

Can sustainable practices optimise fertiliser use and economic efficiency? A micro-panel analysis

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Electronic supplementary material (ESM)

Supplementary Table S1

Supplementary Table S2

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Table S1. First-stage estimates from the cost-efficiency prediction equation

Dependent variable: RDFA adoption	Coefficient	SE	z-values	P-values
Information seeking state (Instrument)	0.183	0.016	11.51	0.000
Capital (<i>K</i>)	0.006	0.163	0.04	0.969
Land (<i>L</i>)	0.006	0.085	0.06	0.949
Labour (<i>LB</i>)	0.022	0.134	0.16	0.871
Urea (<i>UF</i>)	0.181	0.122	1.49	0.137
TSP (<i>TF</i>)	−0.292	0.171	−1.71	0.088
MOP (<i>MPF</i>)	0.152	0.144	1.05	0.292
Pesticide (<i>P</i>)	−0.019	0.057	−0.33	0.745
Irrigation (<i>I</i>)	0.198	0.034	5.81	0.000
Tilling (<i>T</i>)	−0.020	0.019	−1.04	0.300
Rice produce (<i>Q</i>)	−0.288	0.085	−3.41	0.001
Year dummy	−0.031	0.017	−1.78	0.075
Age (<i>AG</i>)	0.010	0.006	1.82	0.068
Age squared (<i>AS</i>)	−0.000	0.000	−1.38	0.168
Education (<i>ED</i>)	−0.016	0.023	−0.71	0.480
Household size (<i>HS</i>)	−0.038	0.016	−2.35	0.019
Soil water retention (<i>SWR</i>)	0.452	0.018	−5.36	0.000
Soil fertility perception (<i>SFP</i>)	−0.063	0.017	−3.66	0.000
Irrigation machine ownership (<i>IMO</i>)	−0.096	0.018	−5.51	0.000
Off-farm earning (<i>OE</i>)	0.093	0.018	5.04	0.000
Knowledge of RDFA (<i>KFD</i>)	0.026	0.016	1.56	0.119
Constant	−0.019	1.082	−0.02	0.986

Source: Authors' elaboration.

Table S2. Instrument validity test result from two stage least square regression (2SLS)

Dependent variable	Adoption impact on fertilizer consumption	Adoption impact on fertilizer consumption
	total fertiliser use amount (kg/ha, expressed in logarithmic form)	total production cost (USD/ha, normalised by seed cost in USD/ha)
Test of endogeneity		
Durbin score	Chi ² (1) = 64.356 (<i>P</i> = 0.000)	Chi ² (1) = 8.774 (<i>P</i> = 0.003)
Wu-Hausman	<i>F</i> (1, 2 007) = 65.877 (<i>P</i> = 0.000)	<i>F</i> (1, 2 002) = 8.712 (<i>P</i> = 0.003)
Instrument validity		
According to Stock and Yogo, the conventional threshold is <i>F</i> > 10, whereas Staiger and Stock suggest a threshold of <i>F</i> > 16.38	<i>F</i> (1, 2 008) = 124.663 (<i>P</i> = 0.000)	<i>F</i> (1, 2 003) = 125.782 (<i>P</i> = 0.000)

Source: Authors' elaboration.