**Model Analysis Result for Nigeria**

OLS Result N= 8,144

R2= 0.0828

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
| Variables | Coefficient  OLS | p-Value | Coefficient  HH Fixed effect |  | Coefficient  Tobit marginal effect |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Subsidized quantity(kg) | -0.11\*\*\*  (0.00) |  | -0.19\*\*\* |  | -0.18\*\*\* |  |
| Market distance(km) | 0.16\*  (0.08) |  | 0.05 |  | -0.02 |  |
| Fertilizer price(NGN) | -0.02\*\*\*  (0.00) |  | -0.03\*\*\* |  | 0.002 |  |
| Household size | 1.10\*\*\*  (0.01) |  | -2.87\*\*\* |  | -0.39 |  |
| Age of household head | -0.02  (0.78) |  | 0.01 |  | 0.13 |  |
| Value of assets(‘000) | 0.007\*\*  (0.031) |  | -0.002 |  | -0.005 |  |
| Labor age(>=15) | 0.64  (0.340) |  | 1.08 |  | 0.38 |  |
| Maize price | -0.007  (0.281) |  | -0.004 |  | -0.01\*\* |  |
| Rice price | -0.008\*\*\*  (0.002) |  | -0.005 |  | -0.001 |  |
| Land holding (ha) | 2.57\*\*\*  (0.00) |  | 3.05\*\*\* |  | 2.05\*\*\* |  |
| Female head(=1) | -0.86  (0.77) |  | -0.51 |  | 2.13 |  |
| Informal savings(=1) | 1.07  (0.60) |  | 2.12 |  | 1.73 |  |
| Formal credit(=1) | 5.66  (0.215) |  | 4.30 |  | 4.31 |  |
| Informal credit(=1) | 2.27  (0.38) |  | 1.95 |  | 1.89 |  |
| Extension access (=1) | 9.63\*\*\*  (0.00) |  | 3.12 |  | 1.80 |  |
| Attended school(=1) | 12.09\*\*\*  (0.00) |  | 1.99 |  | 1.77 |  |
| Primary education (=1) | -6.73\*  (0.07) |  | -8.93\*\* |  | -3.34 |  |
| Finished primary(=1) | -2.46  (0.329) |  | -10.64\*\* |  | -2.92 |  |
| Finished secondary(=1) | -3.85  (0.17) |  | -9.27 |  | -2.14 |  |
| Safety net(=1) | 1.88  (0.75) |  | 7.01 |  | 5.51 |  |
| Net seller produce(=1) | 7.34\*\*\*  (0.002) |  | 5.60\* |  | 5.70\*\*\* |  |
| Net buyer produce(=1) | -34.44\*\*  (0.013) |  | -23.73 |  | -12.32\* |  |
| Soil quality (1=good,2=fair,3=bad) | 6.90\*\*  (0.02) |  | 5.14 |  | 1.93 |  |
| Zone |  |  |  |  |  |  |
| 2 | 7.24 | 0.025 |  |  |  |  |
| 3 | 33.12 | 0.00 |  |  |  |  |
| 4 | -15.12 | 0.00 |  |  |  |  |
| 5 | -17.84 | 0.00 |  |  |  |  |
| 6 | -17.94 | 0.00 |  |  |  |  |
| Year |  |  |  |  |  |  |
| 2012 | 10.16\*\*\* | 0.00 | 11.21\*\*\* |  | 6.14\*\*\* |  |
| 2015 | -6.94\*\*\* | 0.01 | -0.14 |  | -4.54\*\*\* |  |
|  |  |  |  |  |  |  |

OLS with HH fixed effect F(25,3169) = 7.27

N= 8,144

No of group= 3,170

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Variables | Coefficient | p-Value |
|  |  |  |
|  |  |  |
| Subsidized quantity(kg) | -0.19\*\*\* | 0.00 |
| Market distance(km) | 0.05 | 0.69 |
| Fertilizer price(NGN) | -0.03\*\*\* | 0.00 |
| Household size | -2.87\*\*\* | 0.02 |
| Age of household head | 0.01 | 0.96 |
| Value of assets(‘000) | -0.002 | 0.70 |
| Labor age(>=15) | 1.08 | 0.47 |
| Maize price | -0.004 | 0.63 |
| Rice price | -0.005 | 0.14 |
| Land holding (ha) | 3.05\*\*\* | 0.002 |
| Female head(=1) | -0.51 | 0.92 |
| Informal savings(=1) | 2.12 | 0.44 |
| Formal credit(=1) | 4.30 | 0.47 |
| Informal credit(=1) | 1.95 | 0.56 |
| Extension access (=1) | 3.12 | 0.53 |
| Attended school(=1) | 1.99 | 0.67 |
| Primary education (=1) | -8.93\*\* | 0.02 |
| Finished primary(=1) | -10.64\*\* | 0.02 |
| Finished secondary(=1) | -9.27 | 0.13 |
| Safety net(=1) | 7.01 | 0.44 |
| Net seller produce(=1) | 5.60\* | 0.06 |
| Net buyer produce(=1) | -23.73 | 0.12 |
| Soil quality (1=good,2=fair,3=bad) | 5.14 | 0.22 |
| Year |  |  |
| 2012 | 11.21\*\*\* | 0.00 |
| 2015 | -0.14 | 0.96 |
|  |  |  |
| Sigma\_u | 59.85 |  |
| Sigma\_e | 76.24 |  |
| rho | 0.3812 |  |
|  |  |  |
|  |  |  |
|  |  |  |

Tobit Regression LR chi2(54) = 2749.15

Average marginal effect N= 8,144

Pseudo R2 = 0.1379

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Variables | dy/dx | p-Value |
|  |  |  |
|  |  |  |
| Subsidized quantity(kg) | -0.18\*\*\* | 0.00 |
| Market distance(km) | -0.02 | 0.79 |
| Fertilizer price(NGN) | 0.002 | 0.46 |
| Household size | -0.39 | 0.50 |
| Age of household head | 0.13 | 0.34 |
| Value of assets(‘000) | -0.005 | 0.12 |
| Labor age(>=15) | 0.38 | 0.57 |
| Maize price | -0.01\*\* | 0.04 |
| Rice price | -0.001 | 0.43 |
| Land holding (ha) | 2.05\*\*\* | 0.00 |
| Female head(=1) | 2.13 | 0.68 |
| Informal savings(=1) | 1.73 | 0.26 |
| Formal credit(=1) | 4.31 | 0.20 |
| Informal credit(=1) | 1.89 | 0.30 |
| Extension access (=1) | 1.80 | 0.33 |
| Attended school(=1) | 1.77 | 0.46 |
| Primary education (=1) | -3.34 | 0.31 |
| Finished primary(=1) | -2.92 | 0.20 |
| Finished secondary(=1) | -2.14 | 0.47 |
| Safety net(=1) | 5.51 | 0.11 |
| Net seller produce(=1) | 5.70\*\*\* | 0.00 |
| Net buyer produce(=1) | -12.32\* | 0.09 |
| Soil quality (1=good,2=fair,3=bad) | 1.93 | 0.37 |
| Zone |  |  |
| 2 | 1.72 | 0.33 |
| 3 | 14.83\*\*\* | 0.00 |
| 4 | -2.33 | 0.20 |
| 5 | -5.61\*\*\* | 0.00 |
| 6 | -6.81\*\*\* | 0.00 |
| Year |  |  |
| 2012 | 6.14\*\*\* | 0.00 |
| 2015 | -4.54\*\*\* | 0.01 |
|  |  |  |

**Double Hurdle Craggit Model**



**Crowding out estimate for each asset quintile**















**Model Analysis Result for Tanzania**

OLS Result N= 7,451

R2= 0.1419

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Variables | Coefficient  OLS | p-Value | Coefficient | coefficient |
|  |  |  | HH Fixed effect | Tobit marginal effect |
|  |  |  |  |  |
| Subsidized quantity(kg) | -0.13\*\*\* | 0.00 | -0.06 | -0.03 |
| Market distance(km) | -0.05 | 0.24 | 0.09 | 0.01 |
| Fertilizer price(NGN) | -0.007\* | 0.05 | -0.06\*\* | -0.01 |
| Household size | -0.77\*\* | 0.01 | -1.92 | -0.47 |
| Age of household head | -0.22\*\*\* | 0.00 | -0.69\*\* | -0.24 |
| Value of assets(‘000) | 0.0002\*\*\* | 0.00 | 0.0005\*\* | 0.0002 |
| Labor age(>=15) | 0.52 | 0.36 | 1.95 | 0.25 |
| Maize price | 0.02\*\*\* | 0.00 | -0,03 | 0.006\* |
| Rice price | -0.008\*\* | 0.03 | 0.02 | 0.004 |
| Land holding (ha) | 1.84\*\*\* | 0.00 | 4.07\*\*\* | 1.19 |
| Female head(=1) | -4.20\*\*\* | 0.00 | 11.70 | 2.75 |
| formal savings(=1) | 7.59\*\*\* | 0.002 | -21.50\*\* | -4.85 |
| Formal bank(=1) | 24.59\*\*\* | 0.00 | 30.54 | 8.89 |
| Formal credit(=1) | 3.62 | 0.30 | -12.33 | -0.12 |
| Informal credit(=1) | 8.87\*\*\* | 0.00 | 1.70 | 0.31 |
| Extension access (=1) | 4.63\*\*\* | 0.00 | 4.66 | 1.18 |
| Attended school(=1) | 2.33 | 0.37 | 3.42 | -0.04 |
| Primary education (=1) | 24.82\*\*\* | 0.00 | 45.69\*\* | 11.38 |
| Finished primary(=1) | 17.39\*\*\* | 0.00 | 39.43\* | 9.91 |
| Finished secondary(=1) |  |  |  |  |
| Safety net(=1) | -2.75\* | 0.098 | -29.87\*\* | -10.20 |
| Net seller produce(=1) | 4.44\*\* | 0.01 | 9.01 | 2.35 |
| Net buyer produce(=1) | -1.18 | 0.80 | -9.94 | 6.68 |
| Soil quality (1=good,2=fair,3=bad) | 0.08 | 0.94 | -3.84 | -0.23 |
| region |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
| Year |  |  |  |  |
| 2012 | 1.68 | 0.31 | 20.33\* | -0.93\*\*\* |
| 2014 | 5.66\*\* | 0.04 |  | 0.31 |
|  |  |  |  |  |

OLS with HH fixed effect F(24,6997) = 1.67

N= 7,451

No of group= 6,998

Prob > F = 0.0216

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Variables | Coefficient | p-Value |
|  |  |  |
|  |  |  |
| Subsidized quantity(kg) | -0.06 | 0.55 |
| Market distance(km) | 0.09 | 0.71 |
| Fertilizer price(NGN) | -0.06\*\* | 0.03 |
| Household size | -1.92 | 0.17 |
| Age of household head | -0.69\*\* | 0.01 |
| Value of assets(‘000) | 0.0005\*\* | 0.04 |
| Labor age(>=15) | 1.95 | 0.45 |
| Maize price | -0,03 | 0.28 |
| Rice price | 0.02 | 0.34 |
| Land holding (ha) | 4.07\*\*\* | 0.01 |
| Female head(=1) | 11.70 | 0.13 |
| formal savings(=1) | -21.50\*\* | 0.03 |
| Formal bank(=1) | 30.54 | 0.04 |
| Formal credit(=1) | -12.33 | 0.63 |
| Informal credit(=1) | 1.70 | 0.81 |
| Extension access (=1) | 4.66 | 0.42 |
| Attended school(=1) | 3.42 | 0.71 |
| Primary education (=1) | 45.69\*\* | 0.05 |
| Finished primary(=1) | 39.43\* | 0.07 |
| Finished secondary(=1) |  |  |
| Safety net(=1) | -29.87\*\* | 0.02 |
| Net seller produce(=1) | 9.01 | 0.27 |
| Net buyer produce(=1) | -9.94 | 0.46 |
| Soil quality (1=good,2=fair,3=bad) | -3.84 | 0.39 |
| region |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Year |  |  |
| 2012 | 20.33\* | 0.08 |
| 2014 |  |  |
| Sigma\_u | 53.41 |  |
| Sigma\_e | 63.92 |  |
| rho | 0.41 |  |
|  |  |  |

Tobit Regression LR chi2(78) = 4454.85

Average marginal effect N= 7,451

Pseudo R2 = 0.3017

|  |  |  |
| --- | --- | --- |
|  |  |  |
| Variables | dy/dx | p-Value |
|  |  |  |
|  |  |  |
| Subsidized quantity(kg) | -0.03 | 0.28 |
| Market distance(km) | 0.01 | 0.68 |
| Fertilizer price(NGN) | -0.01 | 0.00 |
| Household size | -0.47 | 0.06 |
| Age of household head | -0.24 | 0.00 |
| Value of assets(‘000) | 0.0002 | 0.00 |
| Labor age(>=15) | 0.25 | 0.56 |
| Maize price | 0.006\* | 0.05 |
| Rice price | 0.004 | 0.04 |
| Land holding (ha) | 1.19 | 0.00 |
| Female head(=1) | 2.75 | 0.01 |
| formal savings(=1) | -4.85 | 0.00 |
| Formal bank(=1) | 8.89 | 0.00 |
| Formal credit(=1) | -0.12 | 0.96 |
| Informal credit(=1) | 0.31 | 0.84 |
| Extension access (=1) | 1.18 | 0.18 |
| Attended school(=1) | -0.04 | 0.99 |
| Primary education (=1) | 11.38 | 0.00 |
| Finished primary(=1) | 9.91 | 0.00 |
| Finished secondary(=1) |  |  |
| Safety net(=1) | -10.20 | 0.00 |
| Net seller produce(=1) | 2.35 | 0.06 |
| Net buyer produce(=1) | 6.68 | 0.13 |
| Soil quality (1=good,2=fair,3=bad) | -0.23 | 0.74 |
| region |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Year |  |  |
| 2012 | -0.93\*\*\* | 0.01 |
| 2014 | 0.31 | 0.58 |

**Double Hurdle Craggit Model**

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**Crowding out estimate for each asset quintile**





