**Supplemental Materials**

**Political Efficacy in Adolescence: Development, Gender Differences, and Outcome Relations**

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Table S1

*Goodness-of-fit Indices*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Model Description** | **χ²** | **df** | **CFI** | **TLI** | **RMSEA** | **CI RMSEA** | **SRMR** |
| S1 | One factor for political efficacy at T1  | 24.733 | 2 | .989 | .968 | .067 | [.045; .092] | .015 |
| S2 | One factor for political efficacy at T2 | 6.886 | 2 | .998 | .995 | .031 | [.008; .058] | .006 |
| S3 | One factor for political information behavior at T1  | 17.331 | 2 | .993 | .978 | .055 | [.033; .081] | .014 |
| S4 | One factor for political information behavior at T2  | 41.647 | 2 | .982 | .947 | .089 | [.067; .114] | .021 |
| S5 | Separate factors for political information behavior at T1 and T2 | 94.239 | 15 | .985 | .971 | .046 | [.037; .055] | .018 |
| S6 | Separate factors for political information behavior at T1 and T2, invariant factor loadings | 126.210 | 18 | .979 | .967 | .049 | [.041; .057] | .032 |
| S7 | Separate factors for political information behavior at T1 and T2, invariant factor loadings and item intercepts  | 127.679 | 21 | .979 | .973 | .045 | [.038; .053] | .031 |
|  | **Political Efficacy and Information Behavior**  |  |  |  |  |  |  |  |
| S8 | Separate factors for political efficacy and information behavior at T1 and T2  | 387.766 | 90 | .980 | .973 | .036 | [.033; .040] | .026 |
| S9 | Separate factors for political efficacy and information behavior at T1 and T2, configural invariance across gender  | 492.912 | 180 | .978  | .971 | .037 | [.033; .041] | .029 |
| S10 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings across gender  | 540.844 | 192 | .975 | .969 | .038 | [.034; .042] | .035 |
| S11 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings and item intercepts across gender | 581.756 | 204 | .973 | .969 | .039 | [.035; .042] | .035 |
| S12 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across gender | 724.414 | 220 | .964 | .961 | .043 | [.039; .046] | .048 |
| S13 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across gender  | 759.335 | 224 | .962 | .959 | .044 | [.040; .047] | .069 |
| *(continued)* |
| *Table S1 (continued)* |
| S14 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across gender | 757.705 | 230 | .963 | .961 | .043 | [.040; .046] | .068 |
| S15 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across gender | 924.860 | 234 | .951 | .950 | .049 | [.045; .052] | .067 |
|  | **Political Efficacy and Interest in Politics**  |  |  |  |  |  |  |  |
| S16 | Separate factors for political efficacy and interest in politics at T1 and T2 | 255.668 | 27 | .976 | .960 | .058 | [.052; .065] | .023 |
| S17 | Separate factors for political efficacy and interest in politics at T1 and T2, configural invariance across gender  | 290.428 | 54 | .974 | .957 | .059 | [.053; .066] | .025 |
| S18 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings across gender | 320.631 | 60 | .972 | .957 | .059 | [.053; .065] | .033 |
| S19 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings and item intercepts across gender | 342.635 | 66 | .970 | .959 | .058 | [.052; .064] | .032 |
| S20 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across gender | 403.000 | 74 | .964 | .956 | .060 | [.054; .066] | .042 |
| S21 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across gender  | 466.611 | 78 | .958 | .951 | .063 | [.058; .069] | .096 |
| S22 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across gender | 471.996 | 84 | .958 | .955 | .061 | [.056; .066] | .094 |
| S23 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across gender  | 625.027 | 88 | .941 | .940 | .070 | [.065; .075] | .081 |
| *(continued)* |
| *Table S1 (continued)* |
|  | **Political Efficacy and Political Knowledge**  |  |  |  |  |  |  |  |
| S24 | Separate factors for political efficacy and political knowledge at T1 and T2 | 71.692 | 27 | .995 | .991 | .026 | [.019; .033] | .013 |
| S25 | Separate factors for political efficacy and political knowledge at T1 and T2, configural invariance across gender | 108.294 | 54 | .993 | .989 | .028 | [.021; .036] | .017 |
| S26 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings across gender  | 132.648 | 60 | .991 | .987 | .031 | [.024; .038] | .027 |
| S27 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings and item intercepts across gender | 156.085 | 66 | .989 | .985 | .033 | [.026; .040] | .026 |
| S28 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across gender | 228.987 | 74 | .981 | .977 | .041 | [.035; .047] | .039 |
| S29 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across gender | 260.617 | 78 | .978 | .974 | .043 | [.038; .049] | .077 |
| S30 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across gender | 270.035 | 84 | .977 | .976 | .042 | [.037; .048] | .078 |
| S31 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across gender  | 429.306 |  88 | .958 | .957 | .056 | [.051; .061] | .070 |

*Note.* All models were estimated by the maximum likelihood estimator with robust standard errors (MLR), with the type = complex option using classes as cluster variables, and with integrated correlated uniquenesses between repeatedly used items. Allχ² values are statistically significant with *p* < .05. CFI = comparative fit index, TLI = Tucker-Lewis-Index, RMSEA = root mean square error of approximation, CI = confidence interval, SRMR = standardized root mean squared residual.

Table S2

*Standardized Factor Correlations between Political Efficacy, Political Information Behavior, Interest in Politics, and Political Knowledge measured at T1 and T2*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Political efficacy T1 | Political efficacy T2 | Political information behavior T1 | Political information behavior T2 | Political interest T1 | Political interest T2 | Political knowledge T1 |
| Political efficacy T2 | .492 |  |  |  |  |  |  |
| Political information behavior T1 | .701 | .420 |  |  |  |  |  |
| Political information behavior T2 | .432 | .719 | .482 |  |  |  |  |
| Political interest T1 | .768 | .384 | .675 | .390 |  |  |  |
| Political interest T2 | .431 | .732 | .418 | .785 | .415 |  |  |
| Political knowledge T1 | .217 | .211 | .130 | .231 | .203 | .237 |  |
| Political knowledge T2 | .244 | .233 | .141 | .230 | .196 | .279 | .535 |

*Note.* The model fit of this model which is not presented in the main manuscript is χ² (138) = 708.399 (*p* < .001); CFI = .971; TLI = .960; RMSEA = .041; CI RMSEA = [.038; .044]; SRMR = .027. For all factor correlations: *p* < .001.

Table S3

*Goodness-of-fit Indices of Invariance Models across East and West German students*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Model Description** | **χ²** | **df** | **CFI** | **TLI** | **RMSEA** | **CI RMSEA** | **SRMR** |
| G1 | MIMIC model with East vs. West German students as a predictor and political self-efficacy as an outcome  | 63.989 | 21 | .994 | .990 | .029 | [.021; .037] | .014 |
| G2 | Latent change model for the mean level development of political self-efficacy with East vs. West German students as a predictor of the difference score  | 248.403 | 22 | .969 | .949 | .064 | [.057; .071] | .102 |
|  | **Political Efficacy and Information Behavior** |  |  |  |  |  |  |  |
| G3 | Separate factors for political efficacy and information behavior at T1 and T2, configural invariance across East vs. West German students  | 470.306 | 180 | .981  | .974 | .036 | [.032; .040] | .028 |
| G4 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings across East vs. West German students  | 492.211 | 192 | .980 | .975 | .035 | [.032; .039] | .030 |
| G5 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings and item intercepts across East vs. West German students | 516.660 | 204 | .979 | .976 | .035 | [.031; .039] | .031 |
| G6 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across East vs. West German students | 543.035 | 220 | .979 | .977 | .034 | [.031; .038] | .032 |
| G7 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across East vs. West German students  | 560.251 | 224 | .978 | .976 | .035 | [.031; .038] | .047 |
| G8 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across East vs. West German students | 564.904 | 230 | .978 | .977 | .034 | [.031; .038] | 0.046 |
| G9 | Separate factors for political efficacy and information behavior at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across East vs. West German students | 572.697 | 234 |  .977 | .977 | .034 | [.030; .038] | .044 |
| *(continued)* |
| *Table S3 (continued)* |
|  | **Political Efficacy and Interest in Politics**  |  |  |  |  |  |  |  |
| G10 | Separate factors for political efficacy and interest in politics at T1 and T2, configural invariance across East vs. West German students  | 299.970 | 54 | .975 | .958 | .060 | [.054; .067] | .024 |
| G11 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings across East vs. West German students | 316.403 | 60 | .974 | .961 | .058 | [.052; .065] | .028 |
| G12 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings and item intercepts across East vs. West German students | 330.533 | 66 | .973 | .963 | .057 | [.051; .063] | .028 |
| G13 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across East vs. West German students | 340.966 | 74 | .973 | .967 | .054 | [.048; .060] | .030 |
| G14 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across East vs. West German students  | 364.853 | 78 | .971 | .966 | .054 | [.049; .060] | .059 |
| G15 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across East vs. West German students | 386.710 | 84 | .969 | .967 | .054 | [.048; .059] | .057 |
| G16 | Separate factors for political efficacy and interest in politics at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across East vs. West German students  | 400.477 | 88 | .968 | .968 | .053 | [.048; .059] | .053 |
|  | **Political Efficacy and Political Knowledge**  |  |  |  |  |  |  |  |
| G17 | Separate factors for political efficacy and political knowledge at T1 and T2, configural invariance across East vs. West German students | 104.885 | 54 | .994 | .990 | .027 | [.019; .035] | .017 |
| G18 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings across East vs. West German students  | 119.096 | 60 | .993 | .990 | .028 | [.021; .035] | .022 |
| *(continued)* |
| *Table S3 (continued)* |
| G19 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings and item intercepts across East vs. West German students | 129.503 | 66 | .993 | .990 | .028 | [.021; .035] | .022 |
| G20 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, and item uniquenesses across East vs. West German students | 150.848 | 74 | .991 | .989 | .029 | [.022; .035] | .024 |
| G21 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, and factor variances across East vs. West German students |  200.894 | 78 | .986 | .984 | .035 | [.029; .042] | .059 |
| G22 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, and factor covariances across East vs. West German students | 213.608 | 84 | .985 | .984 | .035 | [.029; .041] | .056 |
| G23 | Separate factors for political efficacy and political knowledge at T1 and T2, invariant factor loadings, item intercepts, item uniquenesses, factor variances, factor covariances, and factor means across East vs. West German students  | 363.258 |  88 | .968 | .968 | .050 | [.045; .055] | .076 |

*Note.* Sample sizes were *N* = 1200 for East German students and *N* = 1304 for West German students.

The MIMIC model (Model G1) did not show mean level differences for political efficacy between East and West German students; the grouping variable of East vs. West German students was not significantly related with the mean levels of political efficacy at both measurement points (T1: β = -.058; T2: β = .021, both *ns*).

In the latent change model for examining the mean level development of political efficacy, the grouping variable of East vs. West German students was significantly related to the difference score (β = .072, *p* < .01) indicating that East German students experienced a larger increase in the mean levels of political efficacy across T1 and T2 (East German students were labelled 2, West German students were labelled 1 in the analyses).

Model G16 did not indicate any mean level differences between East and West German students with regard to political efficacy and interest in politics at both time points, since the goodness-of-fit indices remain similar between Models G15 (without invariance constraints on factor means) and G16 (invariance on factor means). However, when inspecting Model G12, in which the factor means were set to zero in the group of West German students as the reference group and freely estimated in the group of East German students as the comparison group, the results showed lower mean levels of interest in politics at T1 for East German students (-.133, *p* < .05), but similar levels of interest in politics as T2 and political efficacy at both time points.

Given the substantial decrease in model fit between Models G22 and G23 (∆CFI = -.017; ∆TLI = -.016; ∆RMSEA = +.015), East and West German students seem to differ in their factor mean levels of political knowledge. The inspection of Model G19 in which the factor means were fixed to zero in the group of West German students but freely estimated in the group of East German students showed that East German students displayed significantly higher mean levels of political knowledge at both time points (T1: .620, T2: .324; for both *p* ≤ .001).

All models were estimated by the maximum likelihood estimator with robust standard errors (MLR), with the type = complex option using classes as cluster variables, and with integrated correlated uniquenesses between repeatedly used items. Allχ² values are statistically significant with *p* < .05. CFI = comparative fit index, TLI = Tucker-Lewis-Index, RMSEA = root mean square error of approximation, CI = confidence interval, SRMR = standardized root mean squared residual.