Table S1. PSM quality indicators before and after matching

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| LGA | Matching algorithm | Pseudo R2  BM AM | | P-values  BM AM | | Mean standardized bias  BM AM | | Absolute bias reduction |
| Shanono | NNM | 0.399 | 0.046 | 0.000 | 0.121 | 24.10 | 6.70 | 72.2 |
| KBM | 0.396 | 0.032 | 0.000 | 0.133 | 24.10 | 3.88 | 87.3 |
| Musawa | NNM | 0.330 | 0.034 | 0.000 | 0.211 | 21.60 | 4.45 | 77.5 |
| KBM | 0.330 | 0.028 | 0.000 | 0.264 | 21.60 | 5.42 | 74.9 |

NB: BM = before matching, AM = after matching

Table S2. PSM estimates simulation-based sensitivity analysis based on KBM

|  |  |  |  |
| --- | --- | --- | --- |
| Outcome variables | Neutral confounder | | |
| Estimate effecta | Outcome effectb | Selection effectc |
| Shanono |  |  |  |
| Maize productivity (kg/ha) | -0.37% | 1.59 | 1.49 |
| Maize income (N) | -1.76% | 1.78 | 2.02 |
| Household income (N) | -3.05% | 1.21 | 4.12 |
| Musawa |  |  |  |
| Maize productivity (kg/ha) | -1.93% | 1.42 | 1.74 |
| Maize income (N) | 2.01% | 1.61 | 1.88 |
| Household income (N) | -1.55% | 1.85 | 1.53 |

aThe estimator effect indicates to what extent the baseline estimation result would change if we could observe an additional binary confounder. bThe outcome effect measures the estimated effect of the simulated binary confounder on the outcome variables; maize productivity, maize income and household income. cThe selection effect measures the estimated effect of the simulated binary confounder on the selection into treatment-the propensity of adoption of improved maize varieties.