# Online Supplementary Material

## Is Mandatory Community Service a Catalyst for Civic Growth or Fruitless Servitude?: Evidence from a Natural Experiment in South Korea

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# Supplementary Table 1.

Summary Statistics

| Mean (SD) / Proportion | Total | Lower SES | Higher SES |
|---|---|---|---|
| Age | 49.48 (18.81) | 55.64 (19.37) | 40.54 (13.69) |
| Women | 0.52 | 0.56 | 0.46 |
| Education | | | |
| No education | 0.04 | 0.07 | |
| Elementary school | 0.11 | 0.19 | |
| Middle school | 0.12 | 0.20 | |
| High school | 0.32 | 0.54 | |
| College (less than 4yrs) | 0.15 | | 0.36 |
| College | 0.22 | | 0.54 |
| Postgraduate | 0.04 | | 0.10 |
| Marital status | | | |
| Single | 0.24 | 0.17 | 0.34 |
| Married | 0.61 | 0.61 | 0.61 |
| Widowed | 0.09 | 0.15 | 0.01 |
| Divorced | 0.05 | 0.06 | 0.03 |
| Separated | 0.01 | 0.01 | < 0.01 |
| Employment type | | | |
| Day worker | 0.04 | 0.05 | 0.03 |
| Temporary worker | 0.08 | 0.08 | 0.07 |
| Permanent worker | 0.29 | 0.17 | 0.45 |
| Household income (₩ / million) | | | |
| Less than 1 | 0.14 | 0.21 | 0.06 |
| 1 to under 2 | 0.17 | 0.22 | 0.09 |
| 2 to under 3 | 0.19 | 0.20 | 0.17 |
| 3 to under 4 | 0.16 | 0.15 | 0.19 |
| 4 to under 5 | 0.12 | 0.09 | 0.16 |
| 5 to under 6 | 0.08 | 0.06 | 0.12 |
| 6 or more | 0.13 | 0.07 | 0.21 |
| Sample size | 36,309 | 21,496 | 14,813 |

*Note*: This summary statistics table represents the total sample from the Korean Social Survey. It's important to clarify that a significant portion of this sample will not be included in the regression discontinuity analysis. Only data points within the specifically defined, data-driven bandwidth (i.e. a range determined by our analytical criteria) will be used for that analysis.

# Supplementary Table 2.

Alternative Model Specifications for the Total Sample

| | (1) Triangular | (2) Epanechnikov | (3) Uniform | (4) MSE combination | (5) CER combination |
|---|---|---|---|---|---|
| **A**. Volunteering | | | | | |
| *Treatment effect* | -0.008 | -0.008 | -0.015 | -0.008 | -0.039 |
| | (0.025) | (0.025) | (0.028) | (0.025) | (0.039) |
| Robust bias-corrected p-value | 0.947 | 0.998 | 0.776 | 0.951 | 0.388 |
| **B.** Donation | | | | | |
| *Treatment effect* | -0.010 | -0.010 | -0.013 | -0.013 | -0.010 |
| | (0.025) | (0.025) | (0.021) | (0.025) | (0.034) |
| Robust bias-corrected p-value | 0.970 | 0.978 | 0.682 | 0.960 | 0.881 |

*Note*: Standard error in parentheses. Column 1 displays the results derived from the same model as used in column 1 of Table 3, serving as a baseline model for comparison. In columns 2 and 3, different kernel functions are employed: the Epanechnikov kernel is used in column 2, while a simple uniform kernel is utilized in column 3. Columns 4 and 5 deviate in bandwidth selection methods from column 1, where the same mean square error (MSE) optimizing bandwidth is applied both below and above the cutoff, and permit asymmetric bandwidth around the cutoff point. Specifically, for each side of the cutoff, column 4 assigns the median value from three bandwidths: symmetric MSE-optimal bandwidth, asymmetric MSE-optimal bandwidth, and symmetric MSE-optimal bandwidth for the sum of regression estimates. Analogously, column 5 assigns the median value from three bandwidths for each side of the cutoff: symmetric bandwidth minimizing an approximation to the coverage error rate (CER) of the confidence interval, asymmetric CER-optimal bandwidth, and symmetric CER-optimal bandwidth for the sum of regression estimates. For statistical inference, we apply bias correction to reduce coverage error, and rescale confidence intervals using a larger standard error than conventionally used. $^{*}$ $p < 0.1$ $^{**}$ $p < 0.05$ $^{***}$ $p < 0.01$.

## Supplementary Table 3.

Alternative Model Specifications for the Lower Socioeconomic Group

| | (1) Triangular | (2) Epanechnikov | (3) Uniform | (4) MSE combination | (5) CER combination |
|---|---|---|---|---|---|
| **A**. Volunteering | | | | | |
| *Treatment effect* | 0.074*** | 0.041* | 0.103** | 0.042** | 0.090*** |
| | (0.030) | (0.025) | (0.046) | (0.025) | (0.035) |
| Robust bias-corrected p-value | 0.008 | 0.069 | 0.015 | 0.037 | 0.007 |
| **B.** Donation | | | | | |
| *Treatment effect* | -0.014 | -0.011 | -0.013 | -0.014 | -0.030 |
| | (0.032) | (0.032) | (0.037) | (0.032) | (0.045) |
| Robust bias-corrected p-value | 0.893 | 0.964 | 0.998 | 0.887 | 0.581 |

*Note*: Standard error in parentheses. Column 1 displays the results derived from the same model as used in column 1 of Table 4, serving as a baseline model for comparison. In columns 2 and 3, different kernel functions are employed: the Epanechnikov kernel is used in column 2, while a simple uniform kernel is utilized in column 3. Columns 4 and 5 deviate in bandwidth selection methods from column 1, where the same mean square error (MSE) optimizing bandwidth is applied both below and above the cutoff, and permit asymmetric bandwidth around the cutoff point. Specifically, for each side of the cutoff, column 4 assigns the median value from three bandwidths: symmetric MSE-optimal bandwidth, asymmetric MSE-optimal bandwidth, and symmetric MSE-optimal bandwidth for the sum of regression estimates. Analogously, column 5 assigns the median value from three bandwidths for each side of the cutoff: symmetric bandwidth minimizing an approximation to the coverage error rate (CER) of the confidence interval, asymmetric CER-optimal bandwidth, and symmetric CER-optimal bandwidth for the sum of regression estimates. For statistical inference, we apply bias correction to reduce coverage error, and rescale confidence intervals using a larger standard error than conventionally used. $^{*}$ $p < 0.1$ $^{**}$ $p < 0.05$ $^{***}$ $p < 0.01$.

# Supplementary Table 4.

Alternative Model Specifications for the Higher Socioeconomic Group

| | (1) Triangular | (2) Epanechnikov | (3) Uniform | (4) MSE combination | (5) CER combination |
|---|---|---|---|---|---|
| **A**. Volunteering | | | | | |
| *Treatment effect* | -0.042 | -0.039 | -0.024 | -0.042* | -0.044 |
| | (0.023) | (0.024) | (0.027) | (0.023) | (0.031) |
| Robust bias-corrected p-value | 0.152 | 0.201 | 0.500 | 0.092 | 0.165 |
| **B.** Donation | | | | | |
| *Treatment effect* | -0.003 | -0.002 | -0.037 | -0.009 | -0.011 |
| | (0.035) | (0.036) | (0.029) | (0.033) | (0.047) |
| Robust bias-corrected p-value | 0.745 | 0.744 | 0.454 | 0.847 | 0.946 |

*Note*: Standard error in parentheses. Column 1 displays the results derived from the same model as used in column 1 of Table 5, serving as a baseline model for comparison. In columns 2 and 3, different kernel functions are employed: the Epanechnikov kernel is used in column 2, while a simple uniform kernel is utilized in column 3. Columns 4 and 5 deviate in bandwidth selection methods from column 1, where the same mean square error (MSE) optimizing bandwidth is applied both below and above the cutoff, and permit asymmetric bandwidth around the cutoff point. Specifically, for each side of the cutoff, column 4 assigns the median value from three bandwidths: symmetric MSE-optimal bandwidth, asymmetric MSE-optimal bandwidth, and symmetric MSE-optimal bandwidth for the sum of regression estimates. Analogously, column 5 assigns the median value from three bandwidths for each side of the cutoff: symmetric bandwidth minimizing an approximation to the coverage error rate (CER) of the confidence interval, asymmetric CER-optimal bandwidth, and symmetric CER-optimal bandwidth for the sum of regression estimates. For statistical inference, we apply bias correction to reduce coverage error, and rescale confidence intervals using a larger standard error than conventionally used. $^{*}$ $p < 0.1$ $^{**}$ $p < 0.05$ $^{***}$ $p < 0.01$.

# Supplementary Table 5.

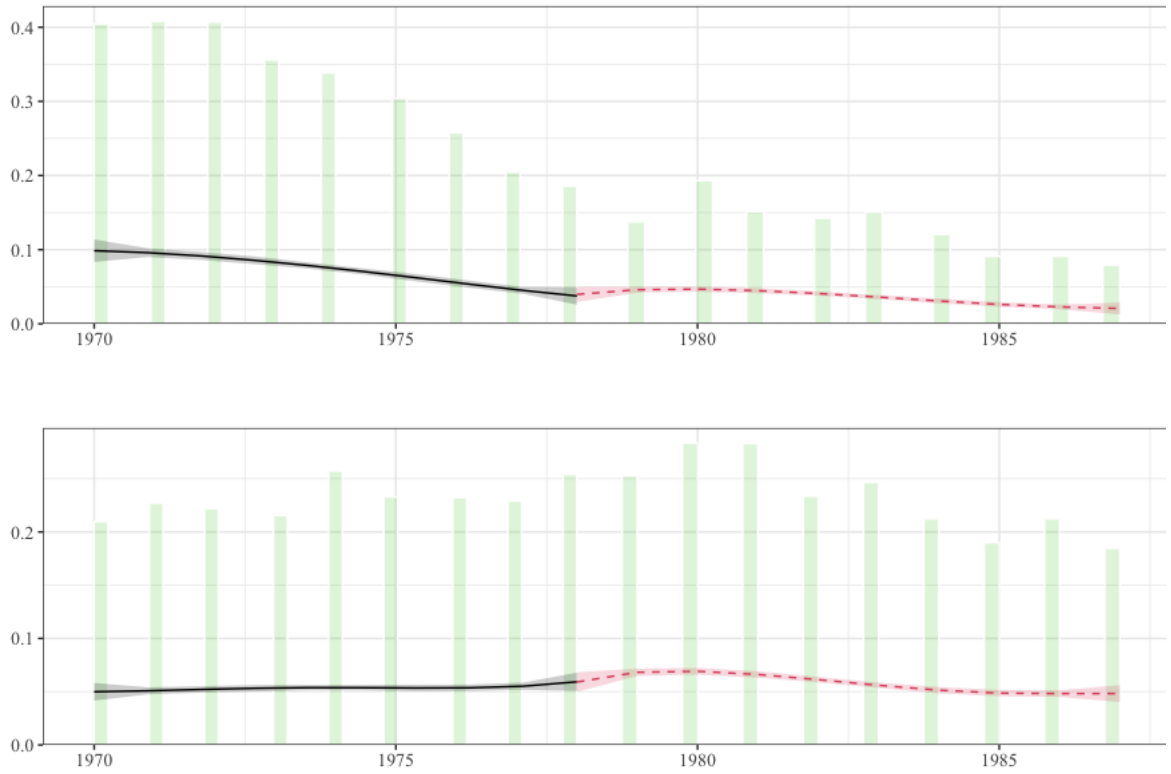
Adding Covariates to the Regression

| | (1)<br>Lower SES | (2)<br>Higher SES |
|---|---|---|
| **A.** Volunteering | | |
| *Treatment effect* | 0.076*** | -0.038 |
| | (0.033) | (0.028) |
| Robust bias-corrected p-value | 0.006 | 0.163 |
| **B.** Donation | | |
| *Treatment effect* | -0.011 | -0.003 |
| | (0.037) | (0.039) |
| Robust bias-corrected p-value | 0.918 | 0.802 |

*Note*: Standard error in parentheses. The results derived from the same model as used in column 1 of Table 4 and Table 5, with the addition of covariates of gender, marital status, employment status, and household income. For statistical inference, we apply bias correction to reduce coverage error, and rescale confidence intervals using a larger standard error than conventionally used. * $p < 0.1$ ** $p < 0.05$ *** $p < 0.01$.

# Supplementary Figure 1.

Density plots for the subgroups




*Note*: The displayed graphs depict density plots for the lower socioeconomic group (top) and the higher socioeconomic group (bottom). The shaded areas illustrate the robust bias-corrected 95% confidence interval (Cattaneo et al., 2020). Bars represent histogram estimates. Based on formal statistical tests, the continuity assumption remains tenable for both groups, evidenced by p-values of 0.4 for the lower socioeconomic group and 0.28 for the higher socioeconomic group."

# References

Cattaneo, M. D, Jansson, M., & Ma, X. (2020). Simple local polynomial density estimators. *Journal of the American Statistical Association*, 115(531), 1449–1455.