Kim*

I. Introduction

One of the key requirements for a tax regime is horizontal equity, which means that taxpayers with similar income should pay similar taxes. However, horizontal equity may be distorted by tax support programs adopted for specific policy goals. It may also be distorted in the course of calculating corporate taxes because, under the corporate tax regime, firms are treated differently depending on their asset types, financing methods, and other different firm characteristics. Governments adopt alternative minimum taxes (AMTs) to prevent such a distortion and improve the horizontal equity among firms' tax burdens. However, in some cases, the original purpose of the AMT is overshadowed by its secondary effect, namely, additional tax revenues. Then, for both the Korean government and taxpayers, it is crucial to assess the role played by Korea's corporate AMT regime in achieving horizontal equity and develop reference materials that can be utilized in the future corporate tax system.

The corporate AMT regime was adopted to improve the horizontal equity of taxation on corporate income. It prevents the excessive use of various tax supports designed for specific policy goals: for example, tax base adjustments in the form of special depreciation; the inclusion of losses; and the non-inclusion of profits, tax credits and reductions, and tax exemptions. In

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practical terms, the Korean government adopted the corporate AMT regime to reduce the differences in corporate tax amounts paid by businesses with similar income. However, Korea's corporate AMT regime raises the tax compliance cost for taxpayers by forcing them to calculate taxes twice.

This study empirically analyzes how the horizontal equity of corporate taxation is affected by the three components of corporate AMT: tax base adjustment, AMT rate, and the designation of tax supports, which are subject to the restriction of using tax credit, reduction, and exemption under AMT. For the analysis, we developed a database by merging the data of more than 140,000 corporate tax administration data and corporate financial data over the period of tax filing year 2009–2016. This study proposes suggestions for the improvement of the corporate AMT regime aligned with the initial policy goals, based on the findings of the analysis.

II. How to Measure Horizontal Equity

Only a small number of countries apply progressive rates to corporate taxes or adopt corporate AMT regimes. This may explain the scarcity of studies on corporate AMT regimes that lay out findings on the horizontal equity of corporate taxation. On the other hand, many countries impose personal income AMTs, and many researchers have tackled the issue of the horizontal equity of personal income taxation. In this study, we analyzed the distortion of the horizontal equity of corporate taxation based on the income distribution of firms before taxes. To this end, we relied on the scaled order statistics, which is used to measure the horizontal equity of individual income taxes in King (1980).

King noted that, unlike vertical equity, it is difficult to identify an objective index of horizontal equity. He also showed that such an index is defined by utility function parameters that represent individuals' aversion to horizontal inequity under certain conditions. However, a horizontal equity index for firms cannot be readily defined by utility function parameters because firms are assumed to maximize their profits. Instead, in this study, we measured horizontal equity as follows, based on the principle that taxpayers with similar income should pay similar taxes.

The horizontal equity of corporate taxation is achieved when the income distribution of corporations remains unchanged before and after taxes. Then, we can determine how corporate taxation distorts horizontal equity by measuring changes in the rankings of each corporation in the after-tax income distributions for the regular corporate tax and the AMTs compared to their rankings in the before-tax income distributions. We denote the income ranking after the

regular corporate tax and the income ranking after the corporate AMT as r_i^c and r_i^{amt} , respectively. The income rankings of individual firms in a corporate tax regime ensuring complete horizontal equity must be identical among the three income distributions: pre-tax income distribution, income distribution after the regular corporate tax, and income distribution after the corporate AMT. In other words, in a tax regime where complete horizontal equity is achieved, r_i^a is equal to r_i^c for all firms, and the income rankings of individual corporations before the regular corporate tax (r_i^a) are identical to their rankings after the regular corporate tax. In addition, assuming that the corporate AMT regime completely restores horizontal equity distorted by the regular corporate tax, and ensures that the income rankings of all firms remain the same before and after taxation, the income rankings of individual firms before corporate taxation (r_i^a) should be identical to their rankings after taking the corporate AMT (r_i^{amt}). Therefore, the distortion of the horizontal equity among individual firms can be expressed as the difference in income rankings before and after corporate taxation.

In other words, when event p denotes the imposition of the regular corporate taxes (c) or the imposition of the corporate AMTs (amt) and there are N firms, the distortion of horizontal equity faced by an individual firm (i) can be expressed as $HE_i^p = |r_i^a - r_i^p| / (N - 1)$. Under a tax with a complete horizontal equity, where firms with similar income pay similar taxes, each firm's income rankings do not change before and after the event. Therefore, $HE_i^p = 0$. In an extreme case, if a firm ranked at the N -th in the before-tax income distribution is ranked at the first after tax, or vice versa, $HE_i^p = |N - 1| / (N - 1) = 1$. Therefore, HE_i^p has a value between 0 and 1.

III. Results of Measuring Horizontal Equity

As explained above, in this study, we seek to demonstrate the extent to which the horizontal equity among firms is distorted by imposing the regular corporate tax and the corporate AMT. We tabulate the average of the different categories of corporations. Specifically, the following sections discuss the changes in horizontal equity distortion across firms of different sizes, business types, and income levels.

1. Results by Firm Size

This section explores the distortion of the horizontal equity among firms according to the statutory firm size. However, before moving on to the subject matter of the section, we would

like to mention the findings on the distortion of the horizontal equity among all firms.¹ The results showed that the regular corporate tax distorted the horizontal equity among all firms by 0.0162 in 2009, which recorded an overall decline and reached 0.0117 in 2016. In other words, in 2009, the income ranking of firms changed by 0.0162 on average after the imposition of the regular corporate tax. However, the average change in ranking declined to 0.0117, which indicates a smaller change in income distribution before and after taxation. The distortion of the horizontal equity among all firms after the imposition of the corporate AMT also decreased from 0.0175 in 2009 to 0.0125 in 2016. These findings show that Korea's regular corporate tax regime improved between 2009 and 2016 in terms of horizontal equity. However, in each year of the period, the distortion after corporate AMT exceeded the distortion of horizontal equity after the regular corporate tax, which suggests that the corporate AMT regime has not achieved its goal of an improved horizontal equity.

For non-SMEs, there is no marked evidence of improvement in horizontal equity in and after 2010. The distortion of the horizontal equity among non-SMEs after the regular corporate tax was measured at 0.0223 in 2009, which declined to 0.0141 in 2010. However, the horizontal distortion for the regular corporate tax fluctuated in the subsequent years but returned to 0.0141 in 2016. The finding shows that the horizontal equity among non-SMEs did not improve under the regular corporate tax regime. The same phenomenon can be observed with the imposition of corporate AMTs on non-SMEs. However, between 2009 and 2016, the distortion of the horizontal equity among non-SMEs after applying the corporate AMT was 17.2% higher than the distortion of horizontal equity after the regular corporate tax. The application of AMTs on non-SMEs seems to distort horizontal equity more than the imposition of regular corporate taxes.

Corporate taxation was found to distort the horizontal equity among SMEs far less than it did the horizontal equity among non-SMEs. The annual distortion of the horizontal equity among SMEs showed an overall decline after 2009, regardless of whether it was caused by the regular corporate tax or the corporate AMT. The distortion of the horizontal equity among SMEs after the regular corporate tax declined from 0.0147 in 2009 to 0.0121 in 2010. The degree of distorting horizontal equity fluctuated in the subsequent years but recorded an overall improvement, reaching 0.0112 in 2016. A similar trend was observed with the improvement of the horizontal equity among SMEs after the introduction of the corporate AMT. However, the average horizontal equity distortion after corporate the AMT was 3.8%

¹ The firms included in the analysis have positive tax bases in the regular corporate tax returns exceed 0. The same applies to the analysis by industry and revenue size.

higher than the horizontal equity distortion after the regular corporate tax. The finding indicates that the corporate AMT regime failed to lower the distortion of horizontal equity after being under the corporate tax regime.

Table 1_Results by Firm Size

(Unit: N/A, %)

	All firms			Non-SMEs			SMEs		
	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)
2009	0.0162	0.0175	8.0	0.0223	0.0251	13.0	0.0147	0.0156	6.1
2010	0.0125	0.0138	10.8	0.0141	0.0170	20.4	0.0121	0.0130	8.0
2011	0.0132	0.0140	6.3	0.0149	0.0174	17.1	0.0128	0.0132	3.2
2012	0.0130	0.0136	4.1	0.0142	0.0162	14.4	0.0127	0.0129	1.4
2013	0.0122	0.0130	6.5	0.0157	0.0183	16.9	0.0114	0.0118	3.3
2014	0.0119	0.0128	7.4	0.0145	0.0177	21.5	0.0113	0.0117	3.4
2015	0.0121	0.0128	5.4	0.0156	0.0179	15.2	0.0114	0.0117	2.5
2016	0.0117	0.0125	6.6	0.0141	0.0171	21.9	0.0112	0.0114	2.4
Average	0.0129	0.0137	6.9	0.0157	0.0184	17.2	0.0122	0.0127	3.8

Note: The figures in the “Regular tax” and “AMT” columns indicate the average change in income rankings before and after the imposition of the regular corporate tax and the AMT, respectively.

Source: Author calculation, based on the data provided by the National Tax Service

2. Results by Industry

An analysis of the data by industry identified few cases in which the imposition of the corporate AMT mitigated or did not exacerbate the distortion of horizontal equity after the imposition of the regular corporate tax. Only the firms in the primary industry reported a level of horizontal equity distortion after the corporate AMT in 2014, which was 0.4% lower than the distortion of horizontal equity after the regular corporate tax. Reporting from all of the other groups indicated that the AMT actually distorted the horizontal equity among them. However, the level of distortion was the highest among primary industry firms and lower in other firms including service providers.

In particular, the AMT regime had an additional negative impact on horizontal equity in the manufacturing sector. Between 2009 and 2016, the distortion of the horizontal equity among manufacturers after AMT was 5.3% higher than the distortion of horizontal equity after the regular corporate tax. In other sectors, such as the service sector, the distortion after AMT was also higher than the distortion after the regular corporate tax. In the primary industry, the distortion after AMT was only 1.5% higher than the distortion after the regular corporate tax.

Table 2_Results by Industry

(Unit: N/A, %)

	Primary industry			Manufacturing			Services and other business types		
	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)
2009	0.0195	0.0203	3.9	0.0148	0.0157	6.0	0.0142	0.0152	7.4
2010	0.0124	0.0128	3.5	0.0129	0.0136	5.6	0.0117	0.0127	8.2
2011	0.0152	0.0152	0.2	0.0130	0.0136	5.1	0.0123	0.0128	3.6
2012	0.0116	0.0118	1.8	0.0130	0.0135	4.0	0.0123	0.0125	1.8
2013	0.0088	0.0089	2.0	0.0123	0.0130	5.3	0.0110	0.0115	4.0
2014	0.0118	0.0118	-0.4	0.0117	0.0125	7.0	0.0110	0.0115	5.1
2015	0.0161	0.0161	0.0	0.0116	0.0121	4.6	0.0109	0.0112	2.6
2016	0.0120	0.0121	0.2	0.0111	0.0116	4.5	0.0107	0.0110	3.0
Average	0.0134	0.0136	1.5	0.0125	0.0132	5.3	0.0118	0.0123	4.5

Note: The figures in the “Regular tax” and “AMT” columns indicate the average change in income rankings before and after the imposition of the regular corporate tax and the AMT, respectively.

Source: Present study, based on the data provided by the National Tax Service

3. Results by Revenue Size

In addition to the analysis by firm size, this section discusses the distortion of horizontal equity by revenue size. Specifically, we grouped the firms in five revenue brackets: KRW 50 billion or lower, KRW 50–150 billion, KRW 150–300 billion, KRW 300–500 billion, and KRW 500 billion or higher. Then, we looked into the distortion of horizontal equity after corporate taxation in each bracket.

The findings are similar to those of the analysis by statutory firm size classification. A higher-revenue group will have a higher level of horizontal equity distortion. Between 2009 and 2016, the KRW 50 billion or lower group reported the lowest distortion of 0.0118 after the regular corporate tax. The level of distortion increased in higher-revenue groups, reaching 0.018 in the KRW 500 or higher bracket.

In addition, across all brackets, the imposition of the corporate AMT increased the distortion of horizontal equity after corporate taxation. In the KRW 50 billion or lower bracket, the distortion after the corporate AMT exceeded the distortion after the regular corporate tax only by 4.5% in the aforementioned period. The gap widened in higher-revenue groups, with reporting from the KRW 500 billion or higher bracket indicating that the distortion after the corporate AMT exceeded the distortion after the regular corporate tax by

26.2% in the same period. Unlike the analysis by statutory firm size classification, the analysis based on revenue size identified some groups where the corporate AMT improved horizontal equity. However, the improvement effect was observed only with the KRW 300–500 billion bracket in 2010. In the other groups and years, the corporate AMT actually undermined horizontal equity.

To clearly identify the reason for such lower horizontal equity, we need to assess the effect of the three policy instruments of the corporate AMT, which are tax base adjustment, AMT rates, and the designation of tax support, etc., subject to the AMT, on the distortion of horizontal equity after the regular corporate tax and corporate AMT among the individual firms, which will be discussed in the next chapter.

Table 3_ Results by Revenue Size

(Unit: N/A, %)

	KRW 50 billion or lower			KRW 50–150 billion			KRW 150–300 billion			KRW 300–500 billion			KRW 500 billion or higher		
	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)	Regular tax (A)	AMT (B)	Change (B / A-1)
2009	0.0142	0.0152	7.4	0.0225	0.0235	4.4	0.0238	0.0288	21.2	0.0284	0.0288	1.2	0.0256	0.0309	21.0
2010	0.0117	0.0127	8.2	0.0158	0.0175	10.8	0.0134	0.0215	60.0	0.0139	0.0138	-0.8	0.0150	0.0182	21.6
2011	0.0123	0.0128	3.6	0.0169	0.0183	8.4	0.0140	0.0173	23.7	0.0135	0.0177	31.4	0.0158	0.0187	18.2
2012	0.0123	0.0125	1.8	0.0163	0.0164	1.1	0.0127	0.0146	15.0	0.0182	0.0217	19.3	0.0123	0.0195	59.0
2013	0.0110	0.0115	4.0	0.0146	0.0158	8.1	0.0164	0.0209	27.6	0.0194	0.0228	17.8	0.0220	0.0235	6.8
2014	0.0110	0.0115	5.1	0.0150	0.0160	6.3	0.0133	0.0167	25.8	0.0181	0.0234	29.5	0.0146	0.0181	23.5
2015	0.0109	0.0112	2.6	0.0149	0.0156	4.9	0.0165	0.0185	12.7	0.0191	0.0204	6.8	0.0206	0.0291	41.2
2016	0.0107	0.0110	3.0	0.0143	0.0155	8.5	0.0146	0.0167	14.1	0.0122	0.0178	46.0	0.0181	0.0237	31.1
Average	0.0118	0.0123	4.5	0.0163	0.0173	6.4	0.0156	0.0194	24.4	0.0179	0.0208	16.6	0.0180	0.0227	26.2

Note: The figures in the “Regular tax” and “AMT” columns indicate the average change in income rankings before and after the imposition of the regular corporate tax and the AMT, respectively.

Source: Present study, based on the data provided by the National Tax Service

IV. Evaluation of Policy Instruments to Improve Horizontal Equity

Few countries maintain corporate AMT regimes, and no country other than Korea (and, formerly, the United States) maintains corporate AMT regimes on the central government level as a policy instrument designed to impose additional tax burdens on firms. For this reason, researchers have rarely tackled the theoretical or empirical aspects of the corporate AMT regime.² Few previous studies regarding corporate AMTs—such as Lyon (1989), Cummins et al. (1994), and Park (2016)—discuss the effect of depreciation savings, which was a component of the US corporate AMT regime, on investment. These studies hold limited relevance to the situation in Korea, where the same depreciation rules apply to both the corporate AMT and the regular corporate tax.

Carlson and Metcalf (2008) carried out an empirical analysis and found that the use of energy tax credits is largely restricted by General Business Credits (GBCs) and AMTs. A small number of studies in Korea, such as Oh, Jung, and Kim (2011), also found that the AMT regime restricted the use of specific tax supports. They analyzed the financial data of SMEs between 2003 and 2009, and found that the analyzed SMEs expanded the use of tax credits for research and human resource development costs when these costs became exempt from the AMT, and reduced the use of the same credits when the AMT rates were lowered. Kim and Oh (2015) analyzed the financial data of Korea's large firms between 2009 and 2012. Their findings indicate that the strengthening of the AMT regime lowers the overall firm investment. While the AMT regime improves investment efficiency for over-investment firms by reducing their over-investment exceeding the appropriate levels, the investment efficiency for under-investment firms is also undermined investment efficiency by having them invest even less.

These studies do not analyze the effect of the AMT regime on the key policy goal of the corporate AMT regime, that is, horizontal equity. This study tried to show some empirical evidences for how to improve the horizontal equity among firms by analyzing the effect of three policy instruments on horizontal equity. As mentioned before, in Korea, the corporate AMTs and the regular corporate taxes differ in terms of tax bases, tax rates, and the scope of applicable tax supports, among other factors. Therefore, we examined how the government should set these three policy parameters if it is to achieve the policy goal of the corporate AMT regime by improving horizontal equity.

² Most of the previous studies on AMT discuss personal income AMTs.

1. Model Specification

In the previous chapters, we explained that the corporate AMT was adopted for the purpose of preventing the excessive lowering of tax burdens through the active use of non-taxation, credit, exemption, and reduction programs as well as improving horizontal equity. Then, we analyzed the distortion of horizontal equity by looking into the changes in income rankings in income distributions before and after corporate taxation. Regardless of the business type, tax support programs used, and type of tax imposed, the distortion of horizontal equity worsens in proportion to the gap between the income rankings of individual firms before corporate taxation and their income rankings after corporate taxation. In light of the above, we defined $HE_i^{amt} = |r_i^a - r_i^{amt}| / (N - 1)$ as the variable representing the distortion of horizontal equity after imposing the corporate AMT.

To analyze how the distortion of the horizontal equity among individual firms is affected by the three components of the corporate AMT regime, we defined the following explanatory variables that represent the difference between corporate AMT bases and regular corporate tax bases, the difference between corporate AMT rates and regular corporate tax rates, and the scope of tax supports subject to the corporate AMT, respectively. First, we defined a variable for the difference between the corporate AMT bases and regular corporate tax bases (*tbr*). Specifically, it is defined as the ratio of corporate AMT bases to regular corporate tax bases. A higher ratio of corporate AMT bases is expected to improve horizontal equity by preventing the excessive reduction of tax burdens. Therefore, the estimated coefficient for the variable is expected to have a negative value. For the firms imposed with regular corporate taxes, the variable has a value of 1 because the two tax bases are the same. For the firms imposed with corporate AMTs, the value is 1 or higher.

The differential tax rates between the two regimes ($\text{taxr} = \text{amtr} / \text{mtr}$) is defined as the ratio of the AMT rates (determined based on the firm size classifications and tax bases of individual firms) to the statutory marginal rates for regular corporate taxes imposed on individual firms (*mtr*). Assuming that all of the other conditions are constant, raising the AMT rates increases the tax burdens of the firms declaring AMTs. This raising of the AMT rates improves horizontal equity by reducing the changes in income rankings after corporate taxation. Therefore, the estimated coefficient for the variable is expected to have a negative value. However, excessively high or low AMT rates may result in significant changes in income rankings before and after taxation, thereby distorting the horizontal equity even further. Policymakers are interested in the ratio of AMT rates to regular corporate tax rates that minimize the distortion of horizontal equity caused by regular corporate taxes. To answer this

question, we can assume a quadratic relationship between the explanatory variable for tax rate difference (*taxr*) and the dependent variable. To this end, we added a squared variable for the tax difference variable (*taxrq*) to estimate the quadratic relationship between the explanatory variable (*taxr*) and the dependent variable (distortion of horizontal equity).³ With the estimated relationship between the two variables, we can calculate the ratio of AMT rates to regular corporate tax rates that minimize the distortion of horizontal equity.

The variable for the scope of tax support programs subject to the corporate AMT regime (*iter*) is defined as the ratio of the amount of tax credits, reductions, and exemptions subject to the AMT regime (identified from the tax return filed by individual firms) to the sum of the tax credits, reductions, and exemptions subject to the AMT regime, and the tax credits, reductions, and exemptions exempt from the AMT regime. The value of *iter* approaches 1 as the amount of the tax credits, reductions, and exemptions subject to the AMT regime approaches the total amount of tax credits, reductions, and exemptions declared in the tax return filed by individual firms. A higher *iter* improves horizontal equity by reducing the difference in tax supports between firms relying on tax supports subject to the AMT regime and those mostly relying on tax supports that are not subject to the AMT regime. That is, the distortion of horizontal equity decreases as the ratio of tax support programs subject to the corporate AMT regime approaches 1. Therefore, the estimated coefficient for the variable is expected to have a negative value.

We also defined a number of control variables for firm characteristics: the ratios of expenditures on fixed tangible assets to revenues represented in cash flow charts (*tangtr*), ratios of expenditures on intangible assets to revenues (*intangr*), ages of firms (*age*), ratios of liabilities to total assets (*debtr*), and ratios of credits for taxes paid overseas to regular corporate tax bases (*ftcr*). The dependent variable (distortion of horizontal equity after the corporate AMT) is measured by the changes in income rankings before and after the corporate AMT. Such a difference includes the changes in income rankings before and after the regular corporate tax. Therefore, to control for the distortion of horizontal equity caused by the regular corporate tax, we added an explanatory variable that represents the distortion of horizontal equity caused by the tax base calculation rules for regular corporate taxes (*HE-rtb*), which is measured based on the rankings of regular corporate tax bases and the income

3 In the final report meeting for this study, we received a comment that the reliability of the estimation should be improved by considering the cubic relationship between the two variables as well. In response, we included the estimation for the cubic relationship in the sections discussing the findings of our empirical analysis.

rankings before taxation. We also defined an explanatory variable for the ratio between the statutory marginal regular corporate tax rates (determined based on individual firms' tax bases) and the effective tax rates after tax credits, reductions, and exemptions (*drate*) to control for the differences in the extent of reducing tax burdens through the tax support programs.

2. Estimation Results

A. Results for All Firms

We estimated the effects of the three policy variables on the distortion of horizontal equity using a fixed effect model for years and firms. As the three policy instruments were differently defined and implemented according to the statutory size of firms, we analyzed the two groups separately, which would help us understand how the effects of the three variables are different by the firm size. Before we move on to the group-by-group analysis, we first present the findings of the estimation for all firms.

The following table shows that, across all firms, the estimated coefficient of each variable had a value that we had expected ex-ante. However, the only statistically significant coefficient was the estimated coefficient for the *taxr* variable, which is the ratio of the AMT rates to the marginal regular corporate tax rates. The findings on the estimated coefficient for *taxr* show that, as the AMT rates approach the regular corporate tax rates, it reduces the changes in income rankings before and after taxation, and effectively reduces the distortion of horizontal equity at the 5% significance level. However, the estimated coefficients for the *tax base ratio (tbr)* and the *ratio of tax support programs subject to the corporate AMT regime (iter)* were not statistically significant. We also looked into the quadratic or cubic function relationship between the *taxr* variable and the distortion of horizontal equity using equations (B) and (C). However, neither equation supported a specific functional relationship between the two variables.

Table 4 Estimation Results for All Firms

Explanatory variable		(A)		(B)		(C)	
		Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value
Policy variable	taxr	-0.0054	0.011	-0.0029	0.901	-0.1235	0.145
	taxrsq	-	-	-0.0023	0.920	0.2144	0.139
	taxrcube	-	-	-	-	-0.1228	0.113
	tbr	0.0006	0.124	0.0006	0.124	0.0006	0.137
	iter	-0.0013	0.133	-0.0013	0.134	-0.0013	0.118
Control variable	tangr	0.0000	0.523	0.0000	0.523	0.0000	0.527
	intangr	0.0086	0.331	0.0086	0.331	0.0086	0.330
	debtr	0.0000	0.332	0.0000	0.332	0.0000	0.304
	age	-0.0002	0.115	-0.0002	0.137	-0.0001	0.293
	HE-rtb	0.0509	0.000	0.0509	0.000	0.0509	0.000
	drate	0.0003	0.772	0.0003	0.771	0.0003	0.806
	ftcr	-0.0809	0.001	-0.0808	0.001	-0.0812	0.001
	constant	0.0160	0.000	0.0154	0.002	0.0358	0.010
No. of observations		69,808		69,808		69,808	
No. of firms		13,629		13,629		13,629	
within-R ²		0.018		0.018		0.018	
F-Stat		25.72		23.61		23.31	

Source: Present study, based on the data provided by the National Tax Service

These findings may be understood to indicate that the AMT rate increase is the only one of the three policy instruments that improves horizontal equity, which is the original goal of the corporate AMT regime. However, we need to be cautious about reaching this conclusion. The above findings do not reflect the heterogeneity of the population because it includes two groups with different AMT taxations. To support such a conclusion, we need to analyze the two groups separately.

B. Results by Firm Size

The same regular corporate tax regime applies to both SMEs and non-SMEs. However, the two groups differ in terms of applicable tax support programs, the structure of the corporate AMT rates, and the scope of tax support programs subject to the corporate AMT regime. These differences may result in different effects on the distortion of horizontal equity caused by the aforementioned policy variables in each group.

First, the tax rate variable (*taxr*) coefficient for the non-SME group was not statistically significant regardless of the functional relationship assumed. The results indicate that raising corporate AMT rates for non-SMEs does not improve horizontal equity, even though it may result in the increase of tax revenues. It seems that, while raising corporate AMT rates for non-SMEs may advance the secondary policy goal of a tax revenue increase, it does not readily contribute to the primary goal of the corporate AMT regime, which is the improvement of horizontal equity.

Among SMEs, raising corporate AMT rates (that is, raising the *taxr*) was found to lower the distortion of horizontal equity. The finding suggests that, in the SME group, raising AMT rates is conducive to achieving both the main goal and the secondary goal of the AMT regime. We also analyzed the ratio between AMT rates and marginal regular corporate tax rates in the SME group, and found a statistically significant negative functional relationship (both linear and cubic) between the ratio and the distortion of horizontal equity at the 1% significance level.⁴ The Korean government has raised the AMT rates for non-SMEs with tax bases exceeding KRW 10 billion and lowered the AMT rates for SMEs. The above finding shows that, while this approach may have increased tax revenues, it did not contribute to improving horizontal equity.

The tax base ratio (*tbr*) was found to have different effects on horizontal equity in the two groups. For the non-SME group, a higher *tbr* increased the distortion of horizontal equity at the 1% significance level. On the other hand, while a higher *tbr* lowers horizontal equity distortion for the SME group, the significance level of the estimated coefficient was around 14%. The finding can be explained by the fact that non-SMEs are subject to higher AMT rates. For this reason, a higher ratio of AMT bases to regular corporate tax bases raises the tax burdens borne by non-SMEs, which effectively raises the probability of changes in after-taxation income rankings.

The estimated coefficients on the ratio of tax support programs subject to the AMT regime to the total amount of tax supports (*iter*) are negative for both groups. Raising the percentage of tax support programs subject to the AMT regime is expected to lower the distortion of horizontal equity. However, the statistical significance of the estimated coefficient was different according to the size of firms. It seems that raising the percentage

⁴ We carried out an estimation assuming a cubic function relationship between the two variables (C-2). The analysis showed that the estimated coefficient for the cubed *taxr* has a statistically significant negative value. Despite the existence of local peaks, raising the *taxr* was found to lower the horizontal equity distortion for SMEs.

of tax support did not have a significant impact on the horizontal equity among non-SMEs because most tax supports for non-SMEs are already subject to the AMT regime. On the other hand, a significant percentage of tax supports for SMEs are not included in the AMT regime including the tax supports for research and human resource development costs. The finding seems to suggest that the government needs to widen the scope of tax support programs subject to the AMT regime for SMEs if it is to improve horizontal equity in the future.

Annexed Table 1 shows the average iter by year and firm size. According to the table, between 2009 and 2016, the average iter of non-SMEs reported an overall increase, while that of SMEs showed an overall decline. While such a change reflects changes in firm behaviors, it is also the result of the exclusion of tax support programs for SMEs from the scope of the AMT regime. To improve horizontal equity in the future, more support programs need to be included in the scope of the AMT regime. Rather than determining the scope of the AMT regime based on arbitrary criteria and raising tax compliance costs, it may be better to include all tax credits, reductions, and exemptions in the scope of the AMT regime, and allow firms to freely choose their tax credits, reductions, and exemptions within the prescribed limits in AMTs. However, the credits for taxes paid abroad and the loss caused by natural disasters need to remain excluded from the scope of the AMT regime because these credits were adopted for the purpose of preventing double taxation or the emergency support.

Table 5_Estimation Results by Firm Size

Explanatory variable	Non-SMEs						SMEs						
	(A-1)		(B-1)		(C-1)		(A-2)		(B-2)		(C-2)		
	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	
Policy variable	taxr	-0.0077	0.577	-0.0012	0.989	0.2455	0.732	-0.0069	0.000	-0.0161	0.366	-0.3951	0.000
	taxrsq	-	-	-0.0049	0.937	-0.3917	0.728	-	-	0.0090	0.601	0.8645	0.000
	taxrcube	-	-	-	-	0.1925	0.730	-	-	-	-	-0.6038	0.000
Control variable	tbr	0.0097	0.000	0.0097	0.001	0.0097	0.000	-0.0005	0.143	-0.0005	0.141	-0.0005	0.147
	iter	-0.0005	0.864	-0.0006	0.862	-0.0006	0.860	-0.0021	0.000	-0.0021	0.000	-0.0021	0.000
	tangr	-0.0004	0.000	-0.0004	0.000	-0.0004	0.000	0.0000	0.000	0.0000	0.000	0.0000	0.000
Control variable	intangr	0.0474	0.000	0.0474	0.000	0.0474	0.000	-0.0012	0.014	-0.0012	0.014	-0.0012	0.014
	debt	0.0005	0.108	0.0005	0.107	0.0005	0.108	0.0000	0.000	0.0000	0.000	0.0000	0.000
	age	0.0003	0.448	0.0003	0.497	0.0003	0.480	-0.0003	0.000	-0.0003	0.000	-0.0003	0.000
Control variable	HE-rtb	0.0404	0.000	0.0404	0.000	0.0404	0.000	0.0604	0.000	0.0604	0.000	0.0605	0.000
	drate	0.0120	0.014	0.0120	0.013	0.0121	0.012	-0.0009	0.385	-0.0009	0.378	-0.0009	0.406
	ftcr	-0.0977	0.092	-0.0977	0.092	-0.0977	0.092	-0.0298	0.063	-0.0298	0.062	-0.0296	0.064
constant	-0.0045	0.714	-0.0062	0.815	-0.0573	0.699	0.0183	0.000	0.0203	0.000	0.0732	0.000	
No. of observations	13,465		13,465		13,465		56,343		56,343		56,343		
No. of firms	2,591		2,591		2,591		11,038		11,038		11,038		
within-R ²	0.011		0.011		0.011		0.064		0.064		0.064		
F-Stat	9.92		9.05		8.28		81.33		73.83		70.89		

Source: Present study, based on the data provided by the National Tax Service

C. Results for Firms with Tax Bases Exceeding KRW 10 Billion

Since 2009, the changes in AMT rates mostly targeted firms with tax bases exceeding KRW 10 billion. For this reason, we carried out the same empirical analysis for the group of firms meeting this criterion to examine the effects of the three AMT policy variables on the distortion of horizontal equity. Among the firms subject to external audit requirements between 2009 and 2010, 3,101 firms reported tax bases exceeding KRW 10 billion.⁵ The findings regarding this group of firms are presented in Table 6. As mentioned above, SMEs, even the ones reporting tax bases exceeding KRW 10 billion, are subject to a different corporate AMT regime from non-SMEs. Therefore, the analysis needs to take account of the difference between the two groups. As non-SMEs with tax bases exceeding KRW 10 billion were the main target of enhanced corporate AMTs, the analysis excluding SMEs would yield more meaningful results. However, for comparison purposes, we also present the findings on all firms including SMEs exceeding the KRW 10 billion tax base.

The analysis of SMEs and non-SMEs with tax bases exceeding KRW 10 billion shows a quadratic function relationship between the ratio of AMT rates to the marginal regular corporate tax rates (taxr) and the distortion of horizontal equity. Estimations assuming a linear or cubic function relationship between the two variables, (A-3) and (C-3), did not produce any statistically significant result. In (B-3), which assumes a quadratic function relationship between the two variables, the squared taxr and the taxr estimated coefficient were statistically significant at the 5% and 10% significance levels, respectively. The estimation also supports the hypothetical existence of a U-shaped relationship between the two variables. In the group of firms exceeding the KRW 10 billion tax base, the AMT rates were found to minimize the distortion of horizontal equity when it stands at 63.9% of the marginal regular corporate tax rates.⁶ In other words, for firms facing a 25% marginal rate, a 16% AMT rate minimizes the distortion of horizontal equity.

The findings on taxr and horizontal equity distortion in non-SMEs reporting tax bases

5 Surprisingly, almost half of these firms (1,404 firms) are SMEs. These SMEs take up 45.3% of the firms included in the group. These firms, despite their tax bases exceeding KRW 10 billion, benefit from the 7% AMT rate applicable to statutory SMEs. In addition, most of the tax support programs applied to these SMEs are exempt from the AMT regime. This outcome seems unreasonable at best.

6 The taxr that minimizes horizontal equity distortion is the taxr that satisfies the first-order condition for minimization after differentiating the quadratic relationship between the two estimated variables with respect to taxr ($2 \times 0.2501 \times \text{taxr} - 0.3229 = 0$).

exceeding KRW 10 billion are similar to the findings including the SMEs. The analysis did not find any statistically significant linear or cubic function relationship between the two variables, and as shown in the findings for (B-4), only the quadratic function relationship between the two variables was found to be statistically significant. In (B-4), the squared taxr and the taxr estimated coefficient were statistically significant at the 5% significance level. The estimation also supports the hypothetical existence of a U-shaped relationship between the two variables. The appropriate AMT rate that minimizes distortion was found to be 64.6% of the marginal regular corporate tax rate.⁷

As in the analysis of non-SMEs, the analysis of firms including SMEs did not produce any statistically significant results for the other policy variables. The findings suggest that the AMT rate adjustment is the appropriate policy instrument for improving the horizontal equity among firms exceeding the KRW 10 billion tax base. Given the current regular corporate tax rate of 25%, the appropriate AMT rate seems to be 16%, which is lower than the current 17%. The findings imply that, while the 1% point increase in the AMT rates applied to firms exceeding the KRW 100 billion tax base in 2014 may have increased tax revenues, it had a negative impact on horizontal equity.

To improve horizontal equity in the future, the AMT rates for the large firms need to be lowered by one to three percentage points to 14%–16%, and the tax rates for firms with KRW 100 billion or lower tax bases need to be raised slightly. If the government plans to maintain the tax rate structure of the regular corporate tax, the AMT tax rate structure for non-SMEs need to be modified to match the tax rate structure of the regular corporate tax. As for SMEs, the government needs to raise their overall AMT rates, and apply the same rules to non-SMEs and SMEs with tax bases exceeding KRW 100 billion. Previous studies found that SMEs that are innovative and create jobs are the newly established SMEs entering their growth period, not the smaller SMEs. Then, the corporate AMT difference between SMEs and non-SMEs should be gradually narrowed in the future.

⁷ See the preceding footnote for the calculation of the appropriate taxr.

Table 6_Estimation Results for Firms with Tax Bases Exceeding KRW 10 Billion

Explanatory variable	All firms including SMEs						Non-SMEs					
	(A-3)		(B-3)		(C-3)		(A-4)		(B-4)		(C-4)	
	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value	Estimated coefficient	p-value
taxr	-0.0237	0.288	-0.3229	0.031	0.5200	0.186	-0.0199	0.387	-0.4830	0.015	-1.3935	0.293
taxrsq	-	-	0.2501	0.057	-1.2689	0.121	-	-	0.3780	0.023	1.9128	0.406
taxrcube	-	-	-	-	0.8860	0.110	-	-	-	-	-0.8470	0.519
tbr	-0.0008	0.612	-0.0014	0.386	-0.0009	0.554	0.0008	0.746	0.0006	0.801	0.0007	0.787
iter	0.0025	0.252	0.0027	0.216	0.0029	0.193	0.0034	0.169	0.0036	0.138	0.0035	0.169
tangr	-0.0082	0.357	-0.0084	0.350	-0.0082	0.357	-0.0097	0.298	-0.0098	0.295	-0.0099	0.289
inangr	0.0019	0.788	0.0021	0.761	0.0021	0.765	0.0022	0.751	0.0025	0.727	0.0025	0.720
debtr	0.0000	0.747	0.0000	0.770	0.0000	0.823	0.0000	0.852	0.0000	0.876	0.0000	0.816
age	0.0010	0.030	0.0012	0.011	0.0013	0.010	0.0012	0.030	0.0018	0.007	0.0019	0.003
HE-rtb	-0.0253	0.000	-0.0256	0.000	-0.0258	0.000	-0.0270	0.000	-0.0278	0.000	-0.0280	0.000
drate	-0.0421	0.000	-0.0435	0.000	-0.0431	0.000	-0.0405	0.000	-0.0423	0.000	-0.0427	0.000
ficr	-0.0817	0.198	-0.0889	0.164	-0.0858	0.182	-0.0700	0.285	-0.0792	0.231	-0.0811	0.224
constant	0.0493	0.000	0.1279	0.000	-0.0242	0.714	0.0382	0.005	0.1609	0.001	0.3352	0.177
No. of observations	10,166		10,166		10,166		7,224		7,224		7,224	
No. of firms	3,101		3,101		3,101		1,697		1,697		1,697	
within-R ²	0.014		0.015		0.016		0.014		0.018		0.018	
F-Stat	10.56		10.15		9.37		9.98		9.53		8.73	

Source: Present study, based on the data provided by the National Tax Service

V. Implications

In this study, we analyzed the distortion of the horizontal equity among individual firms by measuring changes in income distributions before and after corporate taxation. While the distortion has declined since 2009, higher levels of distortion were observed for the case of non-SMEs, firms in the primary industry and the manufacturing sector, and firms with higher revenues. One of the most significant findings of this study is that the AMT regime did not mitigate the distortion of horizontal equity for most firms. In most of the cases analyzed above, the average distortion of horizontal equity worsened after applying the AMTs. It seems difficult to achieve the main goal of the AMT policy with the current approach employed by the government.

The three components of the AMT regime—the ratio between marginal regular corporate tax rates and AMT rates, the ratio of the tax bases of the two parallel tax regimes, and the ratio of tax support programs subject to the AMT regime to the total amount of tax supports—were found to have different effects on horizontal equity depending on the firm sizes. An empirical analysis of the data from firms subject to external audit requirements showed that raising the AMT rates for SMEs and the more tax support programs subject to the AMT regime improve the horizontal equity among SMEs. However, in the non-SME group, particularly the group of non-SMEs reporting tax bases higher than KRW 10 billion, it is found that raising the AMT rates was not an appropriate means of improving horizontal equity. The appropriate AMT rate for minimizing horizontal equity distortion was estimated to be about 64% of the regular corporate tax rates.

Assuming that the regular corporate tax rate structure remains unchanged, it does not seem to be appropriate to apply different AMT regimes to firms of different sizes. To improve horizontal equity, the government needs to apply the same AMT regime at least to firms subject to an external audit requirement. Even if the government maintains the current AMT structure for political reasons and other considerations, the AMT rates for SMEs need to be raised by three to four percentage points, and the rates for non-SMEs need to be lowered by one to three percentage points. We should also note from the empirical findings that a higher percentage of tax support programs subject to the AMT regime have a positive effect on horizontal equity, and that it is difficult to establish a reasonable criterion for distinguishing between tax support programs included in the AMT regime and those excluded therefrom. Given these findings, the government needs to include all tax support programs in the scope of the AMT regime, with exceptions for the benchmark tax systems such as credits for taxes paid abroad and tax credits for natural disasters.

Based on the above discussion, we suggest the following.

First, if the policy goal of the corporate AMT is to collect more tax revenues, the government needs to replace the current regime (which forces firms to calculate taxes twice) with a simpler regime that increases revenues and lowers compliance costs.

Second, if the government seeks to improve horizontal equity through the AMT, it needs to raise the AMT rates for SMEs and lower the rates for non-SMEs, and include all tax support programs in the scope of the AMT regime, with few exceptions.

Third, the government needs to align its corporate tax policy with the goal of efficiency improvement and gradually reduce the difference in corporate taxation according to the statutory size of firms so that firms with similar income pay similar taxes regardless of their statutory firm size.

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■ Appendix | Changes in Key Explanatory Variables

Annexed Table 1_Three AMT Policy Variables by Year and Firm Size

Year of declaration	Average taxr		Average tbr		Average iter	
	Non-SMEs	SMEs	Non-SMEs	SMEs	Non-SMEs	SMEs
2009	0.6457	0.4187	1.1766	1.2232	0.7370	0.7767
2010	0.6669	0.5045	1.2239	1.2187	0.7197	0.7295
2011	0.6390	0.4557	1.2266	1.2415	0.7207	0.6528
2012	0.6424	0.4617	1.1597	1.1654	0.7055	0.6243
2013	0.6749	0.4867	1.1577	1.1509	0.7242	0.5930
2014	0.6939	0.4897	1.1487	1.1509	0.7593	0.5929
2015	0.7049	0.4955	1.1358	1.1082	0.7747	0.5818
2016	0.7054	0.4987	1.1701	1.1221	0.7791	0.5637

Source: Present study, based on the data provided by the National Tax Service

Annexed Table 2_Control Variables by Year and Firm Size

Year of declaration	Average tangr		Average intangr		Average debrt		Average age		Average HE-rtb		Average drate		Average fctr	
	Non-SME	SME	Non-SME	SME	Non-SME	SME	Non-SME	SME	Non-SME	SME	Non-SME	SME	Non-SME	SME
2009	1.3580	5.1420	0.0319	0.0256	3.2816	6.3597	19.2316	12.7767	0.1637	0.1195	0.7614	0.7133	0.0039	0.0009
2010	2.7096	1.2636	0.0175	0.0199	19.2122	7.1398	19.5215	13.2314	0.1679	0.1397	0.7592	0.6207	0.0043	0.0011
2011	11.6983	12.0373	0.0334	0.2109	3.9354	7.8978	19.7289	13.6745	0.1543	0.1383	0.7741	0.6209	0.0044	0.0013
2012	90.5686	13.2465	0.1006	0.5175	3.0290	14.7789	20.0958	14.0744	0.1538	0.1365	0.7748	0.6232	0.0055	0.0015
2013	29.2166	122.9183	0.0832	0.0479	3.3724	10.9843	20.6479	14.4393	0.1613	0.1377	0.7941	0.6438	0.0061	0.0016
2014	1.9911	17.7383	0.0535	0.0225	4.1033	8.1549	21.2410	14.8778	0.1661	0.1357	0.8199	0.6910	0.0069	0.0015
2015	0.4881	3.0616	0.0175	2.6464	3.2404	33.5072	22.0008	15.3822	0.1725	0.1381	0.8213	0.6650	0.0080	0.0016
2016	0.7008	4.9649	0.0333	2.4255	3.2530	9.5043	22.9041	16.3465	0.1663	0.1375	0.8323	0.6757	0.0077	0.0015

Source: Present study, based on the data provided by the National Tax Service

A Study on the Management Evaluation of Non-classified Public Institutions

Han Jun Park*

I. Introduction

Korean public institutions were the driving force behind Korea's economic and industrial growth, and they continue to play a pivotal role in Korea's public service delivery system. They provide a wide range of public services directly and indirectly related to people's lives, from utilities, social overhead capital, and industrial growth, to healthcare, welfare, and culture. Despite the diversity of their roles, most research and policies on public institution management have focused on policies and programs involving public corporations and quasi-governmental institutions.

The Act on the Management of Public Institutions (Public Institutions Act) is the framework law governing the management of public institutions in Korea. This Act stipulates the requirements for public institution designation and the roles and responsibilities of those who own them. Article 4(1) of the Public Institutions Act provides for the requirements, and Paragraph (2) of the same Article specifies institutions that are not eligible for public institution designation. Article 5 sets out the criteria for distinguishing between different types of public institutions: public corporations, quasi-governmental institutions, and non-classified public institutions. The number of institutions designated as public institutions fluctuates from year to year. As of May 2018, Korea had 338 designated public institutions, of which 35

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are public corporations, 93 are quasi-governmental institutions, and 210 are non-classified public institutions. The 35 public corporations consist of 15 market-based public corporations and 20 quasi-market-based public corporations. The 93 quasi-governmental institutions consist of 16 institutions tasked with fund management and 77 institutions tasked with commissioned services. The number of public institutions grew by 36 (from 302 to 338) over the last five years. Non-classified public institutions were responsible for 25 of the new institutions, recording the highest growth rate. Despite the rapid growth, non-classified public institutions have remained outside the focus of policy and program studies.

Some commentators argue for the privatization of non-classified public institutions as a way to overcome the inefficiency caused by multiple layers of delegation. However, unlike public corporations, most non-classified public institutions are either tasked with implementing government projects or executing government subsidies. Given their roles, non-classified public institutions need to be subject to public management more than others, and more research needs to be done about non-classified public institution policies.

Under the current system, each ministry evaluates the management performance of the non-classified public institutions under its jurisdiction. These evaluations are carried out in accordance with the guidelines promulgated by the Ministry of Economy and Finance (MOEF), which resulted in integration and isomorphism among evaluation programs. This may be one of the reasons for the lack of research on non-classified public institutions. Granted, the integrative approach, such as the one discussed above, propelled advancements in public institution management in Korea. However, there is no denying that the integrative approach was not counterbalanced by efforts to consider the diverse characteristics of evaluated institutions.

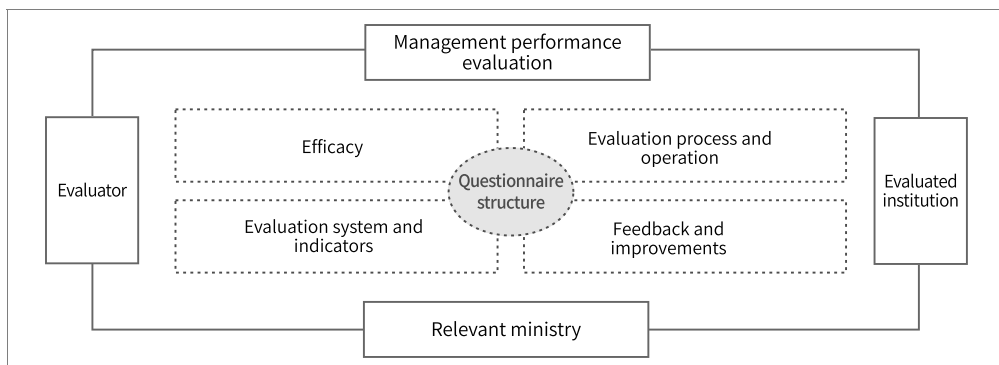
Non-classified public institutions are diverse in terms of policy areas, key businesses, and sizes. This is why they need, more than other types of public institutions, tailored management catering to their respective needs. In this regard, studying non-classified public institutions may provide us with meaningful implications for improving the government's public institution management policy based on the diversity and different needs of public institutions. Tracking and analyzing the operational status of management performance of non-classified public institutions can provide reference points for improving the management framework for that type of public institution and realigning the management policies and programs for public corporations and quasi-governmental institutions as well. To this end, in this study, we analyzed the findings of our questionnaire survey, which targeted ministry officials in charge of performance evaluations, staff in charge of institutional evaluation, and evaluators with experience in participating in the management performance evaluation of non-classified public institutions, to identify the issues with public institution management and possible improvements.

II. Analysis Model and Survey Overview

To understand the operational status of management evaluation of non-classified public institutions, we conducted a questionnaire survey on the opinions and perceptions of ministry officials in charge of performance evaluations, evaluators, experts, and staff in charge of evaluation of non-classified public institutions subject to evaluation. We asked ministry officials in charge of performance evaluations and experts involved in the management evaluation of non-classified public institutions about the current status of management evaluation. We also asked staff in charge of institutional evaluation at the evaluated institutions to examine their perceptions about the success, limitations, and acceptance of the current evaluation system. Questionnaires were sent out to 655 potential respondents, of which 224 responded. The 224 respondents consisted of 11 ministry officials in charge of performance evaluations, 66 evaluators, and 147 staff in charge of evaluation of non-classified public institutions (response ratio: 34.2 percent).

Then, we analyzed their responses to examine these stakeholders' opinions about the structure of the evaluation system (indicators), evaluation results and the associated feedback process, evaluation quality, and possible improvements for the evaluation of non-classified public institutions. To this end, the questionnaire included questions on the achievements of the evaluation system to date, evaluation results and the associated feedback process, comparison with the MOEF evaluation, evaluation quality, and possible improvements. We conducted a pilot test to improve the quality of the survey findings and revised questions before the survey to improve reliability and response ratio.

Figure 1_ Questionnaire Survey Model for Management Performance Evaluation of Non-Classified Public Institutions



Source: Present study

Specifically, the questionnaire consisted of questions about the purpose and achievements of management evaluation, the preparation and actual implementation of management evaluation, the use and feedback of evaluation results, the operation and evaluation indicators of management evaluation, and the disclosure of evaluation results. Most of the questions were multiple-choice questions based on a seven-point Likert scale, save for essay questions asking about possible improvements for management evaluation.

We targeted ministry officials in charge of performance evaluations at the relevant ministries, evaluators, and staff in charge of institutional evaluation at the evaluated institutions because they are main players in the evaluation process, with different interests and stakes depending on their roles and positions. The survey findings on the key issues show us how the three groups have different perceptions and interests. The findings are significant in that any improvement of the evaluation system starts with identifying and narrowing the gaps between these groups.

III. Survey Findings and Key Issues

1. Efficacy of Evaluation

In order to review the necessity and efficacy of management evaluation for non-classified public institutions, and analyze its significance for different stakeholders, we asked respondents about how management performance evaluation contributed to the accountability, autonomy, efficiency, and publicness of non-classified public institutions, whether it effectively served as a means of monitoring the performance of those institutions, and how it contributed to improving the outcomes of their key businesses. Accountability, autonomy, efficiency, and publicness are, in fact, intricately correlated. However, given the fact that these have been discussed as core values pursued by public institution management policies, we asked about each of these four values separately to assess the status of management evaluation. On average, the respondents rated the evaluation's contribution to accountability at 4.5, contribution to autonomy at 3.7, contribution to efficiency at 4.4, and contribution to publicness at 4.4. The respondents perceived that management performance evaluation contributed the most to enhancing accountability and contributed the least to improving autonomous management. In addition, the respondents rated the effectiveness of management evaluation as a means of performance monitoring at 4.3, and its contribution to improved outcomes at 4.2.

Table 1_Perceptions on Efficacy of Management Performance Evaluations

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Accountability contribution	Total	5.4	6.7	8.5	24.6	23.2	26.3	5.4	4.5
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	27.3	18.2	27.3	18.2	5.1
	Evaluators	0.0	4.5	3.0	12.1	22.7	48.5	9.1	5.3
	Staff in charge of institutional evaluation	8.2	7.5	11.6	29.9	23.8	16.3	2.7	4.1
Autonomy contribution	Total	12.5	12.5	17.0	25.0	18.3	14.3	0.4	3.7
	Ministry officials in charge of performance evaluations	9.1	0.0	9.1	36.4	9.1	36.4	0.0	4.5
	Evaluators	1.5	10.6	10.6	19.7	27.3	28.8	1.5	4.5
	Staff in charge of institutional evaluation	17.7	14.3	20.4	26.5	15.0	6.1	0.0	3.3
Efficiency contribution	Total	5.8	7.1	12.9	20.5	26.3	25.0	2.2	4.4
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	36.4	36.4	0.0	4.9
	Evaluators	0.0	4.5	4.5	10.6	24.2	50.0	6.1	5.3
	Staff in charge of institutional evaluation	8.8	8.2	17.7	25.2	26.5	12.9	0.7	3.9
Publicness contribution	Total	7.6	6.3	8.5	26.8	25.0	23.2	2.7	4.4
	Ministry officials in charge of performance evaluations	9.1	0.0	0.0	45.5	18.2	27.3	0.0	4.5
	Evaluators	0.0	6.1	6.1	15.2	24.2	40.9	7.6	5.1
	Staff in charge of institutional evaluation	10.9	6.8	10.2	30.6	25.9	15.0	0.7	4.0
Contribution to outcomes of key businesses	Total	7.6	10.3	15.6	20.5	21.9	20.1	4.0	4.2
	Ministry officials in charge of performance evaluations	0.0	9.1	9.1	9.1	27.3	27.3	18.2	4.7
	Evaluators	0.0	6.1	7.6	12.1	22.7	42.4	9.1	5.2
	Staff in charge of institutional evaluation	11.6	12.2	19.7	25.2	21.1	9.5	0.7	3.8

Table 1_Perceptions on Efficacy of Management Performance Evaluations(continued)

(Unit: %, points)

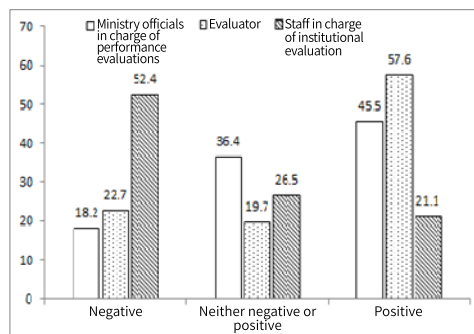
Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Effectiveness as means of performance monitoring	Total	5.8	10.7	9.4	22.3	29.5	20.5	1.8	4.3
	Ministry officials in charge of performance evaluations	9.1	0.0	9.1	9.1	36.4	36.4	0.0	5.1
	Evaluators	0.0	9.1	1.5	6.1	34.8	43.9	4.5	5.2
	Staff in charge of institutional evaluation	8.2	12.2	12.9	30.6	26.5	8.8	0.7	3.6

Source: Present study

Among the three groups, the evaluator group reported the most positive perceptions about the efficacy of performance management evaluation, whereas the staff in charge of institutional evaluation reported the most negative perceptions about the efficacy. The evaluator group gave the highest scores to contribution to accountability (5.3) and efficiency (5.3), and the lowest score to autonomy (4.5). On the other hand, the staff in charge of institutional evaluation gave the highest score to contribution to accountability (4.1), and the lowest score to autonomy (3.3). Most respondents had positive perceptions about a management performance evaluation's contribution to enhancing accountability, and negative perceptions about its contribution to enhancing autonomy.

Figure 2_Perceptions About Contribution to Accountability by Survey Group

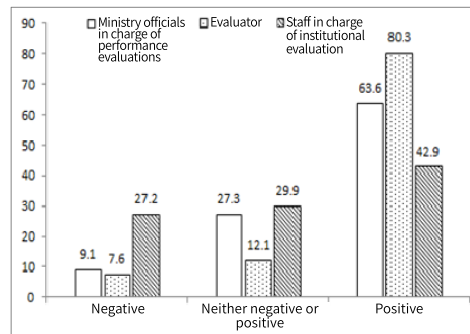
(Unit: %)



Source: Present study

Figure 3_Perceptions About Contribution to Autonomy by Survey Group

(Unit: %)



Source: Present study

2. Evaluation Process and Operation

Management evaluation of non-classified public institutions involves various players who supervise, implement, and receive the evaluation, each required to perform different roles and functions. Evaluation also consists of various activities including report preparation and on-site visit-on-site reviews. Forming an evaluation group of experts also constitutes a key evaluation activity. The survey respondents answered questions about the evaluation roles and activities at different stages of evaluation, and the respondents' answers and assessments are discussed below.

A. Understanding of Evaluation and Support from Institutions

We first looked into whether staff in charge of evaluation of non-classified public institutions subject to evaluation understand the purpose, goal, categories, and key indicators of the management evaluation. The staff in charge of institutional evaluation positively rated their own understanding of the purpose of management evaluation at 5.9. The ministry officials in charge of performance evaluations and evaluators gave higher scores at 6.3 and 6.1, respectively, indicating that institutions have a good understanding of the purpose of management evaluation. In the early days of the management performance evaluation of non-classified public institutions, which was adopted in 2014, performance evaluation encountered various issues caused by the lack of understanding and acceptance of the purpose and goal of the evaluation. The findings show that the level of understanding has significantly improved.

The questions about the understanding of evaluation categories and indicators produced similar results. Overall, the respondents rated the level of understanding at evaluated institutions at around 6. However, it should be noted that, while the ministry officials in charge of performance evaluations did not give negative answers regarding institutions' understanding of evaluation purpose, categories, and indicators, some evaluators and staff in charge of institutional evaluation gave negative answers to the same questions. In addition, the average score for understanding of evaluation categories and indicators (5.8) was lower than the average score for understanding of evaluation purpose (6.0), indicating a somewhat negative assessment of institution members' understanding of the specifics of management evaluation. Another noteworthy finding is that there exists a ten percent point gap between the percentage of staff in charge of institutional evaluation who chose "strongly agree" for the two questions and the percentage of the evaluators and the ministry officials in charge of performance evaluations who chose the same answer for the same questions.

Table 2_ Institution Members' Understanding of Management Evaluation and Evaluation System

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Management evaluation purpose: level of understanding	Total	0.0	0.4	1.3	6.7	11.2	51.8	28.6	6.0
	Ministry officials in charge of performance evaluations	0.0	0.0	0.0	0.0	9.1	54.5	36.4	6.3
	Evaluator	0.0	0.0	1.5	6.1	9.1	47.0	36.4	6.1
	Staff in charge of institutional evaluation	0.0	0.7	1.4	7.5	12.2	53.7	24.5	5.9
Evaluation categories and indicators: level of understanding	Total	0.0	0.4	1.8	8.0	16.1	50.0	23.7	5.8
	Ministry officials in charge of performance evaluations	0.0	0.0	0.0	0.0	27.3	45.5	27.3	6.0
	Evaluator	0.0	0.0	3.0	7.6	12.1	43.9	33.3	6.0
	Staff in charge of institutional evaluation	0.0	0.7	1.4	8.8	17.0	53.1	19.0	5.8

Source: Present study

As for the level of institution leaders' interest in management evaluation, the respondents reported an average score of 5.7 out of 7, which is significantly positive. Eighty-three percent of the staff in charge of institutional evaluation answered that their leaders are interested in management evaluation. This finding can be explained by the fact that institution leaders are responsible for the management performance of their institutions, and their incentives and disincentives are directly affected by the same. In fact, the incentive structure of the management performance evaluation of non-classified public institutions is focused on institution leaders, more than on other members of the institutions.

On the other hand, the respondents gave lower scores to questions regarding the level of support for, and the priority of, management performance evaluations. Ministry members rated the level of support at 5.0 and the priority level at 4.7. The findings indicate that the level of actual support and priority falls behind the high interest in evaluation.

Table 3_ Institution Leaders' Interest in and Support for Management Evaluation, and Its Priority in Leaders' Management Decisions

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Leaders' interest	Total	1.8	3.6	3.6	8.5	14.7	35.7	32.1	5.7
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	9.1	9.1	27.3	45.5	5.8
	Evaluator	0.0	1.5	6.1	10.6	16.7	39.4	25.8	5.6
	Staff in charge of institutional evaluation	2.7	4.1	2.7	7.5	14.3	34.7	34.0	5.7
Leaders' support	Total	1.8	5.8	8.5	13.8	21.9	30.8	17.4	5.1
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	9.1	18.2	45.5	18.2	5.5
	Evaluator	0.0	0.0	10.6	13.6	28.8	28.8	18.2	5.3
	Evaluation staff at institutions Staff in charge of institutional evaluation	2.7	8.2	8.2	14.3	19.0	30.6	17.0	5.0
Priority in leaders' management decisions	Total	3.1	8.0	8.9	18.8	23.2	27.7	10.3	4.8
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	18.2	36.4	18.2	5.3
	Evaluator	0.0	7.6	10.6	19.7	30.3	27.3	4.5	4.7
	Staff in charge of institutional evaluation	4.8	8.2	8.8	18.4	20.4	27.2	12.2	4.7

Source: Present study

The perceptions and cooperation within the institutions also constitutes a key element in fostering a supportive environment for staff in charge of institutional evaluation. When asked about perceptions about the significance of management evaluation within the institutions, the respondents reported an average score of 4.7, which is slightly on the positive side. However, we need to look at the gaps between the three groups. While the ministry officials in charge of performance evaluations and the evaluators rated institutions' perceptions at around 5.5, the average score reported by institution members was 4.3. In addition, around

ten percent of the ministry officials in charge of performance evaluations and the evaluators gave negative responses to the question. Among the staff in charge of institutional evaluation, the percentage of negative responses was three times as high at 31.0 percent.

The staff in charge of institutional evaluation gave even more negative responses to the level of cooperation within the institutions. When asked whether other departments within the institutions are interested and cooperative in management evaluation, institution members reported an average score of 3.9, and 35.4 percent of them gave positive answers while 40.1 percent responded negatively. The findings show that the perceived significance of management evaluation within institutions is not greater than the perceived significance outside the institutions, and the level of support and cooperation within the institutions is even lower.

Table 4_Perceived Significance and Level of Support Within Institutions

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Perceived significance within institutions	Total	4.0	10.3	10.3	18.8	15.6	24.6	16.5	4.7
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	9.1	27.3	36.4	5.5
	Evaluator	0.0	1.5	10.6	10.6	16.7	31.8	28.8	5.5
	Staff in charge of institutional evaluation	6.1	14.3	10.9	22.4	15.6	21.1	9.5	4.3
Cooperation within institutions	Staff in charge of institutional evaluation	6.1	17.0	17.0	24.5	16.3	15.6	3.4	3.9

Source: Present study

All three groups gave negative answers to the level of resources secured for evaluation. When asked whether the institutions have sufficient budget for management evaluation, the staff in charge of institutional evaluation gave an average score of 3.0 (corresponding to “somewhat disagree”). The majority of the staff in charge of institutional evaluation also chose “neither agree nor disagree,” “somewhat disagree,” “disagree,” or “strongly disagree” for questions about the level of workforce and resources committed to management evaluation. The responses from evaluators and ministry members were not particularly positive either, although it should be noted that they do not have access to accurate information about the status of evaluation resources at the institutions.

Table 5_Evaluation Budget, Workforce, and Resources

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Budget for evaluation	Total	14.7	26.3	22.8	24.6	4.5	6.3	0.9	3.0
	Ministry officials in charge of performance evaluations	0.0	9.1	36.4	18.2	9.1	18.2	9.1	4.2
	Evaluator	12.1	31.8	27.3	21.2	1.5	4.5	1.5	2.9
	Staff in charge of institutional evaluation	17.0	25.2	19.7	26.5	5.4	6.1	0.0	3.0
Workforce for evaluation	Total	13.4	24.1	12.1	21.9	7.6	14.7	6.3	3.6
	Ministry officials in charge of performance evaluations	0.0	18.2	18.2	63.6	0.0	0.0	0.0	3.5
	Evaluator	3.0	12.1	18.2	33.3	16.7	15.2	1.5	4.0
	Staff in charge of institutional evaluation	19.0	29.9	8.8	13.6	4.1	15.6	8.8	3.4
Resources for evaluation	Total	12.5	21.4	12.9	24.1	12.1	11.6	5.4	3.6
	Ministry officials in charge of performance evaluations	0.0	18.2	18.2	54.5	0.0	9.1	0.0	3.6
	Evaluator	0.0	10.6	19.7	34.8	18.2	15.2	1.5	4.1
	Staff in charge of institutional evaluation	19.0	26.5	9.5	17.0	10.2	10.2	7.5	3.3

Source: Present study

The above survey finding showed that, compared with the stakeholders' interest in and understanding of management performance evaluation, there exist more problems in terms of internal perceptions and support and evaluation budget, workforce, and resources. The staff in charge of institutional evaluation gave the most negative responses, which seems to reflect the difficulties faced by them when the management evaluation system is not expected to provide any effective incentive for institution members.

B. Functions and Activities at Different Stages of Evaluation

The preparation process for management evaluations consists of various activities, which includes the development and distribution of an evaluation manual, the preparation of institution reports based on the manual, the training of relevant staff, and consulting from

external experts. An evaluation manual holds particular importance for institutions, as it informs the direction of their management and efforts and sets the criteria for management evaluation.

Normally, an evaluation manual is prepared a year before the target year of evaluation (t_n-1). In the target year (t_n), institutions establish plans for their businesses based on the manual. In the following year (t_n+1), they are evaluated for their management performance. Therefore, an institution's businesses and its preparation for evaluation are affected by when an evaluation manual is completed. When asked whether evaluation manuals were completed before the beginning of target years of evaluation, 42.0 percent of the respondents, and 55.1 percent of the staff in charge of institutional evaluation, answered that they were not. Evaluators were not asked this question, as only some evaluators are involved in the preparation and revision of evaluation manuals.

Of the staff in charge of institutional evaluation who answered that evaluation manuals were not completed before the beginning of the target years, 43.2 percent answered that the manuals were completed eight to nine months after the beginning of the target years, and 29.6 percent answered that they were completed six to seven months after. The MOEF has yet to provide specific guidelines for evaluation manuals. However, it has been speculated that the completion of evaluation manuals for non-classified public institutions was delayed because many of the manuals were completed after the completion of evaluation manuals for public corporations and quasi-governmental institutions, and some evaluation manuals were not completed by the beginning of target years because of the need to add new evaluation indicators required by new government policies. The respondents' answers confirm that speculation.

When asked whether evaluation manuals helped them with management evaluation, the respondents gave positive answers. The usefulness of manuals perceived by ministry officials in charge of performance evaluations and evaluators who prepare and distribute the manuals was somewhat higher than the usefulness perceived by staff in charge of institutional evaluation. Therefore, it is probable that the above findings reflect the different stakes that the respective groups have in management evaluation.

Table 6_ Usefulness of the Evaluation Manual

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	1.3	1.3	6.3	15.6	25.0	40.2	10.3	5.2
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	9.1	9.1	45.5	36.4	6.1
Evaluator	0.0	0.0	7.6	12.1	18.2	47.0	15.2	5.5
Staff in charge of institutional evaluation	2.0	2.0	6.1	17.7	29.3	36.7	6.1	5.0

Source: Present study

To questions asking whether relevant ministries and management evaluation groups provide sufficient support, information, and training for management evaluation, the respondents gave an average score of 3.8. By respondent group, the ministry officials in charge of performance evaluations, the evaluators, and the staff in charge of institutional evaluation reported average scores of 3.5, 4.6, and 3.4, respectively. The majority (54.4 percent) of the staff in charge of institutional evaluation gave negative responses, and the percentage of positive responses was the highest in the evaluator group. On the other hand, 54.4 percent of the evaluators answered that sufficient information and training are provided. The findings show a significant gap between the perceptions of the evaluators and the evaluatees.

Table 7_ Sufficiency of Information and Training for Management Evaluation

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	5.8	15.6	24.1	23.2	13.4	16.1	1.8	3.8
Ministry officials in charge of performance evaluations	27.3	18.2	9.1	9.1	9.1	18.2	9.1	3.5
Evaluator	1.5	4.5	18.2	21.2	18.2	31.8	4.5	4.6
Staff in charge of institutional evaluation	6.1	20.4	27.9	25.2	11.6	8.8	0.0	3.4

Source: Present study

While the staff in charge of institutional evaluation did not feel that institution members are being given a sufficient amount of training or access to information, they responded that the training and information they do receive are useful in preparing for evaluations. The average score across all respondents was 5.0, showing that all three groups were particularly positive about the usefulness of briefing sessions at institutions and workshops. The percentage of positive responses was 67.9 percent, which was five times as high as the percentage of negative responses (13.0 percent). The findings indicate that institutional efforts to provide more training and information and raise their quality and usefulness can greatly facilitate the institutions' efforts to prepare for evaluations.

Table 8_Usefulness of Workshops and Briefing Sessions

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	1.3	5.4	6.3	19.2	24.6	35.3	8.0	5.0
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	9.1	27.3	45.5	18.2	5.7
Evaluator	0.0	4.5	4.5	10.6	16.7	48.5	15.2	5.5
Staff in charge of institutional evaluation	2.0	6.1	7.5	23.8	27.9	28.6	4.1	4.7

Source: Present study

Other than official training and information provided by evaluating institutions, some non-classified public institutions were found to retain external consultants to prepare for evaluations. Of the staff in charge of institutional evaluation, 44.2 percent answered that their institutions utilized external consulting services, which is not an insignificant percentage given the fact that some ministries recommended against relying on external consulting.

Table 9_Use of External Consulting

(Unit: %)

Respondent type	Yes	No	Total
Staff in charge of institutional evaluation	44.2	55.8	100.0

Source: Present study

Among the staff in charge of institutional evaluation that did utilize external consulting, 76.9 percent reported that it helped them prepare for evaluations. It suggests that, in the course of preparation, institutions may be highly interested in, or incentivized to utilize, external consulting services. It should be noted that external consulting is not a requirement; it is an optional choice aimed at lowering the burden of preparing for evaluations. Therefore, some institutions may be in better financial positions to choose the option than others, which may undermine the fairness of the evaluation results. This issue suggests a need to simplify the evaluation processes and provide more training and support within the evaluation system.

Table 10_Usefulness of External Consulting

(Unit: %)

Respondent type	Yes	No	Total
Staff in charge of institutional evaluation	76.9	23.1	100.0

Source: Present study

One of the key outputs of preparation for management performance evaluation is the management performance report of each institution. During the evaluations, these reports provide evaluators with essential information about the evaluated institutions. Therefore, to ensure accurate evaluations, management performance reports need to be aligned with the relevant evaluation indicators. When asked whether management performance reports are being aligned with evaluation indicators, the respondents reported an overall average score of 5.0, indicating that reports are being prepared in alignment with evaluation indicators and evaluation manuals. The percentages of positive responses were similar across the three groups: 72.7 percent among the ministry officials in charge of performance evaluations, 62.1 percent among the evaluators, and 63.8 percent among the staff in charge of institutional evaluation. However, the percentages of negative responses were different. Only 6.8 percent of the staff in charge of institutional evaluation were negative or cautious about the quality of performance reports, whereas 18.2 percent of the evaluators gave negative responses to the same question.

Table 11_Quality of Performance Management Reports

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	1.3	5.4	6.3	19.2	24.6	35.3	8.0	5.0
Ministry officials in charge of performance evaluations	0.0	0.0	9.1	18.2	36.4	18.2	18.2	5.2
Evaluator	0.0	4.5	13.6	19.7	19.7	39.4	3.0	4.8
Staff in charge of institutional evaluation	0.7	2.7	3.4	29.3	16.3	40.8	6.8	5.1

Source: Present study

The staff in charge of institutional evaluation were found to think that, during evaluations, they are not given sufficient opportunities to ask questions to ministry representatives or evaluators. While 76.9 percent of the staff in charge of institutional evaluation answered that the relevant ministries or evaluation groups did not operate a help desk, 75.8 percent of the evaluators answered that they do operate help desks. This discrepancy may result from several factors: actual lack of help desk availability, lack of publicization or efficient operation regarding help desks, and possible gap in expectations for the scope and depth of questions and answers exchanged between evaluators and evaluatees. Evaluating institutions need to ramp up the efforts to narrow such gaps.

Table 12_Availability of Help Desk

(Unit: %)

Respondent type	Yes	No	Total
Total	39.7	60.3	100.0
Ministry officials in charge of performance evaluations	45.5	54.5	100.0
Evaluator	75.8	24.2	100.0
Staff in charge of institutional evaluation	23.1	76.9	100.0

Source: Present study

On-site reviews are considered as one of the key stages of the evaluation process. However, some commentators have pointed out that such reviews may lay extra burden on the evaluated institutions. On the other hand, many evaluators stress the need to verify information and check facts by visiting the evaluated institutions in person. In this survey, the staff in charge of institutional evaluation were neutral about the need for on-site reviews, whereas the ministry officials in charge of performance evaluations and the evaluators were positive towards such need. Of the evaluators, 95.5 percent agreed that on-site reviews are necessary, while only 44.2 percent of the staff in charge of institutional evaluation gave positive responses, showing a sizable gap between evaluators and evaluatees.

Table 13_Necessity of On-site reviews

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	5.4	9.8	7.1	16.5	14.7	29.0	17.4	4.8
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	18.2	0.0	63.6	18.2	5.8
Evaluator	0.0	1.5	1.5	1.5	10.6	37.9	47.0	6.2
Staff in charge of institutional evaluation	8.2	14.3	10.2	23.1	17.7	22.4	4.1	4.1

Source: Present study

To the question of whether on-site reviews affect evaluation results, the three groups gave positive responses (average score of 5.3). The staff in charge of institutional evaluation and the evaluators seem to feel the effect of on-site reviews more acutely than the ministry officials in charge of performance evaluations. It should be noted that while none of the ministry officials in charge of performance evaluations or the evaluators chose negative answers to the question, some staff in charge of institutional evaluation reported that the reviews do not have any effect.

The above findings show that the ministry officials in charge of performance evaluations and the evaluators perceive on-site reviews as events required for accurate evaluation. While the majority of staff in charge of institutional evaluation share the other groups' opinion, some of them tend to perceive them as burdens and try to evade them.

Table 14 Effects of On-site reviews on Performance Evaluation and Grading

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	0.9	2.7	4.0	16.1	28.6	32.6	15.2	5.3
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	9.1	27.3	27.3	36.4	5.9
Evaluator	0.0	0.0	0.0	7.6	25.8	43.9	22.7	5.8
Staff in charge of institutional evaluation	1.4	4.1	6.1	20.4	29.9	27.9	10.2	5.0

Source: Present study

On-site reviews can have the expected effects when evaluators and evaluatees effectively communicate with each other, because on-site reviews are aimed at checking facts that cannot be verified from performance reports. To the question asking about the effectiveness of communication during on-site reviews, the ministry officials in charge of performance evaluations and the evaluators reported average scores of 5.6 and 5.5, respectively. On the other hand, the average reported by the staff in charge of institutional evaluation was around one point lower at 4.3. In addition, while the percentages of positive responses were 72.7 percent and 83.3 percent among the ministry officials in charge of performance evaluations and the evaluators, respectively, only 42.9 percent of the staff in charge of institutional evaluation answered that they communicate effectively during on-site reviews. A similar discrepancy could be observed with the percentages of negative responses. Only 1.5 percent of the evaluators, and none of the ministry officials in charge of performance evaluations, gave negative responses, whereas 27.9 percent of the staff in charge of institutional evaluation felt a lack of effective communication.

Such a discrepancy in the perceived effectiveness of communication may explain why staff in charge of institutional evaluation feel on-site reviews are burdensome. In fact, in the focus group interview (FGI) with staff in charge of institutional evaluation, it was pointed out that evaluators focus on fact-checking directly required for their evaluation, rather than trying to understand the overall situation at the evaluated institutions. For this reason, evaluators often fail to gain a comprehensive understanding of the motivations and backgrounds behind the evaluated institutions' decisions. In such cases, the evaluated institutions may feel that they did not communicate in an effective manner, in the sense that the evaluators did not consider the real issues that the institutions wished to convey. However, given the positive responses from the evaluators, on-site reviews do seem to have contributed to achieving the objectives of performance evaluations.

Table 15_Effectiveness of Communication during On-site reviews

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	1.8	7.6	9.4	25.0	18.8	32.1	5.4	4.7
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	27.3	0.0	54.5	18.2	5.6
Evaluator	0.0	1.5	0.0	15.2	21.2	56.1	6.1	5.5
Staff in charge of institutional evaluation	2.7	10.9	14.3	29.3	19.0	19.7	4.1	4.3

Source: Present study

The findings show that staff in charge of institutional evaluation feel various types of burden in the course of preparing and receiving performance evaluations. When asked about the overall burden from preparing for evaluations, the staff in charge of institutional evaluation reported a significantly high average score at 6.4. In addition, 95.2 percent of them answered that they have felt such burden at least to a degree. The highest burden seems to come from having to prepare performance reports. The average score for the question about the burden of report preparation was 6.5 among the staff in charge of institutional evaluation, of whom 97.3 percent agreed that report preparation was burdensome. They reported lower average scores and percentages of positive responses for the question about burdens coming from on-site reviews and during evaluations, although the figures were still significantly high at 6.1 and 93.9 percent, respectively.

Table 16_Evaluation Burdens During Different Stages of Evaluation

(Unit: %, points)

Respondent type	Question	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Evaluation staff at institutions	Overall burden	0.0	0.7	0.0	4.1	8.2	27.9	59.2	6.4
	Burden from report preparation	0.0	0.0	0.7	2.0	6.8	23.1	67.3	6.5
	On-site review preparation and during evaluations	0.7	0.7	0.7	4.1	14.3	34.7	44.9	6.1

Source: Present study

Evaluation teams are formed for management performance evaluations. These teams consist of management experts, who evaluate the overall strategies and management

practices, and experts in each of the key business areas of the evaluated institutions. In some cases, evaluators' capabilities and expertise are questions. In this survey, we asked the ministry officials in charge of performance evaluations and institutions about their opinions on the expertise of management experts and area-specific experts.

The ministry officials in charge of performance evaluations rated the expertise of management experts at 5.9, which implies a positive perception toward evaluators expertise and capabilities. The staff in charge of institutional evaluation reported a neutral average score at 4.1. While the responses from the staff in charge of institutional evaluation seem to be less positive, the percentage of positive answers (44.2 percent) exceeds the percentage of negative answers (32.0 percent) by 12.2 percent points.

As for area-specific experts, their expertise was positively rated at 5.6 by the ministry officials in charge of performance evaluations. On the other hand, the average score reported by the staff in charge of institutional evaluation was somewhat negative at 3.7. The percentage of negative responses among the latter group was 41.5 percent, which is 7.5 percent points higher than the percentage of positive responses (34 percent). While the responses do not differ starkly between the two groups of evaluators, both the staff in charge of institutional evaluation and the ministry officials in charge of performance evaluations seem to be more positive toward the expertise of management experts than toward area-specific experts.

Table 17_Expertise of Evaluators

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Management experts	Total	6.3	8.9	14.6	22.2	22.2	24.7	1.3	4.2
	Ministry officials in charge of performance evaluations	0.0	0.0	0.0	0.0	18.2	72.7	9.1	5.9
	Staff in charge of institutional evaluation	6.8	9.5	15.6	23.8	22.4	21.1	0.7	4.1
Area specific experts	Total	10.8	12.0	16.5	22.8	22.2	15.2	0.6	3.8
	Ministry officials in charge of performance evaluations	0.0	0.0	9.1	0.0	18.2	63.6	9.1	5.6
	Staff in charge of institutional evaluation	11.6	12.9	17.0	24.5	22.4	11.6	0.0	3.7

Source: Present study

We also asked the ministry officials in charge of performance evaluations and the evaluators about the expertise and capabilities gap among evaluators. The average score across all respondents was 4.9, which indicates that some gap exists. Those that answered that such gap exists were 54.6 percent among ministry officials in charge of performance evaluations, whereas the percentage was 62.7 percent in the evaluator group.

Table 18_Capabilities Gap among Evaluators

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	1.3	2.6	5.2	28.6	28.6	27.3	6.5	4.9
Ministry officials in charge of performance evaluations	9.1	0.0	0.0	36.4	9.1	36.4	9.1	4.8
Evaluator	0.0	3.0	6.1	27.3	31.8	25.8	6.1	4.9

Source: Present study

Such a gap does not necessarily have a negative impact on evaluations. However, each evaluation group needs to organize sub-organizations (teams) to share their members' expertise and experiences. We also asked the evaluator group whether evaluators are assigned to different evaluation areas in accordance with their areas of expertise and majors. The evaluators reported an average score of 5.2, and 75.8 percent of them answered that evaluators are being assigned in a reasonable manner. However, 9.1 percent of them were skeptical about the reasonableness of current assignment practices.

Table 19_Reasonableness of Evaluator Assignment

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Evaluator	1.5	6.1	1.5	15.2	24.2	37.9	13.6	5.2

Source: Present study

To the question about whether evaluators are monitored for their evaluation activities after the official conclusion of the evaluations, the respondents reported an average score of 3.2. Among the ministry officials in charge of performance evaluations, only 27.3 percent

answered that such post-evaluation monitoring is carried out. The percentage was 19.0 percent among the staff in charge of institutional evaluation. In both groups, the majority of respondents were not aware of whether post-evaluation monitoring is being conducted. Given the fact that the organization and operation of evaluation groups are key determinants of evaluation activities and results, the government needs to provide more support for, and take higher interest in, the management and operation of evaluation groups.

Table 20_Post-Evaluation Monitoring of Evaluators' Activities

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	19.0	20.3	17.1	24.1	8.9	8.2	2.5	3.2
Ministry officials in charge of performance evaluations	0.0	54.5	0.0	18.2	9.1	9.1	9.1	3.5
Staff in charge of institutional evaluation	20.4	17.7	18.4	24.5	8.8	8.2	2.0	3.2

Source: Present study

Most ministries hold jurisdiction over less than ten non-classified public institutions, which causes issues with the efficiency of having each ministry organize and conduct its own evaluation groups and evaluations. To address this issue, joint evaluations among ministries can be considered as a way to reduce evaluation cost and burden. Joint evaluations among ministries with jurisdiction over a limited number of evaluations are expected to be particularly effective in reducing fixed expenses for each institution, rendering evaluations less burdensome, and raising their efficiency. We asked the stakeholders whether such joint evaluation is necessary.

The ministry officials in charge of performance evaluations reported an average score of 4.8, which is close to “somewhat agree.” The staff in charge of institutional evaluation reported the lowest average score at 3.3. The evaluators were found to be neutral about joint evaluation. In terms of percentage, 54.5 percent of the ministry officials in charge of performance evaluations, 39.4 percent of the evaluators, and 25.2 percent of the staff in charge of institutional evaluation responded that joint evaluation is necessary.

Table 21_Necessity of Joint Evaluation among Ministries

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	13.8	21.9	12.1	21.4	9.8	16.5	4.5	3.6
Ministry officials in charge of performance evaluations	0.0	9.1	9.1	27.3	18.2	18.2	18.2	4.8
Evaluator	4.5	27.3	7.6	21.2	12.1	22.7	4.5	4.0
Staff in charge of institutional evaluation	19.0	20.4	14.3	21.1	8.2	13.6	3.4	3.3

Source: Present study

However, as non-classified public institutions are engaged in a wide range of activities, joint evaluation of their specific businesses may not be as essential or even feasible as joint evaluation of their general management. For this reason, we asked the respondents whether it would be necessary to evaluate general management through joint evaluation, while specific businesses are separately evaluated by each ministry. The average score was 5.3 for the ministry officials in charge of performance evaluations, 4.2 for the evaluators, and 3.6 for the staff in charge of institutional evaluation. The overall response was somewhat more positive than the response to the question about the necessity of all-encompassing joint evaluation. However, the staff in charge of institutional evaluation responded negatively towards joint evaluation.

The positive response from the ministry officials in charge of performance evaluations seems to be attributable to their positive perception toward the benefits of joint evaluation in terms of efficient management. On the other hand, staff in charge of institutional evaluation are more acutely aware of the unique characteristics and situations at their institutions. They may have responded negatively toward joint evaluation because they believe that it is incapable of taking into account the fundamental differences between institutions. It seems that the necessity of joint evaluation needs to be determined based on a balancing between efficient evaluation and respect for diversity among institutions. The relative importance of the two values may vary depending on the factors and situations involved, which is why the adoption of joint evaluation warrants long-term deliberation.

Table 22_Necessity of Joint Evaluation of General Management Only

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	11.6	21.0	8.9	17.0	15.6	21.4	4.5	3.6
Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	18.2	36.4	18.2	5.3
Evaluator	6.1	19.7	9.1	13.6	18.2	30.3	3.0	4.2
Staff in charge of institutional evaluation	15.0	22.4	9.5	18.4	14.3	16.3	4.1	3.6

Source: Present study

3. Evaluation System

A. Categories and Systems

We presented the respondents with eight evaluation categories and asked them to mark up to three categories that they thought were absolutely necessary. The findings are presented in Table 23. The top three categories selected by the ministry officials in charge of performance evaluations are key businesses, social values, and fiscal and budgetary management. The evaluators chose key businesses, management strategy and leadership, and business efficiency, and the staff in charge of institutional evaluation chose key businesses, management strategy and leadership, and social values. All three groups placed the highest priority on the key businesses category, and the management strategy and leadership category and the social values category were ranked 4th or higher in all of the groups.

Table 23_Categories Absolutely Needed to be Evaluated (Multiple Answers Allowed) (Unit: %)

Rank	Ministry officials in charge of performance evaluations		Evaluator		Staff in charge of institutional evaluation	
	Category	Percentage of respondents	Category	Percentage of respondents	Category	Percentage of respondents
1	Key businesses	81.8	Key businesses	87.9	Key businesses	79.6
2	Social values	45.5	Management strategy and leadership	59.1	Management strategy and leadership	53.1
3	Fiscal and budgetary management	45.5	Business efficiency	50.0	Social values	50.3
4	Management strategy and leadership	36.4	Social values	40.9	Organizational and personnel management	40.3
5	Business efficiency	36.4	Fiscal and budgetary management	30.3	Business efficiency	23.8
6	Organizational and personnel management	27.3	Organizational and personnel management	15.2	Remunerations and welfare	21.1
7	Participation and communication	27.3	Remunerations and welfare	12.1	Fiscal and budgetary management	17.0
8	Remunerations and welfare	0.0	Participation and communication	4.5	Participation and communication	14.3

Source: Present study

The respondents placed higher priorities on categories directly associated with improving institutions' performance through autonomous management, such as key businesses and operation. On the other hand, all three groups seemed to think less of the importance of categories not as directly related with performance, such as organizational and personnel management, business efficiency, and remunerations. We also asked the stakeholders about categories that they think require streamlining, but the findings were similar because they equated low-priority categories with categories requiring streamlining.

Table 24_Necessity of Evaluation Focused on Key Projects

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Total	4.5	8.0	7.6	17.0	15.2	33.9	13.8	4.9
Ministry officials in charge of performance evaluations	0.0	9.1	0.0	27.3	9.1	27.3	27.3	5.3
Evaluator	7.6	15.2	10.6	15.2	15.2	25.8	10.6	4.3
Staff in charge of institutional evaluation	3.4	4.8	6.8	17.0	15.6	38.1	14.3	5.1

Source: Present study

Then, we asked whether it is necessary to evaluate the management performance of non-classified public institutions based on their key businesses. The average score across the three groups was 4.9, which corresponds to “somewhat agree.” The ministry officials in charge of performance evaluations reported the highest average score at 5.3, and were closely followed by staff in charge of institutional evaluation, who reported an average score of 5.1. On the other hand, the average score of the evaluator group was 4.3, which is slightly above “neither agree nor disagree.” In terms of percentage, 63.6 percent of the ministry officials in charge of performance evaluations, 51.5 percent of the evaluators, and 68.0 percent of the staff in charge of institutional evaluation reported positive perception toward evaluation focused on key businesses. The percentage of negative responses was 9.1 percent among the ministry officials in charge of performance evaluations, 33.3 percent among the evaluators, and 15.0 percent among the staff in charge of institutional evaluation. While most respondents gave positive answers, not a small number of evaluators expressed their skepticism.

Table 25_Difficulty Level of Key Project Indicators and Difficulty Gap Between Institutions

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Very low	low	Somewhat low low	Moderate	Somewhat high	high	Very high	
Indicator level	Total	0.0	4.0	9.4	42.0	27.2	14.7	2.7	4.5
	Ministry officials in charge of performance evaluations	0.0	0.0	0.0	63.6	27.3	9.1	0.0	4.5
	Evaluator	0.0	10.6	24.2	42.4	16.7	6.1	0.0	3.8
	Staff in charge of institutional evaluation	0.0	1.4	3.4	40.1	32.0	19.0	4.1	4.8

Table 25_ Difficulty Level of Key Project Indicators and Difficulty Gap Between Institutions(continued)
(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Very low	low	Somewhat low low	Moderate	Somewhat high	high	Very high	
Existence of difficulty gap among institutions	Total	1.8	2.2	2.2	20.5	30.8	31.7	10.7	5.1
	Ministry officials in charge of performance evaluations	0.0	18.2	0.0	27.3	36.4	18.2	0.0	4.4
	Evaluator	0.0	0.0	1.5	18.2	42.4	31.8	6.1	5.2
	Staff in charge of institutional evaluation	2.7	2.0	2.7	21.1	25.2	32.7	13.6	5.2

Source: Present study

The average scores for the question about the difficulty levels of key project indicators were 4.5 across all groups and 4.5 and 4.8 for the ministry officials in charge of performance evaluations and institutions, respectively. The evaluator group reported an average score of 3.8, which means the majority of the evaluators chose “somewhat low” or “moderate.” Few respondents answered that the difficulty level of the key project indicators was too high or too low, and evaluators rated the difficulty level slightly higher than the evaluatees.

Given the findings, the difficulty level does not seem to be a serious issue. However, we need to look into the respondents’ answers to the question regarding the difficulty gap between institutions. The average score across all respondents was 5.1, and 73.2 percent of the respondents answered that there exists a difficulty gap. The evaluators and the staff in charge of institutional evaluation reported the same average score at 5.2. If institutions determine that a difficulty gap between institutions is a major factor affecting evaluation results or grading, it may affect the acceptability of performance evaluations.

B. Evaluation Cycle

To the question about the appropriateness of the current one-year evaluation cycle, the respondents’ opinions starkly varied depending on their roles in the evaluation process. The current cycle was deemed appropriate by 81.81 percent of the ministry officials in charge of performance evaluations and 75.8 percent of the evaluators, whereas only 26.5 percent of the staff in charge of institutional evaluation agreed with the assessment. It means that 73.5 percent of the staff in charge of institutional evaluation did not agree that the annual cycle is appropriate. The findings seem to reflect the burden felt by the institutions. They also

indicate that the staff consider related issues including the appropriate evaluation cycle for long and medium-term performance of key businesses.

Table 26 Appropriateness of One-Year Evaluation Cycle

(Unit: %)

Respondent type	Appropriate	Not appropriate	Total
All respondents	43.8	56.3	100.0
Ministry officials in charge of performance evaluations	81.8	18.2	100.0
Evaluator	75.8	24.2	100.0
Staff in charge of institutional evaluation	26.5	73.5	100.0

Source: Present study

To the respondents who answered that the one-year cycle is not appropriate, we asked which cycle they consider appropriate. The findings indicate that the majority of staff in charge of institutional evaluation prefer a three-year cycle, while the ministry officials in charge of performance evaluations preferred a two-year cycle. Only 25.0 percent of the evaluators answered that a three-year cycle is appropriate, and 56.3 percent preferred a two-year cycle.

Table 27 Appropriate Evaluation Cycle

(Unit: %, points)

Respondent type	2-year	3-year	4-year or longer	No answer	Total
All respondents	41.3	51.6	4.0	3.2	100.0
Ministry officials in charge of performance evaluations	100.0	0.0	0.0	0.0	100.0
Evaluator	56.3	25.0	0.0	18.8	100.0
Evaluation staff at institutions	38.0	56.5	4.6	0.9	100.0
Research institutions	30.6	63.9	5.6	0.0	100.0

Source: Present study

4. Feedback and Evaluation Structure

A. Acceptance and Application

The staff in charge of institutional evaluation reported a low level of acceptance toward management evaluation results. The average score for acceptance of evaluation results reported by the staff in charge of institutional evaluation was 4.3. However, less than half of the group reported that they accept the results (43.5 percent). The finding hardly indicates a high level of acceptance. In addition, 34.0 percent answered that they neither accept nor object, and 22.4 percent

answered that they do not accept the results. Of those staff in charge of institutional evaluation who accepted evaluation results, the majority answered that they “somewhat accept” the results.

Acceptance level varies depending on evaluation categories. The percentage of respondents who accept the evaluation results regarding the business strategy category and the business management category was 40.8 percent for both categories. The lowest level of acceptance was reported regarding the key businesses category, at 36.7 percent. For this category, 33.3 percent of the respondents answered they do not accept the evaluation results, which was higher than the percentages of respondents who did not accept the evaluation results regarding the business strategy category and the business management category.

Table 28 Acceptance of Evaluation Results at Institutions

(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly object	Object	Somewhat object	Neither accept nor object	Somewhat accept	Accept	Strongly accept	
Evaluation results in general	Total	1.8	7.6	9.8	26.3	23.7	29.0	1.8	4.6
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	18.2	36.4	18.2	5.3
	Evaluator	0.0	4.5	9.1	10.6	25.8	48.5	1.5	5.1
	Staff in charge of institutional evaluation	2.7	8.8	10.9	34.0	23.1	19.7	0.7	4.3
Business strategy	Total	1.8	8.5	10.7	28.1	23.7	25.0	2.2	4.5
	Ministry officials in charge of performance evaluations	0.0	18.2	0.0	27.3	9.1	36.4	9.1	4.7
	Evaluator	0.0	3.0	7.6	16.7	27.3	45.5	0.0	5.0
	Staff in charge of institutional evaluation	2.7	10.2	12.9	33.3	23.1	15.0	2.7	4.2
Business experts	Total	1.3	8.5	9.8	26.3	23.2	29.0	1.8	4.6
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	18.2	45.5	9.1	5.2
	Evaluator	0.0	3.0	9.1	7.6	30.3	50.0	0.0	5.2
	Staff in charge of institutional evaluation	2.0	10.9	10.9	35.4	20.4	18.4	2.0	4.2
Area specific	Total	3.6	6.7	14.7	26.8	22.8	22.8	2.7	4.4
	Ministry officials in charge of performance evaluations	0.0	9.1	0.0	18.2	18.2	45.5	9.1	5.2
	Evaluator	1.5	0.0	7.6	21.2	28.8	39.4	1.5	5.0
	Staff in charge of institutional evaluation	4.8	9.5	19.0	29.9	20.4	13.6	2.7	4.0

Source: Present study

The staff in charge of institutional evaluation and the evaluators were found to have more positive perceptions toward the acceptance level of evaluation results at institutions. The idea that institutions accept evaluation results was supported by 75.8 percent of the evaluators and 72.7 percent of the ministry officials in charge of performance evaluations. The wide gap between the two sides may seem insurmountable, but it suggests a need to work toward raising the level of acceptance at evaluated institutions.

Unlike acceptance, the respondents gave more positive responses regarding the application of recommendations suggested by evaluators. Of the staff in charge of institutional evaluation, 63.9 percent answered that they apply evaluation results and evaluators' comments to their management plans. However, this percentage is lower than the 81.9 percent and 68.2 percent reported by the ministry officials in charge of performance evaluations and the evaluators, respectively. Given that applying comments to management plans constitutes one of the basic requirements of the evaluation process, and such application serves as an important factor in the following year's evaluation, 63.9 percent does not seem to represent a high level of application. Only 9.1 percent of the ministry officials in charge of performance evaluations, 13.7 percent of the evaluators, and 15.6 percent of the staff in charge of institutional evaluation gave negative responses to the same question, which shows that the institutions' compliance with the evaluators' comments is far from perfect.

Table 29 Application of Evaluation Results and Evaluators' Comments to Institutions' Management Plans

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly object	Object	Somewhat object	Neither accept nor object	Somewhat accept	Accept	Strongly accept	
Total	2.2	7.1	5.4	19.2	32.1	29.5	4.5	4.8
Ministry officials in charge of performance evaluations	0.0	9.1	0.0	9.1	36.4	27.3	18.2	5.3
Evaluator	0.0	7.6	6.1	18.2	37.9	30.3	0.0	4.8
Staff in charge of institutional evaluation	3.4	6.8	5.4	20.4	29.3	29.3	5.4	4.7

Source: Present study

A low acceptance level or lack of application of recommendations may be attributable to various factors, including the passive attitude of the institutions, lack of incentive, and lack of continuity caused by officials being required to change positions every few years. Another

important cause of the problem is vague recommendations. Vague recommendations tend to be more difficult to apply.

Only 23.1 percent of the staff in charge of institutional evaluation answered that evaluators provide clear comments and recommendations, of whom more than a half chose “somewhat agree.” A majority (53.7 percent) of the group “disagreed” with the statement. To the question about whether evaluators’ comments are helpful in managing their institutions, 40.8 percent of the staff in charge of institutional evaluation answered that they are not, which was higher than the percentage of positive answers (32.7 percent).

According to the findings from the FGI with staff in charge of institutional evaluation, the main reasons cited by the staff in charge of institutional evaluation for not accepting evaluation reports included recommendations based on inaccurate facts or vaguely described recommendations. Many of them also answered that the recommendations often did not reflect the reality of the key businesses of their institutions. The staff in charge of institutional evaluation believe that, even when evaluators lack the expertise in the key businesses of their institutions, they can still provide more acceptable comments if they were to take the time to understand the situation. However, they do not expect it to be possible under the current evaluation system where only a limited time is allowed for on-site reviews.

Table 30_Concreteness and Clearness of Evaluators’ Recommendations

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Ministry officials in charge of performance evaluations	0.0	0.0	18.2	18.2	27.3	27.3	9.1	4.9
Staff in charge of institutional evaluation	10.2	21.8	21.8	23.1	15.6	6.8	0.7	3.4

Source: Present study

Table 31_Usefulness of Evaluators’ Recommendations

(Unit: %, points)

Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
	Strongly disagree	disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	agree	Strongly agree	
Ministry officials in charge of performance evaluations	0.0	0.0	0.0	18.2	36.4	36.4	9.1	5.4
Staff in charge of institutional evaluation	7.5	16.3	17.0	26.5	21.8	10.2	0.7	3.7

Source: Present study

B. Incentives Based on Evaluation Results

Non-classified public institutions do not utilize incentives based on evaluation results as much as public corporations and quasi-governmental institutions do. The latter institutions have worked bonuses based on evaluation results into their wage structure. Only 52.4 percent of the respondents answered that the institutions provide incentives tied with evaluation results. Even fewer respondents (19.0 percent) answered that institution members receive penalties based on evaluation results. In addition, only a small percentage of institutions were found to distribute incentives among departments based on evaluation results (31.3 percent).

Table 32_Incentives Based on, and Use of, Evaluation Results

(Unit: %)

Question	Respondent type	Positive	Negative	Total
Incentives based on evaluation results	Staff in charge of institutional evaluation	52.4	47.6	100.0
Penalties based on evaluation results	Staff in charge of institutional evaluation	19.0	81.0	100.0
Internal distribution of incentives based on evaluation results	Staff in charge of institutional evaluation	31.3	68.7	100.0

Source: Present study

C. Transparency

We also asked questions about the public disclosure of management performance reports and evaluation results. The respondents rated the need for public disclosure of management performance reports at 4.7. The evaluators gave the highest score at 5.3, and the staff in charge of institutional evaluation reported the lowest score at 4.4. Most of the evaluators and the ministry officials in charge of performance evaluations (75.8 percent and 63.7 percent, respectively) agreed that transparency should be improved by publicly disclosing management performance reports.

On the other hand, when asked whether evaluation results should be disclosed, the respondents provided more positive opinions. The average score across all groups was 5.1. As was the case with the disclosure of performance reports, the evaluators gave the highest score at 5.6, and the staff in charge of institutional evaluation reported the lowest score at 4.8. However, even among the staff in charge of institutional evaluation, 59.8 percent agreed with the need to disclose evaluation results. All in all, more than half of the respondents agreed with the need to disclose evaluation results.

Table 33_ Transparency and Disclosure of Management Performance and Evaluation Results
(Unit: %, points)

Question	Respondent type	①	②	③	④	⑤	⑥	⑦	Average score
		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	
Management performance reports	Total	3.1	9.4	9.4	21.0	18.8	27.7	10.7	4.7
	Ministry officials in charge of performance evaluations	0.0	0.0	18.2	18.2	27.3	27.3	9.1	4.9
	Evaluator	0.0	6.1	7.6	10.6	21.2	36.4	18.2	5.3
	Staff in charge of institutional evaluation	4.8	11.6	9.5	25.9	17.0	23.8	7.5	4.4
Evaluation results	Total	2.7	4.0	6.7	18.8	20.5	34.4	12.9	5.1
	Ministry officials in charge of performance evaluations	0.0	0.0	9.1	18.2	36.4	27.3	9.1	5.1
	Evaluator	0.0	3.0	6.1	6.1	21.2	43.9	19.7	5.6
	Staff in charge of institutional evaluation	4.1	4.8	6.8	24.5	19.0	30.6	10.2	4.8

Source: Present study

IV. Policy Directions for Better Evaluation

Through our survey, we were able to identify different levels and directions of perceptions, depending on the roles of the respondents, regarding performance evaluation of non-classified public institutions. Institutions and evaluators have different perceptions toward the level of communication, which suggests a need for qualitative improvement of the operation of the evaluation system. In addition, many respondents answered that evaluation of non-classified public institutions contributes to the accountability and publicness of the institutions rather than their efficiency and autonomy. The findings indicate that the autonomy-first and evaluation /accountability-later principle of the evaluation system is not working as it should. In the following sections, we suggest possible improvements based on the issues and perception gaps identified through the survey.

1. Preparation of Legal Basis of Evaluation

To improve the efficiency of public institution management and expand the autonomy of non-classified public institutions, the government reduced the 32 guidelines regarding public institutions down to 15. We found out that the reduction is being accused of obscuring the legal basis for management performance evaluation of non-classified public institutions. While we agree with the government's intention to expand the discretion of relevant ministries by removing the intention to expand the discreprovisions in the Public Institution Act and the relevant guidelines, the ministries need a legal basis on which they can manage their subsidiary public institutions within their prescribed scope of discretion. A clearer legal basis is required also for the purpose of preventing resistance from institutions and clarifying the responsibility of ministries regarding their discretionary management activities. The management system for public institutions has included multiple layers of delegation from the very outset. For this reason, institutions can exercise their discretion and autonomy only within the scope delimited by the scope of the government's responsibilities as an agent of the people, and the scope of the institutions' responsibility. It should be noted that granting autonomy to non-classified public institutions is not an excuse for a lack of clear legal basis.

2. Streamlined Categories and Indicators

Management performance evaluation of non-classified public institutions have been traditionally carried out based on the evaluation manuals prepared for quasi-governmental institutions. Other than research institutions, non-classified public institutions are evaluated under a system and terms that are similar to those applied to public corporations and quasi-governmental institutions. As the survey findings show, both staff in charge of institutional evaluation and evaluators agree that evaluations should focus on the categories and indicators associated with the key performance of the institutions, such as key businesses and business strategies. Non-classified public institutions without sufficient resources or manpower do not readily accept evaluation results regarding fiscal management or management efficiency. In addition, the demand for streamlining is high for categories or indicators that are not directly associated with the performance of key businesses and focus on regulation and compliance. We need to carefully weigh the benefit of laying significant burdens on non-classified public institutions by scrutinizing their regulatory compliance, given their relatively small size and scope of discretion. Given the fact that different

non-classified public institutions have different natures, the weights given to publicness and efficiency need to be adjusted accordingly. For example, for non-classified public institutions less directly associated with the market, publicness should be accorded more weight during evaluations. However, further discussion is needed to determine whether publicness and social value should be evaluated with separate indicators, or through the performance of the institutions' key businesses.

We believe that compliance with government policies or other systems can be sufficiently managed through monitoring by the relevant ministries, rather than through performance evaluations. The government needs to consider reviewing the business strategy and management indicators and identifying and removing the indicators that are not closely related with the institutions' key businesses. In other words, as achievements in management are improving across all institutions, evaluations need to focus on the key businesses of each institution, if only to ensure that evaluation results better represent different levels of performance among institutions.

While the government tries to streamline some indicators to reduce overlaps and excesses, it only does so by simply merging existing indicators or introducing multi-indicators.

Primarily the government needs to work toward improving the quality of evaluation indicators. The government should also achieve a fair difficulty level for all institutions to improve acceptance. A noteworthy aspect of the performance evaluation is that institutions of different sizes are differently affected by the percentages of quantitative indicators and non-quantitative indicators. A higher percentage of quantitative indicators may work against smaller institutions. Also, when institutions lack management capabilities and resources, some commentators point out that non-quantitative evaluations may not accurately represent the performance levels of the institutions. This demand for streamlined categories and indicators primarily suggests the need for improvement of the evaluation system, and also implies the need for a new evaluation method that considers the diverse and unique needs and circumstances of the institutions.

3. Expansion of Evaluations Tailored to Diverse and Unique Needs and Circumstances

Non-classified public institutions are engaged in a wide range of businesses across diverse areas. Around 30 ministries have non-classified public institutions as their subsidiaries, which shows the diversity of the businesses carried out by these institutions. Despite such diversity, performances of non-classified public institutions have been evaluated based on the MOEF

model developed for public corporations and quasi-governmental institutions. A possible approach is to consider the sizes and resources of the institutions and replace standard evaluation with consulting and on-site support for institutions for which grading is meaningless or standard evaluation is meritless. Due to the wide spectrum of sizes among non-classified public institutions, applying the evaluation system intended for public corporations and quasi-governmental institutions may result in perfunctory evaluation at small-sized institutions, in which case the feedback process cannot be expected to result in meaningful improvements. The Ministry of Culture, Sports and Tourism uses two different models to evaluate its non-classified public institutions: the standard model and the simplified model. It stands as a real-world example of the potential benefits and necessity of diversifying evaluation methods among institutions.

Possible options for evaluation methods tailored for diverse needs and circumstances include: streamlining indicators within the current evaluation system; diversifying evaluation cycles; limiting evaluation targets to institutions for which evaluation yields merit and, for the other institutions, replacing management evaluation with training, consulting, monitoring, audits, and on-site supports; replacing management evaluation with disclosure of project performance; and for institutions with limited manpower or financial resources, replacing institution evaluation with the evaluation of institution leaders

Most non-classified public institutions are small-sized organizations consisting of temporary workers who work on special businesses and government-funded projects. Evaluating them under a similar framework to public corporations or quasi-governmental institutions despite these differences will only undermine their creativity and innovation capabilities.

4. Need for Training and Access to Information

The findings of this study showed us that members of non-classified public institutions experience great burden in the course of preparing for and receiving evaluations. While a significant part of the burden comes from the psychological burden of being on the receiving end of the evaluation, there are tangible factors as well, such as lack of support from and within the institutions. Unlike public corporations and non-classified public institutions, which have gained experience with evaluation for more than 30 years, evaluation of non-classified public institutions did not start until 2014, which means that most non-classified public institutions are inexperienced and still going through trial and error. In particular, lack of information

significantly increases their burdens, financial or otherwise. They lack the knowledge and experience required to compile results, prepare management performance reports, and collect supporting materials in accordance with the goals and key points of each evaluation.

For this reason, against the relevant ministries' recommendations, these institutions retain external consulting services to acquire the information and knowhow required to prepare for evaluations. Granted, relying on these 'private tutors' may benefit institutions with less experience with evaluation. However, if this practice continues and spreads, institutions may have to pay unnecessarily high costs, or the evaluations may derail from their original purpose. Therefore, the government needs to dampen the negative effects of such reliance by providing more support within the official evaluation system. While it applies to all public institutions, it is particularly relevant for non-classified public institutions with limited budgets.

While more than a half of institutions answered that briefing sessions conducted by ministries or evaluation groups were helpful, they do not think that the level of information and training is sufficient. In particular, they feel that they are not given sufficient opportunities to ask questions to ministries and evaluation groups. This is the area where more support could be provided from the evaluating side. By helping institutions prepare performance reports and make other preparations for performance evaluations, ministries and evaluation groups can also acquire the information required to conduct evaluations.

We also found out that, with limited opportunities to meet members of ministries and evaluation groups in person, institutions greatly rely on evaluation manuals when preparing for evaluations. Therefore, developing better manuals and ensuring their timely distribution will help reduce the burden felt by evaluated institutions. Evaluation manuals should be finalized and distributed before the target year of evaluation, so that institutions can use them to compile results and draw up performance reports. When a manual is finalized or revised after the beginning of the target year, it may confuse institutions as they carry out their businesses and cause them to waste their budget, resulting in financial burden. Institutions currently feel that evaluation manuals are finalized too late, which reduces the time available to prepare for evaluations, resulting in increased burden. Budget and other practical issues aside, if the government plans to maintain the current evaluation system for non-classified public institutions, the relevant departments at each ministry or evaluation groups need to provide more training and access to information.

5. More Meaningful On-site reviews

Both non-classified public institutions and evaluators agree that on-site reviews have great impact on evaluation results. During on-site reviews, evaluators verify performance reported by the institution, confirm their efforts for efficient management, and gain other information not provided in the report. Evaluators feel that these activities greatly affect their evaluation decisions. Institutions are also aware of the effect of on-site reviews, as they are reflected in the comments and recommendations in the evaluation reports prepared by evaluators.

For this reason, while evaluators believe that on-site reviews are highly necessary, staff in charge of institutional evaluation have a different view about its necessity. The negative responses from institutions partly come from the perception that on-site reviews are not conducted as they are originally intended. According to the FGI session with staff in charge of institutional evaluation, they feel that on-site reviews do not provide them with enough opportunities to exchange information and opinions with evaluators. Due to the limited preparation period and the short duration of on-site reviews, evaluators do not have enough time to closely review the management status and project details and results at the evaluated institution. Even when they are on-site, despite the need to communicate with the institution members, they do not have enough time for Q&A sessions because they need time to verify additional information required for the evaluation.

Non-classified public institutions and evaluators both acknowledge the effect of on-site reviews because, with the gap narrowing in the quality of performance reports across all institutions, on-site reviews provide evaluators with opportunities to verify the performance reported by the institutions. For this reason, a perfunctory or poorly executed on-site review may undermine the institution's faith in the evaluation results and may cause the institution to refuse to accept the results. More meaningful on-site reviews are required to improve the credibility of the evaluation system, and all stakeholders need to direct their efforts toward that goal. To this end, ministries need to allow sufficient time for Q&A sessions between evaluators and institution members and help evaluators learn about target institutions and their businesses in advance. Evaluators also need to learn about the status and key businesses of each institution beforehand and, during reviews, try their best to hear and understand the information and opinions from the institution.

6. Clearer Recommendations and Comments

Management evaluation is ultimately aimed at improving the efficiency of public institution management, enhancing the performance of their key businesses, and encouraging them to fulfill their social responsibilities. For this reason, the evaluation system includes the feedback process of the evaluation results. The surveyed institutions gave low ratings to the concreteness, clarity, and usefulness of recommendations and comments provided by evaluators. Neither do they proactively apply them to their management plans. Therefore, the quality of evaluation results needs to be improved so as to provide clear recommendations and comments corresponding to each grade. During the FGI with staff in charge of institutional evaluation, some voiced the opinion that evaluators often give recommendations and comments based on misunderstood or inaccurate facts. Some reported cases of difficulty with applying evaluators' recommendations due to their vagueness. To improve the quality of evaluators' recommendations and comments, evaluators need to provide concrete alternatives to improve the relevant institutions' efficiency and practices, rather than providing comments simply for the sake of grading the institutions.

7. Improved Use of Evaluation Results

Compared with public corporations and quasi-governmental institutions, non-classified public institutions were found to be less interested, and to invest less resources, in management evaluation. The evaluation system needs to adopt mechanisms to induce their interest and promote active participation in evaluations. As many institutions have limited resource and manpower to commit to evaluations, it is essential to invoke the assistance of members who are not directly involved in the evaluation process.

In the FGI with evaluation group leaders and members, it was suggested that non-classified public institutions' lack of interest in evaluation may be associated with the lack of binding force of the evaluation results. Many non-classified public institutions do not have incentives or penalties tied to evaluation results. Due to the lack of binding force, institution members do not feel the effect of management evaluation, which in turn reduces the effectiveness of evaluation across all stages of the process. Therefore, the ministries need to take measures to hold institution leaders and members accountable for evaluation results, raise their awareness on the importance of evaluation, and tie evaluation results to department evaluations, remunerations, and the fate of institution leaders.

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Perception of the Measurement and Reporting of Social Value: Public Entities in Korea

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I. Introduction

Today's private enterprises use integrated reporting¹ to disclose information on the activities they perform with the intention of creating social values. The spread of this practice is attributable to the growing awareness that, while private enterprises pursue profits and efficiency by nature, they cannot sustain their businesses without corporate social responsibility (CSR) and creating shared values (CSV). Unlike profit-seeking private enterprises, public entities are designed to pursue public values (social values) that benefit the public and contribute to its growth. The current administration has put forward "restructuring public entities to take the lead in realizing social values" as one of its 100 policy tasks, stressing the social responsibility and publicness of these entities. The administration also revised the criteria for the management evaluation of public entities, in order to shift their focus from profitability

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1 Otherwise known as "sustainability reporting," integrated reporting involves the reporting of social responsibility management in terms of governance, human rights, labor, environment, fair management, consumers, and local communities, in accordance with the international reporting standards put forward by the Global Reporting Initiative (GRI).

to social values. For example, the government included “realization of social values” as a separate indicator for management evaluation, starting with the 2018 management evaluation.

Public entities in Korea tend to report their social contribution outcomes by simply listing the related activities. However, such a simplistic reporting practice makes it difficult to verify and evaluate the social values created by the public entities. For public entities, the creation of social values is a crucial factor in achieving the very purpose of their establishment. However, previous research has not accorded sufficient attention to some of the fundamental questions regarding social values, including what social values public entities should create, and how those values should be measured and reported to stakeholders. To define, categorize, measure, and manage the social values created by public entities, we first need to understand how the public perceives the importance of social values, and the appropriate extent of the measurement and reporting of such values. We also need to ask members of public entities to describe the social values that serve the public purpose of their organization, and to explain how they believe such values should be managed. Surveys asking these questions would provide a good starting point for helping public entities achieve their public purposes by creating social values and managing them in sustainable ways.

For this reason, in this study, we conducted surveys of members of Korea’s public entities and stakeholders outside the organizations (the general public), aimed at understanding their perception of social values pursued by public entities. Specifically, to understand the gap in perception between members of public entities and the public, we surveyed individuals from both groups by asking them questions regarding the importance of social values pursued by public entities, the measurement and reporting of social values, and the preparation guidelines for social value outcome reports. Additionally, we asked members of public entities about the importance accorded to different types of social values by their affiliated entities, and the progress they have achieved regarding the values. For this study, we selected two public entities: Korea Gas Corporation (KOGAS), a market-based public corporation, and Korea Expressway Corporation (KEC), a quasi-market-based public corporation. The external stakeholder (general public) group included accounting professionals, members of research organizations, professors, and students.

The findings of this study provide crucial information for creating a management system designed for the identification, measurement, and outcome reporting of the social values of public entities. They will also provide useful points of reference for public entities developing their outcome evaluation criteria. In this report, Chapter II provides an overview of the theoretical background of this field and previous studies on social values. Chapter III explains

the survey design adopted in this study and analyzes the findings. Chapter IV discusses the implications of the findings. Chapter V summarizes the findings and lays out the conclusions of this study.

II. Theoretical Background and Previous Research

1. Previous Research on Definition of Social Values

The Organization for Economic Co-operation and Development (OECD, 1999) defined social values as a part of its concept of sustainable development. This concept includes valuing people more than capital, stressing openness and members' autonomy, relying on democratic control between members, pursuing universal interests, pursuing social solidarity and responsibility, and working toward sustainable growth. Chae et al. (2009) studied the definition of social enterprises and the actual forms that they take in Korea. Specifically, Chae et al. attempted to propose alternatives to promote social enterprises based on the perceptions of key players involved. Lim (2009) argued that social values are created by people who share specific social and cultural backgrounds, and that the criteria for the distribution of social values should be congruent with the characteristics of the values. Jin (2011) defined social values as "values created by taking actions that affect the matters that the society considers important, in order to improve citizen quality of life and solve social issues."

A number of statutes and bills provide their own definition of social values. Chapter 1, Article 3 of the Bill for the Framework Act on Realization of Social Values by Public Entities define social values as "values that contribute to public interests and the growth of the community in social, economic, environmental, and cultural areas." The Special Act on Promotion and Sales Channel Support for Social Enterprise Products (2016) defines social values as "financial and non-financial benefits created in the course of solving labor, welfare, human rights, environmental, and other issues faced by the community, such as job creation, labor integration, social services, local community regeneration, realization of community interests, and environmental sustainability. According to Article 2 Seoul Special Metropolitan City Ordinance No. 6386, social values are values focused on public interests such as the creation of high quality jobs, the promotion of employment opportunities for vulnerable groups, shared growth and fair trade with vendors, contributions to the local economy, the growth of local communities, and social contributions. The same definition is found in Seoul Public Procurement Innovation Whitepaper (2016). Article 3, Subparagraph 2 of the Bill for

the Framework Act on Social Economy (Bill No. 2001614) defines social values as “social and public interest outcomes that contribute to public interests and the growth of the community through social economic activities in the social, economic, environmental, and cultural areas.”

The Korean Association for Public Administration (2017) defines social values as values with potential contribution to public interests and the growth of the community, and grouped the key social values of the Korean society in 12 areas: human rights, safety, labor, jobs, health and welfare, support for vulnerable groups, shared growth, local economy, community restoration, responsible and ethical management, environment, and participation. The Ministry of the Interior and Safety (2017) defines social values as “values that contribute to public interests and the growth of the community, such as human rights, labor rights, safe working environments, accommodation of socially disadvantaged groups, high-quality jobs, revitalization of local communities and contribution to local economy, democratic decision-making, and participation.” According to the National Human Resources Development Institute (2017), social values are values preferred by the community, or the interest in, and the pursuit of, what the community shares and considers important.

Yang (2017) defined social values as “core values that the Korean society needs to restore and pursue in its efforts to enhance the publicness of the public sector, realize the sovereignty of the people, and advance to a society that ensures good living for all.” Song (2017) defined them as values pursued by the community as a whole, and the interest in, and the pursuit of, what others and the community consider important. Jeong et al. (2017) defined social outcomes as “public interest outcomes generated by enterprises in the course of their main business activities.” Kim (2018) proposed a broader definition by arguing that social values affect the society in general, beyond the individual level, and each component of social values shares the common elements of social goals and enhancement of publicness. Park (2018) defined social values as values that support a sustainable community with potential contribution to public interests and the growth of the community.

2. Studies on Measurement of Social Values

Kim (2008) developed indicators for outcome evaluation for social enterprises, and discussed their applications and possible linkage with the government’s other administrative and financial support programs. Lee (2009) used the balanced scorecard (BSC) model to empirically analyze the application of outcome standards for social enterprises. Rhee and Rah (2010) defined social investment using concepts from corporate accounting, and proposed a

theoretically bolstered version of social return on investment (SROI). Kim (2012) used the SROI method to measure the values of social enterprises in Gyeongsangnam-do, Korea, and found that social enterprises create significantly more social values than other enterprises. Cho and Shin (2013) developed indicators capable of the comprehensive measurement and evaluation of social values created by social enterprises, and proposed all-industry indicators applicable to any social enterprise, along with industry-specific indicators. Park and Bae (2014) measured the economic values of social enterprises in Jeollabuk-do, Korea, using BSC, SROI, and benefit estimation using the conditional valuation method (CVM). Kim and Jeong (2016) used SROI to measure the social and economic values of universities, and showed that social contribution activities are conducive to a university's growth. Gregory et al. (2016) employed Ohlson's valuation method to study the relationship between corporate social performance (CSP) and values. Jeong et al., (2017) attempted to objectively recognize and measure the social value outcomes of enterprises by looking into their assets, liabilities, profits, and costs, and identifying social outcomes that are sustainable.

3. Studies on Public Entities

Ra and Yun (2010) stressed the need to develop models and indicators for socially responsible management of public entities. They argued that the sustainable management and social responsibility of public entities are fundamentally different from those of private enterprises. Beare et al. (2010) interviewed experts at 35 Canadian enterprises to study the relationship between sustainability reports and public policies. The findings showed that the connection between the reports and the public policies is undermined by a lack of government guidelines. Han (2013) proposed enhancing the concept of cooperative responsibility as a way to address the diversity of the public sector. Kim (2013) verified which elements of sustainable management affect the outcomes of public entities. The findings identified customer satisfaction, contribution to local communities, and prevention of pollution as key elements that affect public entity outcomes. Kim (2015) designed an analysis model consisting of three core factors: value proposal, value creation, and value acquisition. Then, Kim used the model to analyze the business models of social enterprises. Mok (2015) analyzed how sustainable management affects the efficiency and integrity of public entities on two levels: foundation building (the publication of sustainable management reports, UN Global Compact membership, etc.) and activities (leadership, responsible management, social contribution, and compliance with government recommendations). Ju et al. (2015) confirmed that, of the social responsibility

practices of public corporations, education and academic support, volunteer activities, and donations have significant effects. Ra (2017) proposed a need to develop economic, social, and environmental indicators to enhance the publicness of public entities. Kim (2018) studied the values of public offices for inclusive growth. Based on his findings, Kim concluded that persons holding public office need to pursue values such as social innovation, redundancy, collaboration, inclusive sympathy, social sensibilities, and preventive professionalism.

The studies mentioned above discussed the importance of the concept of sustainability for social values: the Bill for the Framework Act on Realization of Social Values by Public Entities, OECD (1999), Ra and Yun (2010), Kim (2013), Mok (2015), Jeong et al. (2017), and Kim (2018).

In this study, based on the concepts and elements of social values discussed in previous studies, we define social values as “values with potential contribution to public interests and the sustainable growth of the community across all areas including society, economy, environment, and culture.”

III. Survey of Perception on Social Values Pursued by Public Entities

In this study, we conducted questionnaire surveys on topics related to the perception of social values pursued by public entities. The surveys were completed by members of the general public and by staff members of two public entities (KOGAS and KEC).² The survey for members of the general public was aimed at analyzing the public perception of which social values public entities should pursue, and how those values should be measured and reported. The questionnaire was comprised of ten questions.³

The survey for members of the public entities, in addition to the questions included in the general public questionnaire, asked questions about the staff member’s perception of the extent to which the public entity (for which they work) had achieved social values through its projects and activities, and which social value-creating activities (or projects) the public entity should focus on more. For the latter question, we asked members of KOGAS and KEC to choose from a list of social value-generating activities. We listed 28 social value-generating

2 A total of 425 respondents were surveyed, which consisted of 219 members of the general public (accounting professionals: 14.2 percent; researchers: 6.4 percent; professors: 7.8 percent; students: 55.2 percent; and others: 16.4 percent), and 103 members of each of the two public entities.

3 See the Appendix for the ten questions.

activities in the questionnaire, based on the social outcome incentives for private enterprises obtained from research by Yang (2017), the social value-creating activities proposed by Jeong et al. (2017), the 13 activities listed in the Bill for the Framework Act on Realization of Social Values by Public Entities, and the innovation plan announced by the Ministry of Economy and Finance (2018).⁴

1. Findings by Entity

A. Findings for KOGAS

Perception of Social Values Pursued by Public Entities⁵

For the question on “importance of pursuit of social values,” KOGAS members reported a high average score at 4.69 (± 0.65). As for the appropriate ratio between “economic values” and “social values” pursued by public entities, the majority of the respondents answered 50:50. To the question about the percentage that social values should contribute to management evaluations of public entities, around 30.1 percent of the KOGAS respondents answered “50 percent or higher,” and another 28.2 percent chose “20 percent or higher, below 30 percent.”

The average score for the question on the “need to measure social values created by public entities in monetary units” was 3.04 (± 1.25), which is close to “neither important nor unimportant.” However, KOGAS members reported an average score of 3.53 (± 0.93) for the question asking whether “it is sufficient to list the social value-creating activities of a public entity,” indicating a lack of consistency between the answers to the two questions.

The average score for the question asking whether or not “the social values created by a public entity should be reported in its financial statements” was 3.17 (± 1.24), which is slightly above the “neither important nor unimportant” level. When asked the question on “supposing social value outcomes are reported in financial statements, in which part of the financial statements social value outcomes should be reported,” 84.5 percent of KOGAS respondents chose “reference materials (notes)” rather than the “body of the financial statements.” In addition, a high average score (3.89 ± 1.08) was reported for the statement “the social value outcomes of a public entity should be reported in a separate report, rather than in financial statements.”

⁴ See the Appendix for the list of the 28 social value-creating activities of public entities.

⁵ In five-point scale questions (where 1=not applicable, 3=so so, 5=highly applicable), an average score closer to five denotes a higher level of agreement.

The respondents had an average score of 3.71 (± 1.09) for the “need to specify the scope of social value-creating activities in a public entity’s articles of association,” indicating that an average KOGAS member believes the need exists. The average score for the question regarding the “need to establish preparation guidelines for the measurement and reporting of social value outcomes by public entities” was 4.03 (± 0.97). The high score indicates a high level of perceived need for the preparation guidelines.

Social Values that Public Entities Need to Focus on and Their Actual Level of Realization⁶

A comparison of the perceived importance of the pursuit of “economy-related social values” and the actual realization level of these values showed that, in general, the perceived importance of the values was slightly higher than their actual realization level. In particular, the perceived importance of ethical management was significantly higher than its actual realization level. These findings indicate a need for constant monitoring and management regarding the realization of social values at public entities.

Table 1 Perceived Importance and Realization Level of Economy-Related Social Values at KOGAS (n=103)

Subcategory and values		Perceived importance	Level of realization	t-value
Management	Ethical production and supply of products and services	4.41 (0.93)	4.26 (0.71)	1.26
	Ethical management	4.64 (0.77)	4.13 (0.86)	4.70**
Industry	Foundation building for fair competition	4.27 (0.89)	4.17 (0.77)	0.96
SME	Enhancement of cooperation with vendors	4.05 (0.88)	4.11 (0.82)	-0.55
	Shared growth and cooperation between large enterprises and SMEs / micro enterprises	3.99 (0.91)	4.06 (0.81)	-0.63
	Support for startups and wider participation of venture firms	3.79 (0.96)	3.65 (1.01)	1.12
	Enhanced cooperation with social enterprises	3.95 (0.98)	3.93 (0.92)	0.16
	Support for innovation-driven growth, including sales channel support for innovative products	3.98 (0.84)	3.81 (0.96)	1.51

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

A comparison of the perceived importance of the pursuit of “society-related social values” and their actual realization level showed that, in general, the perceived importance of

⁶ In five-point scale questions (where 1=not applicable, 3=so so, 5=highly applicable), an average score closer to five denotes a higher level of agreement.

the values was higher than their actual realization level. In particular, for “resolution of social issues through new services and products,” “protection of employee labor rights,” and “improvement of working conditions” in the welfare subcategory, and for “maintenance of working / living environments in terms of protection against disasters and accidents” and “spread of safety culture” in the safety subcategory, the perceived importance was significantly higher than the realization level.

Table 2_Perceived Importance and Realization Level of Society-Related Social Values at KOGAS (n=103)

Subcategory and values		Perceived importance	Level of realization	t-value
Health	Provision of health services for healthy living	3.90 (1.02)	3.84 (1.01)	0.47
Welfare	Resolution of social issues through new services and products	4.01 (0.93)	3.64 (1.09)	3.24**
	Improvement of people's quality of living	4.43 (0.73)	4.29 (0.74)	1.52
	Creation of high-quality jobs	4.07 (0.96)	4.13 (0.86)	-0.51
	Protection of employee labor rights	4.43 (0.74)	4.16 (0.87)	2.84**
	Improvement of working conditions (work / life balance through flexible working hours, etc.)	4.53 (0.70)	4.21 (0.84)	3.22**
	Provision of opportunities to the socially disadvantaged / social integration	4.15 (0.99)	4.14 (0.72)	0.01
	Reinforced support for vulnerable groups (specialized services / products, etc.)	4.17 (0.97)	4.13 (0.79)	0.33
	Support for job creation and job quality improvement in the private sector	3.79 (1.12)	3.94 (0.92)	-1.17
Environment	Sustainable preservation of natural environment	4.44 (0.73)	4.28 (0.76)	1.61
Safety	Maintenance of safe working / living environments in terms of protection against disasters and accidents	4.68 (0.49)	4.39 (0.77)	4.10**
	Spread of safety culture	4.66 (0.55)	4.38 (0.79)	3.71**

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

A comparison of the perceived importance and the actual realization level of public service-related social values showed that the perceived importance exceeded the actual realization level for “improvement of public services,” “human rights protection,” and “contribution to local economy to ensure that the economic activities benefit the local community.” The gap between the perceived importance and realization level was particularly low for “improvement of public services.” However, the realization levels were significantly higher than the perceived importance for “implementation of the central government's policy tasks,” “revitalization of local communities and restoration of communities” and “enhanced cooperation with NGOs.”

Table 3 Perceived Importance and Realization Level of Public Service-Related Social Values at KOGAS (n=103)

Subcategory and values	Perceived importance	Level of realization	t-value
Improvement of public services	4.40 (0.82)	4.26 (0.73)	1.98*
Procurement innovation	3.91 (0.93)	4.00 (0.86)	-1.01
Human rights protection	4.14 (0.92)	4.04 (0.82)	0.10
Implementation of the central government's policy tasks	4.00 (0.94)	4.35 (0.86)	-3.92**
Revitalization of local communities and restoration of communities	3.99 (0.98)	4.20 (0.72)	-1.97*
Contribution to local economy to ensure that the economic activities benefit the local community	4.07 (0.88)	4.00 (0.81)	0.72
Democratic decision-making and participation based on citizens' rights	4.10 (0.85)	4.15 (0.83)	-1.00
Enhancement of cooperation with vendors	3.65 (1.09)	4.02 (0.82)	-3.20**

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

Ranking of Social Values in Terms of Importance and Realization

We asked KOGAS members to rank the 28 social value-creating activities⁷ in terms of their perceived importance and their actual levels of realization at KOGAS. The findings showed that “ethical production and supply of products” topped the list of social values perceived as important (that is, the values the member believed should be pursued by KOGAS), followed by “ethical management,” “foundation building for fair competition,” “improvement of people’s quality of living,” and “creation of high-quality jobs.” On the other hand, “ethical management” ranked first in terms of the level of realization, followed by “ethical production and supply of products,” “foundation building for fair competition,” “shared growth and competition between large enterprises and SMEs,” “improvement of people's quality of living,” “protection of employee labor rights,” “improvement of working conditions,” and “enhanced collaboration.”

Summary of Findings for KOGAS

Table 4 shows a matrix of the findings for KOGAS on the perceived importance and outcomes (realization levels) of social values by category.

⁷ The list consists of eight “economy-related social value” items, 12 “society-related social value” items, and 8 “public service-related social value” items (see Tables 1, 2, and 3).

Table 4_Matrix of Survey Findings for KOGAS Regarding Perceived Importance and Realization Levels

Category		Perceived importance		
		High	Mid	Low
Outcomes (level of realization)	High	<ul style="list-style-type: none"> • Improvement of people's quality of living • Spread of safety culture • Improvement of public services 	<ul style="list-style-type: none"> • Sustainable preservation of natural environment • Implementation of the central government's policy tasks 	
	Mid	<ul style="list-style-type: none"> • Ethical management • Foundation building for fair competition • Maintenance of safe working environments in terms of protection against disasters and accidents 	<ul style="list-style-type: none"> • Ethical production and supply of products and services • Enhancement of cooperation with vendors • Shared growth and cooperation between large enterprises and SMEs / micro enterprises • Creation of high-quality jobs • Provision of opportunities to the socially disadvantaged / social integration • Enhanced support for vulnerable groups • Human rights protection 	<ul style="list-style-type: none"> • Support for job creation and job quality improvement in the private sector • Revitalization of local communities and restoration of communities • Contribution to local economy through economic activities
	Low	<ul style="list-style-type: none"> • Protection of employee labor rights • Improvement of working conditions 	<ul style="list-style-type: none"> • Enhancement of cooperation with social enterprises 	<ul style="list-style-type: none"> • Support for wider participation of startups and venture firms • Support for innovation-driven growth, including sales channel support for innovative products • Provision of health services for healthier living • Resolution of social issues through new services and products • Procurement innovation • Exercise of citizens' rights for participation • Democratic decision-making and participation • Enhanced collaboration with NGOs

B. Findings for KEC

Perception on Social Values Pursued by Public Entities

For the question on “importance of pursuit of social values,” KEC members reported a high average score at 4.46 (± 0.68). As for the appropriate ratio between “economic values” and “social values” pursued by public entities, the highest number of respondents answered 50:50, followed by 30:70. To the question asking about the percentage that social values should contribute to management evaluations of public entities, the majority of respondents chose

“20 percent or higher, below 30 percent,” followed by “30 percent or higher, below 40 percent,” and “below 20 percent.”

KEC respondents reported a slightly lower average score for the question on the “need to measure social values created by public entities in monetary units” at 2.86 (± 1.23). The KEC members reported an average score of 3.62 (± 1.06) for the question asking “whether it is sufficient to list the social value-creating activities of a public entity,” showing consistency between answers to the two questions.

The respondents’ answers to the question whether or not “the social values created by a public entity should be reported in its financial statements” were negative on average, at 2.51 (± 1.12). When asked the question on “supposing social value outcomes are reported in financial statements, in which part of the financial statements social value outcomes should be reported,” 91.3 percent of KOGAS respondents chose “reference materials (notes).” In addition, a high average score 3.87 (± 0.95) was reported for the statement “the social value outcomes of a public entity should be reported in a separate report rather than in financial statements,” which indicated negative perceptions on reporting social value outcomes in financial statements.

The respondents positively answered the question regarding the “need to specify the scope of social value-creating activities in a public entity’s articles of association,” at 3.23 (± 1.06). The respondents were also found to be highly supportive of the “need to establish preparation guidelines for the measurement and reporting of social value outcomes by public entities,” reporting an average score of 3.76 (± 0.97).

Social Values that Public Entities Need to Focus on and Their Actual Level of Realization

A comparison of the perceived importance of the pursuit of “economy-related social values” and the actual realization level of these values showed that, in general, the perceived importance of these values was higher than their actual realization level. In particular, the perceived importance of “ethical production and supply of products and services” and “ethical management” was significantly higher than their actual realization level. The finding indicates a need for constant monitoring and management regarding the realization of social values at public entities.

Table 5 Perceived Importance and Realization Level of Economy-Related Social Values at KEC (n=103)

Subcategory and values		Perceived importance	Level of realization	t-value
Management	Ethical production and supply of products and services	4.14 (0.78)	3.89 (0.69)	3.09**
	Ethical management	4.42 (0.82)	3.95 (0.76)	5.16**
Industry	Foundation building for fair competition	4.15 (0.79)	4.01 (0.71)	1.56
	Enhancement of cooperation with vendors	3.96 (0.79)	3.89 (0.74)	0.78
SME	Shared growth and cooperation between large enterprises and SMEs / micro enterprises	4.03 (0.77)	3.92 (0.76)	1.17
	Support for startups and wider participation of venture firms	3.65 (0.89)	3.57 (0.91)	0.78
	Enhanced cooperation with social enterprises	3.77 (0.87)	3.75 (0.81)	0.20
	Support for innovation-driven growth, including sales channel support for innovative products	3.72 (0.82)	3.75 (0.85)	-0.32

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

A comparison of the perceived importance of the pursuit of “society-related social values” and their actual realization level showed that, in general, the perceived importance of the values was higher than their actual realization level. In particular, for “protection of employee labor rights,” “improvement of working conditions,” and “provision of opportunities to the socially disadvantaged/social integration” in the welfare subcategory, “sustainable preservation of natural environment” in the environment subcategory, and the “maintenance of safe working and living environments in terms of protection against disasters and accidents,” and “spread of safety culture” in the safety subcategory, the realization levels were significantly lower than the perceived importance.

Table 6 Perceived Importance and Realization Level of Society-Related Social Values at KEC (n=103)

Subcategory and values		Perceived importance	Level of realization	t-value
Health	Provision of health services for healthy living	3.82 (0.99)	3.66 (0.85)	1.55
Welfare	Resolution of social issues through new services and products	3.75 (0.83)	3.73 (0.83)	0.22
	Improvement of people's quality of living	4.16 (0.78)	4.04 (0.64)	1.51
	Creation of high-quality jobs	3.92 (0.87)	3.83 (0.75)	1.20
	Protection of employee labor rights	4.26 (0.83)	3.76 (0.86)	4.65**
	Improvement of working conditions (work / life balance through flexible working hours, etc.)	4.30 (0.79)	3.70 (0.76)	6.09**
	Provision of opportunities to the socially disadvantaged / social integration	3.99 (0.79)	3.79 (0.69)	2.51**
	Reinforced support for vulnerable groups (specialized services / products, etc.)	3.87 (0.79)	3.79 (0.72)	1.12
	Support for job creation and job quality improvement in the private sector	3.76 (0.87)	3.74 (0.70)	0.23

Table 6 Perceived Importance and Realization Level of Society-Related Social Values at KEC (n=103)(continued)

Subcategory and values		Perceived importance	Level of realization	t-value
Environment	Sustainable preservation of natural environment	4.22 (0.64)	3.74 (0.72)	5.44**
Safety	Maintenance of safe working / living environments in terms of protection against disasters and accidents	4.50 (0.69)	4.01 (0.73)	5.37**
	Spread of safety culture	4.58 (0.69)	4.18 (0.74)	4.60**

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

A comparison of the perceived importance of the pursuit of “public service-related social value” and their actual realization level showed that, in general, the actual realization levels for “improvement of public services” and “human rights protection” were significantly lower than their perceived importance. To the contrary, the realization levels were significantly higher than the perceived importance of “implementation of the central government's policy tasks” and “revitalization of local communities and restoration of communities.”

Table 7 Perceived Importance and Realization Level of Public Service-Related Social Values at KEC (n=103)

Subcategory and values		Perceived importance	Level of realization	t-value
Improvement of public services		4.36 (0.74)	4.18 (0.68)	2.38*
Procurement innovation		3.62 (0.82)	3.77 (0.83)	-1.73
Human rights protection		4.03 (0.97)	3.83 (0.85)	2.01*
Implementation of the central government's policy tasks		3.84 (0.85)	4.26 (0.69)	-4.18**
Revitalization of local communities and restoration of communities		3.64 (0.94)	3.86 (0.82)	-2.23*
Contribution to local economy to ensure that the economic activities benefit the local community		3.62 (0.96)	3.85 (0.81)	-2.23*
Democratic decision-making and participation based on citizens' rights		3.78 (0.94)	3.69 (0.84)	0.90
Enhancement of collaboration with NGOs		3.37 (1.06)	3.51 (0.96)	-1.27

Note: The ** and * denote significance at the 1 percent and 5 percent levels for a two-tailed test, respectively.

Ranking of Social Values in Terms of Importance and Realization

We asked KEC members to rank the 28 social value-creating activities in terms of their perceived importance and their actual levels of realization at KEC. The KEC members accorded the highest importance to “ethical management,” followed by “ethical production and supply of products,” “improvement of people’s quality of living,” “foundation building for fair competition,” “protection of employee labor rights,” and “maintenance of safe environments in terms of protection against disasters and accidents.” On the other hand, “ethical management”

ranked first in terms of the level of realization, followed by “ethical production and supply of products,” “improvement of people’s quality of living,” “maintenance safe environments in terms of protection against disasters and accidents,” and “spread of safety culture.”

Summary of Findings for KEC

Table 8 shows a matrix of the findings for KEC on the perceived importance and outcomes (realization levels) of social values by category.

Table 8_Matrix of Survey Findings for KEC Regarding Perceived Importance and Realization Levels

Category		Perceived importance		
		High	Mid	Low
Outcomes (level of realization)	High	<ul style="list-style-type: none"> • Ethical production and supply of products and services • Foundation building for fair competition • Improvement of people's quality of living • Sustainable preservation of sustainable natural environment • Maintenance of safe working environments in terms of protection against disasters and accidents • Spread of safety culture • Improvement of public services 	<ul style="list-style-type: none"> • Provision of opportunities to the socially disadvantaged / social integration • Implementation of the central government's policy tasks 	
	Mid	<ul style="list-style-type: none"> • Ethical management • Protection of employee labor rights • Improvement of working conditions 	<ul style="list-style-type: none"> • Enhancement of cooperation with vendors • Shared growth and cooperation between large enterprises and SMEs / micro enterprises • Enhancement of cooperation with social enterprises • Creation of high-quality jobs • Enhanced support for vulnerable groups • Human rights protection • Contribution to local economy through economic activities • Exercise of citizens' rights for participation 	<ul style="list-style-type: none"> • Support for job creation and job quality improvement in the private sector • Procurement innovation • Revitalization of local communities and restoration of communities
	Low		<ul style="list-style-type: none"> • Support for innovation-driven growth, including sales channel support for innovative products • Provision of health services for healthier living • Resolution of social issues through new services and products 	<ul style="list-style-type: none"> • Support for wider participation of startups and venture firms • Enhanced collaboration with NGOs

2. Findings for General Public

The general public respondents (external stakeholders), who consisted of accounting professionals, researchers, professors, students, and others, accorded a high level of importance to the “pursuit of social values by public entities,” with 49.3 percent of them answering “very important,” and 42.5 percent answering “somewhat important.” As for the appropriate ratio between “economic values” and “social values” pursued by public entities, the highest number of respondents chose 50:50. To the question asking about the percentage that social values should contribute to management evaluations of public entities, the majority of respondents chose “30 percent or higher, below 40 percent,” followed by “40 percent or higher, below 50 percent,” and “50 percent or higher.”

The average score for the question on the “need to measure social values created by public entities in monetary units” was 3.63 (± 0.92), indicating that the members of the general public preferred a higher level of support than the respondents at KOGAS or KEC. In addition, to the question asking “whether it is sufficient to list the social value-creating activities of a public entity,” the general public respondents had lower average score than the KOGAS and KEC respondents, at 3.22 (± 1.03).

The respondents’ answers to the question concerning whether or not “the social values created by a public entity should be reported in its financial statements” were slightly positive overall at 3.45 (± 1.10). When asked about “supposing social value outcomes are reported in financial statements, in which part of the financial statements social value outcomes should be reported,” 64.9 percent of KOGAS respondents chose “reference materials (notes).” In addition, a high average score of 3.90 (± 0.94) was reported for the statement “the social value outcomes of a public entity should be reported in a separate report rather than in financial statements,” which indicated negative perceptions on reporting social value outcomes in financial statements.

The respondents positively answered the question regarding the “need to specify the scope of social value-creating activities in a public entity’s articles of association,” at 3.90 (± 0.94). The respondents were also found to be highly supportive of the “need to establish preparation guidelines for the measurement and reporting of social value outcomes by public entities,” with an average score of 4.14 (± 0.76), which is above “somewhat necessary” (4).

3. Comparison of Findings for Members of Public Entities and Those for the General Public

The following sections provide a comprehensive overview of the findings by comparing the answers from the public entity respondents and the general public respondents to the questions on the perceived importance of social values pursued by public entities. Table 9 compares the perceived importance of the “pursuit of social values by public entities” between the two groups. Both groups were found to believe that it is important for public entities to pursue social values, with a higher level of perceived importance observed with members of public entities than with the general public group.

Table 9 Perceived Importance of Pursuit of Social Values by Public Entities - Across All Respondents

[Question 1]	It is important for public entities to pursue social values as well as economic values.			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	1 (0.5)	-	1 (0.2)	$\chi^2=13.40$ ($p=0.01$)
Somewhat disagree	2 (1.0)	5 (2.3)	7 (1.6)	
Neither agree nor disagree	10 (4.9)	13 (5.9)	23 (5.4)	
Somewhat agree	58 (28.2)	93 (42.5)	151 (35.5)	
Strongly agree	135 (65.5)	108 (49.3)	243 (57.2)	
Total	206 (100)	219 (100)	425 (100)	

Table 10 compares the two groups’ answers to the question concerning the appropriate ratio between economic values and social pursued by public entities. The findings show that, across both groups, the highest percentage (41.6 percent) of respondents answered “50:50.” However, in the public entities group, 39.3 percent of the respondents answered “50:50,” closely followed by the 34.0 percent who answered “30:70.” In the general public group, the highest percentage of respondents (43.8 percent) answered “50:50,” followed by “70:30” (24.2 percent) and “30:70” (23.7 percent). To summarize, concerning the relative importance of economic values vs. social values, the general public respondents placed more emphasis on economic values, whereas the members of public entities put more emphasis social values.

Table 10_Ratio between Economic Values and Social Values - Across All Respondents

[Question 2]	In your opinion, which is the most appropriate ratio between economic values and social values pursued by public entities?			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Economic 10: Social 90	12 (5.8)	8 (3.7)	20 (4.7)	$\chi^2=9.04$ ($p=0.05$)
Economic 30: Social 70	70 (34.0)	52 (23.7)	122 (28.7)	
Economic 50: Social 50	81 (39.3)	96 (43.8)	177 (41.6)	
Economic 70: Social 30	39 (18.9)	53 (24.2)	92 (21.6)	
Economic 90 : Social 10	4 (1.9)	10 (4.6)	14 (3.3)	
Total	206 (100)	219 (100)	425 (100)	

Table 11 compares the responses of the two groups to the statement about the appropriate percentage for social values in management evaluations of public entities. Our analysis of the answers showed that the highest percentage of public entity members answered “20 percent or higher, below 30 percent,” and the highest percentage of the general public respondents chose “30 percent or higher, below 40 percent.” The findings indicate that, compared with members of public entities, the general public accorded more importance to increasing the percentage that social values contribute to management evaluations of public entities.

Table 11 Appropriate Percentage for Social Values in Management Evaluations of Public Entities - Across All Respondents

[Question 3]	In your opinion, which is the appropriate percentage that social values should contribute to management evaluations of public entities?			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Below 20%	27 (13.1)	6 (2.7)	33 (7.8)	$\chi^2=64.40$ ($p=0.00$)
20% or higher, below 30%	77 (37.4)	29 (13.2)	106 (24.9)	
30% or higher, below 40%	37 (18.0)	80 (36.5)	117 (27.5)	
40% or higher, below 50%	21 (10.2)	52 (23.7)	73 (17.2)	
50% or higher	44 (21.4)	52 (23.7)	96 (22.6)	
Total	206 (100)	219 (100)	425 (100)	

Table 12 compares the answers of the two groups to the statement regarding the need to measure social values created by public entities in monetary units. An analysis of the answers showed that a high percentage of the public entity respondents disagreed with the statement,

whereas the general public respondents “somewhat agreed” with it. In other words, members of public entities seem to hold a more negative view about the need to measure social values in monetary units.

Table 12_Need for Measurement of Social Values in Monetary Units - Across All Respondents

[Question 4]	It is necessary to measure the social values created by public entities in numbers (monetary units).			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	32 (15.5)	5 (2.3)	37 (8.7)	$\chi^2=52.96$ ($p=0.00$)
Somewhat disagree	41 (19.9)	18 (8.2)	59 (13.9)	
Neither agree nor disagree	65 (31.6)	64 (29.2)	129 (30.4)	
Somewhat agree	41 (19.9)	99 (45.2)	140 (32.9)	
Strongly agree	27 (13.1)	33 (15.1)	60 (14.1)	
Total	206 (100)	219 (100)	425 (100)	

Table 13 compares the two groups’ answers to the statement regarding whether it is sufficient to list social value activities carried out by public entities. An analysis of the answers showed that many respondents in the public entity group chose “somewhat agree” or “strongly agree,” whereas high percentages of respondents in the general public group answered “neither agree nor disagree” or “somewhat agree.” In other words, members of the public entities held a more positive view regarding the sufficiency of listing social value activities when reporting social values created by public entities.

Table 13_Sufficiency of Listing Social Value Activities of Public Entities - Across All Respondents

[Question 5]	It is sufficient to list the social value activities when reporting social values created by public entities.			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	2 (1.0)	14 (6.4)	16 (3.8)	$\chi^2=31.15$ ($p=0.00$)
Somewhat disagree	29 (14.1)	42 (19.2)	71 (16.7)	
Neither agree nor disagree	65 (31.6)	56 (25.6)	121 (28.5)	
Somewhat agree	68 (33.0)	94 (42.9)	162 (38.1)	
Strongly agree	42 (20.4)	13 (5.9)	55 (12.9)	
Total	206 (100)	219 (100)	425 (100)	

Table 14 compares the answers of the two groups to the statement regarding whether the social value outcomes of public entities should be reported in their financial statements. An analysis of the answers showed that, while high percentages of public entity respondents chose “neither agree nor disagree,” “somewhat disagree,” or “do not agree at all,” the highest percentage of general public respondents answered “somewhat agree,” followed by “neither agree nor disagree,” and “strongly agree.” The findings showed that the members of public entities held a somewhat negative view regarding the reporting of social value outcomes in financial statements, compared with the general public.

Table 14_Reporting of Social Value Outcomes in Financial Statements - Across All Respondents

[Question 6]	The outcomes regarding whether the social values created by public entities should be reported in their financial statements.			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	32 (15.5)	12 (5.5)	44 (10.4)	$\chi^2=35.63$ ($p=0.00$)
Somewhat disagree	53 (25.7)	36 (16.4)	89 (20.9)	
Neither agree nor disagree	60 (29.1)	48 (21.9)	108 (25.4)	
Somewhat agree	38 (18.4)	88 (40.2)	126 (29.6)	
Strongly agree	23 (11.2)	35 (16.0)	58 (13.6)	
Total	206 (100)	219 (100)	425 (100)	

Table 15 compares the answers of the two groups to the question asking where in the financial statements social value outcomes should be reported. Across all respondents, the highest percentage (74.9 percent) chose “reference materials (notes).” However, 38.1 percent of general public respondents chose “Assets, liabilities, profits, and costs_main text,” which is higher than the percentage of public entity respondents who chose the same answer. The findings indicate a slight gap in perception between members of public entities and the general public.

Table 15_ Reporting of Social Value Outcomes in Financial Statements - Across All Respondents

[Question 7]	Supposing that the social values created by public entities should be reported in their financial statements, where do you think they should be reported?			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Assets, liabilities, profits, and costs_main text	23 (11.3)	83 (38.1)	106 (25.1)	$\chi^2=40.24$ ($p=0.00$)
Reference materials (notes)	181 (88.7)	135 (61.9)	316 (74.9)	
Total	204 (100)	218 (100)	422 (100)	

Note: Non-responses were excluded from the analysis.

Table 16 compares the answers of the two groups to the statement concerning whether the social value outcomes of public entities should be reported in separate reports, other than financial statements. An analysis of the answers showed that, in both groups, higher percentages of respondents answered “somewhat agree” or “strongly agree.” The findings indicate a negative view about reporting the social value outcomes of public entities in the main bodies of their financial statements.

Table 16_ Reporting of Social Value Outcomes in Separate Reports - Across All Respondents

[Question 8]	The outcomes regarding whether the social values created by public entities should be reported in separate documents other than their financial statements (e.g. social outcome reports).			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	7 (3.4)	4 (1.8)	11 (2.6)	$\chi^2=4.23$ ($p=0.37$)
Somewhat disagree	12 (5.8)	17 (7.8)	29 (6.8)	
Neither agree nor disagree	41 (19.9)	35 (16.0)	76 (17.9)	
Somewhat agree	84 (40.8)	105 (47.9)	189 (44.5)	
Strongly agree	62 (30.1)	58 (26.5)	120 (28.2)	
Total	206 (100)	219 (100)	425 (100)	

Table 17 compares the answers of the two groups to the statement regarding the need for specifying the scope of social value-creating activities in the articles of association. An analysis of the answers showed that both groups support the need for specifying the scope in the articles of association. The percentage of respondents answering “somewhat agree” and “strongly agree” were higher in the general public group than in the public entities group. The

findings indicate a slight gap in perception between members of public entities and the general public.

Table 17_Need for Specification of Scope of Social Value-Creating Activities in Articles of Association

[Question 9]	The scope of social value-creating activities to be pursued by public entities should be clearly specified in their articles of association.			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	12 (5.8)	3 (1.4)	15 (3.9)	$\chi^2=30.93$ ($p=0.00$)
Somewhat disagree	27 (13.1)	13 (5.9)	40 (9.4)	
Neither agree nor disagree	63 (30.6)	37 (16.9)	100 (23.5)	
Somewhat agree	70 (34.0)	111 (50.7)	181 (42.6)	
Strongly agree	34 (16.5)	55 (25.1)	89 (20.9)	
Total	206 (100)	219 (100)	425 (100)	

Table 18 compares the answers of the two groups to the statement regarding the need for preparation guidelines (model rules) for the measurement and reporting of social value outcomes of public entities. An analysis of the answers showed that higher percentages of respondents chose “somewhat agree” or “strongly agree” in both groups, indicating similar perceptions shared by the two groups. However, the members of the general public group accorded slightly greater importance to preparation guidelines than members of the public entities group.

Table 18_Need for Preparation Guidelines for the Measurement and Reporting of Social Value Outcomes of Public Entities - Across All Respondents

[Question 10]	Preparation guidelines (model rules) are needed for the measurement and reporting of social values created by public entities.			
Category	Affiliation		Total	Test statistics
	Public entities (KOGAS + KEC)	General public		
Do not agree at all	7 (3.4)	2 (0.9)	9 (2.1)	$\chi^2=13.40$ ($p=0.00$)
Somewhat disagree	8 (3.9)	4 (1.8)	12 (2.8)	
Neither agree nor disagree	44 (21.4)	26 (11.9)	70 (16.5)	
Somewhat agree	88 (42.7)	117 (53.4)	205 (48.2)	
Strongly agree	59 (28.6)	70 (32.0)	129 (30.4)	
Total	206 (100)	219 (100)	425 (100)	

IV. Discussions

The survey findings suggest that both the general public and members of public entities view social values as equally important as, or more important than, economic values. Given the current administration's emphasis on the pursuit of social values by public entities, and the rising interest in the environment, society, and governance among private entities, the findings of this study imply that public entities need to make greater efforts to create public values in addition to pursuing economic outcomes and efficiency.

The findings also show that both groups agreed on the need for measuring social values in monetary units. These findings reflect the perceived need for more objective measurement criteria regarding the social value outcomes of public entities.

According to the findings, different public entities have different social values that they consider important. This may mean that it is appropriate for different public entities to pursue different social values. Therefore, each public entity needs to determine the importance of each social value in accordance with the entity's nature and characteristics. Evaluators of public entities should also take into account the fact that the social values they pursue may vary, depending on the public entity's nature and characteristics. The need to consider the characteristics of public entities when evaluating their social values also implies the need to measure and report social values in monetary values, if for no other reason than the fact that it would provide enhanced comparability of the social values created by various public entities.

V. Conclusions

The survey findings of this study can be summarized as follows. First, most of the respondents agreed that public entities should take more interest in creating social value. The majority of the respondents answered that the appropriate ratio between social values and economic values is 50:50, supporting the need to emphasize the publicness of public entities. On the other hand, members of the general public accorded greater importance to increasing the percentage that social values contribute to management evaluations of public entities.

Second, the respondents in both groups agreed with the need to measure and disclose social values created by public entities in monetary units. As for the specific reporting practice for social value outcomes, the majority of the respondents chose that they should be reported in the notes of the financial statements, or in separate reports other than their financial statements. Based on the findings mentioned above, we propose reporting social value

outcomes in the notes of financial statements or in the social outcome sections of sustainable management reports.

Third, most of the respondents agreed with the need to specify the scope of social value-creating activities in the articles of association of public entities, and the need to establish preparation guidelines for outcome measurement and reporting. Therefore, public entities need to specify their social value-creating activities in their articles of association. In addition, the Korea Institute of Public Finance, or another organization tasked with developing public accounting standards, needs to develop and disseminate models and rules on the measurement and reporting of social value-creating activities.

Fourth, the findings on the perceived importance of and the actual levels of realization of social values at KOGAS and KEC show that the levels of realization of some social value-creating activities are not on par with their perceived importance. Thus, the public entities need to improve this situation in the future.

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| Appendix | Questionnaire for Survey on Perception of Social Value Outcomes of Public Entities

Survey of Perception of Social Value Outcomes of Public Entities (General Public)

The new administration stresses the social responsibility and publicness of public entities. In keeping with the policy, the government introduced a new indicator for management evaluations, 'realization of social values,' starting in 2018. This questionnaire is designed to understand the public perception on the social values pursued by public entities. Your answers will inform the future direction of social value measurement and reporting at public entities. Confidentiality extends to all information reported in the survey, and none of it will be used for any purpose other than statistical analysis under Article 4 of the Statistics Act. Thank you for your cooperation with the survey.

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Survey conducted by: Korea Institute of Public Finance and Korean Accounting Information Association

August 2018

Contact: Korea Institute of Public Finance

I General Questions

※ For each of the following questions, please mark the applicable number with √.

1. What is your affiliation?

- ① Citizen ② Research institute ③ Public entity
④ Accounting professional ⑤ Professor ⑥ Student

2. What is your age?

- ① 20 or younger ② 30's ③ 40's ④ 50's ⑤ 60's or older

II	Perception Regarding Social Values Pursued by Public Entities
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Social values pursued by public entities can be defined as **values contributing to public interests and the growth of the community in social, economic, environmental, and cultural areas** For each of the following questions, please mark the applicable number with √.

Category	Question	Not agree at all ①-----②-----③-----④-----⑤	Neither agree nor disagree ①-----②-----③-----④-----⑤	Strongly agree ①-----②-----③-----④-----⑤
1. General	1) It is important for public entities to pursue social values as well as economic values.	①-----②-----③-----④-----⑤		
	2) In your opinion, which is the most appropriate ratio between economic values and social values pursued by public entities?	economic value: social value (:)		
	3) In your opinion, which is the appropriate percentage that social values should contribute to management evaluations of public entities?	Example) 30% (%)		
Category	Question	Not agree at all ①-----②-----③-----④-----⑤	Neither agree nor disagree ①-----②-----③-----④-----⑤	Strongly agree ①-----②-----③-----④-----⑤
2. Measurement	1) It is sufficient to list the social value activities when reporting social values created by public entities.	①-----②-----③-----④-----⑤		
	2) It is necessary to measure the social values created by public entities in numbers (monetary units).	①-----②-----③-----④-----⑤		
Category	Question	Not agree at all ①-----②-----③-----④-----⑤	Neither agree nor disagree ①-----②-----③-----④-----⑤	Strongly agree ①-----②-----③-----④-----⑤
3. Reporting	1) The outcomes regarding the social values created by public entities should be reported in their financial statements.	①-----②-----③-----④-----⑤		
	2) Supposing that the social values created by public entities should be reported in their financial statements, where do you think they should be reported?	① Assets, liabilities, profits, and costs_main text ② Reference materials (notes)		
	3) The outcomes regarding the social values created by public entities should be reported in separate documents other than their financial statements (e.g. social outcome reports).	①-----②-----③-----④-----⑤		
Category	Question	Not agree at all ①-----②-----③-----④-----⑤	Neither agree nor disagree ①-----②-----③-----④-----⑤	Strongly agree ①-----②-----③-----④-----⑤
4. Preparation Guidelines	1) The scope of social value-creating activities to be pursued by public entities should be clearly specified in their articles of association.	①-----②-----③-----④-----⑤		
	2) Preparation guidelines (model rules) are needed for the measurement and reporting of social values created by public entities.	①-----②-----③-----④-----⑤		

C. Values related to other public services		Importance			Level of realization		
		Grossly Unimportant	Neither important nor unimportant	Highly important	Very low	Neither high nor low	Very low
		①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
1	Improvement of public services	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
2	Procurement innovation	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
3	Human rights protection	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
4	Implementation of the central government's policy tasks	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
5	Revitalization of local communities and restoration of communities	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
6	Contribution to local economy to ensure that the economic activities benefit the local community	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
7	Democratic decision-making and participation based on citizens' rights	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤
8	Enhanced collaboration with NGOs	①-----②	-----③-----④	-----⑤	①-----②	-----③-----④	-----⑤

2. Among the social values listed in Question 1, please select five values that you believe are **the most important**. (e.g, A-3, B-2, B-7)

3. Among the social values listed in Question 1, please select five values that you believe are the ones realized to the highest extent at your organization.(e.g, A-3, B-2, B-7, etc.)

4. In your opinion, other than the values listed in Question 1, what social values should your organization pursue? (Please specify the additional values that you would like your organization to pursue.)

5. In your opinion, other than the values listed in Question 1, what social values has your organization successfully realized? (Please specify the additional values you would like your organization to pursue.)