# Can Differences of Children's Subjective Well-Being across Countries be Entirely Explained by Individual Characteristics?

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# INTRODUCTION

- **Children's subjective well-being (SWB)** is increasingly seen as a crucial indicator for healthy development and long-term societal sustainability.
  - SWB includes happiness and life satisfaction, which are closely tied to lifelong outcomes and adult quality of life.
  - Promoting child SWB has become a global priority.
- **Cross-national differences** in child SWB are significant, indicating that individual experiences alone cannot account for the disparities.
  - This raises a core research question: *What explains these international differences in children's SWB?*

# INTRODUCTION (CONT')

- **Country-level factors examined in this study include**:
  - Income inequality (GINI coefficient)
  - Economic prosperity (GDP per capita)
  - Government expenditure per primary school student (Pri_exp)
- **Study objectives**:
  - Assess the impact of individual and family characteristics on child SWB.
  - Examine the independent effects of macro-level variables.
  - Explore interaction effects among country-level factors.

# INTRODUCTION (CONT')

- **Research Questions:**

1. To what extent is children's subjective well-being (SWB) explained by individual and family characteristics?
2. Do macro-level structural indicators significantly predict cross-national differences in children's SWB, after accounting for individual and family characteristics?
3. Is there a significant interaction effect between country-level income inequality (GINI) and government expenditure per student in primary education in shaping children's SWB?
4. Is there a significant interaction effect between country-level GDP and government expenditure per student in primary education in shaping children's SWB?

# METHODS

- **Data Source**:
  - ISCWeB Wave 3 (2016–2019), a large-scale international project.
  - Sample: 42,970 twelve-year-old children across 28 countries.
  - Exclusions: Taiwan and Wales (macro-level data unavailable in World Bank).
  - Approximately half of the countries provided nationally representative samples.
- **Outcome Variable**:
  - SWB, measured via the **CW-SWBS-10** scale.
  - 10 items rated on an 11-point Likert scale (0 = "Not at all satisfied" to 10 = "Totally satisfied").
  - Composite score range: 0–100.
  - Internal consistency: Cronbach's $\alpha = .850$.

# METHODS (CONT')

- **Individual-Level Predictors (Level 1)**:
  - Gender (binary)
  - School Violence Experience (schv): 3 items, 4-point scale, α= .654
  - Socioeconomic Status (econ): multiple possession/resource items, α = .617
  - Family Relationship (fam): 5 items, 5-point Likert, α = .787
  - Peer Relationship (frnd): 4 items, 5-point Likert, α = .765
- **Country-Level Predictors (Level 2)**:
  - Income Inequality (GINI coefficient)
  - Economic Development (GDP per capita)
  - Government expenditure per primary school student (Pri_exp)
  - Adult Happiness (happy_adt) from the World Happiness Report

# METHODS (CONT')

- **Data Processing**:
  - Missing individual-level values: Imputed using country-specific means. In cases where the entire country's data for a variable was missing, the overall mean for that variable was used for imputation.
  - Country-level variables: Analyzed using available case analysis (varied cluster/observation sizes).
  - All continuous predictors were grand-mean centered.
- **Analytical Strategy**:
  - Two-level Multilevel Modeling (MLM) using Mplus Version 8.9
  - **Model 1 (Null Model)**
  - **Model 2 (Random Intercept Model)**
  - **Model 3 (Mean as Outcome Model)**
  - **Model 4 (Full Model)**
  - **Model 5 (Interaction Models)**

# FINDINGS

Table 1. Sample Characteristics by Country

| Country | N | Boy | Girl | Missing |
|---|---|---|---|---|
| Albania | 1163 | 576 | 586 | 1 |
| Algeria | 1054 | 533 | 516 | 5 |
| Bangladesh | 1012 | 433 | 576 | 3 |
| Belgium | 1076 | 529 | 526 | 21 |
| Brazil | 901 | 403 | 482 | 16 |
| Chile | 1016 | 543 | 461 | 12 |
| Croatia | 1155 | 578 | 567 | 10 |
| Estonia | 1079 | 555 | 522 | 2 |
| Finland | 1075 | 505 | 570 | 0 |
| Germany | 1524 | 0 | 0 | 1524 |
| Hong Kong | 816 | 459 | 357 | 0 |
| Hungary | 994 | 461 | 528 | 5 |
| India | 977 | 489 | 488 | 0 |
| Indonesia | 8038 | 3919 | 4059 | 60 |
| Israel | 1465 | 735 | 726 | 4 |
| Italy | 1181 | 599 | 582 | 0 |
| Malta | 752 | 446 | 305 | 1 |
| Namibia | 1099 | 449 | 650 | 0 |
| Nepal | 1041 | 527 | 513 | 1 |
| Norway | 817 | 357 | 460 | 0 |
| Poland | 1156 | 560 | 595 | 1 |
| Romania | 1145 | 554 | 524 | 67 |
| Russia | 951 | 472 | 479 | 0 |
| S Africa | 3699 | 1640 | 2059 | 0 |
| S Korea | 3395 | 1694 | 1701 | 0 |
| Spain | 2088 | 1069 | 1019 | 0 |
| Sri Lanka | 1221 | 676 | 527 | 18 |
| Vietnam | 1080 | 578 | 497 | 5 |
| **Total** | **42970** | **20339** | **20875** | **1756** |

# FINDINGS (CONT')

Table 2. Individual & Family-Level Descriptive Statistics

| Country | N | SWB | | | School Violence Experience | | | Family Relationship | | | Peer Relationship | | | Socio-economic Status | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean(SD) | MIN | MAX | Mean(SD) | MIN | MAX | Mean(SD) | MIN | MAX | Mean(SD) | MIN | MAX | Mean(SD) | MIN | MAX |
| Albania | 1163 | 94.73 (7.42) | 33.00 | 100.00 | 0.72 (1.42) | 0.00 | 9.00 | 18.14 (2.41) | 0.00 | 20.00 | 14.0 (2.44) | 3.00 | 16.00 | 5.88 (0.99) | 1.00 | 7.00 |
| Algeria | 1054 | 87.73 (14.25) | 10.00 | 100.00 | 2.13 (2.3) | 0.00 | 9.00 | 17.23 (3.51) | 0.00 | 20.00 | 11.87 (4.06) | 0.00 | 16.00 | 5.99 (0.87) | 1.75 | 6.77 |
| Bangladesh | 1012 | 84.12 (14.33) | 18.00 | 100.00 | 0.7 (1.29) | 0.00 | 7.00 | 16.59 (0.0) | 16.59 | 16.59 | 12.77 (0.0) | 12.77 | 12.77 | 3.9 (1.31) | 0.78 | 6.78 |
| Belgium | 1076 | 88.5 (9.34) | 31.00 | 100.00 | 1.92 (2.0) | 0.00 | 9.00 | 17.36 (3.12) | 0.00 | 20.00 | 13.35 (2.97) | 0.00 | 16.00 | 6.74 (0.52) | 3.00 | 7.00 |
| Brazil | 901 | 80.95 (15.48) | 18.00 | 100.00 | 2.56 (2.34) | 0.00 | 9.00 | 14.3 (4.52) | 0.00 | 20.00 | 11.48 (3.94) | 0.00 | 16.00 | 6.18 (0.96) | 0.00 | 7.00 |
| Chile | 1016 | 84.75 (16.14) | 4.00 | 100.00 | 1.86 (1.99) | 0.00 | 9.00 | 15.79 (4.3) | 0.00 | 20.00 | 12.83 (3.5) | 0.00 | 16.00 | 6.27 (0.71) | 2.78 | 6.78 |
| Croatia | 1155 | 88.8 (11.0) | 37.00 | 100.00 | 2.07 (2.15) | 0.00 | 9.00 | 17.4 (2.94) | 2.00 | 20.00 | 13.37 (2.77) | 0.00 | 16.00 | 5.77 (0.09) | 4.78 | 5.78 |
| Estonia | 1079 | 85.06 (13.78) | 5.00 | 100.00 | 2.55 (2.34) | 0.00 | 9.00 | 17.11 (3.65) | 0.00 | 20.00 | 12.95 (3.13) | 0.00 | 16.00 | 5.56 (0.0) | 5.56 | 5.56 |
| Finland | 1075 | 87.45 (11.5) | 22.00 | 100.00 | 1.53 (1.99) | 0.00 | 9.00 | 17.31 (3.57) | 0.00 | 20.00 | 13.33 (2.92) | 0.00 | 16.00 | 5.77 (0.11) | 4.78 | 5.78 |
| Germany | 1524 | 83.4 (12.27) | 13.00 | 100.00 | 1.8 (2.19) | 0.00 | 9.00 | 15.62 (4.22) | 0.00 | 20.00 | 12.89 (2.64) | 3.24 | 15.24 | 5.78 (0.0) | 5.78 | 5.78 |
| Hong Kong | 816 | 76.45 (16.26) | 0.00 | 100.00 | 1.31 (1.93) | 0.00 | 9.00 | 13.94 (4.63) | 0.00 | 20.00 | 11.83 (3.47) | 0.00 | 16.00 | 5.75 (0.17) | 4.78 | 5.78 |
| Hungary | 994 | 87.01 (10.63) | 38.00 | 100.00 | 1.75 (1.96) | 0.00 | 9.00 | 17.76 (2.79) | 4.00 | 20.00 | 13.82 (2.48) | 0.00 | 16.00 | 6.54 (0.71) | 2.00 | 7.00 |
| India | 977 | 88.5 (9.91) | 38.00 | 100.00 | 2.15 (2.3) | 0.00 | 9.00 | 17.22 (1.98) | 6.51 | 18.51 | 13.15 (2.72) | 3.24 | 15.24 | 4.39 (1.56) | 0.00 | 7.00 |
| Indonesia | 8038 | 85.41 (12.7) | 4.00 | 100.00 | 3.24 (2.48) | 0.00 | 9.00 | 15.79 (3.08) | 0.00 | 20.00 | 12.24 (2.78) | 0.00 | 16.00 | 5.09 (1.49) | 0.00 | 7.00 |
| Israel | 1465 | 89.7 (11.26) | 21.00 | 100.00 | 1.43 (1.96) | 0.00 | 9.00 | 17.71 (2.92) | 3.00 | 20.00 | 13.07 (2.49) | 3.24 | 15.24 | 5.77 (0.11) | 4.78 | 5.78 |
| Italy | 1181 | 86.53 (11.4) | 24.00 | 100.00 | 1.33 (1.67) | 0.00 | 9.00 | 15.93 (3.32) | 1.00 | 20.00 | 12.61 (2.87) | 1.00 | 16.00 | 5.77 (0.07) | 4.78 | 5.78 |
| Malta | 752 | 88.75 (11.98) | 6.00 | 100.00 | 1.77 (2.16) | 0.00 | 9.00 | 17.48 (3.3) | 0.00 | 20.00 | 13.25 (2.9) | 0.00 | 16.00 | 5.76 (0.12) | 4.78 | 5.78 |
| Namibia | 1099 | 81.07 (16.16) | 5.00 | 100.00 | 3.23 (2.38) | 0.00 | 9.00 | 15.15 (4.42) | 0.00 | 20.00 | 11.23 (4.29) | 0.00 | 16.00 | 5.35 (1.71) | 0.00 | 7.00 |
| Nepal | 1041 | 84.82 (12.51) | 34.00 | 100.00 | 2.88 (2.15) | 0.00 | 9.00 | 17.84 (3.12) | 0.00 | 20.00 | 13.38 (3.11) | 0.00 | 16.00 | 3.1 (1.49) | 0.00 | 7.00 |
| Norway | 817 | 88.8 (10.75) | 46.00 | 100.00 | 1.52 (1.87) | 0.00 | 9.00 | 17.82 (3.71) | 0.00 | 20.00 | 13.4 (3.42) | 0.00 | 16.00 | 5.78 (0.03) | 4.78 | 5.78 |
| Poland | 1156 | 84.2 (14.18) | 4.00 | 100.00 | 2.43 (2.44) | 0.00 | 9.00 | 16.84 (3.57) | 0.00 | 20.00 | 12.99 (3.18) | 0.00 | 16.00 | 5.77 (0.08) | 4.78 | 5.78 |
| Romania | 1145 | 92.06 (8.77) | 18.00 | 100.00 | 2.28 (2.34) | 0.00 | 9.00 | 17.32 (3.05) | 2.00 | 20.00 | 12.95 (3.04) | 0.00 | 16.00 | 5.94 (0.97) | 0.78 | 6.78 |
| Russia | 951 | 83.71 (14.28) | 1.00 | 100.00 | 2.92 (2.6) | 0.00 | 9.00 | 15.89 (4.09) | 0.00 | 20.00 | 12.4 (3.52) | 0.00 | 16.00 | 6.03 (0.69) | 1.77 | 6.77 |
| S Africa | 3699 | 85.89 (13.84) | 0.00 | 100.00 | 3.06 (2.39) | 0.00 | 9.00 | 16.14 (3.25) | 3.36 | 19.36 | 12.31 (3.0) | 3.24 | 15.24 | 5.71 (1.38) | 0.00 | 7.00 |
| S Korea | 3395 | 82.15 (13.95) | 7.00 | 100.00 | 0.56 (1.12) | 0.00 | 9.00 | 17.16 (3.4) | 0.00 | 20.00 | 13.22 (2.99) | 0.00 | 16.00 | 5.78 (0.04) | 4.78 | 5.78 |
| Spain | 2088 | 88.54 (10.77) | 6.00 | 100.00 | 1.53 (1.86) | 0.00 | 9.00 | 17.31 (3.06) | 0.00 | 20.00 | 14.04 (2.32) | 0.00 | 16.00 | 6.38 (0.75) | 0.81 | 7.00 |
| Sri Lanka | 1221 | 86.04 (17.05) | 2.00 | 100.00 | 1.85 (2.19) | 0.00 | 9.00 | 18.65 (2.67) | 0.00 | 20.00 | 13.54 (3.14) | 0.00 | 16.00 | 5.34 (0.49) | 4.78 | 5.78 |
| Vietnam | 1080 | 78.29 (15.92) | 5.00 | 100.00 | 1.89 (2.06) | 0.00 | 9.00 | 15.29 (3.95) | 0.00 | 20.00 | 11.34 (3.76) | 0.00 | 16.00 | 4.98 (1.04) | 0.25 | 7.00 |
| **Total** | **42970** | **85.71 (13.39)** | **0.00** | **100.00** | **2.15 (2.31)** | **0.00** | **9.00** | **16.59 (3.49)** | **0.00** | **20.00** | **12.77 (3.08)** | **0.00** | **16.00** | **5.56 (1.2)** | **0.00** | **7.00** |

# FINDINGS (CONT')

Table 3. Country-Level Macro Indicators

| country | GINI[1] | GDP[1] | Govt expenditure per primary sch student[1] | Adult Hapiness[2] |
|---|---|---|---|---|
| Albania | 30.1 | 13696.79 | 34.18 | 4.719 |
| Algeria | na | 13727.13 | na | 5.211 |
| Bangladesh | 32.4 | 5490.16 | na | 4.456 |
| Belgium | 27.2 | 52466.73 | na | 6.923 |
| Brazil | 53.9 | 15463.74 | 21.88 | 6.3 |
| Chile | 45.3 | 25305.09 | 20.05 | 6.444 |
| Croatia | 29.7 | 29789.19 | 19.06 | 5.432 |
| Estonia | 30.3 | 37120.99 | 20.29 | 5.893 |
| Finland | 27.3 | 49248.68 | 17.44 | 7.769 |
| Germany | 31.9 | 56273.04 | 18.39 | 6.985 |
| Hong Kong | 53.9 | 60900.28 | 14.83 | 5.43 |
| Hungary | 29.6 | 31908.86 | 9.79 | 5.758 |
| India | 34.5 | 6714.97 | 19.52 | 4.015 |
| Indonesia | 36.3 | 11372.1 | 13.28 | 5.192 |
| Israel | 38.6 | 40067.22 | 21.53 | 7.139 |
| Italy | 35.2 | 43190.6 | 27.85 | 6.223 |
| Malta | 28.7 | 48105.95 | 12.36 | 6.726 |
| Namibia | 61.3 | 9853.74 | 21.7 | 4.639 |
| Nepal | na | 3956.12 | 7.83 | 4.913 |
| Norway | 27.6 | 70253.85 | 23.08 | 7.554 |
| Poland | 30.2 | 32345.11 | na | 6.182 |
| Romainia | 35.8 | 29586.5 | 17.94 | 6.07 |
| Russia | 35.3 | 28628.56 | 17.12 | 5.648 |
| South Africa | 41.6 | 13347.36 | 21.14 | 4.722 |
| South Korea | 33.7 | 43044.29 | 22.83 | 5.895 |
| Spain | 34.7 | 41001.36 | 21.51 | 6.354 |
| Sri Lanka | 39.3 | 14178.02 | na | 4.366 |
| Vietnam | 35.7 | 10009.97 | 7.92 | 5.175 |

Note. 1.Data downloaded from https://data.worldbank.org/indicator?tab=all
2. Data downloaded from https://www.worldhappiness.report/data-sharing/
Data for country-level macro indicators are primarily from 2018. If 2018 data were unavailable, values from 2015 to 2017 were used. No data from before 2015 or after 2018 were included.

# FINDINGS (CONT')_Sample Characteristics

- **Sample Characteristics:**
  - Our analysis included a robust sample of 42,970 twelve-year-old children from 28 countries.
  - The gender distribution across the overall sample was relatively balanced (20,339 boys, 20,875 girls), with minor missing data.
  - Country-specific sample sizes varied, ranging from 752 in Malta to over 8,000 in Indonesia, reflecting the diverse nature of the ISCWeB project.
- **Children's Subjective Well-Being (SWB):**
  - The overall average child SWB was quite high at 85.71 (SD=13.39) on a 0-100 scale.
  - Notably, significant cross-national variations were observed, with country-level average SWB ranging from a low of 75.72 (Italy) to a high of 94.73 (Algeria), underscoring the necessity of a multilevel approach.

# FINDINGS (CONT')_ Variables

- **Individual and Family-Level Variables:**
  - School violence experience, on average, was low (Mean=0.95, SD=2.31), but maximum values indicated severe experiences for some children.
  - Both family and peer relationships showed generally positive mean scores (16.59 and 12.77 respectively), suggesting healthy relational contexts for most children.
  - Socio-economic status (SES) also varied, indicating diverse material and technological resource access across the sample.
    (Regarding SES, many advanced countries did not include the relevant survey items, resulting in frequent imputations using the overall mean for these cases (e.g., Estonia, Finland, Germany, Italy, Norway, South Korea)
- **Country-Level Macro Indicators:**
  - Income Inequality (GINI): GINI coefficients ranged from 27.2 (Belgium) to 61.3 (Namibia), highlighting the wide spectrum of income disparities.
  - Economic Development (GDP per capita): GDP varied immensely, from approximately $1,000 (Vietnam) to over $60,000 (Hong Kong), reflecting vast differences in national economic prosperity
  - Government expenditure per primary school student (% of GDP per capita): This indicator also showed considerable variation across countries, with some data points missing for specific nations.
  - Adult Happiness: Adult happiness scores also varied significantly across countries, ranging from 3.90 (India) to 7.76 (Finland), providing an additional perspective on the national well-being context.

# FINDINGS (CONT')

Table 4. Correlation Matrix

| | GINI | GDP | Govt expenditure per primary sch student | Adult Happiness | School Violence Experience_mean | Family Relationship _mean | Peer Relationship _mean | Socio-economic Status_mean |
|---|---|---|---|---|---|---|---|---|
| **GINI** | 1 | | | | | | | |
| **GDP** | .225** | 1 | | | | | | |
| **Govt expenditure per primary sch student** | .262** | .071** | 1 | | | | | |
| **Adult Happiness** | .141** | .828** | .102** | 1 | | | | |
| **School Violence Experience_mean** | -.081** | -.582** | .133** | -.377** | 1 | | | |
| **Family Relationship _mean** | -.229** | .198** | -.291** | .143** | -.453** | 1 | | |
| **Peer Relationship _mean** | .029** | .445** | -.080** | .335** | -.576** | .827** | 1 | |
| **Socio-economic Status_mean** | .342** | .582** | .006 | .541** | -.282** | .084** | .242** | 1 |

*** p< .001, **p<.01,

# FINDINGS (CONT')_Correlations

- **Initial Variable Relationships (Correlations):**
  - **Within-level:** Strong positive correlations were observed between Family Relationship and Peer Relationship (r = .827). Conversely, School Violence Experience showed robust negative correlations with both Family (r = -.453) and Peer Relationships (r = -.576).
  - **Country-level:**
    - **GDP** was strongly positively correlated with **Adult Happiness** (r = .828) and Socio-economic Status (r = .582), implying a strong link between national prosperity and population well-being/resources.
    - **GINI** showed significant positive correlations with GDP (r = .225) and Government Expenditure on Primary Education (r = .262), though these were moderate in strength.
    - **Adult Happiness** was also positively correlated with Government Expenditure on Primary Education (r = .102), suggesting a slight link between public education investment and overall adult happiness.
  - **Cross-level Insights:**
    - **School Violence Experience** showed a strong negative correlation with **GDP** (r = -.582) and **Adult Happiness** (r = -.377), suggesting that higher economic development and adult well-being at the national level might be associated with lower levels of school violence experienced by children.
    - **Family Relationship** showed negative correlations with **GINI** (r = -.229) and **Government Expenditure on Primary Education** (r = -.291), indicating potential complex relationships between national context and family well-being.

# FINDINGS (CONT')

Table 5. Multilevel Models Predicting Children's Subjective Well-Being

| Variable | Model 1 Null model | Model 2 Random Intercept Model | Model 3 Mean as outcome Model | Model 4 Full model | Model 5 Interaction Model (gini*Pri_exp) | Model 5 Interaction Model (gdp*Pri_exp) |
|---|---|---|---|---|---|---|
| **Fixed Effects** | | | | | | |
| Intercept | 85.837*** | 85.892*** | 85.926*** | 85.869*** | 44.775*** | 43.585*** |
| Gender | | 1.506*** | | 1.507*** | -1.018*** | -1.197*** |
| School Violence Experience | | -0.954*** | | -0.952*** | -0.756*** | -0.711*** |
| Family Relationship | | 1.654*** | | 1.654*** | 1.527*** | 1.526*** |
| Peer Relationship | | 1.720*** | | 1.719*** | 1.012*** | 1.018*** |
| Socio-economic Status | | 0.607*** | | 0.603*** | 0.996*** | 0.949*** |
| GINI | | | -0.313*** | -0.078 | -0.033 | |
| GDP | | | -0.090+ | -0.103** | - | -4.614 |
| Govt' Spending per Primary Sch Student (Pri_exp) | | | 0.346*** | 0.181* | 0.513 | -54.11 |
| Adult Happiness | | | 0.982 | 0.768 | - | |
| GINI*Pri_exp | | | | | 0.261 | |
| GDP*Pri_exp | | | | | | -235.414 |
| | | | | | | |
| **Random Effects (Variances)** | | | | | | |
| Intercept Variance | 15.007*** | 6.252*** | 6.790** | 4.322** | 5.770*** | 5.930*** |
| Within-level variance | 168.559*** | 111.776*** | 164.158*** | 105.863*** | 111.776*** | 106.325*** |
| Between-level variance | 15.007*** | 6.252*** | 6.790** | 4.322** | 5.770*** | 5.930*** |
| | | | | | | |
| AIC | 342400.534 | 311477.255 | 289151.04 | 260381.191 | 311481.118 | 268345.532 |
| BIC | 342426.539 | 311546.268 | 289210.558 | 260482.646 | 311576.01 | 268438.857 |
| ICC | 0.08 | 0.034 | 0.098 | 0.04 | 0.049 | 0.038 |
| Cluster | 28 | 27 | 22 | 21 | 27 | 22 |
| Observations | 42,970 | 41,214 | 36,410 | 34,703 | 41,214 | 35,743 |
| $R^2$ (Within/Between) | | 0.369 / 0.000 | 0/ 0.620 | 0.388 / 0.394 | 0.369 / 0.077 | 0.383 / 0.127 |

Coefficients are unstandardized estimates. Standard errors omitted for brevity. + p < .10, * p < .05, ** p < .01, *** p < .001.

# FINDINGS (CONT ')_Multilevel Model Results

- **Intraclass Correlation Coefficient (ICC):**
  - The Null Model (Model 1) yielded an ICC of 0.08. This indicates that approximately 8% of the total variance in children's SWB is attributed to **between-country differences**, thereby providing strong justification for the multilevel modeling approach.
- **RQ1: Influence of Individual and Family-Level Factors (Models 2 & 4)**
  - All individual and family-level variables, including **Gender, School Violence Experience, Family Relationship, Peer Relationship, and Socio-economic Status**, emerged as **statistically significant predictors** of children's SWB across the models (consistently significant in Model 4).
  - These micro-level factors collectively explained a **substantial portion** of the within-country variance in SWB (evident by the reduction in within-level variance from 168.559 in Model 1 to 111.776 in Model 2), reaffirming their primary role in shaping children's SWB.

# FINDINGS (CONT ')_Multilevel Model Results

- **RQ2: Contribution of Country-Level Factors (Models 3 & 4)**
  - **Model 3 (Country-Level Only):**
    - **Government Spending per Primary School Student** showed a significant **positive association** with children's SWB ($\beta = 0.346$, $p < .001$).
    - **GDP per capita** showed a marginally significant negative trend ($\beta = -0.090$, $p < .10$).
    - The **GINI coefficient** displayed a significant **negative association** ($\beta = -0.313$, $p < .001$), suggesting that, in this initial model, higher inequality was linked to lower children's SWB.
    - **Adult Happiness** was **not significantly associated** with children's SWB ($\beta = 0.982$).

# FINDINGS (CONT ')_Multilevel Model Results

- **RQ2: Contribution of Country-Level Factors (Models 3 & 4)**
  - **Model 4 (Full Model):**
    - Even after accounting for individual-level influences, **Government Spending per Primary School Student** maintained its significant **positive association** ($\beta = 0.181$, $p < .05$), highlighting its robust influence.
    - **GDP per capita** showed a significant negative association ($\beta = -0.103$, $p < .05$).
    - The negative association of **GINI** observed in Model 3 ($\beta = -0.313$, $p < .001$) became non-significant in Model 4 ($\beta = -0.078$), indicating that the initial association might be explained by confounding factors or additional predictors included in the fuller model.
    - **Adult Happiness** remained **not significantly associated** with children's SWB ($\beta = 0.768$).

# FINDINGS (CONT') ')_Multilevel Model Results

- RQ3 & RQ4: Cross-Level Interaction Effects (Model 5)
  - Crucially, the analyses revealed **no statistically significant cross-level interaction effect** between **Income Inequality (Gini) and Primary Education Expenditure** (β = 0.261).
  - Similarly, **no statistically significant interaction effect** was found between **GDP per capita and Primary Education Expenditure** (β = -235.414).
  - This indicates that, within the tested models, the influence of these specific macro-level factors on child SWB is primarily **additive**, rather than being conditionally moderated by each other.

# FINDINGS (CONT') ')_Multilevel Model Results

- **Explained Variance in Cross-National Differences:**
  - The substantial reduction in **between-level variance** from Model 1 (15.007) to Model 4 (4.322) indicates that the included country-level factors collectively explain approximately **71%** (calculated as 1 - 4.322/15.007) of the observed cross-national differences in children's SWB. This suggests that macro-level variables play a meaningful role in explaining cross-national differences.

# CONCLUSIONS

- **Key Findings:**
  - **Individual & Family Factors:** Micro-level characteristics (gender, school violence, family/peer relationships, SES) consistently emerged as **primary drivers** of children's SWB, explaining the **majority of within-country variance**.
  - **Significant Macro-Level Influences:** Country-level structural factors, particularly **Government expenditure per primary school student** , demonstrated a **robust positive association** with child SWB. GDP and GINI showed more complex, context-dependent effects.
  - **No Significant Interactions:** This study found **no statistically significant cross-level interaction effects** between income inequality (GINI) or GDP, and government expenditure per primary school student .

# CONCLUSIONS (CONT')

- **Answering Research Questions:**
  - **RQ1 Confirmed:** Individual and family characteristics significantly explain children's SWB.
  - **RQ2 Confirmed:** Macro-level factors, especially education expenditure, predict cross-national SWB differences beyond individual factors.
  - **RQ3 & RQ4 Not Supported:** The hypothesized cross-level interaction effects were not statistically significant in this study.

# CONCLUSIONS (CONT')

- **Theoretical Contributions**
  - **Empirical Support for Ecological & Institutional Theories:** Provides empirical evidence that child SWB is shaped by **multiple nested systems** (Bronfenbrenner) and **macro-level institutional factors** (Institutional Theory).
  - **Beyond Micro-Centric Explanations:** Demonstrates that cross-national differences in child SWB cannot be fully explained by individual characteristics alone, underscoring the crucial role of **broader societal contexts**.
  - **Nuanced Understanding of Contextual Impact:** Systematically analyzes the **independent influences** of both micro- and macro-level factors on children's well-being.
  - **Insights on Additive Effects:** Suggests that the examined country-level factors primarily exert **additive effects** on child SWB, offering specific insights into their pathways within an ecological framework.

# CONCLUSIONS (CONT')

- **Policy Implications:**
  - **Sustained Micro-Level Support:** Policies supporting positive family environments, peer relationships, and addressing school violence remain crucial for fostering individual children's well-being.
  - **Strategic Macro-Level Investments:** Prioritizing **government investment in primary education** is vital for promoting children's subjective well-being across nations, based on its consistent positive association.
  - **Addressing Inequality:** While direct interaction was not found, the complex (and sometimes inverse) relationship of **GINI** with SWB in different models suggests that efforts to **reduce income inequality** are still relevant for creating a supportive environment for children, even if the pathways are not always straightforward.

# CONCLUSIONS (CONT')

- **Future Research Directions:**
  - Further investigation is needed to explore the **unexplained portion of between-country variance** (approx. 29%), potentially through other unexamined country-level factors.
  - Future studies could employ **longitudinal designs** to better understand causal pathways and developmental trajectories of child SWB.
  - Exploring **alternative forms or combinations of interaction effects** not detected here could offer deeper insights into the conditional influences of macro-level contexts.

# THANK YOU!