Transforming Rural Prosperity Through Tertiary Education: Evidence from India

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- The macro literature has tried to identify the fundamental determinants of development Institutions (AJR 2001, Acemoglu et al. 2002, 2014), Geography (Sachs 2003), Trade (Frankel and Romer 1999), Human Capital (Lucas 1998).
- Evidence linking human capital to income is weak at the macro level (Benhabib and Spiegel, 1994; Pritchett, 2001).
 - These macro findings are at odds with a large literature in labor economics on the positive returns to education.
 - 10 to 15% for each additional year of schooling.

 One of the explanations: cross-country comparisons are confounded by institutions.

Solution is therefore to look at tighter comparisons.

Regional Development (Acemoglu and Dell (2010); Gennaioli et al. (2013)).

In the case of India, two studies that look at the impact of human capital on regional development (Castelló-Climent and Mukhopadhyay (2013), Castelló-Climent, Chaudhary, and Mukhopadhyay (2018)).

Verdict: Human capital does affect State as well as District prosperity - the role of tertiary (University) education.

The channel is through the service sector.

- This is consistent with a structural transformation story:
 - Higher Education leads individuals to move from the primary sector to the secondary and then tertiary sector.
 - Typically such movement comes with the movement of labor from the Rural to Urban (Lewis, 1954; Harris-Todaro, 1970, Gennaioli et al. (2013)).
- This process leads to a positive link between a rise in human capital (especially tertiary education), the rising share of the services sector, and rising urbanization which in turn leads to growth and development (Sen, 2016; McMillan et al., 2017; Swiecki, 2017; Herrendorf and Schoellman, 2018).

However, according to the population census of India 2011, approximately one-third of tertiary-educated individuals reside in rural areas.

 Share of tertiary (university educated) within the rural population has been growing fast over time.
 Share Tertiary Education

Research Question

- Does Tertiary education lead to rise in rural prosperity?
 - Different from the focus on urbanization.
- If so, what are the mechanisms at play:
 - What sector drives this prosperity?
 - Is it driven by activities within the village or outside the village?

What do we do: we estimate the impact of a higher share of tertiary educated in the village labor force (25+) on village prosperity as measured by village-level mean per capita consumption in the particular year 2011.

Data

We have created a dataset that uses the data on the census of villages. The dataset includes:

□ Socio-Economic and Caste Census (SECC) 2011.

- Socioeconomic High-Resolution Rural Urban Geographic Dataset on India 'version 1.5' (SHRUG).
- □ Population Census (or Census) 2011.
- □ Visible Infrared Imaging Radiometer Suite (VIIRS) Night Lights 2012 & 2015 (extracted at a village level).
- □ World Bank 2011 (combination of various Indian administrative data).
- □ Construct geographical controls at a village level using the GIS technique.
- ▶ We also use district-level historical data from the census 1931.
- India had around 650,000 villages in 2011. Our dataset consists of around 400,000 villages of 27 Indian states¹.

¹We matched only those villages which are uniquely identified within the district or within the block by "village name".

Empirical Strategy

- Step 1:- We run an OLS model, In_cons_per_capita on the share_tert controlling for current controls, geographical characteristics, and historical variables also do the state fixed effect. We find that the coefficient share_tert is positive and significant with In_cons_per_capita.
- Step 2:- To address the issue of endogeneity, construct an instrumental variable (IV) to find a causal link between share_tert and In_cons_per_capita.
- ► IV:- We use the distance to the nearest catholic missionary from each village (*In_dist_cath_miss*) as a valid instrument.

About IV

 We use the spatial location of Catholic missionaries in the early 20th century that was located all over India. There are 277 Catholic missionaries that were settled in India. Catholic Missionary

- Castello-Climent et al. (2018), catholic missions changed the supply and preference for higher education due to their emphasis on providing quality education.
- In India, their role was largely limited to education.
- Their objective is to promote education for Christian minorities.

IV Defense

- ▶ We use *In_dist_cath_miss* as an instrument for *share_tert*.
- For a valid instrument first, the instrument (*In_dist_cath_miss*) has to be correlated with the endogenous variable (*share_tert*).
 - □ For that, we have reported the first stage of each of the IV results.
 - We also show that conventional weak instrument tests, such as Kleibergen-Paap rk Wald F statistic and Cragg-Donald Wald F-statistic, indicate the instrument is not weak².
- Second, the exclusion restriction:- The instrument does not have a direct effect on the outcome variable (i.e. the distance to Catholic missionaries as of 1911 has to be uncorrelated with the error term).

²We also test for weak instrument that is robust to heteroscedasticity, autocorrelation, and clustering Montiel Olea and Pflueger (2013, Journal of Business and Economic Statistics).

Empirical Model "OLS"

 $\textit{In_cons_per_capita_{vds}} = \alpha_{s} + \theta \textit{share_tert}_{vds} + \rho^{'} \textit{C}_{vds} + \pi^{'} \textit{G}_{vds} + \delta^{'} \textit{H}_{ds} + \epsilon_{vds}$

 $\hfill \Box$ Where v represents the village, d represents the district and s represents the state.

- $\Box \alpha_s$, state fixed effect (dummy variables for each state).
- □ Vector C includes the set of current controls, namely the population share of scheduled castes and scheduled tribes.
- Vector G includes the set of geographical characteristics: latitude, longitude and their square term, coastal dummy, average river length, average height (elevation), mean rainfall, soil quality, nearest distance from statutory town, mean temperature, and village area.
- Vector H includes the set of Historical variables: railway 1909, share brahmin 1931, share tribe 1931, dummy variable for the princely state, and share Urban 1931.
- □ We cluster standard errors at the sub-district level to account for autocorrelation within the sub-district.

Empirical Model "IV"

First stage:

 $share_tert_{vds} = \beta_s + \gamma \ln_dist_cath_miss_{vds} + \zeta^{'}C_{vds} + \lambda^{'}G_{vds} + \omega^{'}H_{ds} + \upsilon_{vds}$

Second stage:

 $In_cons_per_capita_{vds} = B_s + \Gamma share_tert_{vds} + Z^{'}C_{vds} + \Lambda^{'}G_{vds} + \Omega^{'}H_{ds} + \Upsilon_{vds}$

Main Results

OLS

The result shows that the coefficient of tertiary education is positive and statistically significant at the 1 percent level. OLS Result

IV

An increase in one standard deviation in the share of tertiary education (5.116) leads to a 22.81 percent increase in consumption per capita. The economic effect of the same is 2.36 percent against the mean value of log mean per capita consumption (9.66). IV Result

Robustness

Distribution of coefficient of 1000 replications of bootstrapped consumption. Distribution of Coefficient

IV Results - Alternative measures of income.
 Other Income Measures

Commuting Channel:

 Tertiary-educated villagers have a greater probability to commute daily to urban areas to earn higher income in service sector jobs.
 Commuting Rural/Urban & Commuting Urban

Agricultural Productivity Channel:

- Households with tertiary-educated members show higher agriculture profit per household member involved in farming. Agriculture Profit
- Also, they are more likely to diversify their crop pattern from cereal & pulses to other crops such as fruits, vegetables, cash crops, etc. Crop Diversification
- This increased productivity is also suggested by satellite-based spatial net primary productivity measures.
 Net Brimany Broductivity

Net Primary Productivity

Conclusion

- We have shown that tertiary education can affect the rural economy positively.
- Our results on the economic effect are robust to alternative measures of income.
- We also provide support for two mechanisms: (a) Commuting channel, (b) Agricultural productivity channel.
- We contend that such changes can happen within rural settlements with rising service sector involvement of those who work in urban spaces but live in rural areas as well as through productivity changes in agriculture that occur within the village.

Tertiary Education in Rural India





Notes: - The above graph depicts the share of tertiary education in rural India in the last three decades for the two sets of Individuals, age group 25 plus and age group 25 to 34. The year 1991, 2001, and 2011 data come from the Population Census of India, and the year 2018-19 data comes from the Periodic Labor Force Survey (PLFS), a nationally representative survey.



Settlement of Catholic Missionary in India

Catholic Missionary Location, 1911





OLS Result

OLS Results, Log Consumption per Capita

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: - Consumption per Ca	apita (log)					
Share Tertiary & Above (pop 25+)	0.0174***	0.0145***	0.0122***	0.0123***	0.0121***	0.0120***
	(0.0007)	(0.0004)	(0.0004)	(0.0003)	(0.0003)	(0.0003)
Share Lower (below graduate) (pop 05+)						0.0002
						(0.0002)
SC Proportion			-0.0760***	-0.0732***	-0.0753***	-0.0746***
			(0.0054)	(0.0052)	(0.0050)	(0.0050)
ST Proportion			-0.2691***	-0.2282***	-0.2267***	-0.2239***
			(0.0075)	(0.0074)	(0.0074)	(0.0078)
Latitude				-0.1052***	-0.0997***	-0.0996***
1.00.1.0				(0.0077)	(0.0075)	(0.0075)
Latitude Square				(0.0025****	(0.0024****	(0.0024****
1				(0.0002)	(0.0002)	(0.0002)
Longitude				-0.1533++++	-0.1401	-0.1397****
1.516				(0.0279)	(0.0281)	(0.0280)
Longitude Square				(0.0009++++	(0.0008****	(0.0008++++
Countral (domento)				(0.0002)	(0.0002)	(0.0002)
Coascar (ddminiy)				(0.0071)	(0.0078)	(0.0077)
Average River Length				0.0002	.0.0001	-0.0002
And age for e congo				(0.0006)	(0.0006)	(0.0006)
Average Height District				0.0000	0.0000	0.0000
And age theight blather				(0.0000)	(0.0000)	(0.0000)
Mean Rainfall (annual)				0.0001	0.0003***	0.0003***
()				(0.0001)	(0.0001)	(0.0001)
Soil Quality (sandy)				-0.0021	-0.0015	-0.0032
				(0.0155)	(0.0151)	(0.0150)
Nearest Distance from Statutory Town				-0.0009***	-0.0009***	-0.0009***
				(0.0001)	(0.0001)	(0.0001)
Mean Temperature (annual)				0.0079***	0.0079***	0.0078***
				(0.0023)	(0.0024)	(0.0024)
Village Area Square km (log)				0.0016	0.0020	0.0019
				(0.0019)	(0.0018)	(0.0018)
Fraction of Brahman (1931)					0.4032***	0.3969***
					(0.0924)	(0.0924)
Fraction of Tribal (1931)					0.1082***	0.1088***
					(0.0279)	(0.0278)
Fraction of Urban (1931)					0.2630***	0.2604***
					(0.0388)	(0.0388)
Princely State (dummy)					0.0232***	0.0238***
					(0.0052)	(0.0052)
Rail (1909)					0.0143**	0.0142**
					(0.0056)	(0.0056)
o	202.002	202.002	202.002	202.002	202.002	202.002
Observations	393,203	395,203	393,203	393,203	393,203	393,203
K-squared	0.097	0.382	0.439	0.462	U.466	0.468
State FE	NO	TES	165	165	TES	TES

Notes: - Robust standard errors are in parentheses and clustered at the Subdistrict Level, *** p<0.01, ** p<0.05, * p<0.1.



OLS Result

OLS Results, Log Consumption per Capita

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: - Consumption per Ca	apita (log)					
Share Tertiary & Above (pop 25+)	0.0174***	0.0145***	0.0122***	0.0123***	0.0121***	0.0120***
	(0.0007)	(0.0004)	(0.0004)	(0.0003)	(0.0003)	(0.0003)
Share Lower (below graduate) (pop 05+)						0.0002
						(0.0002)
Observations	393,203	393,203	393,203	393,203	393,203	393,203
R-squared	0.097	0.382	0.439	0.462	0.466	0.468
State FE	NO	YES	YES	YES	YES	YES
Current Controls	NO	NO	YES	YES	YES	YES
Geographical Characteristics	NO	NO	NO	YES	YES	YES
Historical Variables	NO	NO	NO	NO	YES	YES

Notes: - Robust standard errors are in parentheses and clustered at the Subdistrict Level. *** p <0.01, ** p <0.05, * p <0.1. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Latitude, Square, Longitude, Longitude Square, Coastal (dummy), Average River Length, Average Height District, Mean Rainfall (annual), Soil Quality (sandy), Nearest Distance from Statutory Town, Mean Temperature (annual) and Village Area Square km (log). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and Rail (1909).



IV Result

IV Results, Log Consumption per Capita

	(1)	(2)	(3)	(4)	(5)	(6)	
Panel (a): First stage - Share Tertiary & A	bove (pop 25	+)					
Distance Catholic Missionary (log)	-0.9012***	-0.4077***	-0.4241***	-0.3049***	-0.2890***	-0.2891***	
	(0.0713)	(0.0704)	(0.0684)	(0.0686)	(0.0703)	(0.0699)	
Share Lower (below graduate) (pop 05+)						0.0036	
						(0.0034)	
Kleibergen-Paap rk Wald F statistic	159.778	33.545	38.443	19.777	16.918	17.114	
Panel (b): Second stage - Consumption per Capita (log)							
Share Tertiary & Above (pop 25+)	0.0817***	0.0547***	0.0551***	0.0544***	0.0446***	0.0446***	
	(0.0075)	(0.0112)	(0.0105)	(0.0136)	(0.0134)	(0.0134)	
Share Lower (below graduate) (pop 05+)						0.0001	
						(0.0001)	
Observations	393,203	393,203	393,203	393,203	393,203	393,203	
Controls							
State FE	NO	YES	YES	YES	YES	YES	
Current Controls	NO	NO	YES	YES	YES	YES	
Geographical Characteristics	NO	NO	NO	YES	YES	YES	
Historical Variables	NO	NO	NO	NO	YES	YES	

Notes: - Robust standard errors are in parentheses and clustered at the Subbistrict Level. *** p<0.01, ** p<0.05, * p<0.1. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Latitude Square, Longitude, Longitude Square, Coastal (dummy), Average River Length, Average Height District, Mean Rainfall (annual), Soil Quality (sandy), Nearest Distance from Statutory Town, Mean Temperature (annual) and Village Area Square km (log). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and Rail (1909).



Robustness





Notes: - The Kernel density plots the distribution of (IV) Coefficients of share of tertiary education using 1000 replications of (bootstrapped) consumption per capita (log) as the dependent variable.



Robustness

Robustness, IV Results - Other Measures of Income

	(-)	(-)	(-)	(-)					
	(1)	(2)	(3)	(4)					
Panel (a): First stage - Share Tertiary & Above (pop 25+)									
Distance Catholic Missionary (log)	-0.2866***	-0.2866***	-0.2673***	-0.2508***					
	(0.0681)	(0.0681)	(0.0683)	(0.0685)					
Kleibergen-Paap rk Wald F statistic Panel (b): Second stage	17.735	17.738	15.319	13.396					
	Mean Income	VIIRS Nightlight	VIIRS Nightlight	VIIRS Nightlight					
	(log)	Annual (log)	Annual (log)	Annual (log)					
	(8)		Trim (1% both side)	Trim (2.5% hoth side)					
				(2.0% 5000 5100)					
Share Tertiary & Above (pop 25+)	0.0304***	0.2215***	0.1949***	0.1641***					
	(0.0109)	(0.0521)	(0.0488)	(0.0438)					
Observations	417,713	417,718	413,947	407,997					
Controls									
State FE	YES	YES	YES	YES					
Current Controls	YES	YES	YES	YES					
Geographical Characteristics	YES	YES	YES	YES					
Historical Variables	YES	YES	YES	YES					

Notes: - Robust standard errors are in parentheses and clustered at the Subdistrict Level. *** p<0.01, ** p<0.05, * p<0.1. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Latitude Square, Longitude, Longitude Square, Coastal (dummy), Average River Length, Average Height District, Maan Rainfall (annual), Soil Quality (sandy), Nearest Distance from Statutory Town, Mean Temperature (annual) and Village Area Square km (log). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and Rail (1909).



Mechanism, IV Estimates - Commuting Urban/Rural

	(1)	(2)							
Panel (a): First stage - Tertiary Educated (d	lummy)								
Distance Catholic Missionary (log)	-0.0088***	-0.0088***							
	(0.0032)	(0.0032)							
Kleibergen-Paap rk Wald F statistic:- 7.383									
Panel (b): Second stage									
	Working Location: Urban (dummy)	Working Location: Rural (dummy)							
Tertiary Educated (dummy)	0.5690*	-0.0285							
····· 37	(0.3032)	(0.7404)							
Weak IV Robust 95% Confidence Interval	[0.0047, ∞]	[-2.5204, 1.8184]							
Anderson-Rubin (AR) test statistic Chi2(1)	3.72*	0.00							
Observations	100,101	100,101							
Controls									
State FE	YES	YES							
Individual and Household Controls	YES	YES							
Current Controls	YES	YES							
Geographical Characteristics	YES	YES							
Historical Variables	YES	YES							

Notes: - Robust standard errors are in parentheses and clustered at the District Level. *** p<0.01, ** p<0.05, * p<0.1. Individual and Household Controls: Male (dummy), Age, Age Square, Social Group, Religion, Land Owned, Household Size, and Proportion of Adults. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Longitude, Coastal (dummy), Average Kiver Length, Average Height District, Minimum Distance to Big City. Mean Rainfall (annual), Soil Quality (sandy), Mean Temperature (annual). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and rage 1(1909).



Mechanism, IV Estimates - Commuting Urban

	(1)	(2)	(3)
Panel (a): First stage - Tertiary Educated (c	lummy)		
Distance Catholic Missionary (log)	-0.0088***	-0.0088***	-0.0088***
	(0.0032)	(0.0032)	(0.0032)
	Kleibergen-Paap rk W	ald F statistic:- 7.383	
Panel (b): Second stage			
	Urban Location: Working in	Urban Location: Working in	Urban Location: Working in
	Primary Sector (dummy)	Secondary Sector (dummy)	Service Sector (dummy)
Tertiany Educated (dummu)	0.0504	0 1202	0.4002**
rentary Educated (duminy)	-0.0594	(0.1274)	(0.2272)
Wesk IV Robust 95% Confidence Interval	[-~ 0.0243]	[-0.1916_0.6242]	[0.12273]
Anderson Public (AP) test statistic Chi2(1)	2.02	0.00	[0.1121, 00] E 42**
Anderson-Rubin (AR) test statistic Chi2(1)	2.02	0.90	5.45
Observations	100,101	100,101	100,101
Controls			
State FE	YES	YES	YES
Individual and Household Controls	YES	YES	YES
Current Controls	YES	YES	YES
Geographical Characteristics	YES	YES	YES
Historical Variables	YES	YES	YES

Notes - Robust standard errors are in parentheses and clustered at the Datrict Level. *** p<0.05. * p<0.1. individual and Household Controls: Male (dumm), Age, Age Square, Scoal Group, Religion, Land Owned, Household Size, and Proportion of AddIst. Scurrent Controls: SC Proportion and STP Proportion. Caregorphical Characteristics: Latitude, Longitude, Coastal (dummy), Aevage Rive Length, Average Height District, Minimum Distance to Big City, Mean Rainfall (annus), Soi Quality (sandy), Mean Temperature (annual). Historical Variables: Fraction of Tribal 1931, Fraction of Urbain 1931, Princelly State (dummy), and Rail (1990).



Mechanism, IV Estimates - Profit Per household Agricultural Laborer (log)

	2.5	1.2	4.45	4.5	6.5	6.0	()
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel (a): First stage - Tertiary Educated (dummy)							
Distance Catholic Missionary (log)	-0.0559***	-0.0223***	-0.0204***	-0.0188***	-0.0200***	-0.0208***	-0.0132***
	(0.0084)	(0.0063)	(0.0058)	(0.0058)	(0.0062)	(0.0069)	(0.0037)
Tertiary Educated Working in Agriculture (dummy)							0.9053***
							(0.0053)
Kleibergen-Paap rk Wald F statistic	43.838	12.642	12.464	10.543	10.210	9.014	12.773
Panel (b): Second stage - Profit Per Agriculture Lab	or (log)						
Tertiary Educated (dummy)	0.1989***	0.2144	0.4033**	0.3934**	0.3501**	0.3305*	0.5099*
	(0.0622)	(0.1554)	(0.1779)	(0.1921)	(0.1765)	(0.1963)	(0.3035)
Tertiary Educated Working in Agriculture (dummy)							-0.4443
							(0.2744)
Observations	24,770	24,770	24,770	24,770	24,770	24,770	24,770
Controls							
State FE	NO	YES	YES	YES	YES	YES	YES
Household Controls	NO	NO	YES	YES	YES	YES	YES
Current Controls	NO	NO	NO	YES	YES	YES	YES
Geographical Characteristics	NO	NO	NO	NO	YES	YES	YES
Historical Variables	NO	NO	NO	NO	NO	YES	YES

Note: - Robust standard errors are in parentheses and clustered at the District Level. *** p <0.05, ** p<0.1. Acuatehold Controls: Proportion Male, Mean Age, Social Group, Religion, Land Owned, Household Sza, and Proportion Adult. Current Controls: Sc Proportion and St Transcentrational Landarde, Longitude, Longitude, Longitude, Longitude, Casstal (dummy), Average River Length, Average Height District, Minimum Distance to Big City, Mean Rainfall (annual), Soil Quality (andy), Mean Temperature (annual). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fractions of Urban 1931, Princely State (dummy), and Rail (1999).



Mechanism, IV Estimates - Crop Diversification

	(1)	(2)	(3)	(4)	(5)	(6)	
Panel (a): First stage - Tertiany Edu	(±)	(2)	(3)	(-)	(3)	(0)	
raner (a). This stage - reitiary Educated (uninny)							
Distance Catholic Missionary (log)	-0.0621***	-0.0233***	-0.0220***	-0.0200***	-0.0210***	-0.0225***	
	(0.0099)	(0.0064)	(0.0059)	(0.0059)	(0.0064)	(0.0070)	
Kleibergen-Paap rk Wald F statistic	39.412	13.226	13.867	11.650	10.808	10.426	
Panel (b): Second stage - Share non	Cereal and P	ulses					
Tertiary Educated (dummy)	1.8526***	0.8692	1.0182	1.0043	1.5782*	1.8860**	
	(0.3115)	(0.6948)	(0.7498)	(0.8268)	(0.8840)	(0.9565)	
Observations	27,099	27,099	27,099	27,099	27,099	27,099	
Controls							
State FE	NO	YES	YES	YES	YES	YES	
Household Controls	NO	NO	YES	YES	YES	YES	
Current Controls	NO	NO	NO	YES	YES	YES	
Geographical Characteristics	NO	NO	NO	NO	YES	YES	
Historical Variables	NO	NO	NO	NO	NO	YES	

Notes: - Robust standard errors are in parentheses and clustered at the District Level. ******* p<0.01; ****** p<0.05, ***** p<0.1. Household Controls: Proportion Male, Mean Age, Social Group, Religion, Land Owned, Household Size, and Proportion of Adults. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Longitude, Coastal (dummy), Average River Length, Average Height District, Minimum Distance to Big City, Mean Rainfall (annual), Soil Quality (sandy), Mean Temperature (annual). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and Rail (1909).



Mechanism, IV Estimates - Net Primary Productivity (log)

	(1)	(2)	(3)	(4)	(5)
Panel (a): First stage - Share Tertiary & Ab	ove (pop 25+)				
Distance Catholic Missionary (log)	-1.2459***	-0.4478**	-0.4341**	-0.3832**	-0.4130**
	(0.2039)	(0.1812)	(0.1828)	(0.1855)	(0.1954)
Kleibergen-Paap rk Wald F statistic	39.948	6.490	6.878	4.463	4.665
Cragg-Donald Wald F statistic	51.570	7.070	6.878	4.874	5.205
Panel (b): Second stage - Net Primary Prod	luctivity (log)				
Share Tertiary & Above (pop 25+)	0.5741***	0.7233**	0.8135**	0.7855*	0.7209*
	(0.1652)	(0.3687)	(0.4045)	(0.4196)	(0.3823)
Weak IV Robust 95% Confidence Interval	[0.3056, 0.9915]	[0.2482, ∞]	[0.3256, ∞]	[0.3128, ∞]	[0.2582, ∞]
Anderson-Rubin (AR) test statistic Chi2(1)	22.76***	9.28***	11.97***	12.70***	10.56***
Observations	535	535	535	535	535
Controls					
State FE	NO	YES	YES	YES	YES
Current Controls	NO	NO	YES	YES	YES
Geographical Characteristics	NO	NO	NO	YES	YES
Historical Variables	NO	NO	NO	NO	YES

Notes: - Robust standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Current Controls: SC Proportion and ST Proportion. Geographical Characteristics: Latitude, Longitude, Coastal (dummy), Average River Length, Average Height District, Minimum Distance to Big City, Mean Rainfall (annual), Soil Quality (sandy), Mean Temperature (annual). Historical Variables: Fraction of Brahman 1931, Fraction of Tribal 1931, Fraction of Urban 1931, Princely State (dummy), and Rail (1909).

