

Information and Attitudes toward Fixed Budget Formulas: Experimental Evidence from Korea's Education Finance*

Hwanoong Lee Kyoung Hoon Lee David Sungho Park

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Abstract

Information-provision experiments show factual cues shift public spending preferences, but whether they shift support for institutional rules governing fiscal allocations is unclear. We test this using Korea's Local Education Finance Grant, which earmarks 20.79% of internal tax revenue for education. In a survey experiment (3,066 adults), treatments emphasizing expenditure efficiency, international reference points, and cross-sector trade-offs reduce preferred budget shares by 2–3 percentage points. Efficiency and reference-point treatments also increase support for replacing the fixed earmark with a demographic-linked rule by 5–7 percentage points. Effects are driven by less informed respondents. Parents revise level preferences but resist rule reform.

JEL Codes: D72, D83, H52, H77

Keywords: information provision experiment, education finance, intergovernmental transfers, fiscal rules, Korea

*Lee: Konkuk University (holee@konkuk.ac.kr); Lee: Korea Institute of Public Finance (khlee0423@kipf.re.kr) Park: KDI School of Public Policy and Management (park@kdis.ac.kr). For organizing the data collection, we thank Hankook Research. Funding for this project was provided by the Korea Institute of Public Finance. The study was conducted in compliance with the research ethics guidelines at the KDI School of Public Policy and Management and the Korea Institute of Public Finance. Trial is registered at AEA RCT Registry under AEARCTR-0018287. Any error is our own.

1 Introduction

Public budgets are often governed by rule-based transfers, leaving limited room for discretionary adjustment. Across OECD economies, formula-based intergovernmental transfers finance a large share of subnational service delivery, and mandatory commitments have been rising steadily as a share of GDP in most advanced economies (Bodnár and Nerlich 2022; Dougherty et al. 2024; IMF 2025). Because these commitments are difficult to retrench, reforms aimed at restoring allocative efficiency or fiscal flexibility are often politically costly (Giger and Nelson 2011). The resulting tension is not simply about “more” or “less” spending but about whether entrenched formulas can be recalibrated as demographic fundamentals shift. We ask whether brief, policy-relevant information can shift public support for such recalibration.

Korea, the setting for this study, illustrates this problem. The central government earmarks 20.79% of internal tax revenue as grants to provincial offices of education through the Local Education Finance Grant (LEFG).¹ Because resources follow tax collections rather than student demand, rapid declines in the school-age population mechanically raise per-student funding, even as population aging expands competing claims from pensions and long-term care (Poterba 1997). If the formula remains unchanged, per-student funding is projected to rise more than fourfold by 2060.²

A large literature uses information-provision experiments to study how factual cues shift beliefs and policy preferences (for a review, see Haaland et al. 2023). Within public finance, such experiments show that concise information can move attitudes about redistribution (Kuziemko et al. 2015; Cruces et al. 2013), perceptions of inequality and mobility (Alesina et al. 2018; Stantcheva 2021), and support for education spending (Lergetporer et al. 2018; Cattaneo et al. 2020; Giacobasso et al. 2025). Yet this literature has focused on spending *levels*, leaving open whether updated beliefs translate into support for the institutional rules that govern fiscal allocations. This gap is substantive rather than incidental, because

¹Section 2.1 summarizes the legal basis and formula mechanics, explaining why LEFG operates as a rule-based arrangement rather than a discretionary item. It also highlights the legal designation of grant revenues as tied to internal taxes, which creates rigidities in resource reallocation across functions.

²Proposals to delink or lower the 20.79% earmark repeatedly stall because directly elected provincial superintendents and teacher unions coordinate to resist any perceived diversion of school funds.

the distinction between levels and rules is precisely the margin on which reform is most consequential in settings where statutory earmarks govern fiscal architecture.³

The mechanisms shaping preferences over rules need not mirror those shaping preferences over levels. For spending levels, the logic is relatively direct: citizens hold (often biased) beliefs about current spending, and information that corrects those beliefs shifts the preferred amount in a predictable direction (Lergetporer et al. 2018; Cruces et al. 2013). For rules, an additional layer may matter. A citizen who updates her beliefs and concludes that current spending is excessive may nonetheless resist structural reform if she places independent value on the predictability that a fixed formula provides, a valuation likely to be especially strong among households with direct stakes in the service. The same information can therefore push preferences in opposite directions. Learning that per-student funding rises as cohorts shrink could motivate reform by making the formula’s disconnect from service demand concrete. However, the same information could instead reassure citizens that the rule is already self-correcting and weaken the case for reparameterization. Two further mechanisms may also matter: a reference-point channel, in which cross-country comparisons anchor evaluations of domestic spending, and an opportunity-cost channel, in which seeing education alongside competing claims shifts willingness to reallocate. Which force dominates, and for whom, is an empirical question.

We address these questions in a nationally representative online survey experiment in South Korea. We randomize 3,066 Korean adults into a placebo control or one of three information treatments designed to speak to the LEFG reform debate: (1) expenditure efficiency under demographic change (“demographic-efficiency”), (2) international benchmarks (“reference-point”), and (3) cross-sector budget trade-offs (“trade-off”). Primary outcomes are perceptions and support for actionable policy levers: the preferred education share within the central budget, support for replacing the fixed 20.79% linkage with student-based or demand-based parameters, and the allocation of any implied surplus across competing demographic priorities.

Our research design addresses two key challenges in this literature. First, because in-

³For evidence that factual information moves spending-level preferences, see Lergetporer et al. (2016); Lergetporer et al. (2018); Behringer et al. (2024).

formation effects can be hard to interpret when treatments bundle multiple considerations (Brutger et al. 2023; Dafoe et al. 2018; Mummolo and Peterson 2019), our three arms isolate distinct channels—demographic-efficiency, reference-point, and trade-off—while holding constant visual format and neutral tone. The placebo equalizes attention and exposure rather than providing an information-free baseline, since it presents a neutral overview of the education budget without directional cues about the LEFG. To the extent that this subtly reinforces the salience of education spending, it biases treatment effects toward zero, rendering our estimates conservative. Second, because average effects can mask politically relevant heterogeneity when priors differ (Kuziemko et al. 2015; Alesina et al. 2018; Grigorieff et al. 2020), we examine heterogeneous effects along two dimensions suggested by our conceptual framework: prior awareness of the LEFG rule, which proxies for ex-ante information gaps and tests whether persuasion is concentrated among less informed respondents; and parental status, which proxies for household stakes in the current formula and tests whether direct beneficiaries resist translating updated beliefs into support for structural reform.

We report three sets of findings, corresponding to the three outcome families. First, on spending levels, all three treatments reduce the preferred education share of the central budget by 2.2 to 2.7 percentage points from a placebo mean of 21.8% and lower the probability of ranking education as the top long-run priority by 4 to 5 percentage points. The reference-point and trade-off treatments also shift perceived adequacy of the current education share toward “too high” (by 0.11 and 0.15 points on a five-point scale), consistent with comparative and opportunity-cost information recalibrating assessments of the status quo. Second, on rule preferences, all three treatments shift evaluations of the 20.79% formula toward “too large” (−0.09 to −0.17 on a 1–5 adequacy scale), and the efficiency and trade-off treatments lower the preferred formula percentage by 1.2 to 1.6 percentage points (from a placebo mean of 22.3%). The reform signal is specific rather than diffuse: the efficiency and reference-point treatments increase support for tying the grant to the school-age population by 5–7 percentage points, while support for alternative reforms (e.g., project-based budgeting) does not rise under any treatment. Third, on surplus allocation, all treatments reduce the probability that respondents rank early childhood expansion as the top use of surplus funds (by 5 to 10 percentage points from a placebo mean of 36%), with each treatment redirecting priorities

in a direction consistent with its informational content.⁴ Information does not simply make respondents want less education spending, although it makes them want a different rule, and specifically the rule that the informational content most directly implies.

Two complementary channels account for these effects. Belief updating is more pronounced where ex-ante information gaps are larger: respondents previously unaware of the LEFG revise their preferred education share by 2.7 to 4.0 percentage points, whereas respondents already familiar with the formula show smaller level adjustments but sharper reprioritization. A complementary stability-valuation channel emerges from the parental-status split. Parents update their assessments of spending adequacy in line with non-parents, but resist translating those updates into support for structural rule reform, consistent with direct beneficiaries placing independent value on the formula’s predictability even when they acknowledge its generosity. A supplementary survey of 44 public-finance experts provides an external benchmark: across all core margins, information moves public preferences away from the uninformed baseline and toward the expert consensus on spending adequacy and formula reform. Together, these patterns indicate that the treatments operate through learning rather than undirected sentiment, and that salience shifts are most evident where the information makes cross-sector opportunity costs explicit.⁵

Our study contributes to several strands of literature. First, we extend information-provision experiments to preferences over the rules of intergovernmental finance. [Lergetporer et al. \(2018\)](#) and [Cattaneo et al. \(2020\)](#) show that information shifts preferred levels of education spending, and [Giaccobasso et al. \(2025\)](#) shows that perceived spending composition shapes tax morale. We build on this work by showing that targeted facts also move support for the statutory rules that mechanically determine those levels. This adds a demand-side channel to a literature on intergovernmental grants that has been dominated by supply-side responses such as flypaper effects and tax effort ([Oates 1999](#); [Hines and Thaler 1995](#)). Second, by embedding cross-sector trade-offs in the information set, we provide a forward-looking

⁴The efficiency treatment increases support for transferring surplus to other demographic sectors (+5 pp), the reference-point treatment increases prioritization of higher education (+8 pp), and the trade-off treatment increases support for locally determined projects (+4 pp).

⁵The design holds constant screen length, format, and neutral tone across treatments, which limits confounding from presentation differences. See [subsection 2.2](#) for the conceptual framework and [Section 5](#) for heterogeneity analysis.

test of how information about structural demographic change affects support for reparameterization, rather than for one-off level adjustments (Lergetporer et al. 2016; Wang and Kim 2024). Third, we show that the direction of updating is neither arbitrary nor uniformly anti-spending. Information channels diffuse reform sentiment into a specific, demographically grounded proposal, and it moves public preferences toward positions independently held by public-finance professionals. These findings speak to a broader question about when public opinion can support, rather than block, the reparameterization of entrenched fiscal rules, a question central to fiscal reform in aging advanced economies well beyond Korea.

In what follows, [Section 2](#) provides institutional background on Korea’s LEFG and a conceptual framework; [Section 3](#) introduces the survey data and experimental design; [Section 4](#) presents our main results; [Section 5](#) discusses mechanisms through heterogeneity analysis; and [Section 6](#) draws policy implications and concludes.

2 Context and Conceptual Framework

2.1 Institutional Background

Korea’s Local Education Finance Grant (LEFG) is a statutory, formula-based intergovernmental transfer that finances metropolitan and provincial offices of education (MPOEs) for early-childhood and K–12 operations. The legal basis is the *Local Education Subsidy Act*, which fixes the aggregate grant pool by earmarking a constant share of the central government’s internal taxes and the education tax.⁶ This statutory linkage makes the LEFG mechanically responsive to macro-fiscal conditions rather than to contemporaneous enrollment or service demand.

The LEFG is quantitatively salient, accounting for roughly three-quarters of MPOE revenues in our survey context.⁷ Because the grant is tied to an aggregate tax base rather than

⁶Article 3(2) of the *Local Education Subsidy Act* sets the internal-tax earmark at 20.79% and adds earmarked education-tax revenue, with detailed exclusions and special-account adjustments (Korea Legislation Research Institute 2023). The Act also distinguishes general and special subsidies and equalizes by comparing standard financial demand with standard financial income, with general subsidies closing any shortfall and special subsidies addressing policy-driven or exceptional needs under separate criteria (Song 2006; Min and Lee 2017; Woo 2022).

⁷Our survey materials state that the LEFG represents 73.4% of MPOE budgets in 2025 (Ministry of Education 2025).

student counts, declining school-age cohorts can mechanically raise per-student resources under the fixed linkage rate. This wedge between a tax-linked rule and a shrinking service population is central to the political economy of reform and motivates our efficiency information treatment. The grant also operates within a highly visible national budget process: the annual Budget Bill proposes the formula-based transfer, which is deliberated and potentially amended by the National Assembly before execution and settlement. Korea’s integrated fiscal management infrastructure and public fiscal data portals increase the traceability of both spending levels and the underlying rules, which strengthens the policy realism of our preference-elicitation design.⁸

These features have made LEFG a recurring focal point of fiscal-reform debate. As demographic decline mechanically raises per-student resources under the fixed linkage, policy reports and contemporaneous news coverage increasingly characterize the earmark as a source of fiscal rigidity. A major budget-analysis report by the National Assembly Budget Office argues that tying the grant pool to a fixed tax share can hinder balanced investment across education sectors when the school-age population shrinks (National Assembly Budget Office 2022), and government policy communications have signaled periodic reviews of major grant rules as part of broader fiscal restructuring.⁹ Research-oriented policy work discusses reform directions, including reconsidering allocation principles under demographic change (Kong et al. 2007), and press coverage has framed the disconnect between a fixed earmark and a shrinking student population as a question of allocative efficiency.¹⁰ Comparable tensions arise elsewhere. In the U.S., demographic change and competing spending claims heighten the salience of cross-sector trade-offs and reshape support for education budgets (Harris et al. 2001; Rizzo 2006).

The institutional setting, therefore, places three questions at the center of public debate. The first is whether the overall level of education spending is appropriate. The second is whether a fixed tax linkage is an appropriate mechanism for determining the grant pool.

⁸See Korea’s Open Fiscal Data portal (<https://www.openfiscaldata.go.kr/op/ko/index>) and the Education Finance Information portal (<https://www.eduinfo.go.kr/portal/main.do?pageCd=PC>) for publicly accessible fiscal and education-finance data.

⁹Ministry of Economy and Finance (2021) states a commitment to review local-government grant arrangements in the context of spending reform.

¹⁰See ChosunBiz (2025) for a discussion of inefficiency concerns related to LEFG under demographic decline, and Maeil Business Newspaper (2026) for reporting on recent reform pressures.

The third is whether alternative parameters, such as student-based or broader need-based criteria, should play a larger role as demographics change. Our experiment is designed to test whether targeted information shifts public opinion on each of these margins.

2.2 Conceptual Framework

We develop an organizing framework, rather than a structural model, to clarify why concise, policy-linked information can shift preferences over both the level of education spending and the design of a fixed-budget formula. The framework serves two purposes. It clarifies how the LEFG’s institutional structure creates scope for information to matter, and it generates the testable predictions that guide our heterogeneity analysis in [Section 5](#). We begin with the mechanical implications of the LEFG formula, then introduce a simple decomposition of stated preferences into beliefs, salience, and stability valuation, and finally map each treatment arm to the components of the decomposition.

The formula and its mechanical implications. Let T denote the central-government internal tax base and τ the statutory linkage rate. Under the status quo rule, aggregate grant revenue flowing to MPOEs is

$$G = \tau \cdot T. \tag{1}$$

Let N denote the size of the school-age cohort. Per-student resources implied by the grant are

$$g \equiv \frac{G}{N} = \frac{\tau \cdot T}{N}. \tag{2}$$

When N declines while T is stable or growing, g rises mechanically even if neither learning needs nor service quality changes. Citizens who are unaware of this arithmetic—or who have not considered its implications—may hold fiscal preferences that would differ if they understood how the rule translates tax revenue into per-student resources under demographic change.

The public-facing policy levers in our study map directly to this structure. The preferred education share in the central budget corresponds to views about the aggregate G . The preferred LEFG share within MPOE revenues concerns the composition of local education

finance. Support for replacing the fixed linkage τ with student- or demand-based parameters addresses whether the rule itself should be reparameterized to depend on N rather than on T alone. Surplus-allocation priorities reveal how respondents would redistribute any implicit slack created by the wedge between G and N .

Beliefs, salience, and the levels–rules distinction. We model respondent i 's stated preference Y_i (for example, a preferred budget share or rule choice) as

$$Y_i = f(b_i, \theta_i, \sigma_i),$$

where b_i is a vector of beliefs about fiscal facts and policy mechanics, θ_i captures salience weights that determine which considerations are at the forefront when translating beliefs into a stated choice, and σ_i reflects the respondent's valuation of rule stability, that is, the extent to which she values the predictability of the current formula independent of its generosity.¹¹

The vector b_i collects beliefs about fiscal facts: for instance, the statutory linkage underlying the LEFG, the implied per-student resource path under cohort decline, and the size of education earmarks relative to other sectors. The salience parameter θ_i captures the weight respondents place on particular aspects of the fiscal environment, such as opportunity costs, reference points, or cross-sector comparisons, when forming a stated budget choice. Importantly, θ_i is not meant to represent deep, time-invariant tastes. It summarizes attention and framing induced by the informational environment.¹²

The key addition relative to the standard information-experiment framework is σ_i . For spending *levels*, the mapping from beliefs to preferences is relatively direct: correcting b_i shifts the preferred amount in a predictable direction (Lergetporer et al. 2018; Cruces et al. 2013). For funding *rules*, an additional margin matters. Even a respondent who updates b_i and concludes that education spending is too generous may resist reparameterizing the

¹¹This decomposition draws on models of limited attention and context-dependent decision weights (Bordalo et al. 2012; Gabaix 2014), rational-inattention frameworks (Maćkowiak et al. 2023), and the political-communication literature on framing as shifts in the weight placed on competing considerations (Chong and Druckman 2007).

¹²Empirical work shows that increasing the visibility of policy attributes shifts choices in predictable ways, for example tax salience (Chetty et al. 2009), and that prompting opportunity-cost considerations changes spending behavior (Frederick et al. 2009; Persson and Tinghög 2020).

formula if she places high value on its predictability, for example, because her household directly benefits from the earmarked transfer. This is captured by σ_i : when σ_i is high, updated beliefs b_i translate into revised level preferences but not into support for structural rule change. This distinction is central to our setting because the LEFG formula provides a stable, visible funding guarantee to school-age households, and reform proposals that threaten this guarantee may face resistance even among citizens who acknowledge the formula’s generosity.

How each treatment arm maps to the framework. Our three information treatments are designed to shift different components of this framework, though the channels are not mutually exclusive. The *efficiency treatment* primarily targets b_i by providing factual content about the mechanical relationship between cohort decline and per-student resources under the fixed linkage. For respondents who were previously unaware that g rises as N falls, this information corrects a specific factual gap. However, the direction of the effect on rule preferences is not predetermined. The same facts could support reform by revealing the disconnect between τ and N , or they could reduce perceived urgency by showing that per-student resources are already rising without intervention.

The *reference-point treatment* also operates on b_i , but through an anchoring mechanism rather than factual correction. Citizens who lack a clear standard for evaluating domestic education spending may use OECD peer-country comparisons to recalibrate their assessment. The treatment provides both aggregate spending shares and per-student metrics, which could pull in different directions: aggregate comparisons that place Korea above the OECD average may shift adequacy perceptions toward “excessive,” while per-student breakdowns by education level may redirect attention toward specific margins such as tertiary underspending.

The *trade-off treatment* is the arm most likely to shift θ_i . By presenting education finance alongside the full spending basket, including mandatory commitments for pensions, healthcare, and long-term care under population aging, the treatment makes opportunity costs explicit and may increase the weight respondents place on cross-sector comparisons when forming their preferences.

Across all three treatments, the design holds a constant visual format, length, neutral

tone, and the absence of partisan or elite cues. This is intended to isolate the informational content of each arm from messenger effects or rhetorical framing, so that any shifts in θ_i are interpretable as changes in the salience of policy-relevant considerations made explicit by the information itself.

Testable predictions. The framework generates two predictions that we take to the data in [Section 5](#). The first prediction concerns *Learning*. If the treatments operate partly through correcting factual beliefs, treatment effects should be larger among respondents with greater ex-ante informational gaps. Specifically, respondents who were previously unaware of the LEFG and its mechanics face the largest marginal informational value from the treatments and should exhibit the largest shifts in b_i , and consequently in stated preferences. We test this by splitting the sample on a pre-treatment measure of LEFG familiarity.

The second prediction concerns *stakes and rule protection*. If the stability valuation σ_i moderates the mapping from updated beliefs to rule preferences, respondents with higher personal stakes in the current formula should revise spending-level preferences (which depend on b_i and θ_i) but resist translating those revisions into support for structural rule change (which also depends on σ_i). Parents of school-age children are a natural test group: they benefit directly from the earmarked transfer and have the strongest incentive to value the formula’s predictability. We therefore expect parents to update their assessments of spending adequacy, closing the gap with the uninformed baseline, while showing smaller or null effects on support for reparameterizing the formula itself.

These two predictions do not exhaust the framework’s implications, but they correspond to the heterogeneity dimensions where the data speak most clearly. We also explore heterogeneity by education background and survey attentiveness in [Section 5](#), and we treat those analyses as exploratory.

3 Experimental Design and Data

3.1 Setting and Data Collection

We fielded a nationally representative online survey of Korean adults (ages 19–63) designed to measure how policy-relevant information about education finance updates fiscal preferences. The sampling frame is the *Korea Research* master panel with proportional quotas by region, sex, and age benchmarked to September 2024 population statistics. Fieldwork ran October 18–24, 2024 via web mode and yielded $N = 3,066$ respondents with a maximum sampling error of ± 1.8 percentage points at the 95% level.

The questionnaire comprises 45 items organized in modular blocks: demographics and labor-income covariates; neutral primers on central-government education outlays and the LEFG (including the statutory 20.79% linkage); a randomized information module; and outcome items aligned with policy levers. All respondents completed the same pre-treatment covariates and primers before randomization into one of four information modules described in Section 3.2. Immediately after the assigned module, all respondents answered identical post-treatment outcomes, followed by comprehension and robustness checks. The full survey instrument, including the treatment information as presented to respondents, is reproduced in [Appendix E](#).

To ensure high-quality responses, the instrument incorporated several automated quality controls: soft prompts for skipped items, internal consistency checks without revealing correct answers, and time-on-page constraints on data-heavy screens to ensure respondents spent adequate time processing information before advancing. The resulting dataset contains a complete trace of pre-treatment covariates, randomized treatment exposure, and post-treatment outcomes for each respondent.¹³

¹³The survey collected no personally identifiable information; all responses were recorded anonymously. The study was conducted in compliance with the research ethics guidelines at the authors' then affiliated institutions (i.e., the KDI School of Public Policy and Management and the Korea Institute of Public Finance), and we were advised that formal IRB review was not required given the anonymous, non-sensitive nature of the data.

3.2 Treatment Arms

Respondents were randomized at survey entry into one of four modules: a placebo control and three information treatments. All modules used the same visual format, neutral tone, and closed-ended response scales, and were designed to be comparable in length. Each module presented official statistics as simple tables or charts with units and sources labeled; wording was descriptive rather than exhortatory. The three treatments correspond to the channels discussed in the conceptual framework (Section 2.2): an efficiency channel under demographic change, a reference-point channel via international benchmarks, and an opportunity-cost channel via cross-sector trade-offs. The placebo provides a non-directional fiscal context to separate information effects from mere exposure.

A. Placebo

The placebo module provides a non-directional fiscal context without policy-relevant cues. It displays the FY2023 education budget by function and program category, highlighting that personnel costs account for nearly half of total outlays. It then introduces the Ministry of Education’s fiscal-assessment framework, which consists of soundness, efficiency, and accountability. Furthermore, the module asks respondents which dimension they consider most important. Finally, it elicits beliefs about whether LEFG is related to public education quality and whether a reduction would affect students’ school life. This structure holds attention and exposure constant while avoiding any information that could directionally shift spending or rule preferences. To the extent that these items subtly reinforce the salience or legitimacy of education spending, they would bias estimated treatment effects toward zero, rendering our estimates conservative (see [Appendix E](#) for the full module).

B. Efficiency treatment: Expenditure efficiency under demographic change

This module targets the belief-updating channel (b_i in the framework) by presenting factual content about the mechanical relationship between cohort decline and per-student resources under the fixed LEFG formula. It first shows recent trends (2018–2023): while K–12 enrollment declined from 5.58 million to 5.21 million, the LEFG pool—fixed at 20.79% of

internal-tax revenue—grew from KRW 4.7 trillion to KRW 7.4 trillion, raising per-student LEFG from 8.87 million KRW to 14.54 million KRW. Respondents judge whether this level is appropriate. The module then presents long-run projections (2020–2060) showing that, if the formula remains unchanged, per-student LEFG would rise from about 10.0 million KRW to 45.4 million KRW as the tax base grows and enrollment shrinks. Respondents select their preferred policy response from five options ranging from gradually reducing per-student amounts to raising the linkage above 20.79%. The module closes with projected student-teacher ratios and class sizes through 2060 and an item on redirecting resources across education levels, covering early childhood, K–12, and higher/lifelong education.

C. Reference-point treatment: International benchmarks

This module targets the reference-point channel by providing cross-country comparisons that anchor evaluations of Korea’s education spending to OECD peer-economy levels. It first presents a table comparing Korea’s student-teacher ratios and class sizes with the OECD average at both elementary and secondary levels, and asks respondents to assess whether Korea’s ratios are appropriate. The module then shows government education spending as a share of total government expenditure for elementary, secondary, and higher education, comparing Korea and the OECD average in 2015 and 2019. Two facts are salient: Korea’s K–12 spending share exceeds the OECD average by roughly 30%, while its higher-education spending share falls about 17% below the OECD average. Respondents evaluate whether Korea spends “too much,” “about right,” or “too little” on K–12 and on higher education separately. By providing a concrete external standard where most respondents previously had none, the module tests whether anchoring to peer-economy reference points shifts assessments of spending adequacy.

D. Trade-off treatment: Cross-sector budget trade-offs

This module targets the salience-weight channel (θ_i in the framework) by embedding education finance in the economy-wide spending basket, making opportunity costs explicit. It first defines mandatory versus discretionary spending and presents long-term fiscal projections (2022–2070) showing that mandatory spending as a share of GDP is projected to rise from

15.7% to 23.4%, while discretionary spending remains flat at about 12.8%. Respondents assess whether these trajectories are appropriate. The module then breaks out mandatory social-welfare spending into four categories, namely public pensions, social insurance, public assistance, and other, revealing that pension expenditure is projected to grow at 10.1% annually, far outpacing other categories. Respondents indicate which categories should grow faster or be reduced. Finally, the module overlays LEFG projections with demographic structure through 2060, showing the LEFG rising from 2.9% to 4.8% of GDP alongside a sharp decline in the school-age population and a rapid increase in the population aged 65 and over. Respondents evaluate whether the projected LEFG growth rate is appropriate.

3.3 Outcomes, Estimation, and Internal Validity

Primary outcomes are pre-specified and policy-proximate. They capture three preference margins: (i) the perceived adequacy of the current education-budget share and the preferred education share within the central budget; (ii) support for maintaining the current tax-linked earmark versus replacing it with student- or need-based parameters; and (iii) stated priorities for reallocating resources when trade-offs are explicit, including the allocation of any implied surplus across demographic priorities (for example, child and elder care) and rankings across functional categories. Item formats and response scales are held constant across all arms, and outcome families are defined *ex ante*.

We estimate intention-to-treat (ITT) effects by comparing each treatment arm to the placebo. For binary and ordered categorical outcomes, we report linear probability specifications for transparency and comparability across outcome families. We use heteroskedasticity-robust standard errors. We also report covariate-adjusted estimates that include pre-treatment characteristics that can improve precision.

Internal validity is constructed by the randomized assignment, and we assess it using balance diagnostics and comprehension checks. We report balance on pre-treatment covariates across the four arms in Section 3.4. Comprehension items administered after the outcome battery confirm that respondents processed the assigned information. The common formatting across arms and the placebo module minimizes presentation-driven artifacts, so that contrasts across the three treatment arms isolate the roles of efficiency cues, reference

points, and opportunity-cost framing in shaping preferences over education spending and the LEFG rule.

3.4 Baseline Summary Statistics

We first verify that the randomization produced comparable groups. [Table 1](#) presents baseline summary statistics for the placebo (control) group in Column 1 and tests for differences in means for each treatment group (Columns 2–4). Overall, respondents are around 43 years old on average, about 51% are female, 53% reside in the Seoul metropolitan area, and 63% hold a bachelor’s degree or higher (Panel A). We observe no systematic demographic differences across the experimental groups. The share of female respondents is 51% in the control group; while the trade-off treatment group is about 4 percentage points lower (47% female), this difference is only marginally significant. The reference-point group has a slightly higher proportion of mid-income individuals (monthly income 2–5 million KRW) by about 5 percentage points (Panel B), but other employment and income categories show no significant imbalances.

Household characteristics (Panel C) are also well balanced. The average household size is 3 members with around 0.26 school-aged children in the control group, and these figures are statistically similar across treatment groups. The only exception is a 0.07 increase in the number of school-aged children for the reference-point group, significant at the 5% level. Panel D presents measures of baseline familiarity with the LEFG and survey attentiveness. About 44% of the control group had never heard of LEFG before, and no treatment group differed significantly in prior awareness. To gauge attentiveness, all respondents received brief, neutral baseline information about education spending before treatment assignment, followed by a three-question review quiz. The control group’s mean score was 2.15 out of 3, and this metric is highly comparable across groups. In summary, the control and treatment groups are well balanced on observable demographics, prior knowledge, and baseline attentiveness.

Table 1: Summary Statistics and Randomization Check

	(1)	(2)	(3)	(4)
	Mean [SD]	Coefficient on difference against placebo group		
	Placebo message group	Demographic efficiency group	International reference-point group	Cross-sector trade-off group
Panel A. Respondent demographics				
Age	42.78 [12.78]	-0.41 (0.64)	0.36 (0.65)	0.01 (0.65)
=1 if female	0.51	-0.02 (0.03)	-0.01 (0.03)	-0.04* (0.03)
=1 if resides in Seoul Metropolitan Area	0.53	-0.01 (0.03)	0.01 (0.03)	0.01 (0.03)
=1 if bachelors degree or above	0.63	-0.03 (0.02)	-0.04 (0.02)	-0.02 (0.02)
Panel B. Employment and income				
=1 if employed	0.73	-0.00 (0.02)	-0.00 (0.02)	0.02 (0.02)
<i>Monthly income:</i>				
less than 2m KRW	0.19	0.00 (0.02)	-0.01 (0.02)	-0.01 (0.02)
2-5m KRW	0.49	0.03 (0.03)	0.05* (0.03)	0.02 (0.03)
5-10m KRW	0.30	-0.03 (0.02)	-0.04 (0.02)	-0.01 (0.02)
more than 10m KRW	0.03	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)
Panel C. Household characteristics				
=1 if married	0.60	0.03 (0.02)	0.03 (0.02)	0.00 (0.02)
Number of household members	3.00 [1.18]	-0.01 (0.06)	-0.01 (0.06)	-0.04 (0.06)
Number of children	0.86 [0.94]	-0.01 (0.05)	0.03 (0.05)	0.01 (0.05)
Number of under-5 children	0.13 [0.41]	0.00 (0.02)	-0.00 (0.02)	-0.01 (0.02)
Number of school-aged children	0.26 [0.59]	0.04 (0.03)	0.07** (0.03)	0.03 (0.03)
Panel D. Baseline knowledge about Local Education Finance Grants (LEFG)				
Number of correct questions in review quiz ^a	2.15	0.07 (0.04)	0.05 (0.04)	-0.00 (0.04)
=1 if never heard about LEFG	0.44	0.01 (0.03)	-0.01 (0.03)	-0.02 (0.03)
Observations	767	766	766	767

Note: Column 1 shows the mean and standard deviations in brackets for the placebo message group, while Columns 2-4 report the differences between each information treatment group and placebo group and standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

^a Three questions about Local Education Finance Grants (LEFG) after providing relevant information.

4 Results

4.1 Specification

To estimate intention-to-treat (ITT) effects of information provision, we estimate

$$Y_i = \beta_1 \text{Efficiency}_i + \beta_2 \text{RefPoint}_i + \beta_3 \text{TradeOff}_i + \mathbf{X}'_i \gamma + \varepsilon_i, \quad (3)$$

where Y_i is the outcome of interest for individual i , and the three right-hand-side variables are indicators for random assignment to each treatment arm. The omitted category is the placebo control. The coefficients β_1 , β_2 , and β_3 are the ITT estimates for the effects of each information treatment relative to the placebo. We estimate heteroskedasticity-robust standard errors. [Appendix B](#) reports covariate-adjusted estimates that include pre-treatment demographics; results are virtually identical.

4.2 Education Budget Perceptions and Preferences

[Table 2](#) reports treatment effects on education-budget beliefs and preferences. All three treatments reduce the probability of ranking education as the top long-run spending priority out of 15 sectors by 4–5 percentage points (Column 1, from a placebo mean of 19%), with smaller but directionally consistent declines for second-priority rankings (Column 2). Preferred aggregate education spending also declines: all three treatments lower the preferred education share of total government expenditure by 2.2–2.7 percentage points from a placebo mean of 21.8% (Column 4). On the five-point adequacy scale (Column 3; 1 = far too low, 5 = far too high), the reference-point and trade-off treatments increase perceived adequacy by 0.11 and 0.15 points, respectively, indicating that respondents view the current education share as more sufficient once placed in a comparative or opportunity-cost context. The efficiency treatment moves the mean in the same direction but is not statistically significant. Covariate-adjusted estimates reported in [Table B.1](#) are virtually identical.

Table 2: Perceived and Preferred Allocation of Education Budget

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Demographic Efficiency	-0.05** (0.02)	-0.04** (0.02)	0.05 (0.04)	-2.73*** (0.73)
Int'l Reference-point	-0.04** (0.02)	-0.01 (0.02)	0.11** (0.05)	-2.21*** (0.76)
Cross-sector Trade-off	-0.05*** (0.02)	-0.03* (0.02)	0.15*** (0.05)	-2.60*** (0.74)
Placebo group mean	0.19	0.16	3.04	21.83
Placebo group SD	0.39	0.37	0.85	15.31
Observations	3,066	3,066	3,066	3,066

Note: This table reports ITT effects on education-budget beliefs and preferences. Column 1 is an indicator equal to one if the respondent ranked “Education” as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors on a five-point scale (1 = far too low, 5 = far too high). Column 4 records the respondent’s preferred share of total government expenditure allocated to education (percentage). Robust standard errors in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

4.3 Attitudes toward the LEFG Formula

We next examine whether information shifts attitudes toward the LEFG formula—the statutory mechanism that guarantees 20.79% of internal tax revenue to education. Table 3 reports the results.

Column 1 confirms that baseline awareness of the formula is balanced: approximately 50% of placebo respondents had never heard of the 20.79% linkage, and treatments do not shift this measure. On the evaluative scale (Column 2; 1 = too large, 3 = adequate, 5 = too small), the placebo mean is 2.82—just below “adequate,” leaning toward “somewhat large.” All three treatments shift this further toward “too large”: the trade-off treatment has the strongest effect (−0.17), followed by the efficiency (−0.11) and reference-point (−0.09) treatments.

The efficiency and trade-off treatments also produce significant reductions in the preferred

formula percentage (Column 3). From a placebo mean of 22.3%—slightly above the current 20.79%—the efficiency treatment lowers the preferred share by 1.62 percentage points and the trade-off treatment by 1.20 percentage points. The reference-point treatment does not significantly shift this numeric outcome, suggesting that while international comparisons make respondents view the current share as generous, they do not provide a clear anchor for *how much* to adjust.

The most interpretively rich results appear in Columns 4–6. In the placebo group, 79% of respondents state that the LEFG formula should be changed (Column 4). The efficiency and reference-point treatments *reduce* this share by 4–5 percentage points, while the trade-off treatment has no effect. This appears counterintuitive given the negative adequacy shifts, but the reform-option columns resolve the puzzle. Among respondents who endorse reform, the efficiency treatment increases support for tying the formula to the school-age population by 7 percentage points (Column 5; placebo mean 53%), and the reference-point treatment increases it by 5 percentage points. Support for the alternative—project-based budgeting—does not rise under any treatment (Column 6; placebo mean 31%). The pattern is consistent with information channeling diffuse reform sentiment toward a specific, demographically linked proposal: respondents who receive per-student or per-capita metrics become more likely to endorse a formula tied to the school-age population, while those receiving aggregate fiscal information (trade-off treatment) shift on adequacy perceptions but not on the form of reform.¹⁴ Table B.2 shows that these patterns are robust to including pre-treatment covariates.

¹⁴As a supplementary measure, we also elicited views on the LEFG share within local education budgets (76.4% of MPOE revenues). The trade-off treatment reduces the perceived appropriateness of this share by 0.13 points on a 1–5 scale ($p < 0.01$), but treatments do not significantly alter the preferred share in percentage terms (Table A.1). Because our treatments focused on aggregate national-level spending rather than central-local transfer mechanics, any effects on this margin are likely indirect.

Table 3: Revenue Formula for Local Education Finance Grant

	(1)	(2)	(3)	(4)	(5)	(6)
	=1 if unaware of current LEFG formula	Perceived adequacy of current formula (1-5 scale)	Preferred share in formula (percentage)	=1 if perceives change in formula necessary	=1 if change should be based on school-age population	=1 if change should be based on project needs
Demographic Efficiency	0.01 (0.03)	-0.11** (0.04)	-1.62*** (0.52)	-0.04** (0.02)	0.07** (0.03)	-0.04 (0.03)
Int'l Reference-point	0.01 (0.03)	-0.09** (0.04)	-0.05 (0.60)	-0.05** (0.02)	0.05* (0.03)	-0.04 (0.03)
Cross-sector Trade-off	-0.01 (0.03)	-0.17*** (0.04)	-1.20** (0.56)	0.02 (0.02)	0.01 (0.03)	-0.01 (0.03)
Placebo group mean	0.50	2.82	22.28	0.79	0.53	0.31
Placebo group SD	0.50	0.83	10.73	0.40	0.50	0.46
Observations	3,066	3,066	3,066	3,066	2,379	2,379

Note: This table reports ITT effects on knowledge and attitudes regarding the LEFG revenue formula (20.79% of national tax revenue). Column 1: indicator for never having heard of the formula. Column 2: perceived adequacy (1 = too large, 3 = adequate, 5 = too small). Column 3: preferred percentage allocation. Column 4: indicator for believing the formula should be changed. Columns 5–6 condition on supporting change: Column 5 is an indicator for reform based on the school-age population; Column 6 for project-based budgeting. Robust standard errors in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

4.4 Preferred Uses of Surplus Education Funds

Given the ongoing decline in the school-age population, local education authorities increasingly face surplus funds under the current financing structure. The survey presented a hypothetical surplus scenario and asked respondents to rank their preferred use. [Table 4](#) reports whether each option is ranked first.

In the placebo group, “expanding early childhood education support” is the most popular first choice (36%), followed by “transfers to other sectors” (22%), “expanding higher education support” (20%), “integrating local and education finances” (19%), and “transferring funds to locally needed projects” (4%). All three treatments significantly reduce the probability of selecting early childhood expansion (Column 2): by 5 percentage points under the efficiency treatment, 10 points under the reference-point treatment, and 8 points under the trade-off treatment.

Where respondents redirect their priorities is treatment-specific, consistent with each arm’s informational content. Under the efficiency treatment, support for transferring surplus

to other sectors—such as programs addressing low birthrates or an aging society—increases by 5 percentage points (Column 4). Under the reference-point treatment, prioritization of higher education rises by 8 percentage points (Column 3), consistent with the OECD comparisons revealing that Korea’s tertiary spending share falls below the OECD average. Under the trade-off treatment, support for transferring funds to locally needed projects increases by 4 percentage points (Column 5), consistent with an opportunity-cost frame increasing willingness to grant local discretion over surplus resources.¹⁵ Table B.3 confirms that these estimates are unchanged when pre-treatment covariates are included.

Table 4: Preferred Uses of Surplus Education Funds under Current LEFG Formula

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Demographic Efficiency	0.00 (0.02)	-0.05** (0.03)	0.00 (0.02)	0.05** (0.02)	0.00 (0.01)
Int’l Reference-point	0.02 (0.02)	-0.10*** (0.02)	0.08*** (0.02)	-0.01 (0.02)	0.02 (0.01)
Cross-sector Trade-off	0.02 (0.02)	-0.08*** (0.02)	-0.01 (0.02)	0.03 (0.02)	0.04*** (0.01)
Placebo group mean	0.19	0.36	0.20	0.22	0.04
Placebo group SD	0.39	0.48	0.40	0.41	0.20
Observations	2,789	2,789	2,789	2,789	2,789

Note: This table reports ITT effects on the probability that each surplus-allocation option is ranked first. Options: (i) integrating local and education finances (Column 1); (ii) expanding early childhood education (Column 2); (iii) expanding higher education (Column 3); (iv) transferring funds to other sectors such as low-birthrate and aging policies (Column 4); (v) transferring funds to locally needed projects (Column 5). Robust standard errors in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

¹⁵We also measured perceived need for budget expansion in five welfare sub-sectors. The efficiency treatment reduces perceived need for basic livelihood support (-0.11 , $p < 0.10$) and increases perceived need for pension fund management ($+0.11$, $p < 0.10$), consistent with the demographic content redirecting attention toward aging-related fiscal pressures. The reference-point treatment reduces perceived need for basic livelihood support (-0.15 , $p < 0.05$). The trade-off treatment produces no significant welfare-sector spillovers (Table A.2).

5 Mechanisms and Interpretation

This section interprets how the information treatments operate. We organize the analysis around three questions. First, are treatment effects larger among respondents with greater ex-ante information gaps about LEFG? The answer to this question is the most direct implication of the learning channel in our conceptual framework. Second, do personal stakes—in particular, parental status—moderate the mapping from updated beliefs to rule preferences, as the framework predicts? Third, does the observed updating move citizens toward an informed benchmark or merely induce arbitrary retrenchment? We address these questions using heterogeneous treatment effects, a supplementary expert survey, and response-quality checks. The subgroup analyses by education, parental status, and survey attentiveness are guided by the conceptual framework and by institutional priors about who is most likely to be informed about LEFG and who has the strongest household-level stakes. We treat the heterogeneity results as suggestive evidence that helps interpret mechanisms, emphasizing broad and consistent patterns across outcome families rather than isolated coefficients.¹⁶

5.1 Information gaps and heterogeneous updating

If the treatments operate partly through correcting misperceptions about the LEFG and its fiscal implications, effects should be concentrated among respondents who were previously unaware of the system. We test this by splitting the sample on a pre-treatment measure of LEFG familiarity: roughly 44% of respondents reported having never heard of the LEFG before the survey.

Table 5 reports the split for education-budget perceptions and preferences. The contrast is sharp. Among respondents who had never heard of LEFG, all three treatments produce large reductions in the preferred education budget share—roughly 2.7 to 4.0 percentage points, depending on the treatment arm (Panel A, Column 4). The effect on perceived adequacy is also concentrated in this group: all treatments shift the adequacy score upward, indicating that previously uninformed respondents revise toward viewing the current educa-

¹⁶The LEFG-familiarity split is the most direct test of the learning channel because it proxies for ex-ante informational gaps about the earmark. The other subgroup analyses are exploratory and should be interpreted accordingly.

tion share as more sufficient. By contrast, the priority-ranking outcomes in Column 1 show little movement among the uninformed.

The pattern reverses among respondents already familiar with LEFG (Panel B). Preferred-share reductions are smaller and less consistently significant (1.6–1.9 percentage points). The more prominent response is a re-ranking effect: each treatment reduces the probability of selecting education as the top long-run spending priority by about 8 percentage points (Column 1). This split is consistent with the idea that new factual content generates larger quantitative updating among the previously uninformed, while the already informed are more likely to reallocate attention across sectors when confronted with structured comparisons.

Table 5: Perceived and Preferred Allocation of Education Budget, heterogeneity by familiarity with LEFG

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Panel A. Never heard of LEFG				
Demographic Efficiency	-0.01 (0.03)	-0.04* (0.03)	0.11* (0.06)	-3.89*** (1.11)
Int'l Reference-point	0.01 (0.03)	-0.02 (0.03)	0.14* (0.07)	-2.65** (1.18)
Cross-sector Trade-off	-0.01 (0.03)	-0.02 (0.03)	0.15** (0.07)	-4.00*** (1.09)
Placebo group mean	0.13	0.16	2.99	22.12
Placebo group SD	0.33	0.37	0.85	16.04
Observations	1,335	1,335	1,335	1,335
Panel B. Heard of or know well about LEFG				
Demographic Efficiency	-0.08*** (0.03)	-0.03 (0.02)	-0.00 (0.06)	-1.78* (0.96)
Int'l Reference-point	-0.08*** (0.03)	-0.00 (0.02)	0.10 (0.06)	-1.86* (0.99)
Cross-sector Trade-off	-0.08*** (0.03)	-0.04 (0.02)	0.15** (0.06)	-1.58 (1.00)
Placebo group mean	0.24	0.16	3.07	21.61
Placebo group SD	0.43	0.37	0.85	14.72
Observations	1,731	1,731	1,731	1,731

Note: This table shows the information treatment effects on respondents' beliefs and preferences about the government's education budget. Column 1 is an indicator equal to one if the respondent ranked "Education" as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors, based on a five-point Likert scale (1 = far too low, 5 = far too high). Column 4 records the respondent's preferred share of total government expenditure that should be allocated to education (expressed as a percentage). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

The same asymmetry appears for attitudes toward the earmark itself. On the 20.79% revenue linkage, the never-heard group shows strong declines in perceived adequacy across all treatments and large reductions in the preferred formula percentage—especially under the efficiency treatment (Table C.1). However, this does not translate into a higher probability of endorsing a generic call to “change the formula,” consistent with respondents learning

that the status quo is generous without necessarily endorsing unspecified reforms. Among the already-familiar group, by contrast, the efficiency and reference-point treatments *reduce* the probability of stating that a change is necessary, while the trade-off treatment primarily shifts perceived adequacy (Table C.1). This pattern aligns with a refinement mechanism: additional information can make already-informed respondents less willing to endorse broad reform absent a specific proposal.

Surplus-allocation responses are comparatively similar across familiarity groups: the reference-point treatment consistently reduces prioritization of early childhood expansion and increases prioritization of higher education, and the trade-off treatment increases support for transferring surplus to locally needed projects (Table C.2). Overall, prior familiarity with LEFG separates a large quantitative-updating margin among the uninformed from a more compositional reprioritization and reform-refinement margin among the informed.

5.2 Personal stakes and rule protection

The conceptual framework predicts that even citizens who accept that education spending is generous may resist rule reform if they value the predictability that the current formula provides—a concern especially relevant for parents, whose households are direct beneficiaries of the earmarked transfer. We test this by splitting the sample on parental status.

The results confirm a systematic asymmetry on both the *prioritization* and *rule-protection* margins. In the placebo group, parents are substantially more likely than non-parents to rank education as the top sector for long-run funding (24% vs. 13%). Even against this higher baseline, all three treatments reduce parents' propensity to rank education first by 7–8 percentage points and lower their preferred education budget share by roughly 2.7–3.0 percentage points (Table C.6). Among non-parents, the treatments generate smaller movement in priority rankings, though they still reduce the preferred education share, particularly under the efficiency and trade-off treatments. This pattern indicates that information weakens education-first prioritization most strongly among respondents with the greatest household stake in schooling.

The sharper contrast emerges for attitudes toward the earmark itself. Non-parents become more critical of the current LEFG arrangements across all treatments: perceived ade-

quacy of the 20.79% formula shifts toward “too large,” and the efficiency treatment lowers non-parents’ preferred formula share by 2.2 percentage points. Non-parents also become more willing to endorse formula change under the trade-off treatment (Table C.7). Parents, by contrast, revise perceived generosity—the trade-off treatment shifts their adequacy score by -0.17 —but *do not* translate this into lower preferred formula shares, and the efficiency and reference-point treatments actually *reduce* the probability that parents endorse formula change (Table C.7). In other words, parents update their assessments of the status quo but resist acting on those assessments when the policy lever is structural reform of the earmark.

This divergence fits the interpretation that household stake moderates the mapping from updated beliefs to stated rule preferences. Parents appear to value the stability and predictability of the current formula even when they acknowledge its generosity—precisely the mechanism highlighted in the conceptual framework. The result also has practical implications: reform packages that preserve core funding predictability for current beneficiaries may face less parental resistance than proposals framed as open-ended restructuring.

Surplus-allocation responses reinforce this interpretation. Both parents and non-parents become less likely to prioritize early childhood expansion as a top use of surplus funds. But non-parents redirect surplus toward transfers to other sectors (under the efficiency treatment), while parents redirect toward higher education (under the reference-point treatment)—keeping reallocations within the education domain rather than across sectors (Table C.8).

5.3 Benchmarking against expert views

The heterogeneity results suggest that the treatments operate through learning and salience mechanisms rather than undirected sentiment. But a further question remains: does the observed updating move citizens *toward* an informed policy position, or does it simply induce retrenchment? To address this, we conducted a supplementary survey of 44 public-finance experts—professors and researchers in economics and public administration—and use their responses as an external benchmark.

The expert–public gap is substantial on every core margin, and the treatments consistently narrow it. On perceived adequacy of overall education spending (1–5 scale, where 1 = too high and 5 = too low), the expert mean is 2.27, compared with 2.96 in the placebo

group. The information treatments reduce the public’s mean to 2.81, closing roughly 22% of the gap (Figure D.1 in Appendix Appendix D). The gap is even larger for the 20.79% statutory linkage: the expert mean is 1.61 (no expert rated the current allocation as insufficient), while the placebo public mean is 2.82. Treatments reduce this to 2.65, narrowing the gap by about 14% (Figure D.2). On reform support, 68% of experts favor replacing the fixed linkage with a population-based rule, compared with 53% in the placebo group. Among treated respondents, support rises to 60%, closing roughly half the gap (Figure D.3).

These comparisons should be interpreted with appropriate caution: the expert sample is small ($N = 44$) and drawn from a specific professional community, so it does not define what preferences *should* be. Nevertheless, the consistent direction of convergence across all three margins—adequacy of spending, adequacy of the formula, and reform support—indicates that the information treatments did not merely induce arbitrary budget cutting. Instead, the treatments moved public preferences toward positions independently held by professionals whose assessments incorporate the fiscal and demographic realities that the treatments made salient.

5.4 Other dimensions of heterogeneity

To complete our mechanism analysis, we report two additional heterogeneity dimensions suggested by our framework and by standard robustness concerns in information-provision experiments. We split the sample by education background, which proxies for how respondents translate information into preferences, and by survey attentiveness, which tests whether our main findings are driven by inattentive respondents.

Education background. Education shapes *how* respondents translate the same information into budget and rule preferences. Among respondents with a bachelor’s degree or higher, all three treatments consistently reduce the probability of ranking education as the top long-run spending priority and lower the preferred education budget share by roughly 2.7 to 3.0 percentage points (Table C.3). Among respondents with high school or less, the treatments generate little movement in education’s priority ranking, even though the efficiency treatment still produces a sizable decline in the preferred education share. A similar distinction

appears in formula attitudes: the bachelor’s-or-higher group shows large and consistent declines in perceived adequacy across all treatments, especially under the trade-off treatment, whereas the high-school-or-below group exhibits larger movements in the preferred formula percentage and stronger support for tying the rule to the school-age population under the efficiency treatment (Table C.4). A parallel split appears in surplus-allocation responses, where reference-point and trade-off effects on the preferred use of surplus funds are concentrated among the more educated subgroup (Table C.5). These patterns are consistent with a stronger salience and reweighting margin among more educated respondents and a stronger mechanical-learning margin among less educated respondents.

Survey attentiveness. The three-item review quiz was administered before treatment exposure, so stratifying by quiz performance does not condition on a post-treatment variable. This makes it a clean check on whether the main findings are driven by inattentive respondents. The results are reassuring: treatment effects on the preferred education share and on formula attitudes are similar in sign and magnitude across respondents who answered all three questions correctly and those who did not (Appendix Tables C.9, C.10, and C.11). If anything, point estimates tend to be slightly larger among the attentive subgroup for the priority-ranking outcomes, consistent with engaged respondents processing the information more carefully. The main conclusions are therefore not an artifact of inattentive or weakly engaged respondents.

6 Conclusion

This study examines whether concise, policy-linked information shifts public preferences over both the level and the rules of education finance—a distinction that matters most where statutory earmarks govern fiscal architecture. In a nationally representative survey experiment in Korea, we randomize 3,066 adults into a placebo or one of three information treatments, each targeting a distinct channel through which citizens might update preferences over the LEFG, Korea’s formula-based earmark that ties education grants to internal tax revenue. All three treatments reduce the preferred education share of the central budget by

2.2 to 2.7 percentage points and shift evaluations of the 20.79% statutory linkage toward “too large.” The efficiency and trade-off treatments lower the preferred formula share by 1.2 to 1.6 percentage points. The most distinctive finding concerns the form of preferred reform: the efficiency and reference-point treatments—both of which frame education outlays around per-student or per-capita metrics—increase support specifically for tying the grant to the school-age population by 5 to 7 percentage points, while support for project-based budgeting or other alternatives does not rise under any treatment. Information does not simply make respondents want less education spending; it makes them want a different rule, and specifically, the rule that the informational content most directly implies.

The heterogeneity analysis supports two channels from our conceptual framework. First, effects on spending-level preferences are concentrated among respondents previously unaware of the LEFG, consistent with the learning channel: the treatments correct factual beliefs (b_i), and the correction is largest where ex-ante gaps are largest. Second, parents update their assessments of spending adequacy but resist translating those assessments into support for structural formula reform, consistent with the stability-valuation channel (σ_i): households that directly benefit from the earmarked transfer value the predictability of the current rule even when they acknowledge its generosity. A supplementary expert survey confirms that the direction of updating is not arbitrary—information consistently moves public preferences toward positions independently held by public-finance professionals.

Three practical implications follow. First, reform packages that translate statutory parameters into transparent per-beneficiary incidence, which makes concrete what the formula implies for each student under demographic change, may face less resistance than proposals framed as aggregate spending cuts. Second, preserving the core equalization logic of existing rules while introducing need-based adjustment margins may be more politically feasible than open-ended restructuring, particularly among direct beneficiaries. Third, proactively specifying how freed fiscal space will be used, for example on higher education, long-term care, or locally determined priorities, may preempt the protective response that arises when reallocation is framed as loss rather than redistribution. These implications extend beyond Korea. Similar tensions between tax-linked earmarks and shrinking service populations are likely to intensify in other aging advanced economies, and the finding that targeted informa-

tion can build support for reparameterization rather than retrenchment is relevant wherever entrenched fiscal rules constrain reform.

Several limitations qualify the interpretation. The experiment identifies intention-to-treat effects on stated preferences measured shortly after exposure, and we do not observe longer-run behavior, electoral outcomes, or intergovernmental bargaining. Neutral presentation and credible sourcing are integral to the design, and politicized messaging environments could attenuate or reverse similar effects. Each treatment arm bundles multiple pieces of information, which means the design cannot fully isolate which specific element within an arm drives the response. We view these limitations as directions for future work. Subsequent studies can test persistence and deliberative spillovers, explore interactions with institutional trust and messenger identity, and connect stated-preference shifts to implementable parameterizations by mapping the distributional consequences of formula reform across jurisdictions and schooling levels.

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Appendix

A Supplementary Outcomes

Table A.1: Local Education Finance Grant Share in Education Budget

	(1)	(2)
	Perceived adequacy of current share in educ budget (1-5 scale)	Preferred share in educ budget (percentage)
Demographic Efficiency	-0.07 (0.05)	0.54 (1.33)
Int'l Reference-point	-0.09* (0.05)	0.08 (1.34)
Cross-sector Trade-off	-0.13*** (0.05)	-1.59 (1.34)
Placebo group mean	3.11	56.36
Placebo group SD	0.93	25.80
Observations	3,066	3,066

Note: This table shows the information treatment effects on respondents' perceptions regarding the composition of local education finance grant (LEFG) within the education budget of metropolitan and provincial offices of education (MPOEs). Column 1 measures views on whether and how much the current share (76.4%) should be adjusted, using a five-point scale where 1 = should be reduced a lot, 2 = should be reduced a bit, 3 = adequate, 4 = should be increased a bit, and 5 = should be increased a lot. Column 2 records the respondent's preferred percentage share. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table A.2: Perceived Need for Budget Expansion in Welfare Sub-sectors

	(1) Basic livelihood support	(2) Childbirth & childcare support	(3) After- school care	(4) Elderly care	(5) Pension fund management
Demographic Efficiency	-0.11* (0.06)	-0.03 (0.06)	-0.01 (0.06)	0.06 (0.06)	0.11* (0.06)
Int'l Reference-point	-0.15** (0.06)	0.00 (0.06)	-0.02 (0.06)	-0.09 (0.06)	0.06 (0.06)
Cross-sector Trade-off	0.02 (0.06)	-0.01 (0.06)	0.06 (0.06)	0.04 (0.06)	0.04 (0.06)
Placebo group mean	2.90	3.15	3.05	3.09	2.87
Placebo group SD	1.19	1.22	1.16	1.12	1.20
Observations	3,066	3,066	3,066	3,066	3,066

Note: This table shows the information treatment effects on respondents' perceptions regarding the need for increased government spending across major welfare sub-sectors. Each column corresponds to one specific program area. Column 1 (*Basic Livelihood Protection and Support for Vulnerable Groups*) measures the perceived need to expand the budget for programs supporting persons with disabilities, the homeless, and low-income households. Column 2 (*Cash Support Services for Childbirth and Child-care*) captures attitudes toward expanding cash transfer programs aimed at reducing the financial burden of childbirth and childcare, such as child allowances, childcare subsidies, and babysitting support. Column 3 (*Elementary After-School Care Services*) reflects perceived needs for greater spending on after-school care programs, including Neulbom Schools and Youth After-School Academies. Column 4 (*Elderly Care Services*) measures views on expanding services for the elderly, including income support and medical assistance programs. Column 5 (*National Pension Fund Management*) assesses perceptions about the need to increase spending related to the management and sustainability of the national pension fund. Outcomes are measured on a five-point scale where 1–2 = no or minor need for additional spending, 3 = moderate need, and 4–5 = strong need for increased spending. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

B Main Results with Controls

Table B.1: Perceived and Preferred Allocation of Education Budget, with controls

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Demographic Efficiency	-0.06*** (0.02)	-0.04** (0.02)	0.07 (0.04)	-2.92*** (0.73)
Int'l Reference-point	-0.04** (0.02)	-0.01 (0.02)	0.13*** (0.04)	-2.29*** (0.76)
Cross-sector Trade-off	-0.05*** (0.02)	-0.03* (0.02)	0.15*** (0.05)	-2.52*** (0.74)
Placebo group mean	0.19	0.16	3.04	21.83
Placebo group SD	0.39	0.37	0.85	15.31
Observations	3,066	3,066	3,066	3,066

Note: This table is a version of [Table 2](#) with regressions including control variables from Panels A-C of [Table 1](#). Column 1 is an indicator equal to one if the respondent ranked “Education” as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors, based on a five-point Likert scale (1 = far too low, 5 = far too high). Column 4 records the respondent’s preferred share of total government expenditure that should be allocated to education (expressed as a percentage). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table B.2: Revenue Formula for Local Education Finance Grant, with controls

	(1)	(2)	(3)	(4)	(5)	(6)
	=1 if unaware of current LEFG formula	Perceived adequacy of current formula (1-5 scale)	Preferred share in formula (percentage)	=1 if perceives change in formula necessary	=1 if change should be based on school-age population	=1 if change should be based on project needs
Demographic Efficiency	0.01 (0.03)	-0.13*** (0.04)	-1.80*** (0.52)	-0.04* (0.02)	0.07** (0.03)	-0.03 (0.03)
Int'l Reference-point	0.00 (0.02)	-0.11** (0.04)	-0.05 (0.60)	-0.04** (0.02)	0.05* (0.03)	-0.03 (0.03)
Cross-sector Trade-off	-0.01 (0.03)	-0.17*** (0.04)	-1.12** (0.56)	0.02 (0.02)	0.01 (0.03)	-0.01 (0.03)
Placebo group mean	0.50	2.82	22.28	0.79	0.53	0.31
Placebo group SD	0.50	0.83	10.73	0.40	0.50	0.46
Observations	3,066	3,066	3,066	3,066	2,379	2,379

Note: This table is a version of Table 3 with regressions including control variables from Panels A-C of Table 1. Column 1 is an indicator equal to one if the respondent reported having never heard about the formula. Column 2 measures views on whether and how much the current 20.79% share should be adjusted, using a five-point scale where 1 = too large, 2 = somewhat large 3 = adequate, 4 = somewhat small, and 5 = too small. Column 3 records the respondent's preferred percentage allocation. Column 4 is an indicator equal to one if the respondent believes the current LEFG formula should be changed. Column 5 is an indicator equal to one if the respondent suggested that the formula should be revised based on the school-age population. Column 6 is an indicator equal to one if the respondent proposed a project- or item-based budgeting system jointly determined by central and local governments. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table B.3: Preferred Uses of Surplus Education Funds under Current LEFG Formula, with controls

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Demographic Efficiency	0.01 (0.02)	-0.05** (0.03)	0.00 (0.02)	0.05** (0.02)	-0.00 (0.01)
Int'l Reference-point	0.02 (0.02)	-0.10*** (0.02)	0.08*** (0.02)	-0.01 (0.02)	0.01 (0.01)
Cross-sector Trade-off	0.02 (0.02)	-0.08*** (0.02)	-0.01 (0.02)	0.03 (0.02)	0.03*** (0.01)
Placebo group mean	0.19	0.36	0.20	0.22	0.04
Placebo group SD	0.39	0.48	0.40	0.41	0.20
Observations	2,789	2,789	2,789	2,789	2,789

Note: This table is a version of Table 4 with regressions including control variables from Panels A-C of Table 1. Options: (i) integrating local and education finances (Column 1); (ii) expanding early childhood education (Column 2); (iii) expanding higher education (Column 3); (iv) transferring funds to other sectors such as low-birthrate and aging policies (Column 4); (v) transferring funds to locally needed projects (Column 5). Robust standard errors in parentheses. ***, **, and * denote significance at 1%, 5%, and 10%, respectively.

C Other Heterogeneity

C.1 Heterogeneity by familiarity with LEFG

Table C.1: Local Education Finance Grant Share in Education Budget, heterogeneity by familiarity with LEFG

	(1) =1 if unaware of current LEFG formula	(2) Perceived adequacy of current formula (1-5 scale)	(3) Preferred share in formula (percentage)	(4) =1 if perceives change in formula necessary	(5) =1 if change should be based on school-age population	(6) =1 if change should be based on project needs
Panel A. Never heard of LEFG						
Demographic Efficiency	0.00 (0.03)	-0.19*** (0.06)	-2.80*** (0.75)	-0.01 (0.04)	0.07 (0.05)	-0.07 (0.04)
Int'l Reference-point	0.05* (0.03)	-0.14** (0.07)	-1.00 (0.92)	-0.04 (0.04)	0.05 (0.05)	-0.08* (0.04)
Cross-sector Trade-off	-0.04 (0.03)	-0.16** (0.06)	-1.69** (0.85)	0.01 (0.04)	-0.00 (0.05)	-0.02 (0.04)
Placebo group mean	0.81	2.89	22.41	0.71	0.51	0.36
Placebo group SD	0.39	0.79	11.58	0.46	0.50	0.48
Observations	1,335	1,335	1,335	1,335	926	926
Panel B. Heard of or know well about LEFG						
Demographic Efficiency	0.01 (0.03)	-0.04 (0.06)	-0.65 (0.71)	-0.06** (0.03)	0.06 (0.04)	-0.02 (0.03)
Int'l Reference-point	-0.00 (0.03)	-0.06 (0.06)	0.66 (0.79)	-0.06** (0.03)	0.05 (0.04)	-0.02 (0.03)
Cross-sector Trade-off	0.04 (0.03)	-0.18*** (0.06)	-0.83 (0.74)	0.02 (0.02)	0.01 (0.04)	-0.00 (0.03)
Placebo group mean	0.26	2.76	22.17	0.86	0.54	0.28
Placebo group SD	0.44	0.86	10.03	0.34	0.50	0.45
Observations	1,731	1,731	1,731	1,731	1,453	1,453

Note: This table shows the information treatment effects on respondents' knowledge and perceptions regarding the composition of local education finance grant (LEFG) within the education budget of metropolitan and provincial offices of education (MPOEs). Column 1 is an indicator equal to one if the respondent reported having never heard that LEFG is the largest share (76.4%) within MPOE budget. Column 2 measures views on whether and how much the current share (76.4%) should be adjusted, using a five-point scale where 1 = should be reduced a lot, 2 = should be reduced a bit, 3 = adequate, 4 = should be increased a bit, and 5 = should be increased a lot. Column 3 records the respondent's preferred percentage share. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.2: Preferred Uses of Surplus Education Funds under Current LEFG Formula, heterogeneity by familiarity with LEFG

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Panel A. Never heard of LEFG					
Demographic Efficiency	-0.02 (0.03)	-0.06 (0.04)	0.01 (0.03)	0.06 (0.04)	0.01 (0.02)
Int'l Reference-point	0.01 (0.03)	-0.13*** (0.04)	0.08** (0.03)	0.01 (0.04)	0.04** (0.02)
Cross-sector Trade-off	0.02 (0.03)	-0.10** (0.04)	0.02 (0.03)	0.02 (0.04)	0.04* (0.02)
Placebo group mean	0.19	0.37	0.16	0.24	0.04
Placebo group SD	0.39	0.48	0.37	0.43	0.20
Observations	1,177	1,177	1,177	1,177	1,177
Panel B. Heard of or know well about LEFG					
Demographic Efficiency	0.01 (0.03)	-0.05 (0.03)	0.00 (0.03)	0.03 (0.03)	-0.01 (0.01)
Int'l Reference-point	0.02 (0.03)	-0.08** (0.03)	0.08*** (0.03)	-0.03 (0.03)	-0.00 (0.01)
Cross-sector Trade-off	0.02 (0.03)	-0.06* (0.03)	-0.03 (0.03)	0.03 (0.03)	0.04** (0.02)
Placebo group mean	0.18	0.35	0.22	0.20	0.04
Placebo group SD	0.39	0.48	0.42	0.40	0.20
Observations	1,612	1,612	1,612	1,612	1,612

Note: This table shows the information treatment effects on respondents' preferences regarding the use of surplus education funds, assuming no change to the current local education finance grant (LEFG) formula. Each column represents an indicator equal to one if the respondent ranked the corresponding option as the top (first-priority) use of surplus funds. The options include: (i) integrating local and education finances for flexible local spending (column 1); (ii) expanding early childhood education support (column 2); (iii) expanding higher education support (column 3); (iv) transferring funds to other sectors such as low birthrate and aging policies (column 4); and (v) transferring funds to locally needed projects (column 5). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

C.2 Heterogeneity by education background

Table C.3: Perceived and Preferred Allocation of Education Budget, heterogeneity by education background

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Panel A. Bachelors degree or above				
Demographic Efficiency	-0.07*** (0.02)	-0.05** (0.02)	0.07 (0.05)	-2.72*** (0.85)
Int'l Reference-point	-0.06** (0.03)	0.00 (0.02)	0.11* (0.06)	-2.71*** (0.86)
Cross-sector Trade-off	-0.08*** (0.02)	-0.04* (0.02)	0.18*** (0.06)	-3.01*** (0.87)
Placebo group mean	0.21	0.16	3.00	21.32
Placebo group SD	0.41	0.37	0.84	14.03
Observations	1,856	1,856	1,856	1,856
Panel B. High school diploma or below				
Demographic Efficiency	-0.01 (0.03)	-0.02 (0.03)	0.01 (0.07)	-2.86** (1.31)
Int'l Reference-point	0.00 (0.03)	-0.03 (0.03)	0.11 (0.07)	-1.61 (1.39)
Cross-sector Trade-off	-0.00 (0.03)	-0.01 (0.03)	0.10 (0.08)	-2.03 (1.33)
Placebo group mean	0.15	0.16	3.09	22.69
Placebo group SD	0.35	0.37	0.86	17.24
Observations	1,210	1,210	1,210	1,210

Note: This table shows the information treatment effects on respondents' beliefs and preferences about the government's education budget. Column 1 is an indicator equal to one if the respondent ranked "Education" as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors, based on a five-point Likert scale (1 = far too low, 5 = far too high). Column 4 records the respondent's preferred share of total government expenditure that should be allocated to education (expressed as a percentage). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.4: Local Education Finance Grant Share in Education Budget, heterogeneity by education background

	(1)	(2)	(3)	(4)	(5)	(6)
	=1 if unaware of current LEFG formula	Perceived adequacy of current formula (1-5 scale)	Preferred share in formula (percentage)	=1 if perceives change in formula necessary	=1 if change should be based on school-age population	=1 if change should be based on project needs
Panel A. Bachelors degree or above						
Demographic Efficiency	0.01 (0.03)	-0.13** (0.05)	-0.74 (0.64)	-0.09*** (0.03)	0.03 (0.04)	-0.02 (0.03)
Int'l Reference-point	0.02 (0.03)	-0.15*** (0.06)	-0.14 (0.71)	-0.06** (0.03)	0.07** (0.04)	-0.06* (0.03)
Cross-sector Trade-off	0.02 (0.03)	-0.24*** (0.06)	-1.53** (0.68)	-0.03 (0.02)	0.03 (0.04)	-0.01 (0.03)
Placebo group mean	0.47	2.84	21.55	0.85	0.55	0.30
Placebo group SD	0.50	0.85	10.38	0.36	0.50	0.46
Observations	1,856	1,856	1,856	1,856	1,486	1,486
Panel B. High school diploma or below						
Demographic Efficiency	0.01 (0.04)	-0.07 (0.06)	-3.07*** (0.86)	0.04 (0.04)	0.13*** (0.05)	-0.07 (0.04)
Int'l Reference-point	-0.01 (0.04)	-0.01 (0.07)	-0.11 (1.05)	-0.01 (0.04)	0.02 (0.05)	-0.01 (0.05)
Cross-sector Trade-off	-0.06 (0.04)	-0.07 (0.07)	-0.77 (0.95)	0.10*** (0.04)	-0.02 (0.05)	-0.01 (0.04)
Placebo group mean	0.56	2.77	23.49	0.71	0.49	0.33
Placebo group SD	0.50	0.81	11.23	0.46	0.50	0.47
Observations	1,210	1,210	1,210	1,210	893	893

Note: This table shows the information treatment effects on respondents' knowledge and perceptions regarding the composition of local education finance grant (LEFG) within the education budget of metropolitan and provincial offices of education (MPOEs). Column 1 is an indicator equal to one if the respondent reported having never heard that LEFG is the largest share (76.4%) within MPOE budget. Column 2 measures views on whether and how much the current share (76.4%) should be adjusted, using a five-point scale where 1 = should be reduced a lot, 2 = should be reduced a bit, 3 = adequate, 4 = should be increased a bit, and 5 = should be increased a lot. Column 3 records the respondent's preferred percentage share. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.5: Preferred Uses of Surplus Education Funds under Current LEFG Formula, heterogeneity by education background

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Panel A. Bachelors degree or above					
Demographic Efficiency	0.02 (0.03)	-0.07** (0.03)	-0.00 (0.03)	0.05* (0.03)	-0.00 (0.01)
Int'l Reference-point	0.01 (0.03)	-0.08*** (0.03)	0.07** (0.03)	-0.01 (0.03)	0.00 (0.01)
Cross-sector Trade-off	0.02 (0.03)	-0.07** (0.03)	-0.04 (0.03)	0.05* (0.03)	0.04** (0.02)
Placebo group mean	0.19	0.35	0.21	0.21	0.04
Placebo group SD	0.39	0.48	0.41	0.41	0.20
Observations	1,702	1,702	1,702	1,702	1,702
Panel B. High school diploma or below					
Demographic Efficiency	-0.03 (0.03)	-0.03 (0.04)	0.01 (0.03)	0.03 (0.04)	0.01 (0.02)
Int'l Reference-point	0.02 (0.03)	-0.13*** (0.04)	0.10*** (0.04)	-0.02 (0.04)	0.03 (0.02)
Cross-sector Trade-off	0.02 (0.03)	-0.08** (0.04)	0.03 (0.03)	-0.01 (0.04)	0.04* (0.02)
Placebo group mean	0.18	0.36	0.18	0.23	0.04
Placebo group SD	0.39	0.48	0.39	0.42	0.19
Observations	1,087	1,087	1,087	1,087	1,087

Note: This table shows the information treatment effects on respondents' preferences regarding the use of surplus education funds, assuming no change to the current local education finance grant (LEFG) formula. Each column represents an indicator equal to one if the respondent ranked the corresponding option as the top (first-priority) use of surplus funds. The options include: (i) integrating local and education finances for flexible local spending (column 1); (ii) expanding early childhood education support (column 2); (iii) expanding higher education support (column 3); (iv) transferring funds to other sectors such as low birthrate and aging policies (column 4); and (v) transferring funds to locally needed projects (column 5). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

C.3 Heterogeneity by having children

Table C.6: Perceived and Preferred Allocation of Education Budget, heterogeneity by having children

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Panel A. No child				
Demographic Efficiency	-0.02 (0.02)	-0.04 (0.02)	0.07 (0.06)	-2.55*** (0.99)
Int'l Reference-point	-0.00 (0.02)	-0.02 (0.02)	0.21*** (0.07)	-1.69 (1.10)
Cross-sector Trade-off	-0.02 (0.02)	-0.02 (0.02)	0.12* (0.07)	-2.14** (1.04)
Placebo group mean	0.13	0.14	3.07	21.01
Placebo group SD	0.33	0.34	0.84	14.52
Observations	1,463	1,463	1,463	1,463
Panel B. At least one child				
Demographic Efficiency	-0.07*** (0.03)	-0.03 (0.03)	0.03 (0.06)	-2.90*** (1.06)
Int'l Reference-point	-0.07** (0.03)	0.00 (0.03)	0.03 (0.06)	-2.68** (1.05)
Cross-sector Trade-off	-0.08*** (0.03)	-0.03 (0.03)	0.17*** (0.06)	-3.02*** (1.05)
Placebo group mean	0.24	0.18	3.00	22.59
Placebo group SD	0.43	0.38	0.86	15.98
Observations	1,603	1,603	1,603	1,603

Note: This table shows the information treatment effects on respondents' beliefs and preferences about the government's education budget. Column 1 is an indicator equal to one if the respondent ranked "Education" as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors, based on a five-point Likert scale (1 = far too low, 5 = far too high). Column 4 records the respondent's preferred share of total government expenditure that should be allocated to education (expressed as a percentage). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.7: Local Education Finance Grant Share in Education Budget, heterogeneity by having children

	(1)	(2)	(3)	(4)	(5)	(6)
	=1 if unaware of current LEFG formula	Perceived adequacy of current formula (1-5 scale)	Preferred share in formula (percentage)	=1 if perceives change in formula necessary	=1 if change should be based on school-age population	=1 if change should be based on project needs
Panel A. No child						
Demographic Efficiency	-0.04 (0.04)	-0.14** (0.06)	-2.20*** (0.79)	-0.03 (0.03)	0.08* (0.04)	-0.09** (0.04)
Int'l Reference-point	-0.01 (0.04)	-0.13** (0.06)	-0.55 (0.93)	-0.01 (0.03)	0.04 (0.04)	-0.04 (0.04)
Cross-sector Trade-off	-0.03 (0.04)	-0.18*** (0.06)	-1.43* (0.83)	0.06* (0.03)	-0.00 (0.04)	-0.03 (0.04)
Placebo group mean	0.58	2.79	22.28	0.73	0.53	0.32
Placebo group SD	0.49	0.83	11.73	0.44	0.50	0.47
Observations	1,463	1,463	1,463	1,463	1,075	1,075
Panel B. At least one child						
Demographic Efficiency	0.06 (0.04)	-0.08 (0.06)	-1.09 (0.68)	-0.05** (0.03)	0.05 (0.04)	-0.00 (0.04)
Int'l Reference-point	0.04 (0.04)	-0.07 (0.06)	0.39 (0.78)	-0.08*** (0.03)	0.06 (0.04)	-0.04 (0.04)
Cross-sector Trade-off	0.01 (0.04)	-0.17*** (0.06)	-0.98 (0.75)	-0.02 (0.03)	0.02 (0.04)	-0.00 (0.04)
Placebo group mean	0.43	2.84	22.27	0.85	0.53	0.30
Placebo group SD	0.50	0.83	9.75	0.36	0.50	0.46
Observations	1,603	1,603	1,603	1,603	1,304	1,304

Note: This table shows the information treatment effects on respondents' knowledge and perceptions regarding the composition of local education finance grant (LEFG) within the education budget of metropolitan and provincial offices of education (MPOEs). Column 1 is an indicator equal to one if the respondent reported having never heard that LEFG is the largest share (76.4%) within MPOE budget. Column 2 measures views on whether and how much the current share (76.4%) should be adjusted, using a five-point scale where 1 = should be reduced a lot, 2 = should be reduced a bit, 3 = adequate, 4 = should be increased a bit, and 5 = should be increased a lot. Column 3 records the respondent's preferred percentage share. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.8: Preferred Uses of Surplus Education Funds under Current LEFG Formula, heterogeneity by having children

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Panel A. No child					
Demographic Efficiency	-0.02 (0.03)	-0.01 (0.04)	-0.03 (0.03)	0.07* (0.04)	0.00 (0.02)
Int'l Reference-point	-0.03 (0.03)	-0.09** (0.04)	0.06* (0.03)	0.03 (0.03)	0.04* (0.02)
Cross-sector Trade-off	-0.01 (0.03)	-0.04 (0.04)	0.01 (0.03)	0.00 (0.03)	0.04** (0.02)
Placebo group mean	0.19	0.34	0.20	0.24	0.04
Placebo group SD	0.39	0.47	0.40	0.43	0.20
Observations	1,303	1,303	1,303	1,303	1,303
Panel B. At least one child					
Demographic Efficiency	0.02 (0.03)	-0.08** (0.03)	0.04 (0.03)	0.03 (0.03)	-0.00 (0.01)
Int'l Reference-point	0.05* (0.03)	-0.11*** (0.03)	0.11*** (0.03)	-0.05* (0.03)	-0.00 (0.01)
Cross-sector Trade-off	0.05 (0.03)	-0.11*** (0.03)	-0.03 (0.03)	0.05 (0.03)	0.04** (0.02)
Placebo group mean	0.18	0.37	0.20	0.21	0.04
Placebo group SD	0.39	0.48	0.40	0.40	0.20
Observations	1,486	1,486	1,486	1,486	1,486

Note: This table shows the information treatment effects on respondents' preferences regarding the use of surplus education funds, assuming no change to the current local education finance grant (LEFG) formula. Each column represents an indicator equal to one if the respondent ranked the corresponding option as the top (first-priority) use of surplus funds. The options include: (i) integrating local and education finances for flexible local spending (column 1); (ii) expanding early childhood education support (column 2); (iii) expanding higher education support (column 3); (iv) transferring funds to other sectors such as low birthrate and aging policies (column 4); and (v) transferring funds to locally needed projects (column 5). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

C.4 Heterogeneity by review quiz pass before treatment

Table C.9: Perceived and Preferred Allocation of Education Budget, heterogeneity by review quiz pass before treatment

	(1)	(2)	(3)	(4)
	=1 if education top priority	=1 if education second priority	Perceived adequacy of current share in total expend (1-5 scale)	Preferred education share (percentage)
Panel A. All questions correct in review quiz				
Demographic Efficiency	-0.08*** (0.03)	-0.00 (0.03)	0.06 (0.06)	-3.14*** (1.00)
Int'l Reference-point	-0.07** (0.03)	0.03 (0.03)	0.11 (0.07)	-2.49** (1.07)
Cross-sector Trade-off	-0.09*** (0.03)	-0.02 (0.03)	0.14** (0.07)	-2.78*** (1.03)
Placebo group mean	0.20	0.13	3.05	21.31
Placebo group SD	0.40	0.34	0.82	14.17
Observations	1,265	1,265	1,265	1,265
Panel B. At least one wrong				
Demographic Efficiency	-0.05** (0.02)	-0.04* (0.02)	0.04 (0.04)	-2.55*** (0.74)
Int'l Reference-point	-0.04* (0.02)	-0.01 (0.02)	0.09** (0.05)	-2.00*** (0.77)
Cross-sector Trade-off	-0.05*** (0.02)	-0.03* (0.02)	0.14*** (0.05)	-2.76*** (0.74)
Placebo group mean	0.19	0.16	3.04	21.75
Placebo group SD	0.39	0.37	0.85	14.96
Observations	2,927	2,927	2,927	2,927

Note: This table shows the information treatment effects on respondents' beliefs and preferences about the government's education budget. Column 1 is an indicator equal to one if the respondent ranked "Education" as the first-priority sector, out of 15 sectors, for additional long-term budget allocation; Column 2 second-priority. Column 3 measures the perceived adequacy of current education spending relative to other sectors, based on a five-point Likert scale (1 = far too low, 5 = far too high). Column 4 records the respondent's preferred share of total government expenditure that should be allocated to education (expressed as a percentage). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

Table C.10: Local Education Finance Grant Share in Education Budget, heterogeneity by review quiz pass before treatment

	(1) =1 if unaware of current LEFG formula	(2) Perceived adequacy of current formula (1-5 scale)	(3) Preferred share in formula (percentage)	(4) =1 if perceives change in formula necessary	(5) =1 if change should be based on school-age population	(6) =1 if change should be based on project needs
Panel A. All questions correct in review quiz						
Demographic Efficiency	-0.07* (0.04)	-0.09 (0.06)	-1.96** (0.76)	-0.00 (0.03)	0.05 (0.04)	-0.06 (0.04)
Int'l Reference-point	-0.06 (0.04)	-0.10 (0.06)	-0.31 (0.92)	-0.04 (0.03)	0.04 (0.04)	-0.07* (0.04)
Cross-sector Trade-off	-0.04 (0.04)	-0.15** (0.07)	-1.11 (0.85)	0.03 (0.03)	-0.04 (0.04)	-0.02 (0.04)
Placebo group mean	0.58	2.81	22.24	0.79	0.59	0.32
Placebo group SD	0.50	0.80	11.33	0.41	0.49	0.47
Observations	1,265	1,265	1,265	1,265	987	987
Panel B. At least one wrong						
Demographic Efficiency	0.01 (0.03)	-0.10** (0.04)	-1.57*** (0.53)	-0.05** (0.02)	0.07** (0.03)	-0.04* (0.03)
Int'l Reference-point	0.02 (0.03)	-0.07* (0.04)	0.19 (0.62)	-0.06*** (0.02)	0.05* (0.03)	-0.03 (0.03)
Cross-sector Trade-off	-0.00 (0.03)	-0.17*** (0.05)	-1.26** (0.57)	0.01 (0.02)	0.01 (0.03)	-0.01 (0.03)
Placebo group mean	0.50	2.81	22.24	0.80	0.53	0.31
Placebo group SD	0.50	0.83	10.73	0.40	0.50	0.46
Observations	2,927	2,927	2,927	2,927	2,279	2,279

Note: This table shows the information treatment effects on respondents' knowledge and perceptions regarding the composition of local education finance grant (LEFG) within the education budget of metropolitan and provincial offices of education (MPOEs). Column 1 is an indicator equal to one if the respondent reported having never heard that LEFG is the largest share (76.4%) within MPOE budget. Column 2 measures views on whether and how much the current share (76.4%) should be adjusted, using a five-point scale where 1 = should be reduced a lot, 2 = should be reduced a bit, 3 = adequate, 4 = should be increased a bit, and 5 = should be increased a lot. Column 3 records the respondent's preferred percentage share. Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

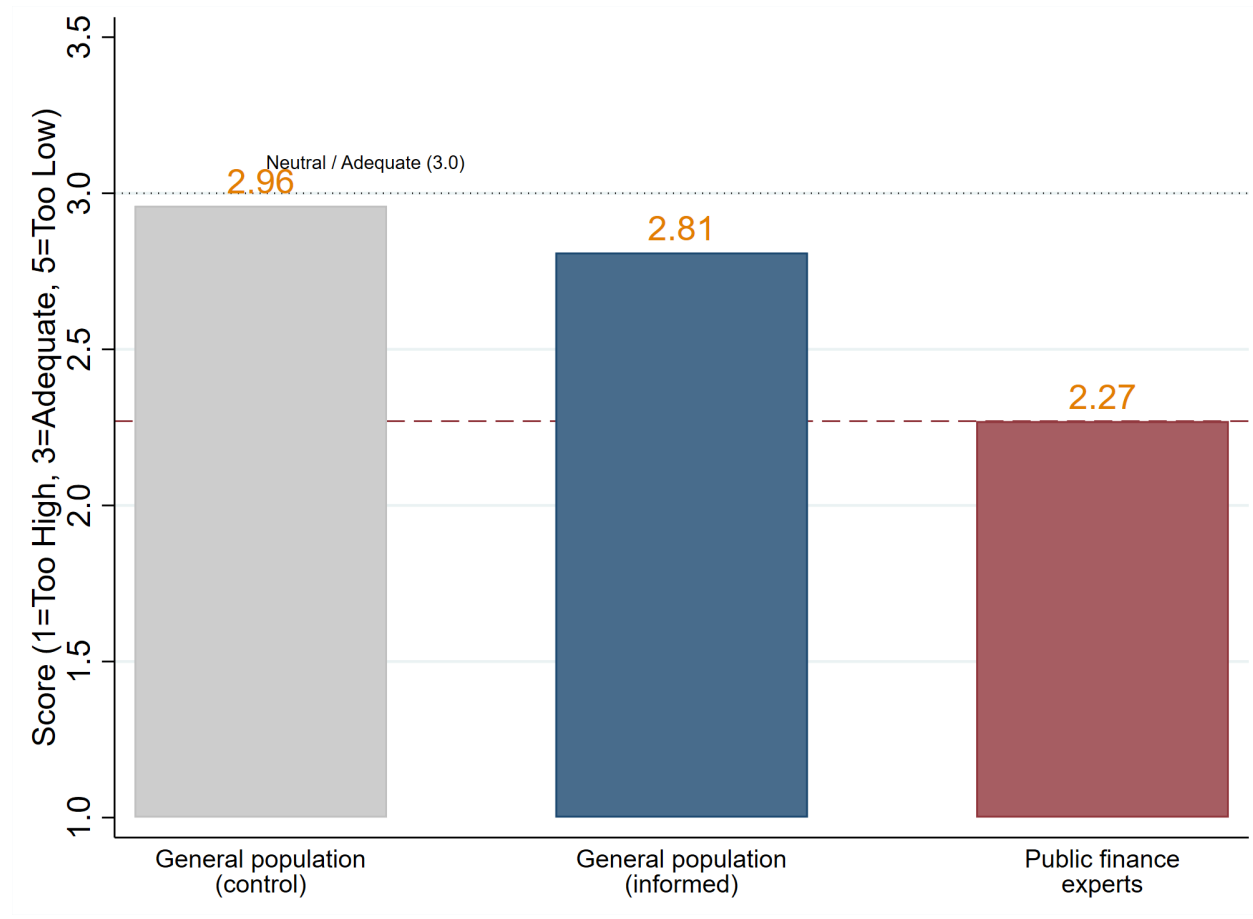
Table C.11: Preferred Uses of Surplus Education Funds under Current LEFG Formula, heterogeneity by review quiz pass before treatment

	(1)	(2)	(3)	(4)	(5)
	=1 if ranked 1st the following:				
	Integrate local finance	Expand early education	Expand higher education	Transfer to other sectors	Transfer to local projects
Panel A. All questions correct in review quiz					
Demographic Efficiency	0.02 (0.03)	-0.06 (0.04)	0.03 (0.03)	0.02 (0.04)	-0.00 (0.02)
Int'l Reference-point	0.05* (0.03)	-0.11*** (0.04)	0.10*** (0.04)	-0.05 (0.04)	0.00 (0.02)
Cross-sector Trade-off	0.02 (0.03)	-0.07* (0.04)	-0.01 (0.03)	0.04 (0.04)	0.01 (0.02)
Placebo group mean	0.15	0.36	0.21	0.25	0.04
Placebo group SD	0.36	0.48	0.41	0.43	0.19
Observations	1,146	1,146	1,146	1,146	1,146
Panel B. At least one wrong					
Demographic Efficiency	-0.00 (0.02)	-0.05** (0.03)	0.01 (0.02)	0.05** (0.02)	0.00 (0.01)
Int'l Reference-point	0.01 (0.02)	-0.10*** (0.03)	0.09*** (0.02)	-0.01 (0.02)	0.01 (0.01)
Cross-sector Trade-off	0.01 (0.02)	-0.07*** (0.03)	-0.01 (0.02)	0.02 (0.02)	0.04*** (0.01)
Placebo group mean	0.19	0.35	0.20	0.22	0.04
Placebo group SD	0.39	0.48	0.40	0.42	0.20
Observations	2,666	2,666	2,666	2,666	2,666

Note: This table shows the information treatment effects on respondents' preferences regarding the use of surplus education funds, assuming no change to the current local education finance grant (LEFG) formula. Each column represents an indicator equal to one if the respondent ranked the corresponding option as the top (first-priority) use of surplus funds. The options include: (i) integrating local and education finances for flexible local spending (column 1); (ii) expanding early childhood education support (column 2); (iii) expanding higher education support (column 3); (iv) transferring funds to other sectors such as low birthrate and aging policies (column 4); and (v) transferring funds to locally needed projects (column 5). Robust standard errors in parentheses. ***, **, and * represent significance at 1%, 5%, and 10%, respectively.

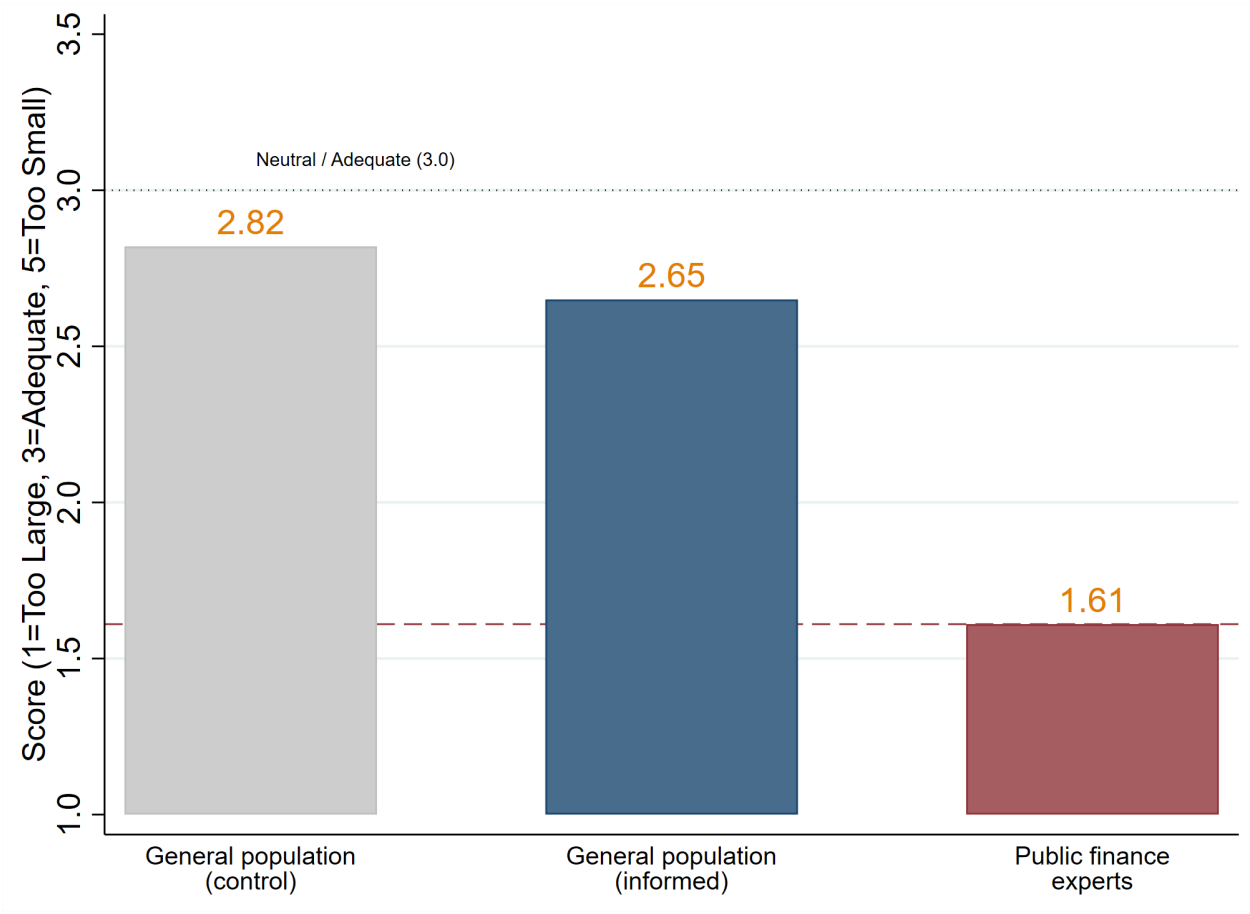
D Benchmarking public updating against expert views

Figure D.1: Perceived Adequacy of Overall Education Spending: Public Opinion vs. Expert Consensus



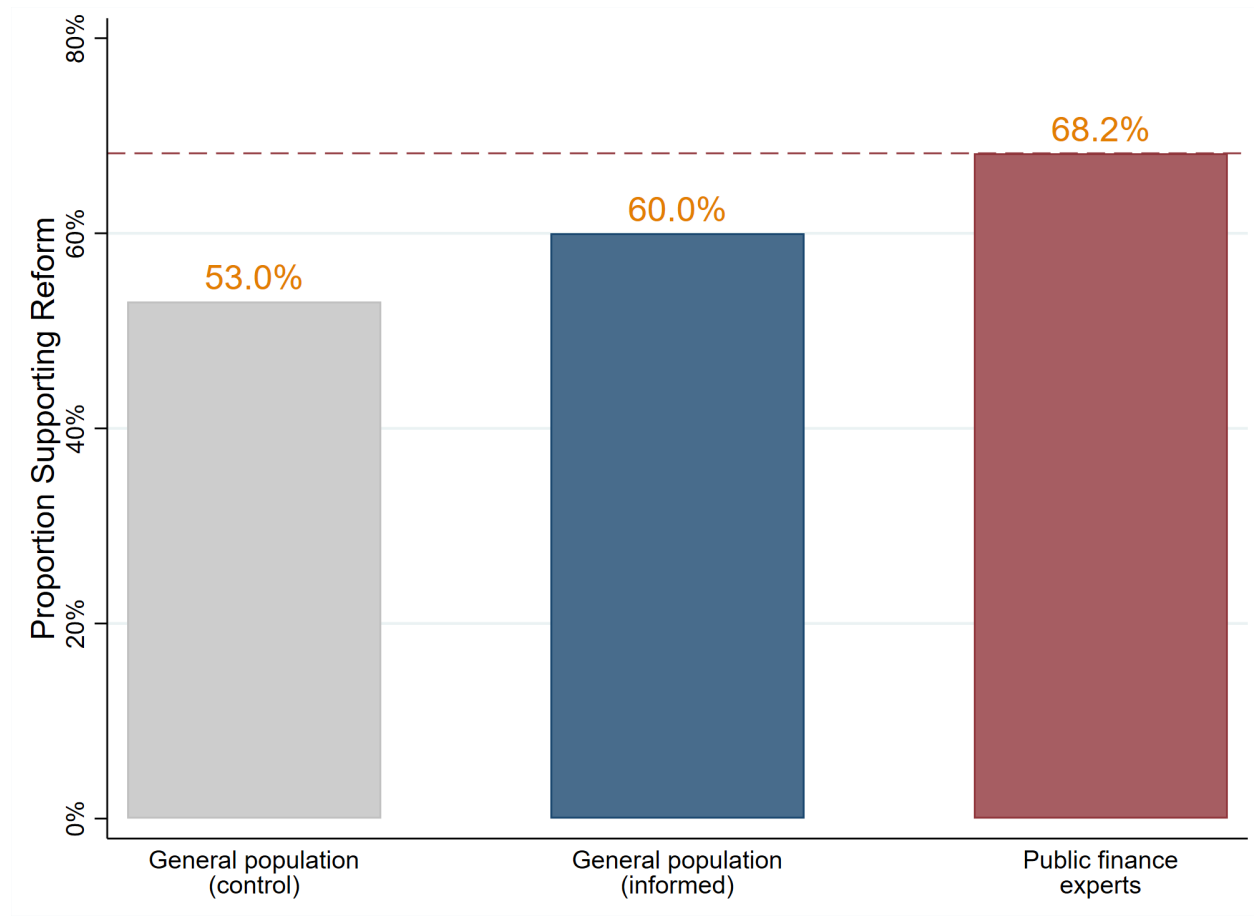
Notes: This figure presents the mean perceived adequacy of the current statutory formula, which rigidly allocates 20.79% of internal tax revenue to education. Responses are measured on a 5-point Likert scale ranging from 1 (Too large) to 5 (Too small), with 3 indicating Adequate. The “informed” group corresponds to the general public respondents assigned to the cross-sector trade-off information treatment. The expert benchmark is based on the supplementary survey of 44 public finance professionals.

Figure D.2: Perceived Adequacy of the Earmarked Grant Formula (20.79% Linkage): Public Opinion vs. Expert Consensus



Notes: This figure presents the mean perceived adequacy of the current statutory formula, which rigidly allocates 20.79% of internal tax revenue to education. Responses are measured on a 5-point Likert scale ranging from 1 (Too large) to 5 (Too small), with 3 indicating Adequate. The “informed” group corresponds to the general public respondents assigned to the cross-sector trade-off information treatment. The expert benchmark is based on the supplementary survey of 44 public finance professionals.

Figure D.3: Support for Linking the Grant Formula to the School-Age Population: Public Opinion vs. Expert Consensus



Notes: This figure displays the proportion of respondents who support reforming the current local education finance grant (LEFG) formula by linking it to the school-age population. “General population (control)” refers to the baseline group that received no information. “General population (informed)” represents respondents in the information treatment arm that exhibited the most pronounced shift (e.g., the demographic efficiency treatment). “Public finance experts” denotes the benchmark consensus derived from a supplementary survey of 44 academic and policy experts in public finance and economics.

E Survey Questionnaire

This appendix presents the full survey instrument administered to respondents. The original survey was conducted in Korean; the text below is a translated version. After completing background questions (Part 1) and an informational module on education finance and the Local Education Finance Grant (Part 2), respondents were randomly assigned to one of four treatment arms (Parts 3A–3D). All respondents then completed common post-treatment modules on perceptions of education spending (Part 4), the LEFG (Part 5), and the LEFG formula and fiscal utilization (Part 6).

Part 1. Respondent Background Characteristics

Q1-1. What is your age and year of birth?

(1) Year of birth: _____ [Valid range: 1900–2015]

(2) Age (in Korean age): _____ [Valid range: 0–99]

Note: Auto-calculated as $2024 - \text{birth year} + 1$. Survey restricted to ages 19–64.

Q1-2. What is your sex?

(1) Male

(2) Female

Q1-3. What is your highest level of education completed? **Exclude currently enrolled programs.*

(1) Less than high school diploma

(2) High school diploma

(3) Two-year college degree (including vocational college)

(4) Four-year university degree

(5) Master's degree

(6) Doctoral degree

Q1-4. In which region do you currently reside?

(1) Seoul

(2) Busan

- (3) Daegu
- (4) Daejeon
- (5) Incheon
- (6) Gwangju
- (7) Ulsan
- (8) Gyeonggi-do
- (9) Gangwon-do
- (10) Chungcheongbuk-do
- (11) Chungcheongnam-do
- (12) Jeollabuk-do
- (13) Jeollanam-do
- (14) Gyeongsangbuk-do
- (15) Gyeongsangnam-do
- (16) Jeju-do
- (17) Sejong Special Autonomous City

The following questions ask about your occupation.

Q1-5. What is your primary employment status?

- (1) Self-employed professional
- (2) Salaried employee
- (3) Self-employed / freelancer
- (4) Student
- (5) Other (including unpaid family workers)
- (6) Not employed

Q1-6. What is the industry and occupation of your primary job? [*Dropdown menus*]

- (1) Industry: _____ **Based on the Korean Standard Industrial Classification (major categories)*
- (2) Occupation: _____ **Based on the Korean Standard Classification of Occupations (major categories)*

Industry categories: Agriculture, forestry and fishing; Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply, sewerage, waste management and remediation; Construction; Wholesale and retail trade; Transportation and storage; Accommodation and food service; Information and communication; Financial and insurance activities; Real estate; Professional, scientific and technical services; Business facilities management, business support and rental services; Public administration, defense and social security; Education services; Human health and social work; Arts, sports and recreation-related services; Membership organizations, repair and other personal services; Activities of households as employers; Activities of extraterritorial organizations and bodies.

Occupation categories: Managers; Professionals and related workers; Clerks; Service workers; Sales workers; Skilled agricultural, forestry and fishery workers; Craft and related trades workers; Equipment, machine operating and assembling workers; Elementary workers; Armed forces.

Q1-7. What is your current marital status?

- (1) Never married
- (2) Ever married

Q1-8. How many members are in your household? (*Include yourself, family members, and cohabitants.*)

- (1) _____ persons [Valid range: 1–20]

Q1-9. How many children do you have?

- (1) _____ children [Valid range: 1–20]

Q1-10. How many of your children are preschool-age (up to age 5)?

- (1) _____ children [Valid range: 1–20]

Q1-11. How many of your children are currently enrolled in elementary, middle, or high school?

- (1) _____ children [Valid range: 1–20]

Q1-12. What is your average monthly income (before tax)?

- (1) KRW 0–1 million

- (2) KRW 1–2 million
- (3) KRW 2–3 million
- (4) KRW 3–4 million
- (5) KRW 4–5 million
- (6) KRW 5–6 million
- (7) KRW 6–7 million
- (8) KRW 7–8 million
- (9) KRW 8–9 million
- (10) KRW 9–10 million
- (11) More than KRW 10 million

Part 2. Background on Education Finance and the Local Education Finance Grant

[Preamble shown to respondents:]

This section examines your awareness of the “Education” sector within the national budget and your understanding of the Local Education Finance Grant (LEFG), which constitutes a large share of education-sector spending.

The table below shows the Korean government’s FY2023 expenditure budget by the 16 major sectors. The “Education” sector accounts for approximately 15% of total expenditure and ranks third, after “Social Welfare” and “General and Local Administration.”

Table E.1: Expenditure Budget by Sector (FY2023)

Sector	Budget	Sector	Budget
Social welfare	206.0 (32.25%)	Health	20.0 (3.13%)
General & local admin.	112.2 (17.56%)	Environment	12.2 (1.91%)
Education	96.3 (15.08%)	Telecommunications	9.9 (1.41%)
National defense	55.3 (8.66%)	Science & technology	9.0 (1.55%)
Industry, SMEs & energy	26.0 (4.07%)	Culture & tourism	8.6 (1.35%)
Agriculture & fisheries	24.4 (3.82%)	Unification & diplomacy	6.4 (1.00%)
Public order & safety	22.9 (3.58%)	Land & regional development	4.6 (0.66%)
Transport & logistics	20.8 (3.26%)	Contingency reserve	4.2 (0.72%)

Unit: trillion KRW.

Q2-1. What share of Korea’s total government expenditure does the “Education” sector account for?

- (1) Approximately 5%
- (2) Approximately 10%
- (3) Approximately 15%
- (4) Approximately 20%
- (5) Approximately 25%

Q2-2. Among the 16 major sectors, where does “Education” rank in terms of expenditure?

- (1) 1st
- (2) 3rd
- (3) 5th
- (4) 7th
- (5) 9th

[Additional information shown to respondents before Q2-3:]

The Local Education Finance Grant (LEFG) constitutes a large share of the central government’s “Education” expenditure. It is a grant provided by the central government to provincial offices of education (POEs) to fully or partially fund the establishment and operation of educational institutions and administrative agencies.

Under current law, the LEFG is set at 20.79% of total domestic tax (*naegukse*) revenue. In FY2023, KRW 74.4 trillion of the total national tax revenue of KRW 344.1 trillion was allocated to the LEFG. Furthermore, as of FY2023, the LEFG accounted for 76.4% of total revenue in provincial Special Accounts for Education Expenditure.

Q2-3. Revenue of the Special Account for Education Expenditure consists of transferred revenue, own-source revenue, local bonds and other sources, and internal transactions. How familiar are you with the LEFG, which falls under central government transferred revenue?

- (1) I am well informed.
- (2) I think I have heard of it.
- (3) I have never heard of it.

Q2-4. The size of the LEFG is linked to domestic tax revenue at a fixed rate. What percentage of domestic tax revenue is allocated to the LEFG?

- (1) Approximately 5%
- (2) Approximately 10%
- (3) Approximately 15%
- (4) Approximately 20%
- (5) Approximately 25%

[Randomization:] After completing Part 2, respondents were randomly assigned to one of four groups (A, B, C, or D), each receiving a different information treatment module (Parts 3A–3D).

Part 3A. LEFG Oversight and Social Contribution [Placebo / Control Group]

Q3-1A. The table below shows the FY2023 education budget by function and policy program. The largest category, “Other (personnel costs),” includes salaries for both civil-servant teachers and non-civil-servant contract employees.

Table E.2: Education Budget by Function and Policy Program (FY2023)

	Total	Early childhood & K–12 education	Lifelong education	General education	Contingency reserve	Other (personnel)
Amount	974,192	428,361	2,055	82,628	12,457	448,691
Share (%)	100.0	44.0	0.2	8.5	1.3	46.1

Unit: KRW 100 million, %.

The vast majority of the education budget is allocated to K–12 education. What is your opinion on the government’s proposal to redirect part of the LEFG (K–12 education budget) toward universities and other higher-education institutions?

- (1) Strongly agree
- (2) Agree
- (3) Neutral
- (4) Disagree

(5) Strongly disagree

Q3-2A. The Ministry of Education conducts annual comprehensive analyses of provincial education offices' fiscal operations under Article 55 of the Local Finance Act, evaluating soundness, efficiency, and accountability. The key indicators are summarized below.

Table E.3: Fiscal Operations Assessment Framework

Domain	Indicator	Description
Soundness	Consolidated fiscal balance ratio	Measures surplus or deficit by comparing revenue and expenditure; higher values indicate a surplus.
	Managed debt ratio	Measures outstanding debt relative to revenue; lower values indicate a smaller debt burden.
Efficiency	Earmarked expenditure ratio	Share of the budget allocated to earmarked programs; higher values imply less discretion.
	Carryover and lapsed budget ratio	Share of the budget not executed (carried over or lapsed); higher values imply less efficient execution.
Accountability	Fiscal information disclosure	Measures proactiveness and user-friendliness of public disclosure; higher values indicate greater transparency.
	Purchases from socially disadvantaged enterprises	Share of procurement from SMEs and enterprises employing persons with disabilities; higher values indicate greater social responsibility.

Among the three domains above, which do you consider most important?

- (1) Soundness
- (2) Efficiency
- (3) Accountability

Q3-3A. How much do you think the LEFG (K–12 education budget) is related to improving public education quality?

- (1) Very much related
- (2) Somewhat related
- (3) Neutral
- (4) Not much related
- (5) Not at all related

Q3-4A. Do you think a reduction in the LEFG would affect students' school life?

- (1) Very much related
- (2) Somewhat related
- (3) Neutral
- (4) Not much related
- (5) Not at all related

Part 3B. Demographic Trends and the LEFG [Efficiency Treatment]

Q3-1B. The figure below shows trends in total K–12 enrollment and per-student LEFG spending from 2018 to 2023. While enrollment declined from 5.58 million in 2018 to 5.21 million in 2023, the LEFG—which is fixed at 20.79% of domestic tax revenue regardless of enrollment—increased from KRW 4.7 trillion to KRW 7.4 trillion over the same period. As a result, per-student LEFG spending rose from KRW 8.87 million in 2018 to KRW 14.54 million in 2023.

[Figure 1: Trends in K–12 Enrollment and Per-Student LEFG Spending]

Do you think the current level of per-student LEFG spending is appropriate?

- (1) Per-student spending seems far too high.
- (2) Per-student spending seems somewhat too high.
- (3) It is at an appropriate level.
- (4) Per-student spending seems somewhat too low.
- (5) Per-student spending seems far too low.

Q3-2B. The figure below shows projected trends in school-age population and per-student LEFG spending from 2020 to 2060. Domestic tax revenue is projected to increase from KRW 247 trillion in 2020 to KRW 761 trillion in 2060. Because enrollment is declining while the LEFG remains tied to tax revenue, per-student spending is projected to rise from KRW 10 million in 2020 to KRW 45.4 million in 2060.

[Figure 2: Long-Term Projections of School-Age Population and Per-Student LEFG Spending]

From a long-term perspective, what do you think about the projected level of per-student LEFG spending?

- (1) Given declining enrollment, spending should be gradually reduced.
- (2) Per-student spending should be set below the current level and then fixed at that amount.
- (3) Per-student spending should be maintained at roughly the current level.
- (4) The current formula (20.79% of domestic tax revenue) should be maintained, allowing per-student spending to increase.
- (5) A larger share of domestic tax revenue (above 20.79%) should be allocated to education, increasing per-student spending beyond the current projection.

[Information shown to respondents before Q3-4-1B and Q3-4-2B:]

The table below recalculates projected student-to-teacher and class-size ratios through 2060, based on 2021 teacher and classroom counts and long-term demographic projections.

Table E.4: Projected Student-to-Teacher and Class-Size Ratios (Based on 2021 Teacher Counts)

	2020	2030	2040	2050	2060
<i>Elementary education</i>					
Population aged 6–11	2,723,951	1,606,699	1,564,864	1,529,601	1,233,019
Students per teacher	14.2	8.4	8.2	8.0	6.4
Students per class	21.9	12.9	12.6	12.3	9.9
<i>Secondary education</i>					
Population aged 12–17	2,753,969	2,480,667	1,365,278	1,641,610	1,445,154
Students per teacher	11.3	10.2	5.6	6.7	5.9
Students per class	25.2	22.7	12.5	15.0	13.2

Unit: persons.

Korea’s elementary student-to-teacher and class-size ratios are projected to decline rapidly from 2030, with secondary-level ratios following from 2040.

Q3-4-1B. In the future, the number of teachers should be _____.

- (1) Increased
- (2) Maintained
- (3) Reduced

Q3-4-2B. In the future, the number of classes should be _____.

- (1) Increased
- (2) Maintained
- (3) Reduced

Q3-5B. The table below shows per-capita government education spending by level: per-student LEFG spending (K–12), per-child spending from the Special Account for Early Childhood Education Support (ages 3–5), and per-adult spending from the Special Account for Higher and Lifelong Education Support (age 18+; established in 2023).

Table E.5: Government Education Spending by Level

	2018	2019	2020	2021	2022	2023
Per-student (K–12) LEFG	887.2	1,013.2	1,035.6	1,000.0	1,222.2	1,454.0
Per-child (age 3–5) early childhood	293.8	294.3	330.4	353.3	380.9	376.3
Per-adult (age 18+) higher & lifelong	—	—	—	—	—	21.2

Unit: KRW 10,000 (ten thousand won).

What is your opinion on redirecting part of the LEFG to early childhood and higher/lifelong education programs?

- (1) Strongly agree
- (2) Agree
- (3) Neutral
- (4) Disagree
- (5) Strongly disagree

Part 3C. International Comparison of Education Spending [Reference-Point Treatment]

[Information shown to respondents:]

The table below compares Korea’s K–12 education environment with OECD averages as of 2021.

Table E.6: K–12 Education Environment: Korea vs. OECD Average (2021)

	Korea	OECD average
<i>Elementary education</i>		
Students per teacher	16	15
Students per class	22	21
<i>Secondary education</i>		
Students per teacher (middle & high school)	12	13
Students per class (middle school)	26	23
Students per class (high school)	23	—

Unit: persons.

Q3-1C. What do you think about Korea’s student-to-teacher ratio?

- (1) It is far too high.
- (2) It is somewhat too high.
- (3) It is at an appropriate level.
- (4) It is somewhat too low.
- (5) It is far too low.

Q3-2C. What do you think about Korea’s class size (students per class)?

- (1) The number of classes should be increased.
- (2) The current number of classes is appropriate.
- (3) The number of classes should be reduced.

[Additional information shown to respondents before Q3-3C:]

Q3-3C. As of 2019, Korea’s elementary education spending was 4.6% and secondary education spending was 5.64% of total government expenditure—approximately 30% above the OECD average. Compared with OECD countries, what do you think about Korea’s K–12 education spending?

Table E.7: Government Spending on Education as a Share of Total Government Expenditure: Korea vs. OECD Average

	Korea		OECD average	
	2015	2019	2015	2019
<i>Elementary education</i>				
Share of total government expenditure (%)	4.61	4.60	3.42	3.48
<i>Secondary education</i>				
Share of total government expenditure (%)	5.73	5.64	4.37	4.38
<i>Higher education</i>				
Share of total government expenditure (%)	2.9	2.4	3.0	2.9

Source: Initial government funding basis, %.

- (1) Given overall spending, K–12 education spending is far too high.
- (2) Given overall spending, K–12 education spending is somewhat too high.
- (3) Current education spending is at an appropriate level.
- (4) Given overall spending, K–12 education spending is somewhat too low.
- (5) Given overall spending, K–12 education spending is far too low.

Q3-4C. As of 2019, Korea’s higher education spending was 2.4% of total government expenditure—more than 17% below the OECD average of 2.9%. Compared with OECD countries, what do you think about Korea’s higher education spending?

- (1) Given overall spending, higher education spending is far too high.
- (2) Given overall spending, higher education spending is somewhat too high.
- (3) Current education spending is at an appropriate level.
- (4) Given overall spending, higher education spending is somewhat too low.
- (5) Given overall spending, higher education spending is far too low.

Part 3D. Cross-Sector Fiscal Tradeoffs [Trade-Off Treatment]

[Preamble shown to respondents:]

Questions Q3-1-1D through Q3-3D concern mandatory and discretionary spending. **Mandatory spending** refers to expenditures for which the obligation and amount are determined by statute (e.g., the LEFG under the Local Education Finance Grant Act, transfers to provincial education special accounts under the National Finance Act). **Discretionary spending**

refers to all other government spending not mandated by law, which the government may allocate at its discretion (e.g., basic administrative costs, legislative expenses, R&D, culture and sports).

[Information shown to respondents:]

The table below presents long-term projections of total expenditure, mandatory spending, and discretionary spending.

Table E.8: Long-Term Fiscal Projections: Total Expenditure

	2022	2030	2040	2050	2060	2070	Ann. growth
Total expenditure	689.9	739.6	905.8	1,073.0	1,215.8	1,341.9	2.0%
(% of GDP)	(31.8)	(29.0)	(31.0)	(33.1)	(34.8)	(36.2)	
Mandatory spending	340.5	413.0	532.4	658.3	769.1	868.0	3.2%
(% of GDP)	(15.7)	(16.2)	(18.2)	(20.3)	(22.0)	(23.4)	
Discretionary spending	349.4	326.6	373.4	414.7	446.8	473.9	0.7%
(% of GDP)	(16.1)	(12.8)	(12.8)	(12.8)	(12.8)	(12.8)	

Unit: trillion KRW, %. Note: The FY2022 final parliamentary budget was KRW 607.7 trillion, resulting in an approximate deficit of KRW 82.2 trillion.

Q3-1-1D. What do you think about the long-term trajectory of total expenditure as a share of GDP?

- (1) The share is increasing far too rapidly.
- (2) The share is increasing somewhat too rapidly.
- (3) It is increasing at an appropriate level and pace.
- (4) The share is increasing somewhat too slowly.
- (5) The share is increasing far too slowly.

Q3-1-2D. What do you think about the long-term trajectory of mandatory spending as a share of GDP?

- (1) The share is increasing far too rapidly.
- (2) The share is increasing somewhat too rapidly.
- (3) It is increasing at an appropriate level and pace.
- (4) The share is increasing somewhat too slowly.
- (5) The share is increasing far too slowly.

[Information shown to respondents:]

The table below breaks down long-term projections for mandatory spending in the social welfare sector.

Table E.9: Long-Term Projections: Mandatory Spending in the Social Welfare Sector

	2022	2030	2040	2050	2060	2070	Ann. growth
Total welfare mandatory	141.6	200.5	282.3	366.3	434.8	488.4	5.1%
Public pensions	60.6	95.4	157.8	232.7	300.9	354.0	10.1%
Social insurance	34.3	43.3	48.1	50.2	51.2	53.7	1.2%
Public assistance	37.7	51.8	66.2	73.3	72.7	70.6	1.8%
Other	9.0	10.0	10.2	10.1	10.1	10.2	0.3%

Unit: trillion KRW, %. Public pensions include the National Pension, Private School Pension, Government Employees Pension, and Military Pension. Social insurance includes the National Health Insurance, Long-Term Care Insurance, Employment Insurance, and Industrial Accident Insurance. Public assistance includes the Basic Livelihood Security Program, Basic Pension, early childhood care, and child allowance.

Q3-2-1D. What do you think about the pace of growth in mandatory social welfare spending?

- (1) It is increasing far too rapidly.
- (2) It is increasing somewhat too rapidly.
- (3) It is increasing at an appropriate level and pace.
- (4) It is increasing somewhat too slowly.
- (5) It is increasing far too slowly.

Q3-2-2D. Which category of mandatory social welfare spending should grow *faster* in the long run?

- (1) Public pensions
- (2) Social insurance
- (3) Public assistance
- (4) Other

Q3-2-3D. Which category of mandatory social welfare spending should be *reduced the most* in the long run?

- (1) Public pensions
- (2) Social insurance

- (3) Public assistance
- (4) Other

Q3-3D. The table below presents long-term projections for the LEFG alongside Korea’s demographic structure.

Table E.10: Long-Term LEFG Projections and Population Estimates

	2020	2030	2040	2050	2060	Ann. growth
LEFG (trillion KRW)	55.9	82.2	109.1	137.6	168.8	5.1%
(% of GDP)	(2.9)	(3.2)	(3.7)	(4.2)	(4.8)	
Age 0–6	2,650,813	1,626,220	1,907,395	1,642,322	1,180,165	–1.4%
Age 7–19	6,173,275	4,816,869	3,201,622	3,466,093	3,016,370	–1.3%
Age 20–64	34,860,284	31,882,405	27,798,888	23,090,692	19,423,659	–1.1%
Age 65+	10,042,691	16,053,714	22,482,664	26,568,939	27,104,340	4.2%

Unit: trillion KRW, %, persons. Source: LEFG projections from Korea Development Institute (2021).

Korea’s demographic transition projects a rapid increase in the elderly population (age 65+) alongside a sharp decline in the school-age population (ages 7–19). Considering the fiscal projections and mandatory social welfare spending trends above, what do you think about the long-term growth of the LEFG?

- (1) It is increasing far too rapidly.
- (2) It is increasing somewhat too rapidly.
- (3) It is increasing at an appropriate level.
- (4) It is increasing somewhat too slowly.
- (5) It is increasing far too slowly.

[The following modules (Parts 4–6) were administered to all respondents after the randomized treatment modules.]

Part 4. Perceptions of Education Finance and Government Spending

[Preamble:] This section examines your perceptions of government spending on “Education” relative to other sectors. The government budget comprises 16 sectors; per-capita amounts represent each sector’s budget divided by the total population.

Q4-1. What share of the total government budget do you think is spent on “Education” (support for K–12 and universities)?

- (1) 1%–10%
- (2) 11%–20%
- (3) 21%–30%
- (4) 31%–40%
- (5) 41%–50%

Q4-2. The table below shows the FY2023 budget by sector. A total of KRW 96.3 trillion was spent on “Education.” Do you think education spending is appropriate compared with other sectors?

[Table A1 (expenditure by sector) reproduced here.]

- (1) Far too much
- (2) Somewhat too much
- (3) Appropriate
- (4) Somewhat too little
- (5) Far too little

Q4-3. If you believe education spending is not appropriate, what share of the total budget would be appropriate? *(If you believe it is appropriate, please enter 15%.)*

Enter an integer: approximately _____% [Valid range: 0–100]

Q4-4. Excluding the contingency reserve, among the 15 sectors listed above, which three should receive *more* budget allocation in the long run? *[Rank 1st to 3rd.]*

- (1) Social welfare
- (2) General and local administration
- (3) Education
- (4) National defense
- (5) Industry, SMEs and energy
- (6) Agriculture and fisheries
- (7) Public order and safety

- (8) Transport and logistics
- (9) Health
- (10) Environment
- (11) Telecommunications
- (12) Science and technology
- (13) Culture and tourism
- (14) Unification and diplomacy
- (15) Land and regional development

Part 5. Perceptions of Education Finance and the LEFG

[Preamble:] The Local Education Finance Grant (LEFG) is the central government's transfer to provincial offices of education to fund their operations. Under current law, the LEFG is set at 20.79% of domestic tax (*naegukse*) revenue. In FY2022, KRW 75.8 trillion of total national tax revenue of KRW 344.1 trillion was allocated to the LEFG.

**Domestic tax (naegukse):* Of the national taxes, this refers to the 13 types excluding customs duties. Local taxes are not included.

Q5-1. The LEFG accounted for 76.4% of provincial education offices' total budget (the Special Account for Education Expenditure) in the FY2023 initial budget. How familiar are you with the LEFG?

- (1) I am well informed.
- (2) I think I have heard of it.
- (3) I have never heard of it.

Q5-2. The table below shows the FY2023 revenue composition of the Special Account for Education Expenditure. What do you think about the share of central government transfers (the LEFG) in provincial education budgets?

- (1) Central government support should be substantially reduced.
- (2) Central government support should be somewhat reduced.
- (3) It is at an appropriate level.

Table E.11: Revenue of the Special Account for Education Expenditure (FY2023 Initial Budget)

	Total	Transferred revenue		Own-source revenue	Local bonds & other	Internal transactions
		LEFG	Other			
Amount	974,192	744,289	196,878	4,970	26,055	2,000
Share (%)	100.0	76.4	20.2	0.5	2.7	0.2

Unit: KRW 100 million, %. Transferred revenue refers to funds received from the central government, local governments, and other entities.

- (4) Central government support should be somewhat increased.
- (5) Central government support should be substantially increased.

Q5-3. If you believe the LEFG’s share of the Special Account for Education Expenditure is not appropriate, what share would be appropriate? *(If you believe it is appropriate, please enter 76%.)*

Enter an integer: approximately _____% [Valid range: 0–100]

Part 6. Perceptions of the LEFG Formula and Fiscal Utilization

[Preamble:] The bulk of central government transfers to provincial education offices takes the form of the LEFG, which is set at 20.79% of domestic tax revenue. This formula has been criticized for creating a concentration of fiscal resources in education offices and generating budget surpluses (rising unspent balances), while limiting the programs and policies for which surplus funds may be used.

**Domestic tax (naegukse):* Of the national taxes, this refers to the 13 types excluding customs duties. Local taxes are not included.

Q6-1. Approximately 97% of the LEFG consists of the domestic-tax-linked component, which equals 20.79% of total domestic tax revenue. Were you aware of this formula?

- (1) I was well aware.
- (2) I think I had heard of it.
- (3) I had never heard of it.

Q6-2. What do you think about the allocation of 20.79% of domestic tax revenue to the LEFG?

- (1) The share of domestic tax revenue is far too large.
- (2) The share of domestic tax revenue is somewhat too large.
- (3) It is at an appropriate level.
- (4) The share of domestic tax revenue is somewhat too small.
- (5) The share of domestic tax revenue is far too small.

Q6-3. If you believe the 20.79% rate is not appropriate, what rate would be appropriate?
(If you believe it is appropriate, please enter 21%.)

Enter an integer: approximately _____% [Valid range: 0–100]

Q6-4. Do you think the LEFG formula needs to be changed? If so, what kind of change is needed?

- (1) The formula should be revised: change the domestic-tax linkage rate (currently 20.79%).
- (2) The formula should be revised: replace the domestic-tax linkage with a school-age-population-based formula (so that the grant adjusts with demographic changes).
- (3) The formula should be revised: determine the required amount by program or line item, with the central and local governments sharing the funding.
- (4) The current formula is appropriate.

Q6-5. Assuming no change to the LEFG formula, what should be done with surplus education funds? *[Choose 3 options and rank them in order of priority.]*

- (1) Integrate local fiscal and local education fiscal operations so that the local government can use surplus education funds for other needed programs.
- (2) Expand education support for infants and young children (e.g., the Nuri Curriculum) via the Special Account for Early Childhood Education Support.
- (3) Expand support for higher education (universities) via the Special Account for Higher and Lifelong Education Support.
- (4) Allow fiscal transfers to other sectors (e.g., low-fertility and aging-related budgets).
- (5) Allow fiscal transfers to programs identified as needed by local governments.
- (6) Current fiscal operations are appropriate.

Table E.12: LEFG and Selected Social Welfare Budget Trends (2018–2023)

	2018	2019	2020	2021	2022	2023	Ann. growth
LEFG	49.54	55.25	55.37	53.23	65.06	75.76	10.6%
National Pension expenditure	21.40	23.43	26.36	29.88	34.82	—	15.7%
Vulnerable groups & basic livelihood	12.56	13.81	15.66	17.05	18.65	21.07	13.6%
Family policy & childcare	6.55	8.70	9.16	9.30	10.09	10.88	13.2%
Elderly welfare	11.01	13.98	16.63	18.87	20.46	23.23	22.2%

Unit: trillion KRW, %.

Q6-6. The table below shows the LEFG alongside selected social welfare budget items from 2018 to 2023.

If surplus LEFG funds could be freely redirected to other sectors or programs, how much additional budget do you think each of the following areas should receive? [*Rate each on a 5-point scale.*]

Scale: (1) No increase needed; (2) Slight increase needed; (3) Moderate increase needed; (4) Substantial increase needed; (5) Large increase needed.

1. Basic livelihood security and support for vulnerable populations (persons with disabilities, the homeless, low-income households, etc.)
2. Cash transfers to reduce childbirth and child-rearing costs (child allowance, early childhood care subsidies, childcare services)
3. Elementary school aftercare services (e.g., *Neulbom* School, after-school youth academies)
4. Elderly care services (livelihood stabilization for the elderly, elderly health insurance)
5. National Pension fiscal management