**Model Analysis Result for Nigeria**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| Variables | OLS | HH FE |  | CRE-TOBIT |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Subsidized quantity(kg) | -0.15\*\*\*  (0.00) | -0.20\*\*\*  (0.00) |  | -0.23\*\*\*  (0.00) |  |
| Market distance(km) | 0.16  (0.10) | 0.04  (0.74) |  | 0.004  (0.95) |  |
| Fertilizer price(NGN) | -0.01\*\*\*  (0.00) | -0.02\*\*\*  (0.00) |  | -0.001  (0,56) |  |
| Household size | 1.23\*\*\*  (0.00) | -0.79  (0.48) |  | 0.74  (0.13) |  |
| Age of household head | -0.07  (0.44) | -0.01  (0.96) |  | 0.07  (0.57) |  |
| Value of assets(‘000) | 0.01\*\*\*  (0.00) | -0.006  (0.28) |  | -0.007\*\*  (0.04) |  |
| Labor age(>=15) | 1.25\*  (0.06) | 0.47  (0.74) |  | 0.23  (0.72) |  |
| Maize price | 0.014\*\*  (0.03) | -0.002  (0.79) |  | -0.02\*\*  (0.03) |  |
| Rice price | -0.018\*\*\*  (0.00) | -0.008\*\*  (0.01) |  | -0.003  (0.16) |  |
| Land holding (ha) | 4.1\*\*\*  (0.00) | 3.01\*\*\*  (0.00) |  | 2.48\*\*\*  (0.00) |  |
| Female head(=1) | -2.44  (0.41) | -8.80\*\*  (0.08) |  | 1.36  (0.77) |  |
| Informal savings(=1) | 3.28\*  (0.09) | 4.11  (0.13) |  | 2.46  (0.11) |  |
| Formal credit(=1) | 2.97  (0.52) | 4.07  (0.66) |  | 5.15  (0.14) |  |
| Informal credit(=1) | -0.50  (0.85) | 0.07  (0.98) |  | 1.20  (0.52) |  |
| Extension access (=1) | 8.40\*\*\*  (0.00) | 3.15  (0.46) |  | 3.98\*\*  (0.03) |  |
| Attended school(=1) | 12.2\*\*\*  (0.00) | 1.20  (0.79) |  | 2.07  (0.40) |  |
| Primary education (=1) | -1..41  (0.71) | -10.80\*\*\*  (0.01) |  | -6.11\*  (0.07) |  |
| Finished primary(=1) | 1.62  (0.52) | -8.26\*  (0.06) |  | -2.18  (0.34) |  |
| Finished secondary(=1) | 4.41  (0.104) | -7.86  (0.19) |  | -0.44  (0.88) |  |
| Safety net(=1) | -1.813  (0.79) | 6.19  (0.48) |  | 6.57\*\*  (0.04) |  |
| Net seller produce(=1) | 11.27\*\*\*  (0.00) | 6.55\*\*  (0.02) |  | 6.85\*\*\*  (0.00) |  |
| Net buyer produce(=1) | -25.2\*  (0.07) | -21.13  (0.25) |  | -9.98  (0.18) |  |
| Soil quality (1=good,2=fair,3=bad) | 0.40  (0.88) | 6.43  (0.12) |  | 2.41  (0.26) |  |
| Constant | 7.25  (0.64) | 52.72  (0.03) |  |  |  |
| HH FE | No | Yes |  | No |  |
| Time Average Controls | No | No |  | Yes |  |
| Year FE | Yes | Yes |  | Yes |  |
| Observations | 10,452 | 10,452 |  | 10,452 |  |
| R-squared | 0.1502 |  |  | 0.1595 |  |
| Number of HHID |  | 4,892 |  |  |  |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 2: Crowding out estimate by survey year

|  |  |
| --- | --- |
| Year | APE of subsidized fertilizer |
| 2010/11 | -0.15 (0.00) |
| 2012/13 | -0.20 (0.00) |
| 2015/16 | -0.13 (0.00) |
| 2018/19 | -0.28 (0.00) |

Table 3: Crowding out estimate by asset quintile

|  |  |  |  |
| --- | --- | --- | --- |
|  | Asset Quantile | APE of subsidized fertilizer | Mean Asset Value of Durable goods in 2019 US$ |
| Poorest 20% | 1 | -0.14 (0.00) |  |
|  | 2 | -0.18 (0.00) |  |
|  | 3 | -0.21 (0.00) |  |
|  | 4 | -0.21 (0.00) |  |
| Wealthiest 20% | 5 | -0.20 (0.00) |  |

Table 4: Crowding out estimate by landholding quintile

|  |  |  |
| --- | --- | --- |
| Land Holdings Quantile | APE of subsidized fertilizer | Mean Landholding (Ha) |
| 1 | -0.11 (0.00) |  |
| 2 | -0.17 (0.00) |  |
| 3 | -0.20 (0.00) |  |
| 4 | -0.21 (0.00) |  |
| 5 | -0.24 (0.00) |  |

**Model Analysis Result for Tanzania**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variables | OLS | HH FE |  | CRE-TOBIT |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Subsidized quantity(kg) | -0.13\*\*\*  (0.00) | -0.06  (0.55) |  | -0.03  (0.28) |  |
| Market distance(km) | -0.05  (0.24) | 0.09  (0.71) |  | 0.01  (0.68) |  |
| Fertilizer price(NGN) | -0.007\*  (0.05) | -0.06\*\*  (0.03) |  | -0.01\*\*\*  (0.00) |  |
| Household size | -0.77\*\*  (0.01) | -1.92  (0.17) |  | -0.47\*\*  (0.06) |  |
| Age of household head | -0.22\*\*\*  (0.00) | -0.69\*\*  (0.01) |  | -0.24\*\*\*  (0.00) |  |
| Value of assets(‘000) | 0.0002\*\*\*  (0.00) | 0.0005\*\*  (0.04) |  | 0.0002\*\*\*  (0.00) |  |
| Labor age(>=15) | 0.52  (0.36) | 1.95  (0.45) |  | 0.25  (0.56) |  |
| Maize price | 0.02\*\*\*  (0.00) | -0.03  (0.28) |  | 0.006\*  (0.05) |  |
| Rice price | -0.008\*\*  (0.03) | 0.02  (0.34) |  | 0.004\*\*  (0.04) |  |
| Land holding (ha) | 1.84\*\*\*  (0.00) | 4.07\*\*\*  (0.01) |  | 1.19\*\*\*  (0.00) |  |
| Female head(=1) | -4.20\*\*\*  (0.00) | 11.70  (0.13) |  | 2.75\*\*\*  (0.01) |  |
| Formal savings | 7.59\*\*\*  (0.00) | -21.50\*\*  (0.03) |  | -4.85\*\*\*  (0.00) |  |
| Formal bank(=1) | 24.59\*\*\*  (0.00) | 30.54  (0.04) |  | 8.89\*\*\*  (0.00) |  |
| Formal credit(=1) | 3.62  (0.30) | -12.33  (0.63) |  | -0.12  (0.96) |  |
| Informal credit(=1) | 8.87\*\*\*  (0.00) | 1.70  (0.81) |  | 0.31  (0.84) |  |
| Extension access (=1) | 4.63\*\*\*  (0.00) | 4.66  (0.42) |  | 1.18  (0.18) |  |
| Attended school(=1) | 2.33  (0.37) | 3.42  (0.71) |  | -0.04  (0.99) |  |
| Primary education (=1) | 24.82\*\*\*  (0.00) | 45.69\*\*  (0.05) |  | 11.38\*\*\*  (0.00) |  |
| Finished primary(=1) | 17.39\*\*\*  (0.00) | 39.43\*  (0.07) |  | 9.91\*\*\*  (0.00) |  |
| Finished secondary(=1) |  |  |  |  |  |
| Safety net(=1) | -2.75\*  (0.10) | -29.87\*\*  (0.02) |  | -10.20\*\*\*  (0.00) |  |
| Net seller produce(=1) | 4.44\*\*  (0.01) | 9.01  (0.27) |  | 2.35\*\*  (0.06) |  |
| Net buyer produce(=1) | -1.18  (0.80) | -9.94  (0.46) |  | 6.68  (0.13) |  |
| Soil quality (1=good,2=fair,3=bad) | 0.08  (0.94) | -3.84  (0.39) |  | -0.23  (0.74) |  |
| Constant | -18.84  (0.103) | 98.47  (0.05) |  |  |  |
| HH FE | No | Yes |  | No |  |
| Time Average Controls | No | No |  | Yes |  |
| Year FE | Yes | Yes |  | Yes |  |
| Observations | 7,451 | 7,451 |  | 7,451 |  |
| R-squared | 0.1419 |  |  | 0.3017 |  |
| Number of HHID |  | 6,998 |  |  |  |

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 2: Crowding out estimate by survey year

|  |  |
| --- | --- |
| Year | APE of subsidized fertilizer |
| 2010/11 | 0.01 (0.23) |
| 2012/13 | 0.02 (0.29) |
| 2014/15 | 0.03 (0.34) |

Table 3: Crowding out estimate by asset quintile

|  |  |  |  |
| --- | --- | --- | --- |
|  | Asset Quantile | APE of subsidized fertilizer | Mean Asset Value of Durable goods in 2019 US$ |
| Poorest 20% | 1 | 0.01 (0.20) |  |
|  | 2 | 0.02 (0.25) |  |
|  | 3 | 0.02 (0.28) |  |
|  | 4 | 0.03 (0.33) |  |
| Wealthiest 20% | 5 | 0.04 (0.37) |  |

Table 4: Crowding out estimate by landholding quintile

|  |  |  |
| --- | --- | --- |
| Land Holdings Quantile | APE of subsidized fertilizer | Mean Landholding (Ha) |
| 1 | 0.01 (0.23) |  |
| 2 | 0.02 (0.27) |  |
| 3 | 0.02 (0.28) |  |
| 4 | 0.03 (0.32) |  |
| 5 | 0.03 (0.33) |  |