**Online Appendix C**

**Tables A1-A5**

**Table A1 Individual calorie shares for food consumed at home and away from home**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   |   |   |  *Male* | *Female* |
| **Variables** | Description |   | Mean  | SD | Mean | SD |
| *Food at home* | Individual share of total calories from food consumed at home | *Adults* | 60.29 | 17.28 | 63.25 | 16.25 |
| *Adolescents* | 61.91 | 15.53 | 60.98 | 15.04 |
| *Children* | 54.83 | 18.36 | 53.88 | 18.03 |
| *FAFH* | Individual share of total calories from food bought and consumed away from home  | *Adults* | 39.71 | 17.28 | 36.75 | 16.25 |
| *Adolescents* | 38.09 | 15.53 | 39.02 | 15.04 |
| *Children* | 45.17 | 18.36 | 46.12 | 18.03 |
| *TraditionalFAFH* | Individual share of total calories from traditional style food bought and consumed away from home  | *Adults* | 33.09 | 16.33 | 30.15 | 15.50 |
| *Adolescents* | 24.83 | 14.20 | 26.63 | 15.44 |
| *Children* | 32.21 | 17.31 | 33.24 | 17.39 |
| *WesternFAFH* | Individual share of total calories from western food bought and consumed away from home | *Adults* | 6.62 | 9.52 | 6.60 | 8.81 |
| *Adolescents* | 13.26 | 11.07 | 12.39 | 10.74 |
| *Children* | 12.96 | 10.02 | 12.88 | 9.16 |
| Number of individuals | *Adults (≥ 18 years)* | 1,750 |   | 1,784 |   |
|  |  | *Adolescents (10-17 years)* | 284 |  | 267 |  |
|  |  | *Children (0-9 years)* | 448 |  | 464 |  |
| Number of households | 1,685 |

SD = standard deviation.

Source*:* Authors’ estimates from Vietnam Urban Food Consumption and Expenditure Study.

|  |
| --- |
| **Table A3 OLS regression results for estimation of caloric intake for adults, adolescents and children** |
|   | Adults | Adolescents | Children |
|  | *Male* | *Female* | *Male* | *Female* | *Male* | *Female* |
| *WesternFAFH* | 0.018\*\*\* | 0.014\*\*\* | 0.018\*\*\* | 0.014\*\*\* | 0.005\* | 0.001 |
|  | (0.001) | (0.001) | (0.002) | (0.003) | (0.002) | (0.004) |
| *Age* | -0.003 | 0.009\*\* | 0.0914 | 0.0675 | 0.361\*\*\* | 0.404\*\*\* |
|  | (0.004) | (0.004) | (0.149) | (0.194) | (0.036) | (0.041) |
| *Age2* | 0.001 | -0.001\*\* | -0.003 | -0.002 | -0.030\*\*\* | -0.030\*\*\* |
|  | (0.000) | (0.000) | (0.005) | (0.007) | (0.003) | (0.003) |
| *ConsFreq* | 0.0290\*\*\* | 0.027\*\*\* | 0.072\*\*\* | 0.084\*\* | 0.082\*\*\* | 0.083\*\*\* |
|  | (0.009) | (0.009) | (0.023) | (0.042) | (0.024) | (0.028) |
| *WatchTV* | 0.0040 | -0.011 | 0.009 | 0.035 | 0.012 | 0.008 |
|  | (0.006) | (0.006) | (0.01) | (0.026) | (0.01) | (0.019) |
| *HouseholdSize* | -0.015 | -0.008 | -0.018 | -0.039 | 0.084\*\* | 0.028 |
|  | (0.012) | (0.012) | (0.033) | (0.042) | (0.035) | (0.038) |
| *EduMale* | -0.012\*\* | -0.006 | 0.010 | 0.008 | -0.004 | -0.007 |
|  | (0.004) | (0.004) | (0.013) | (0.022) | (0.01) | (0.015) |
| *EduFemale* | 0.002 | 0.001 | -0.014 | 0.002 | 0.018 | 0.000 |
|  | (0.005) | (0.005) | (0.015) | (0.019) | (0.012) | 0.020 |
| *FemaleWork* | -0.001 | 0.001 | 0.002\* | -0.001 | 0.003\*\* | 0.001 |
|  | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| *Buddhist* | -0.220\*\*\* | -0.246\*\*\* | -0.131 | -0.203\*\* | -0.165\*\* | -0.347\*\*\* |
|  | (0.033) | (0.036) | (0.106) | (0.095) | (0.079) | (0.095) |
| *Christian* | -0.211\*\*\* | -0.177\*\*\* | -0.013 | 0.109 | 0.055 | -0.310\*\*\* |
|  | (0.045) | (0.049) | (0.140) | (0.326) | (0.159) | (0.107) |
| *Income (ref: LowInc)* |  |  |  |  |  |  |
| *LowerMiddleInc* | -0.008 | -0.033 | -0.121 | -0.355\*\* | -0.107 | 0.265\* |
|  | (0.045) | (0.044) | (0.165) | (0.172) | (0.142) | (0.150) |
| *UpperMiddleInc* | 0.020 | 0.006 | -0.145 | -0.259 | -0.175 | 0.301\*\* |
|  | (0.045) | (0.043) | (0.168) | (0.180) | (0.139) | (0.146) |
| *HighInc* | 0.070 | 0.067 | -0.078 | -0.301\* | -0.175 | 0.349\*\* |
|  | (0.048) | (0.045) | (0.175) | (0.178) | (0.143) | (0.150) |
| *HCMC* | 0.215\*\*\* | 0.248\*\*\* | 0.219\* | 0.300\*\* | 0.192\*\* | 0.288\*\*\* |
|  | (0.033) | (0.037) | (0.118) | (0.116) | (0.079) | (0.088) |
| *Constant* | 2.14\*\*\* | 1.88\*\*\* | 1.317 | 1.414 | 0.364 | 0.383 |
|  | (0.13) | (0.120) | (1.051) | (1.323) | (0.295) | (0.306) |
| Mean VIF | 2.48 | 2.52 | 3.74 | 3.15 | 3.07 | 2.93 |
| R-squared | 0.193 | 0.139 | 0.273 | 0.158 | 0.296 | 0.358 |
| Observations | 1,750 | 1,784 | 284 | 267 | 448 | 464 |
| Number of households |  |  | 1685 |  |  |  |

*Notes*: Asterisks ∗∗∗, ∗∗, and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. Robust standard errors are presented in parentheses. Caloric intake is the average kilocalories consumed by each individual per day. 1 USD = 22,318 VND on December 30, 2016.

|  |
| --- |
| **Table A4.1 Three-stage multivariate regression results for estimation of adult macronutrient shares (carbohydrates, fat and protein)**  |
|   |  *Male* |  *Female* |
|  | *Carbohydrates* | *Fat* | *Protein* | *Carbohydrates* | *Fat* | *Protein* |
| *WesternFAFH* | -0.107\*\*\* | 0.139\*\*\* | -0.019\*\* | -0.073\*\*\* | 0.129\*\*\* | -0.027\*\*\* |
|  | (0.018) | (0.0103) | (0.00) | (0.019) | (0.011) | (0.007) |
| *Age* | -0.031 | -0.031 | 0.018 | 0.001 | -0.013 | 0.011 |
|  | (0.069) | (0.039) | (0.029) | (0.067) | (0.040) | (0.028) |
| *Age2* | -0.001 | 0.001 | -0.001 | -0.001 | 0.001 | 0.001 |
|  | (0.001) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| *ConsFreq* | -0.121 | 0.136 | -0.039 | 0.206 | 0.053 | -0.090 |
|  | (0.157) | (0.089) | (0.066) | (0.160) | (0.096) | (0.066) |
| *WatchTV* | 0.355\*\*\* | -0.131\* | -0.122\*\* | 0.251\*\* | -0.0693 | -0.107\*\* |
|  | (0.127) | (0.072) | (0.053) | (0.121) | (0.073) | (0.050) |
| *HouseholdSize* | 0.0741 | -0.0514 | -0.118 | 0.288 | -0.149 | -0.106 |
|  | (0.203) | (0.115) | (0.0857) | (0.199) | (0.120) | (0.082) |
| *EduMale* | 0.120 | -0.078\* | -0.016 | 0.029 | -0.066 | 0.039 |
|  | (0.076) | (0.043) | (0.032) | (0.076) | (0.046) | (0.033) |
| *EduFemale* | -0.291\*\*\* | 0.113\*\* | 0.090\*\*\* | -0.120 | 0.055 | 0.018 |
|  | (0.082) | (0.047) | (0.035) | (0.081) | (0.048) | (0.033) |
| *FemaleWork* | -0.007 | 0.004 | 0.001 | -0.008 | 0.004 | 0.002 |
|  | (0.007) | (0.004) | (0.003) | (0.007) | (0.004) | (0.003) |
| *Buddhist* | -0.803 | 0.069 | 0.107 | 0.562 | -0.461 | -0.224 |
|  | (0.569) | (0.323) | (0.240) | (0.567) | (0.341) | (0.234) |
| *Christian* | -0.119 | -0.540 | 0.241 | 0.0829 | -0.473 | 0.0486 |
|  | (0.799) | (0.454) | (0.337) | (0.781) | (0.470) | (0.323) |
| *Income (ref: LowInc)* |  |  |  |  |  |  |
| *LowerMiddleInc* | 0.652 | 0.0974 | -0.138 | 0.063 | -0.098 | 0.098 |
|  | (0.819) | (0.465) | (0.346) | (0.807) | (0.486) | (0.334) |
| *UpperMiddleInc* | 0.741 | 0.054 | -0.347 | -0.944 | 0.605 | 0.193 |
|  | (0.810) | (0.460) | (0.342) | (0.797) | (0.480) | (0.330) |
| *HighInc* | -0.316 | 0.644 | 0.0781 | -1.364 | 0.874\* | 0.365 |
|  | (0.862) | (0.490) | (0.364) | (0.843) | (0.508) | (0.349) |
| *HCMC* | 0.530 | -1.397\*\*\* | 0.201 | 1.128\* | -1.485\*\*\* | 0.297 |
|  | (0.589) | (0.335) | (0.249) | (0.582) | (0.350) | (0.241) |
| *Constant* | 66.99\*\*\* | 22.54\*\*\* | 17.56\*\*\* | 64.32\*\*\* | 23.37\*\*\* | 17.59\*\*\* |
|  | (2.142) | (1.217) | (0.904) | (2.094) | (1.261) | (0.866) |
| Breusch-Pagan Chi-Sq.(p-value) |  | 1953.6(0.0) |  |  | 1956.9(0.0) |  |
| Observations | 1,750 | 1,750 | 1,750 | 1,784 | 1,784 | 1,784 |
| R-squared | 0.042 | 0.130 | 0.022 | 0.036 | 0.117 | 0.020 |
| Number of households |  |  | 1,685 |  |  |  |

*Notes*: Asterisks ∗∗∗, ∗∗, and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. 1 USD = 22,318 VND on December 30, 2016. *Ref* is reference level of income. Total number of individuals is represented by *n*. The Breusch-Pagan χ2 in the multivariate regression analyses is sufficiently large to reject the null hypothesis of homoscedasticity of the error terms in equations (7) to (9), thus confirming that the estimated variance of the residuals in all models is dependent on the values of the independent variables.

|  |
| --- |
| **Table A4.2 Three-stage multivariate regression results for estimation of adolescent macronutrient shares (carbohydrates, fat and protein)** |
|   | *Male* | *Female* |
|  | *Carbohydrates* | *Fat* | *Protein* | *Carbohydrates* | *Fat* | *Protein* |
| *WesternFAFH* | -0.102\*\*\* | 0.142\*\*\* | -0.024 | -0.088\*\* | 0.146\*\*\* | -0.041\*\* |
|  | (0.038) | (0.023) | (0.015) | (0.041) | (0.023) | (0.017) |
| *Age* | 1.816 | -1.181 | 0.094 | 7.42\*\*\* | -1.57 | -3.10\*\*\* |
|  | (2.303) | (1.409) | (0.913) | (2.445) | (1.367) | (1.01) |
| *Age2* | -0.051 | 0.0335 | -0.00776 | -0.252\*\*\* | 0.058 | 0.099\*\*\* |
|  | (0.085) | (0.052) | (0.033) | (0.090) | (0.050) | (0.037) |
| *ConsFreq* | 0.201 | -0.063 | -0.069 | 0.735\* | -0.409\* | -0.026 |
|  | (0.399) | (0.244) | (0.158) | (0.442) | (0.247) | (0.184) |
| *WatchTV* | -0.846\*\* | 0.421\* | 0.193 | 0.074 | -0.150 | 0.006 |
|  | (0.374) | (0.229) | (0.148) | (0.418) | (0.234) | (0.174) |
| *HouseholdSize* | -0.018 | 0.187 | -0.0543 | 0.343 | 0.168 | -0.472\* |
|  | (0.548) | (0.335) | (0.217) | (0.675) | (0.377) | (0.281) |
| *EduMale* | 0.065 | 0.017 | -0.0714 | -0.04 | 0.128 | -0.057 |
|  | (0.179) | (0.109) | (0.071) | (0.207) | (0.116) | (0.086) |
| *EduFemale* | -0.005 | 0.028 | -0.050 | 0.317 | -0.232\* | -0.082 |
|  | (0.215) | (0.132) | (0.085) | (0.239) | (0.134) | (0.099) |
| *FemaleWork* | 0.004 | -0.007 | 0.002 | -0.016 | 0.009 | 0.008 |
|  | (0.018) | (0.011) | (0.007) | (0.018) | (0.010) | (0.008) |
| *Buddhist* | 0.854 | 0.157 | -0.623 | -2.170 | 0.968 | 0.511 |
|  | (1.44) | (0.880) | (0.570) | (1.566) | (0.875) | (0.652) |
| *Christian* | 3.13 | 0.162 | -2.10\*\*\* | -1.673 | -0.329 | 1.091 |
|  | (2.04) | (1.249) | (0.810) | (2.335) | (1.305) | (0.972) |
| *Income (ref: LowInc)* |  |  |  |  |  |  |
| *LowerMiddleInc* | 0.558 | 0.270 | -0.295 | -1.831 | 1.627 | -0.670 |
|  | (2.855) | (1.746) | (1.132) | (2.693) | (1.505) | (1.121) |
| *UpperMiddleInc* | -0.262 | 0.532 | -0.0771 | -4.155 | 3.140\*\* | -0.530 |
|  | (2.853) | (1.745) | (1.131) | (2.657) | (1.485) | (1.106) |
| *HighInc* | 0.965 | -0.0969 | -0.323 | -4.327 | 3.217\*\* | -0.115 |
|  | (2.937) | (1.796) | (1.164) | (2.824) | (1.578) | (1.175) |
| *HCMC* | 0.145 | -1.714\* | 0.922 | 5.688\*\*\* | -3.24\*\*\* | -1.262\* |
|  | (1.573) | (0.962) | (0.624) | (1.752) | (0.979) | (0.729) |
| *Constant* | 51.32\*\*\* | 30.36\*\*\* | 19.37\*\*\* | 6.862 | 33.19\*\*\* | 45.62\*\*\* |
|  | (15.96) | (9.762) | (6.326) | (17.29) | (9.662) | (7.196) |
| Breusch-Pagan Chi-Sq.(p-value) |  | 347.2 (0.00) |  |  | 286.5 (0.00) |  |
| R-squared | 0.082 | 0.176 | 0.073 | 0.159 | 0.232 | 0.161 |
| Observations | 284 | 284 | 284 | 267 | 267 | 267 |
| Number of households | 1,685 |   |   |   |

*Notes*: Asterisks ∗∗∗, ∗∗, and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. 1 USD = 22,318 VND on December 30, 2016. *Ref* is reference level of income. Total number of individuals is represented by *n*. The Breusch-Pagan χ2 in the multivariate regression analyses is sufficiently large to reject the null hypothesis of homoscedasticity of the error terms in equations (7) to (9), thus confirming that the estimated variance of the residuals in all models is dependent on the values of the independent variables.

**Table A4.3 Three-stage multivariate regression results for estimation of children macronutrient shares (carbohydrates, fat and protein)**

|  |  |  |
| --- | --- | --- |
|   | *Males* | *Females* |
|  | *Carbohydrates* | *Fat* | *Protein* | *Carbohydrates* | *Fat* | *Protein* |
| *WesternFAFH* | -0.077\*\* | 0.116\*\*\* | -0.015 | 0.035 | 0.008 | -0.012 |
|  | (0.036) | (0.024) | (0.015) | (0.044) | (0.029) | (0.020) |
| *Age* | 3.416\*\*\* | -3.37\*\*\* | -0.182 | 1.963\*\*\* | -2.83\*\*\* | 0.089 |
|  | (0.613) | (0.410) | (0.260) | (0.676) | (0.443) | (0.315) |
| *Age2* | -0.278\*\*\* | 0.275\*\*\* | 0.003 | -0.136\*\* | 0.220\*\*\* | -0.019 |
|  | (0.059) | (0.0400) | (0.025) | (0.065) | (0.043) | (0.030) |
| *ConsFreq* | 0.660\* | 0.0421 | -0.159 | 0.125 | 0.538\* | 0.0977 |
|  | (0.385) | (0.257) | (0.164) | (0.443) | (0.291) | (0.207) |
| *WatchTV* | 0.619\* | -0.417\* | -0.126 | 0.955\*\*\* | -0.465\*\* | -0.304\*\* |
|  | (0.317) | (0.212) | (0.135) | (0.314) | (0.206) | (0.146) |
| *HouseholdSize* | -0.015 | 0.291 | -0.509\*\* | -0.343 | 0.069 | 0.260 |
|  | (0.524) | (0.350) | (0.223) | (0.542) | (0.356) | (0.253) |
| *EduMale* | -0.169 | -0.006 | 0.097 | 0.058 | -0.028 | 0.006 |
|  | (0.185) | (0.124) | (0.078) | (0.192) | (0.126) | (0.089) |
| *EduFemale* | -0.026 | 0.014 | -0.044 | -0.277 | 0.098 | 0.061 |
|  | (0.193) | (0.129) | (0.082) | (0.203) | (0.133) | (0.094) |
| *FemaleWork* | 0.005 | -0.008 | -0.002 | 0.001 | -0.012 | 0.008 |
|  | (0.016) | (0.011) | (0.007) | (0.018) | (0.012) | (0.008) |
| *Buddhist* | 0.233 | -0.920 | 0.202 | 0.716 | -0.417 | -0.542 |
|  | (1.289) | (0.863) | (0.548) | (1.344) | (0.882) | (0.627) |
| *Christian* | 0.431 | -1.789 | 0.761 | 0.795 | -0.913 | -0.331 |
|  | (1.855) | (1.241) | (0.789) | (2.019) | (1.324) | (0.941) |
| *Income (ref: LowInc)* |  |  |  |  |  |  |
| *LowerMiddleInc* | 0.843 | -0.113 | -0.828 | 1.854 | 0.257 | -2.063\* |
|  | (2.192) | (1.467) | (0.932) | (2.300) | (1.509) | (1.072) |
| *UpperMiddleInc* | 0.128 | 0.594 | -0.740 | 2.594 | 0.525 | -2.74\*\*\* |
|  | (2.167) | (1.450) | (0.921) | (2.241) | (1.470) | (1.045) |
| *HighInc* | -0.073 | 0.831 | -0.415 | 1.845 | 1.344 | -3.01\*\*\* |
|  | (2.260) | (1.512) | (0.961) | (2.322) | (1.523) | (1.083) |
| *HCMC* | 2.838\*\* | -2.45\*\*\* | 0.016 | 1.978 | -2.85\*\*\* | 0.963 |
|  | (1.278) | (0.855) | (0.543) | (1.343) | (0.881) | (0.626) |
| *Constant* | 48.91\*\*\* | 34.69\*\*\* | 21.70\*\*\* | 52.31\*\*\* | 31.65\*\*\* | 19.54\*\*\* |
|  | (4.383) | (2.933) | (1.863) | (4.940) | (3.241) | (2.304) |
| Breusch-Pagan χ2 | 430.1\*\*\* | 485.2\*\*\* |
| R-squared | 0.217 | 0.381 | 0.056 | 0.132 | 0.261 | 0.050 |
| Observations | 448 | 448 | 448 | 464 | 464 | 464 |
| Number of households | 1,685 |   |   |   |

*Notes*: Asterisks ∗∗∗, ∗∗, and ∗ indicate statistical significance at the 1%, 5% and 10% levels, respectively. 1 USD = 22,318 VND on December 30, 2016. *Ref* is reference level of income. Total number of individuals is represented by *n*. The Breusch-Pagan χ2 in the multivariate regression analyses is sufficiently large to reject the null hypothesis of homoscedasticity of the error terms in equations (7) to (9), thus confirming that the estimated variance of the residuals in all models is dependent on the values of the independent variables.

**Table A5 Two-stage least square regression results for the estimation of Calories and macronutrient shares for adults, adolescents and children)**

|  |  |
| --- | --- |
|   | ***Calories*** |
|  |  Adults |  Adolescents |  Children |
|  | *Male* | *Female* | *Male* | *Female* | *Male* | *Female* |
| *WesternFAFH* | 0.059\*\*\* | 0.024\*\* | -0.008 | 0.037 | 0.121 | -0.003 |
|  | (0.019) | (0.009) | (0.029) | (0.041) | (0.443) | (0.027) |
| Hausman test of endogeneity (p-value) | 2.9 (0.10) | 1.2( 0.27) | 1.9(0.17) | 1.3(0.24) | 1.3(0.25) | 0.02 (0.88) |
|   | ***Carbohydrates*** |
|  |  Adults |  Adolescents |  Children |
|  | *Male* | *Female* | *Male* | *Female* | *Male* | *Female* |
| *WesternFAFH* | -0.433\* | -0.460\*\*\* | 0.07 | -0.866\* | -6.016 | 0.915 |
|  | (0.235) | (0.149) | (0.414) | (0.489) | (4.530) | (0.790) |
| Hausman test of endogeneity (p-value) | 1.13(0.28) | 1.42(0.23) | 0.25(0.61) | 0.98(0.32) | 1.4(0.23) | 2.1(0.14) |
|   | ***Fat*** |
|  |  Adults |  Adolescents |  Children |
|  | *Male* | *Female* | *Male* | *Female* | *Male* | *Female* |
| *WesternFAFH* | 0.373\*\*\* | 0.311\*\*\* | 0.001 | 0.417\* | 1.897 | -0.413 |
|  | (0.134) | (0.079) | (0.263) | (0.238) | (7.217) | (0.448) |
| Hausman test of endogeneity (p-value) | 1.4(0.23) | 1.61(0.20) | 0.55(0.45) | 0.55(0.45) | 1.3(0.24) | 1.3(0.25) |
|   | ***Protein*** |
|  |  Adults |  Adolescents |  Children |
|  | *Male* | *Female* | *Male* | *Female* | *Male* | *Female* |
| *WesternFAFH* | 0.0593 | 0.0594 | -0.024 | 0.0942 | 0.471 | -0.428 |
|  | (0.096) | (0.095) | (0.118) | (0.138) | (2.416) | (0.356) |
| Hausman test of endogeneity (p-value) | 0.452(0.50) | 0.32(0.57) | 0.0(0.99) | 0.71(0.39) | 0.12(0.72) | 2.2(0.13) |
| First stage regression |  |  |  |  |  |  |
| *OtherWesternFAFH* | 0.54\*\*\* | 1.01\*\*\* | 4.64 | 3.42\*\* | 0.443 | 5.225\* |
| F-Stats | 10.33\*\*\* | 28.44\*\*\* | 2.64\* | 3.80\*\* | 5.53\* | 3.45\* |
| Number of individuals | 1,750 | 1,784 | 284 | 267 | 448 | 464 |
| Number of households | 1,685 |

*Notes*: Asterisks ∗∗∗, ∗∗, and ∗ indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard presented in parentheses. The instrumental variable *OtherWesternFAFH* used in 2SLS estimation represents the average calorie share of Western FAFH of all other surveyed individuals in the same ward.