

Supplementary Table 1 Estimates of net farm income from ESR model

Dependent variable →	Endogenous switching regression			OLS
	KVK = 1	KVK = 0	(KVK = 1,	
	(farmers accessed	(farmers didn't	otherwise =	
	KVK)	access KVK)	0)	
Column	NFI	NFI	KVK	NFI
Column	1	2	3	4
KVK ^a				0.225*** (0.067)
Age in years (ln)	0.329 (0.320)	0.270*** (0.058)	0.388*** (0.048)	0.271*** (0.057)
Household size (ln)	0.517*** (0.141)	0.485*** (0.032)	-0.017 (0.024)	0.486*** (0.031)
Male-headed household ^a	0.181 (0.278)	-0.109* (0.060)	-0.032 (0.050)	-0.099* (0.059)
Education in years (ln)	0.273** (0.124)	0.214*** (0.016)	0.199*** (0.014)	0.216*** (0.015)
Principal source of income (base: agriculture)				
Non-agriculture ^a	-0.973*** (0.229)	-0.994*** (0.044)	0.072** (0.032)	- (0.044)
Pension ^a	-1.107** (0.537)	-1.019*** (0.154)	0.211** (0.087)	- (0.149)
Remittances	-1.138** (0.526)	-1.095*** (0.128)	0.276*** (0.081)	- (0.124)
Landholdings in hectares (ln)	-0.068 (0.085)	-0.177*** (0.017)	0.078*** (0.014)	- (0.017)

	Endogenous switching regression			
	KVK = 1 (farmers accessed KVK)	KVK = 0 (farmers didn't access KVK)	(KVK = 1, otherwise = 0)	OLS
Dependent variable →	NFI	NFI	KVK	NFI
Column	1	2	3	4
Social safety nets [^]	0.594**	-0.191***	0.189***	-
				0.167***
	(0.278)	(0.040)	(0.045)	(0.040)
Access to institutional credit [^]	-0.046	-0.271***	0.302***	-
				0.258***
	(0.217)	(0.034)	(0.025)	(0.033)
Instrumental variable: General caste			0.004***	
			(0.002)	
Constant	6.379***	8.113***	-3.839***	8.072***
	(2.328)	(0.236)	(0.208)	(0.230)
Observations	30,938	30,938	30,938	30,938
σ_i	0.982***	0.922***		
	(0.003)	(0.004)		
ρ_j	0.081	-0.015**		
	(0.216)	(0.007)		

Source: Authors calculation

Robust standard errors in parentheses. NFI, Net farm income; OLS, Ordinary least squares.

[^] denotes dummy variable; *** $P < 0.01$; ** $P < 0.05$; * $P < 0.1$.

Supplementary Table 2 Estimates of annual per capita household income from ESR model

Dependent variable → Column	Endogenous switching regression			
	KVK = 1 (farmers accessed to KVK)	KVK = 0 (farmers didn't access to KVK)	(KVK = 1, otherwise = 0)	OLS
	HI	HI	KVK	HI
	1	2	3	4
KVK [^]				0.275*** (0.029)
Age in years (ln)	-0.499 (0.597)	0.134*** (0.023)	0.370*** (0.049)	0.136*** (0.023)
Male-headed household [^]	-0.227 (0.141)	-0.162*** (0.025)	-0.025 (0.053)	-0.168*** (0.025)
Education in years (ln)	-0.075 (0.321)	0.141*** (0.006)	0.193*** (0.015)	0.146*** (0.006)
Principal source of income (base: agriculture)				
Non-agriculture [^]	1.004*** (0.224)	0.763*** (0.016)	0.059* (0.034)	0.784*** (0.015)
Pension [^]	-0.202 (0.326)	-0.321*** (0.072)	0.205** (0.095)	-0.290*** (0.068)
Remittances	-0.977** (0.387)	-0.800*** (0.054)	0.218** (0.091)	-0.791*** (0.053)
Landholdings in hectares (ln)	0.346** (0.141)	0.417*** (0.007)	0.068*** (0.014)	0.418*** (0.007)
Social safety nets [^]	0.280 (0.431)	0.039** (0.019)	0.209*** (0.048)	0.059*** (0.019)
Access to institutional credit [^]	-0.166 (0.558)	0.150*** (0.014)	0.305*** (0.027)	0.163*** (0.013)
Instrumental variable: General caste			0.005*** (0.002)	

Dependent variable →	Endogenous switching regression			
	KVK = 1 (farmers accessed to KVK)	KVK = 0 (farmers didn't access to KVK)	(KVK = 1, otherwise = 0)	OLS
	HI	HI	KVK	HI
Column	1	2	3	4
Constant	12.578* (7.294)	6.169*** (0.097)	-3.805*** (0.220)	6.135*** (0.094)
Observations	28,338	28,338	28,338	28,338
σ_i	0.637 (0.780)	0.001 (0.006)		
ρ_j	-1.439 (1.511)	-0.047*** (0.011)		

Source: Authors calculation

Robust standard errors in parentheses. OLS, Ordinary least squares; HI, Household income. [^] denotes dummy variable; *** $P < 0.01$ ** $P < 0.05$ * $P < 0.1$.

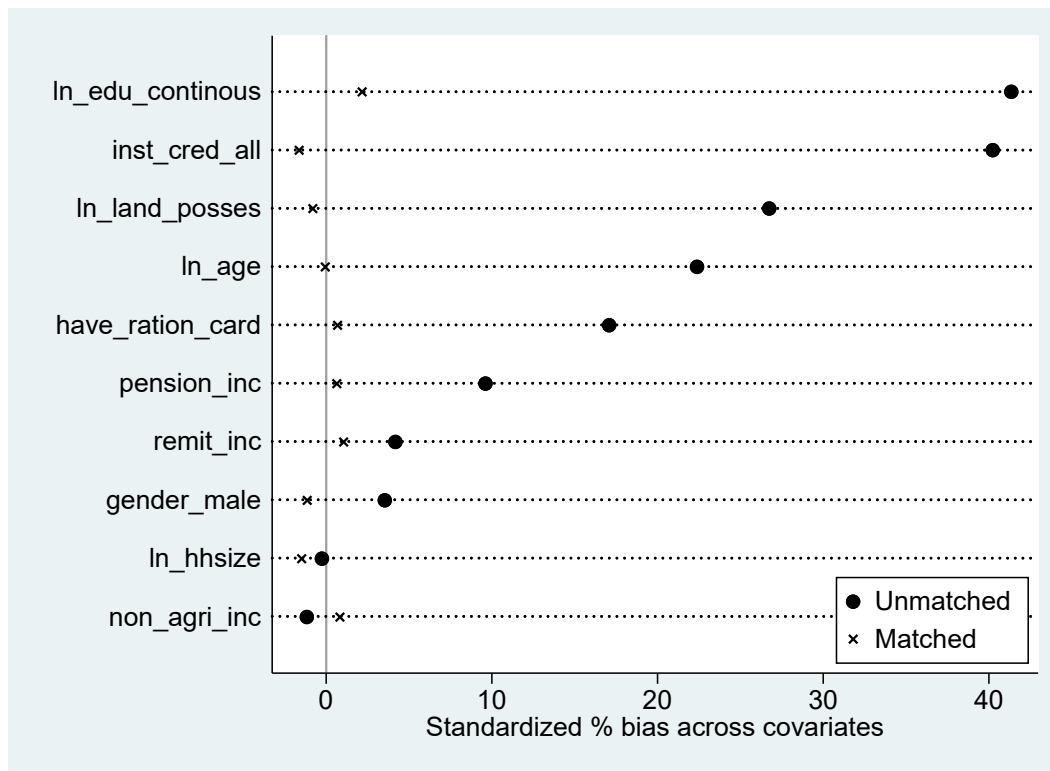
Supplementary Table 3 Treatment and heterogeneity effects using ESR model

	KVK	Non-KVK	Treatment effects
Full model			
Net farm income (₹/ha)			
KVK	(a) 20827	(c) 15075	TT = 5752***
Non-KVK	(d) 12343	(b) 17049	TU = -4706***
Heterogeneity effects	BH ₁ = 8483	BH ₂ = -1974	TH = 1046***
Annual per capita household income (₹)			
KVK	(a) 2094	(c) 1336	TT = 758***
Non-KVK	(d) 1041	(b) 1214	TU = -172***
Heterogeneity effects	BH ₁ = 1052	BH ₂ = 122	TH = 585***
Large farmers			
Net farm income (₹/ha)			
KVK	(a) 22572	(c) 14747	TT = 7825***
Non-KVK	(d) 13638	(b) 16058	TU = -2420***
Heterogeneity effects	BH ₁ = 8934	BH ₂ = -1311	TH = 5405***
Annual per capita household income (₹)			
KVK	(a) 2744	(c) 1775	TT = 969***
Non-KVK	(d) 1055	(b) 1721	TU = -666***
Heterogeneity effects	BH ₁ = 1689	BH ₂ = 54	TH = 303***
Small farmers			
Net farm income (₹/ha)			
KVK	(a) 19718	(c) 15283	TT = 4435***
Non-KVK	(d) 11793	(b) 17470	TU = -5677***
Heterogeneity effects	BH ₁ = 7925	BH ₂ = -2187	TH = 1242***
Annual per capita household income (₹)			
KVK	(a) 1681	(c) 1057	TT = 623***
Non-KVK	(d) 1659	(b) 989	TU = 661***
Heterogeneity effects	BH ₁ = 22	BH ₂ = 59	TH = -38***

Source: Authors calculation

ESR, Endogenous switching regression; BH, Base heterogeneity; TT, Treatment on treated; TU, Treatment on untreated.

Supplementary Fig. 1 Standardized bias across covariates.



Source: Authors calculation

Supplementary Table 4 Balancing property using PSM model

Variable	Matched	Treated	Control	% bias	<i>t-statistics</i>	<i>p-value</i> > <i>statistics</i>
Age in years (ln)	U	3.95	3.89	22.40	8.65	0.00
	M	3.95	3.95	-0.10	-0.02	0.99
Household size (ln)	U	1.58	1.58	-0.30	-0.10	0.92
	M	1.58	1.58	-1.50	-0.42	0.67
Male-headed household [^]	U	0.93	0.92	3.50	1.38	0.17
	M	0.93	0.93	-1.20	-0.35	0.73
Education in years (ln)	U	1.76	1.37	41.40	15.42	0.00
	M	1.76	1.74	2.20	0.69	0.49
Non-agriculture [^]	U	0.19	0.20	-1.20	-0.46	0.64
	M	0.19	0.19	0.80	0.24	0.81
Pension [^]	U	0.03	0.01	9.60	4.58	0.00
	M	0.03	0.03	0.60	0.16	0.87

Remittances	U	0.03	0.02	4.20	1.77	0.08
	M	0.03	0.03	1.00	0.29	0.77
Landholdings in hectares (ln	U	0.29	0.01	26.70	10.45	0.00
	M	0.29	0.30	-0.80	-0.24	0.81
Social safety nets [^]	U	0.93	0.89	17.10	6.17	0.00
	M	0.93	0.93	0.70	0.23	0.82
Access to institutional credit	U	0.55	0.35	40.20	16.34	0.00
	M	0.55	0.56	-1.60	-0.47	0.64

PSM, Propensity score matching; [^] denotes binary variables.

Supplementary Table 5 Impact of KVK (ATT) on outcome indicators using PSM approach

Matching algorithm	Full model	Large farmers	Small farmers
Net farm income			
Kernel matching			
Bandwidth (0.01)	3,628***	7,097***	1,608 ^{ns}
Bandwidth (0.05)	3,426***	7,457***	1,231 ^{ns}
Nearest neighborhood			
N = 1	2,515**	7,505***	610 ^{ns}
N = 3	3,457***	6,748***	594 ^{ns}
N = 5	3,981***	6,755***	1,479 ^{ns}
Radius			
Caliper = 0.01	3,615***	7,154***	1,580 ^{ns}
Caliper = 0.05	3,366***	7,615***	1,069 ^{ns}
Annual per capita household income			
Kernel matching			
Bandwidth (0.01)	405***	488***	326***
Bandwidth (0.05)	475***	588***	371***
Nearest neighborhood			
N = 1	453***	522***	323***
N = 3	419***	419***	345***
N = 5	416***	451***	327***
Radius			
Caliper = 0.01	407***	493***	328***
Caliper = 0.05	508***	629***	388***

Source: Authors calculation

ATT, Average treatment effects on the treated; PSM, Propensity score matching; *** $P < 0.01$; ** $P < 0.05$; * $P < 0.1$; ns, non-significant.

Supplementary Table 6 Estimates of matched observations for net farm income after PSM model

	Full model	Large farmers	Small farmers
KVK [^]	-0.010 (0.093)	0.299** (0.143)	-0.038 (0.136)
Age in years (ln)	-0.062 (0.188)	-0.222 (0.249)	0.253 (0.262)
Household size (ln)	0.325*** (0.105)	0.498*** (0.141)	0.303** (0.131)
Male-headed household [^]	0.246 (0.215)	-0.448** (0.208)	0.008 (0.277)
Education in years (ln)	0.138** (0.054)	0.209** (0.082)	0.240*** (0.081)
Principal source of income (base: agriculture)			
Non-agriculture [^]	-1.095*** (0.147)	-1.204*** (0.290)	-0.711*** (0.162)
Pension [^]	-1.282*** (0.345)	-0.523 (0.899)	-0.763* (0.391)
Remittances	-1.358*** (0.365)	-1.702* (0.965)	-1.328*** (0.416)
Landholdings in hectares (ln)	-0.094* (0.055)	-0.049 (0.145)	-0.187** (0.089)
Social safety nets [^]	0.243 (0.193)	0.088 (0.270)	0.130 (0.229)
Access to institutional credit [^]	-0.018 (0.096)	-0.168 (0.133)	0.059 (0.143)
Constant	10.544*** (0.740)	10.367*** (1.021)	9.409*** (1.057)
Observations	3,258	1,260	2,006
State fixed effect	Yes	Yes	Yes
R ²	0.118	0.147	0.093

Source: Authors calculation

Robust standard errors in parentheses. PSM, Propensity score matching. [^] denotes dummy variable; *** $P < 0.01$; ** $P < 0.05$; * $P < 0.1$.

Supplementary Table 7 Estimates of matched observations for annual per capita household income after PSM model

	Full model	Large farmers	Small farmers
KVK [^]	0.132*** (0.041)	0.188** (0.074)	0.024 (0.053)
Age in years (ln)	-0.116 (0.080)	-0.050 (0.134)	-0.020 (0.095)
Male-headed household [^]	-0.137 (0.088)	-0.168 (0.126)	-0.050 (0.108)
Education in years (ln)	0.170*** (0.024)	0.165*** (0.041)	0.189*** (0.028)
Principal source of income (base: agriculture)			
Non-agriculture [^]	0.944*** (0.049)	0.744*** (0.110)	0.840*** (0.054)
Pension [^]	-0.300* (0.155)	-0.840 (0.600)	-0.521*** (0.192)
Remittances	-0.736*** (0.170)	-0.931* (0.547)	-0.806*** (0.153)
Landholdings in hectares (ln)	0.486*** (0.024)	0.679*** (0.082)	0.380*** (0.034)
Social safety nets [^]	0.094 (0.081)	0.270* (0.146)	0.039 (0.104)
Access to institutional credit [^]	0.151*** (0.041)	0.001 (0.074)	0.117** (0.050)
Constant	7.543*** (0.351)	6.626*** (0.609)	7.383*** (0.412)
Observations	3,041	1,170	1,876
State fixed effect	Yes	Yes	Yes

	Full model	Large farmers	Small farmers
R^2	0.352	0.257	0.341

Source: Authors calculation

Robust standard errors in parentheses; PSM, Propensity score matching; [^] denotes dummy variable; *** $P < 0.01$; ** $P < 0.05$; * $P < 0.1$