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Identifying School Climate Variables Associated with Students' Financial Literacy Outcomes

*A Cross-Country Comparison
Using PISA 2018 Data*

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敬致父母

To my parents

*Study hard what interests you the most in the
most undisciplined, irreverent and original manner
possible.*

Richard P. Feynman

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Acknowledgement

Popular Abstract

Abstract

Chapter 1 Methods

1.1 Model Equations

Student-Level (L_1):

$$\begin{aligned}
\text{LEISURE}_{ij} &= \alpha_{0j}^{M_1} + \gamma_{11}\text{ESCS}_{ij} + \gamma_{21}\text{FEMALE}_{ij} + r_{ij}^{M_1} \\
\text{SCHWK}_{ij} &= \alpha_{0j}^{M_2} + \gamma_{12}\text{ESCS}_{ij} + \gamma_{22}\text{FEMALE}_{ij} + r_{ij}^{M_2} \\
\text{USESCH}_{ij} &= \alpha_{0j}^{M_3} + \gamma_{13}\text{ESCS}_{ij} + \gamma_{23}\text{FEMALE}_{ij} + r_{ij}^{M_3} \\
\text{READJOY}_{ij} &= \alpha_{0j}^{M_4} + \beta_{14}\text{LEISURE}_{ij} + \beta_{24}\text{SCHWK}_{ij} + \beta_{34}\text{USESCH}_{ij} + \gamma_{34}\text{IMMI1} + \gamma_{44}\text{IMMI2}_{ij} + r_{ij}^{M_4} \\
\text{READCOMP}_{ij} &= \alpha_{0j}^{M_5} + \beta_{15}\text{LEISURE}_{ij} + \beta_{25}\text{SCHWK}_{ij} + \beta_{35}\text{USESCH}_{ij} + \gamma_{35}\text{IMMI1}_{ij} + \gamma_{45}\text{IMMI2}_{ij} + r_{ij}^{M_5} \\
\text{READEASE}_{ij} &= \alpha_{0j}^{M_6} + \beta_{16}\text{LEISURE}_{ij} + \beta_{26}\text{SCHWK}_{ij} + \beta_{36}\text{USESCH}_{ij} + \gamma_{36}\text{IMMI1}_{ij} + \gamma_{46}\text{IMMI2}_{ij} + r_{ij}^{M_6} \\
\text{READ}_{ij} &= \alpha_{0j}^{M_7} + \beta_{17}\text{LEISURE}_{ij} + \beta_{27}\text{SCHWK}_{ij} + \beta_{37}\text{USESCH}_{ij} \\
&\quad + \beta_{47}\text{READJOY}_{ij} + \beta_{57}\text{READCOMP}_{ij} + \beta_{67}\text{READEASE}_{ij} + r_{ij}^{M_7}
\end{aligned} \tag{1.1}$$

School-Level (L_2):

$$\alpha_{0j}^{M_7} = \alpha_{00} + a_1\text{LEISURE}_j + a_2\text{SCHWK}_j + a_3\text{USESCH}_j + a_4\text{POLICY}_j + \varepsilon_j \tag{1.2}$$

Student-Level (L_1):

$$\begin{aligned}
\begin{bmatrix} \text{LEISURE}_{ij} \\ \text{SCHWK}_{ij} \\ \text{USESCH}_{ij} \\ \text{READJOY}_{ij} \\ \text{READCOMP}_{ij} \\ \text{READEASE}_{ij} \\ \text{READ}_{ij} \end{bmatrix} &= \begin{pmatrix} \alpha_{0j}^{M_1} \\ \alpha_{0j}^{M_2} \\ \alpha_{0j}^{M_3} \\ \alpha_{0j}^{M_4} \\ \alpha_{0j}^{M_5} \\ \alpha_{0j}^{M_6} \\ \alpha_{0j}^{M_7} \end{pmatrix} + \begin{pmatrix} 0 & 0 & 0 & \beta_{14} & \beta_{15} & \beta_{16} & \beta_{17} \\ 0 & 0 & 0 & \beta_{24} & \beta_{25} & \beta_{26} & \beta_{27} \\ 0 & 0 & 0 & \beta_{34} & \beta_{35} & \beta_{36} & \beta_{37} \\ 0 & 0 & 0 & 0 & 0 & 0 & \beta_{47} \\ 0 & 0 & 0 & 0 & 0 & 0 & \beta_{57} \\ 0 & 0 & 0 & 0 & 0 & 0 & \beta_{67} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{pmatrix}^T \begin{bmatrix} \text{LEISURE}_{ij} \\ \text{SCHWK}_{ij} \\ \text{USESCH}_{ij} \\ \text{READJOY}_{ij} \\ \text{READCOMP}_{ij} \\ \text{READEASE}_{ij} \\ \text{READ}_{ij} \end{bmatrix} \\
&+ \begin{pmatrix} \gamma_{11} & \gamma_{12} & \gamma_{13} & 0 & 0 & 0 & 0 \\ \gamma_{21} & \gamma_{22} & \gamma_{23} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \gamma_{34} & \gamma_{35} & \gamma_{36} & 0 \\ 0 & 0 & 0 & \gamma_{44} & \gamma_{45} & \gamma_{46} & 0 \end{pmatrix}^T \begin{bmatrix} \text{ESCS}_{ij} \\ \text{FEMALE}_{ij} \\ \text{IMMI1GEN}_{ij} \\ \text{IMMI2GEN}_{ij} \end{bmatrix} + \begin{pmatrix} r_{ij}^{M_1} \\ r_{ij}^{M_2} \\ r_{ij}^{M_3} \\ r_{ij}^{M_4} \\ r_{ij}^{M_5} \\ r_{ij}^{M_6} \\ r_{ij}^{M_7} \end{pmatrix}
\end{aligned}$$

School-Level (L_2):

$$\alpha_{0j}^{M_7} = \alpha_{00} + \begin{pmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \end{pmatrix}^T \begin{bmatrix} \text{LEISURE}_j \\ \text{SCHWK}_j \\ \text{USESCH}_j \\ \text{POLICY}_j \end{bmatrix} + \varepsilon_j$$

(1.3)

Appendices

