|  |
| --- |
| **Appendix****Table A1**. Coefficient estimates for healthcare utilization models. |
| 　 | Outpatient services | Inpatient services | Prescription drugs |
|  | Use | Expenditure | Use | Expenditure | Use | Expenditure |
| Variable | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. |
| HHI | 0.020  | \*\*\* | 0.004 | 0.012  | \*\* | 0.005 | 0.002  |  | 0.002 | 0.014  |  | 0.029 | 0.032  | \*\*\* | 0.009 | 0.005  | \*\* | 0.002 |
| Store density | -0.001  | \* | 0.001 | -0.010  | \* | 0.006 | -0.001  |  | 0.002 | -0.009  |  | 0.006 | -0.003  |  | 0.006 | -0.000  | \* | 0.000 |
| Age | -0.001  | \*\*\* | 0.000 | 0.022  | \*\*\* | 0.000 | 0.002  | \*\*\* | 0.000 | 0.016  | \*\*\* | 0.000 | 0.000  | \*\*\* | 0.000 | 0.037  | \*\*\* | 0.000 |
| Male | -0.062  | \*\*\* | 0.001 | -0.142  | \*\*\* | 0.003 | -0.002  | \*\*\* | 0.001 | 0.102  | \*\*\* | 0.005 | -0.081  | \*\*\* | 0.001 | -0.034  | \*\*\* | 0.006 |
| Income | 0.005  | \*\*\* | 0.000 | -0.053  | \*\*\* | 0.002 | -0.006  | \*\*\* | 0.000 | -0.011  | \*\*\* | 0.001 | 0.001  | \*\* | 0.000 | -0.081  | \*\*\* | 0.002 |
| Labor insurance | 0.038  | \*\*\* | 0.001 | -0.033  | \*\*\* | 0.007 | -0.004  | \*\*\* | 0.001 | -0.102  | \*\*\* | 0.006 | 0.040  | \*\*\* | 0.001 | -0.109  | \*\*\* | 0.009 |
| Government insurance | 0.061  | \*\*\* | 0.001 | 0.117  | \*\*\* | 0.011 | -0.003  | \*\*\* | 0.001 | -0.130  | \*\*\* | 0.009 | 0.070  | \*\*\* | 0.002 | 0.080  | \*\*\* | 0.014 |
| Farmer insurance | 0.050  | \*\*\* | 0.001 | 0.008  |  | 0.008 | 0.007  | \*\*\* | 0.001 | -0.124  | \*\*\* | 0.008 | 0.055  | \*\*\* | 0.002 | -0.024  | \*\* | 0.011 |
| Medical institution | -0.003  |  | 0.002 | -0.002  |  | 0.007 | -0.001  |  | 0.001 | 0.008  |  | 0.016 | -0.006  |  | 0.004 | -0.002  |  | 0.009 |
| Beds | 0.000  |  | 0.000 | 0.000  |  | 0.000 | 0.000  |  | 0.000 | 0.001  |  | 0.001 | 0.000  |  | 0.000 | 0.000  |  | 0.001 |
| Medical personnel | 0.014  | \*\*\* | 0.004 | 0.008  |  | 0.011 | 0.003  |  | 0.002 | -0.010  |  | 0.027 | 0.021  | \*\*\* | 0.006 | -0.011  |  | 0.013 |
| Population | 0.010  | \*\*\* | 0.002 | -0.010  | \* | 0.006 | 0.000  |  | 0.001 | 0.013  |  | 0.010 | 0.006  | \*\* | 0.003 | -0.017  | \*\* | 0.009 |
| Air quality | 0.000  |  | 0.000 | 0.000  |  | 0.000 | 0.000  |  | 0.000 | -0.001  |  | 0.001 | 0.001  | \*\*\* | 0.000 | 0.001  | \*\* | 0.001 |
| Garbage | 0.000  |  | 0.000 | 0.001  | \*\* | 0.000 | 0.000  |  | 0.000 | 0.000  |  | 0.001 | 0.000  |  | 0.000 | 0.001  | \*\*\* | 0.001 |
| Dust | 0.000  | \*\* | 0.000 | 0.000  |  | 0.000 | 0.000  | \*\* | 0.000 | 0.001  | \*\* | 0.001 | 0.000  |  | 0.000 | 0.001  |  | 0.000 |
| Car density | 0.005  | \*\*\* | 0.001 | 0.005  | 　 | 0.004 | 0.000  | 　 | 0.001 | 0.012  | 　 | 0.009 | 0.006  | \*\*\* | 0.001 | 0.003  | 　 | 0.005 |
|  |

|  |
| --- |
| **Table A1**. Coefficient estimates for healthcare utilization models (continued). |
| 　 | Outpatient services | Inpatient services | Prescription drugs |
|  | Use | Expenditure | Use | Expenditure | Use | Expenditure |
| Variable | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. |
| Motorcycle density | 0.056  | \*\*\* | 0.007 | 0.067  | \*\*\* | 0.025 | 0.008  | \*\* | 0.004 | 0.207  | \*\*\* | 0.065 | 0.089  | \*\*\* | 0.010 | 0.027  |  | 0.032 |
| Constant | 0.890  | \*\*\* | 0.008 | 7.999  | \*\*\* | 0.025 | 0.015  | \*\* | 0.006 | 9.577  | \*\*\* | 0.058 | 0.785  | \*\*\* | 0.016 | 5.765  | \*\*\* | 0.035 |
| Township fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects  | Yes | Yes | Yes | Yes | Yes | Yes |
| Township\*Time trend  | Yes | Yes | Yes | Yes | Yes | Yes |
| *R2* | 0.021  | 0.127  | 0.021  | 0.111  | 0.016  | 0.192  |
| N\*T | 9,353,987  | 8,498,051  | 9,353,987 | 731,352 | 9,353,987 | 7,793,687 |

Notes: Standard errors are cluster-corrected at the township-level. \*\*\*, \*\*, \* indicate statistical significance at the 1%, 5% and 10% level.

|  |
| --- |
| **Table A2**. Coefficient estimates for NHIST obesity and BMI Z-score models. |
| Dependent Var. | Obesity | BMI Z-score |
|  | Full sample | Urban sample | Rural sample | Full sample | Urban sample | Rural sample |
| Variable | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. | Coefficient | S.E. |
| HHI | 0.034  | \*\*\* | 0.010  | 0.021  | \* | 0.011  | 0.056  | \*\*\* | 0.001  | 0.137  | \*\* | 0.052  | 0.138  |  | 0.111  | 0.203  | \*\*\* | 0.018  |
| Store density | -0.015  | \* | 0.081  | -0.024  |  | 0.022  | -0.028  | \*\*\* | 0.005  | -0.081  | \* | 0.047  | -0.110  |  | 0.081  | -0.109  | \* | 0.062  |
| Age | 0.002  | \*\*\* | 0.000  | 0.002  | \*\*\* | 0.000  | 0.002  | \*\* | 0.001  | 0.021  | \*\*\* | 0.001  | 0.021  | \*\*\* | 0.001  | 0.017  | \*\*\* | 0.002  |
| Male | 0.060  | \*\*\* | 0.010  | 0.059  | \*\*\* | 0.013  | 0.065  | \*\*\* | 0.004  | 0.290  | \*\*\* | 0.051  | 0.294  | \*\*\* | 0.062  | 0.274  | \*\*\* | 0.012  |
| Junior high | -0.063  | \*\*\* | 0.009  | -0.064  | \*\*\* | 0.010  | -0.060  | \*\*\* | 0.013  | 0.005  |  | 0.066  | -0.007  |  | 0.079  | -0.035  | \*\* | 0.015  |
| Senior high | -0.063  | \*\*\* | 0.013  | -0.061  | \*\*\* | 0.010  | -0.071  | \* | 0.035  | 0.035  |  | 0.065  | 0.034  |  | 0.070  | -0.046  |  | 0.051  |
| College | -0.093  | \*\*\* | 0.013  | -0.093  | \*\*\* | 0.010  | -0.092  | \*\* | 0.032  | -0.031  |  | 0.063  | -0.033  |  | 0.065  | -0.118  | \* | 0.066  |
| Graduate | -0.117  | \*\*\* | 0.020  | -0.126  | \*\*\* | 0.009  | -0.027  |  | 0.063  | -0.038  |  | 0.071  | -0.065  |  | 0.052  | 0.095  |  | 0.102  |
| Employment | 0.019  | \*\*\* | 0.006  | 0.017  | \*\*\* | 0.005  | 0.027  |  | 0.021  | 0.143  | \*\*\* | 0.033  | 0.142  | \*\*\* | 0.038  | 0.161  | \*\*\* | 0.009  |
| Income | -0.001  |  | 0.001  | -0.001  |  | 0.001  | -0.003  | \*\*\* | 0.001  | -0.006  | \*\*\* | 0.002  | -0.006  | \*\*\* | 0.002  | -0.007  | \*\*\* | 0.000  |
| HHSIZE | 0.000  |  | 0.000  | 0.000  |  | 0.000  | 0.000  |  | 0.001  | 0.000  |  | 0.000  | 0.000  |  | 0.000  | 0.005  | \*\* | 0.002  |
| Area | 0.011  | \*\*\* | 0.002  | 0.009  |  | 0.006  | 0.011  | \*\*\* | 0.003  | 0.031  | \*\* | 0.013  | 0.070  |  | 0.046  | 0.030  | \*\*\* | 0.009  |
| Population | 0.002  | \* | 0.001  | 0.002  |  | 0.002  | 0.008  | \*\*\* | 0.000  | -0.005  |  | 0.019  | -0.008  |  | 0.025  | 0.009  | \*\* | 0.004  |
| Medical institution | -0.018  |  | 0.067  | -0.020  |  | 0.065  | -0.016  |  | 0.011  | -0.072  | \*\* | 0.034  | -0.085  | \*\* | 0.036  | -0.015  |  | 0.020  |
| Beds | 0.000  |  | 0.000  | 0.000  |  | 0.001  | -0.001  |  | 0.003  | -0.001  |  | 0.002  | -0.001  |  | 0.002  | -0.002  | \*\*\* | 0.000  |
| Medical personnel | 0.043  | \*\*\* | 0.005  | 0.047  | \*\*\* | 0.005  | 0.029  | \* | 0.017  | 0.148  | \*\*\* | 0.031  | 0.176  | \*\*\* | 0.025  | 0.032  |  | 0.083  |
| Constant | 0.094  | \*\*\* | 0.009  | 0.103  | \*\*\* | 0.018  | 0.074  | \*\* | 0.028  | -0.858  | \*\*\* | 0.037  | -0.859  | \*\*\* | 0.079  | -0.774  | \*\*\* | 0.100  |
| County FE | Yes | Yes | Yes | Yes | Yes | Yes |
| *R2* | 0.027  | 0.026  | 0.034  | 0.291  | 0.309  | 0.146  |
| *N* | 22,423  | 17,606  | 4,817  | 22,423  | 17,606  | 4,817  |

Notes: Sampling weights are used and standard errors are cluster-corrected at the county-level. \*\*\*, \*\*, \* indicate statistical significance at the 1%, 5% and 10% level.

**Table A3**. Percentage of total sales for products sold at convenience stores.

|  |  |  |
| --- | --- | --- |
|  | All products | Private label products |
| General food products | 10% | 3% |
| Meal boxes, ready-to-eat food | 15% | 51% |
| Non-alcoholic drinks | 25% | 12% |
| Coffee | 6% | 29% |
| Alcoholic drinks | 6% | 0.5% |
| Cigarettes | 28% | - |
| Personal items | 3% | 5% |
| Books and magazines | 3% | - |
| Other products | 2% | <0.001% |
| Services | 3% | - |
| Total | 100% | 100% |

Notes: These data are from the TFTC (2016).