

Table Supplemental1: Comparing Fixed Effect and Random Effect Model Specifications

| | Coefficients | | Difference | S.E. |
|---------------------------------------|--------------|---------------|------------|----------|
| | Fixed Effect | Random Effect | | |
| IAP | | | | |
| Solid Cooking Fuel | 0.25 | 0.05 | 0.20 | 0.12 |
| Father smokes | -0.01 | -0.06 | 0.04 | 0.08 |
| solid x smoke | -0.08 | -0.19 | 0.11 | 0.10 |
| Solid x Female | 0.44 | 0.42 | 0.01 | 0.09 |
| Smoke x Female | 0.41 | 0.46 | -0.05 | 0.97 |
| Child Characteristics | | | | |
| Female | -0.27 | -0.26 | -0.01 | 0.11 |
| Age | -0.25 | -0.26 | 0.01 | 0.02 |
| Age-squared | 0.84E-02 | 0.97E-02 | -0.13E-02 | 0.13E-02 |
| Mother's Education Level | | | | |
| Middle school Degree | -0.26 | -0.22 | -0.03 | 0.07 |
| High school Degree | -0.20 | -0.06 | -0.14 | 0.13 |
| College degree and above | -0.42 | -0.07 | -0.34 | 0.25 |
| Wealth | | | | |
| Housesize | 0.22E-02 | 0.14E-02 | 0.8E-03 | 0.5E-03 |
| Number of rooms | -0.05 | -0.04 | -0.59E-02 | 0.01 |
| Log (Household net income per capita) | 0.01 | 0.06 | -0.04 | 0.03 |
| Permeability | | | | |
| Roof Permeable | -0.23 | -0.13 | -0.09 | 0.11 |

b= consistent under Ho and Ha;
obtained from xtlogit
B= inconsistent under Ha,
efficient under Ho;
obtained from xtlogit

Test: Ho: difference in coefficients not systematic
chi2(18) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 29.45
Prob>chi2 = 0.04

Table Supplemental2: Predicted Probabilities and Marginal Effects of Acute Respiratory Infections From Logistic Regressions, Marginal Standardization

| Method | Predicted Probabilities of ARI | |
|-------------------------------|--------------------------------|--------|
| | Female | Male |
| Solid Fuel Exposure | | |
| No | 45.29% | 2.99% |
| Yes | 62.10% | 3.53% |
| Marginal Effects (Difference) | 16.81% | 0.54% |
| Paternal Smoking | | |
| No | 43.43% | 3.29% |
| Yes | 56.00% | 3.24% |
| Marginal Effects (Difference) | 12.57% | -0.06% |

Table Supplemental3: Association between Solid Cooking Fuel and First Acute Respiratory Infection
by Child Gender, Odd Ratios

| | Total | | Male | | Female | |
|---------------------------------------|-----------|-------------|-------------|--------------|--------|-------------|
| | OR | 95%CI | OR | 95%CI | OR | 95%CI |
| IAP | | | | | | |
| Solid Cooking Fuel | 1.84 | [0.73-4.60] | 1.60 | [0.43-5.91] | 4.02 | [0.87-18.4] |
| Father smokes | 1.60 | [0.73-3.49] | 1.42 | [0.52-3.83] | 2.06 | [0.53-7.92] |
| solid x smoke | 0.87 | [0.35-2.17] | 1.23 | [0.31-4.87] | 0.38 | [0.07-1.92] |
| solid x female | 1.32 | [0.60-2.92] | | | | |
| smoke x female | 0.92 | [0.60-2.92] | | | | |
| Child Characteristics | | | | | | |
| Female | 0.98 | [0.40-2.41] | | | | |
| Age | 0.82* | [0.69-0.98] | 0.70* | [0.51-0.96] | 0.80 | [0.51-0.96] |
| Age-squared | 1.00 | [0.99-1.01] | 1.01 | [0.99-1.02] | 1.00 | [0.99-1.02] |
| Mother's Education Level | | | | | | |
| Middle school Degree | 1.02 | [0.63-1.65] | 0.97 | [0.44-2.15] | 0.99 | [0.47-2.06] |
| High school Degree | 0.91 | [0.46-1.80] | 0.49 | [0.14-1.74] | 1.27 | [0.45-3.53] |
| College degree and above | 1.23 | [0.37-4.04] | 0.55 | [0.071-4.23] | 1.27 | [0.21-7.50] |
| Wealth | | | | | | |
| Housesize | 1.00 | [0.99-1.00] | 0.99 | [0.99-1.00] | 1.00 | [0.99-1.00] |
| Number of rooms | 0.98 | [0.88-1.09] | 0.95 | [0.79-1.14] | 1.04 | [0.90-1.20] |
| Log(Household net income per capita) | 1.06 | [0.84-1.34] | 1.00 | [0.72-1.04] | 0.98 | [0.65-1.48] |
| Permeability | | | | | | |
| Roof Permeable | 0.78 | [0.45-1.33] | 0.35* | [0.14-0.82] | 1.64 | [0.68-3.96] |
| Community Fixed Effect | Yes | | Yes | | Yes | |
| Time Fixed Effect | Yes | | Yes | | Yes | |
| Observation | 775 | | 287 | | 258 | |
| * p<0.05 | ** p<0.01 | | *** p<0.001 | | | |

Note: The total number of male and female children do not add up to 775 because certain communities were dropped from the analyses because there was no variation in the ARI outcome by gender.

Table Supplemental4: Association between Solid Cooking Fuel and ARIs with Food Preparation Controls, by Child Gender, Odd Ratios

| | Total | | Male | | Female | |
|---------------------------------------|-----------|-------------|-------------|-------------|--------|---------------|
| | OR | 95%CI | OR | 95%CI | OR | 95%CI |
| IAP | | | | | | |
| Solid Cooking Fuel | 1.12 | [0.45-2.77] | 1.12 | [0.29-4.31] | 3.75* | [1.05-13.40] |
| Father smokes | 1.00 | [0.48-2.06] | 0.98 | [0.37-2.63] | 2.64 | [0.96-7.25] |
| solid x smoke | 0.62 | [0.24-1.55] | 0.92 | [0.22-3.89] | 0.44 | [0.10-2.00] |
| solid x female | 2.40 | [0.99-5.82] | | | | |
| smoke x female | 1.87 | [0.77-4.53] | | | | |
| Child Characteristics | | | | | | |
| Female | 0.48 | [0.20-1.17] | | | | |
| Age | 0.71 | [0.42-1.19] | 0.79 | [0.33-1.92] | 0.42* | [0.17-0.99] |
| Age-squared | 1.01 | [0.99-1.03] | 1.00 | [0.97-1.04] | 1.03 | [0.99-1.06] |
| Food Preparation | 1.35 | [0.78-2.34] | 1.14 | [0.42-3.05] | 2.00 | [0.84-4.76] |
| Mother's Education Level | | | | | | |
| Middle school Degree | 0.55* | [0.33-0.93] | 0.51 | [0.21-1.25] | 0.35* | [0.153-0.838] |
| High school Degree | 0.57 | [0.27-1.23] | 0.54 | [0.16-1.74] | 0.50 | [0.14-1.74] |
| College degree and above | 0.24 | [0.04-1.20] | 0.30 | [0.01-5.26] | 0.32 | [0.02-3.88] |
| Wealth | | | | | | |
| Housesize | 1.00 | [0.99-1.00] | 0.99 | [0.99-1.00] | 1.00* | [1.00-1.01] |
| Number of rooms | 0.94 | [0.85-1.04] | 1.01 | [0.84-1.23] | 0.88 | [0.75-1.03] |
| Log(Household net income per capita) | 1.07 | [0.85-1.35] | 0.85 | [0.56-1.28] | 1.08 | [0.73-1.60] |
| Permeability | | | | | | |
| Roof Permeable | 1.01 | [0.58-1.77] | 0.51* | [0.19-1.34] | 2.56 | [0.99-6.63] |
| Community Fixed Effect | Yes | | Yes | | Yes | |
| Time Fixed Effect | Yes | | Yes | | Yes | |
| Observation | 783 | | 273 | | 287 | |
| * p<0.05 | ** p<0.01 | | *** p<0.001 | | | |

Note: The total number of male and female children do not add up to 783 because certain communities were dropped from the analyses because there was no variation in the ARI outcome by gender.