

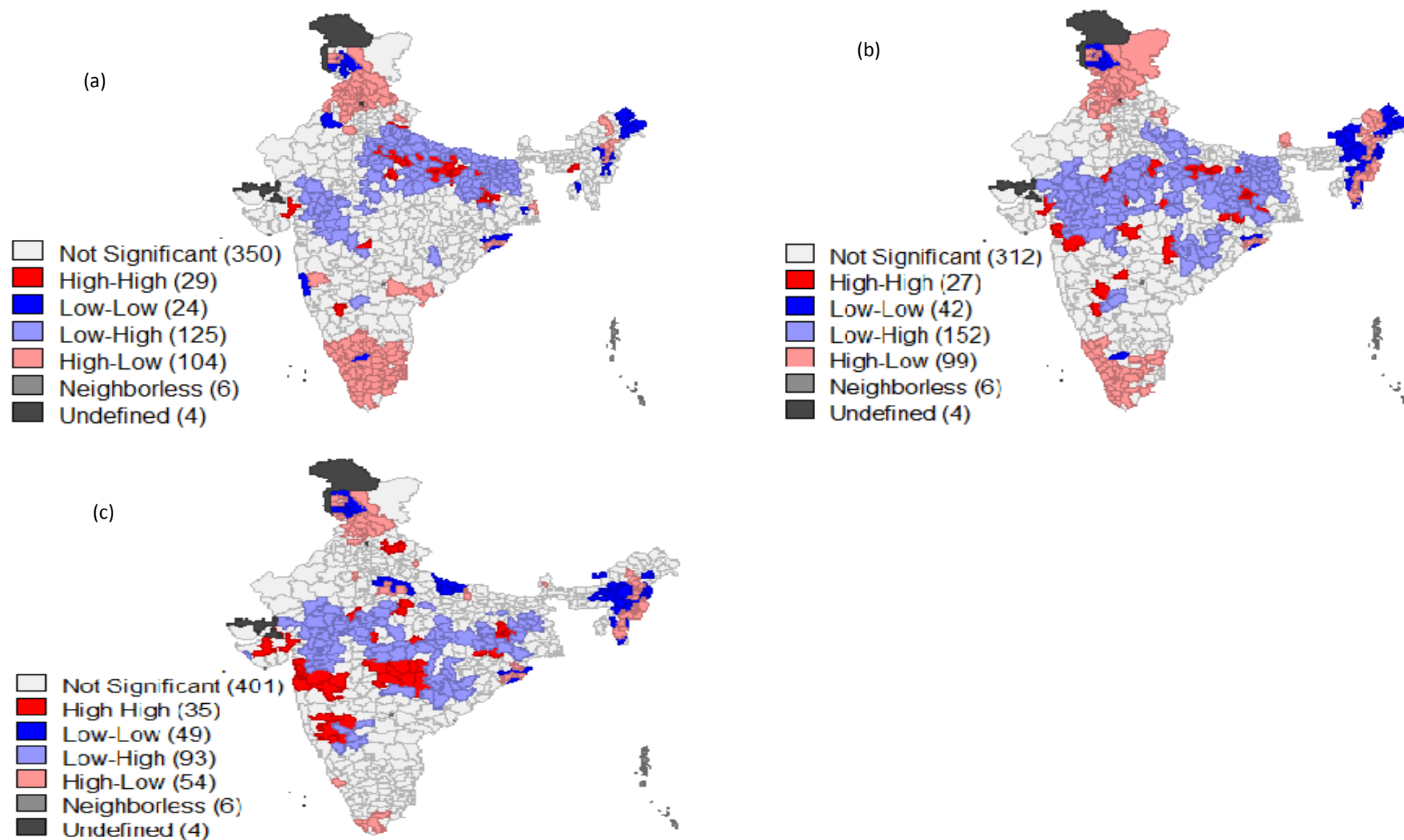
Appendix 1: Moran's I Statistics showing the spatial dependence for the district level prevalence of stunting and the meso scale indicators in India, 2015-16

District level Meso scale Indicators/Variables	Moran's I values	Z value
Stunting	0.65	25.13
Underweight	0.74	29.91
Wasted	0.51	20.1
Women whose BMI is below normal	0.69	27.13
Poverty Head Count ratio	0.59	21.71
women with 10 or more years schooling	0.69	27.66
Institutional births	0.66	23.95
Children fully Immunized	0.55	20.24
Children breastfed & received adequate diet	0.64	25.56
Households with improved sanitation	0.74	30.3
Households with electricity	0.70	23.35

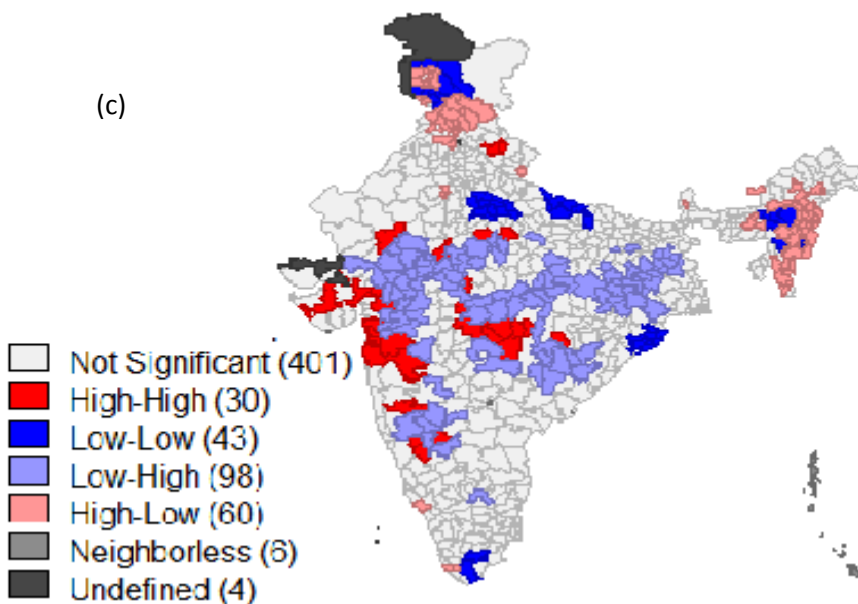
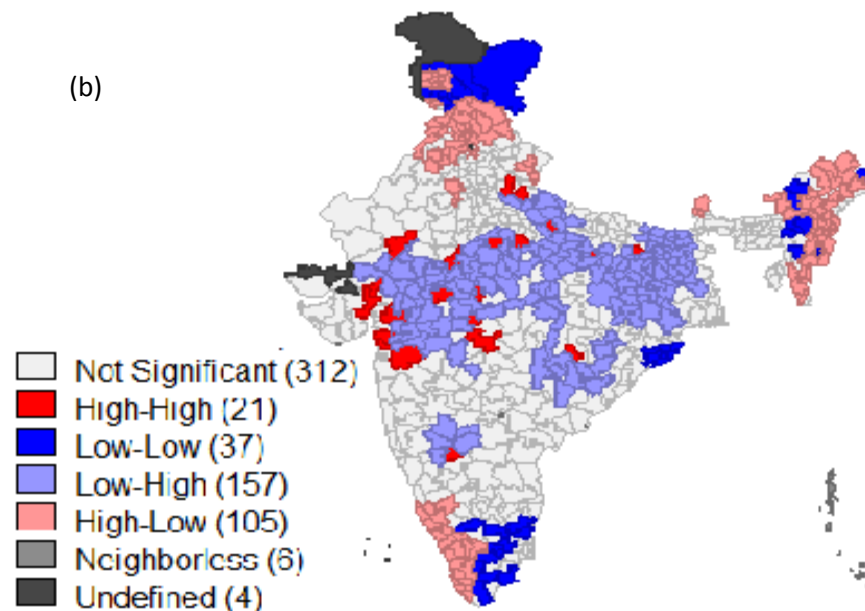
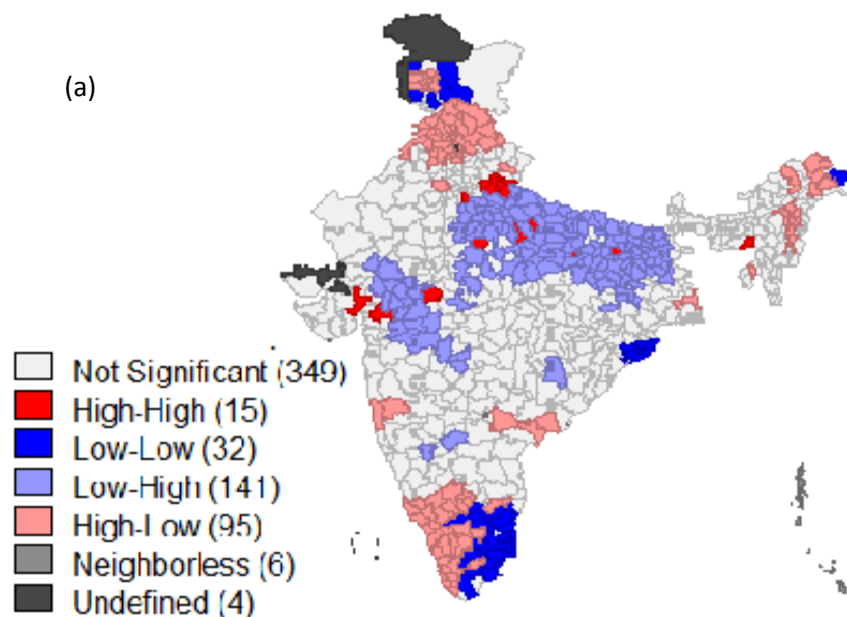
Appendix 2: Estimated results from Spatial lag model for stunting, underweight and wasted, India, 2015-16.

	Stunting		Underweight		Wasted	
District level meso scale correlates	Coef. (95% CI)	p-value	Coef. (95% CI)	p-value	Coef. (95% CI)	p-value
Percent women whose BMI is below 18.5kg/m ²	0.21 (0.13,0.29)	0.000	0.44 (0.36,0.52)	0.000	0.2 (0.12,0.28)	0.000
Poverty Head Count ratio	0.06 (0.02,0.09)	0.001	0.07(0.03,0.10)	0.000	0.05 (0.02,0.09)	0.005
Percent women (10 or more years education)	-0.07 (-0.12,-0.02)	0.005	-0.03 (-0.08,0.02)	0.299	0.02 (-0.04,0.07)	0.516
Percentage of Institutional births	-0.07 (-0.10,-0.03)	0.000	-0.01 (-0.05,0.02)	0.501	0.01 (-0.02,0.05)	0.493
Percent children fully Immunized	-0.02 (-0.05,0.01)	0.265	0.03 (0.00,0.06)	0.055	0.01 (-0.02,0.04)	0.422
Percent children breastfed & received adequate diet	-0.04(-0.07,-0.01)	0.006	-0.04 (-0.07,-0.01)	0.006	-0.01 (-0.04,0.02)	0.500
Percent households with improved sanitation	-0.03 (-0.06,0.01)	0.149	-0.03 (-0.06,0.01)	0.114	-0.01 (-0.05,0.03)	0.559
Households with electricity (%)	-0.06 (-0.11,-0.02)	0.004	0.01 (-0.03,0.05)	0.612	0.07 (0.02,0.12)	0.003
Rho Value (Lag coefficient)	0.362		0.495		0.501	
AIC value	3870.54		3866.75		3947.42	
Pseudo R Square	0.6924		0.7848		0.4292	
No of districts	640		640		640	

Appendix 3: Bivariate LISA cluster maps, India, 2015-16



Map 1. Bivariate LISA cluster maps of India visualising the geographic clustering (hotspots & coldspots) of (a) education vs stunting (b) education vs underweight (c) education vs wasting across districts of India, 2015-16. Source: Authors generated the maps using GeoDa version 1.6.7



Map 2. Bivariate LISA cluster maps of India visualising the geographic clustering (hotspots & coldspots) of (a) sanitation vs stunting (b) sanitation vs underweight (c) sanitation vs wasting across districts of India, 2015-16. Source: Authors generated the maps using GeoDa version 1.6.7

Appendix 4: Districts with higher prevalence of stunting (46-65)% among children under age five, India, 2015-16							
State	Districts						
Bihar	Banka	Katihar	Araria	Darbhanga	Madhepura	Munger	Aurangabad
	Madhubani	Samastipur	Bhagalpur	Kishanganj	Arwal	Khagaria	Jehanabad
	Gaya	Sitamarhi	Purba	Nawada	Rohtas	Muzaffarpur	Vaishali
	Nalanda	Lakhisarai	Champanan	Sheohar	Sheikhpura	Kaimur (Bhabua)	
Uttar Pradesh	Supaul		Purnia				
	Fatehpur	Shrawasti	Kheri	Unnao	Farrukhabad	Bara Banki	Mainpuri
	Mahrajanj	Kanshiram Nagar	Basti	Etawah	Shahjahanpur	Pilibhit	Banda
	Sant Kabir Nagar	Sitapur	Chitrakoot	Sant Ravidas Nagar (Bhadohi)	Gonda	Faizabad	Bahraich
Madhya Pradesh	Balrampur	Aligarh	Siddharthnagar	Hardoi	Budaun	Mirzapur	Jaunpur
	Kaushambi	Kannauj	Etah				
	Datia	Sheopur	Morena	Alirajpur	Bhind	Sidhi	Shajapur
	Burhanpur	Khargone (West Nimar)	Bhopal	Barwani	Tikamgarh	Shivpuri	
Rajasthan	Udaipur	Bharatpur	Banswara	Dhaulpur	Dungarpur	Pratapgarh	
Karnataka	Yadgir	Gulbarga	Bagalkot	Bellary	Davanagere	Koppal	
Jharkhand	Pakur	Hazaribagh	Chatra	Godda	Sahibganj	Pashchimi Singhbhum	
Gujarat	Narmada	Sabar Kantha	The Dangs	Anand	Bhavnagar		
Chhattisgarh	Rajnandgaon	Bijapur	Narayanpur				
Meghalaya	Jaintia Hills	East Khasi Hills	Ribhoi	West Khasi Hills			
Maharashtra	Yavatmal	Nandurbar	Parbhani				
Haryana	Mewat						
Assam	Dhubri						
Odisha	Subarnapur						

Appendix 5: Districts with higher prevalence of underweight (44-67)% among children under age five, India, 2015-16							
States	Districts						
Bihar	Jamui	Banka	Saharsa	Katihar	Araria	Madhepura	Aurangabad
	Nalanda	Madhubani	Kishanganj	Arwal	Jehanabad	Lakhisarai	Sheikhpura
	Gaya	Sitamarhi	Nawada	Rohtas	Bhojpur	Purnia	
	Kaimur (Bhabua)						
Uttar Pradesh	Rampur	Lalitpur	Sonbhadra	Budaun	Kaushambi	Lucknow	Jalaun
	Mahoba	Shahjahanpur	Pilibhit	Auraiya	Varanasi	Mirzapur	Sitapur
	Chitrakoot	Sant Ravidas Nagar (Bhadohi)	Faizabad	Jaunpur	Tehri Garhwal	Puruliya	
Madhya Pradesh	Datia	Mandla	Sheopur	Morena	Alirajpur	Raisen	Bhind
	Gwalior	Rajgarh	Shajapur	Dhar	Betul	Barwani	Ashoknagar
	Umaria	Khandwa (East Nimar)	Burhanpur	Dewas	Khargone (West Nimar)	Dindori	
Jharkhand	Guna	Shivpuri					
	Purbi						
	Singhbhum	Pakur	Simdega	Deoghar	Latehar	Gumla	Jamtara
	Lohardaga	Hazaribagh	Khunti	Chatra	Dumka	Garhwa	Bokaro
	Saraikela- Kharsawan	Sahibganj	Ramgarh		Godda		
Gujarat	Narmada	Dohad	Surendranagar	Kheda	The Dangs	Bharuch	Bhavnagar
	Sabar Kantha						
Odisha	Kendujhar	Sundargarh	Nabarangapur	Balangir	Malkangiri	Sambalpur	Koraput
	Rajasthan	Banswara	Jhalawar	Dungarpur	Pratapgarh	Sirohi	
	Karnataka	Gulbarga	Bagalkot	Bellary	Koppal		
Chhattisgarh	Yadgir			Uttar	Dakshin		
				Bastar	Bastar		
	Bastar	Bijapur	Narayanpur	Kanker	Dantewada		
Maharashtra	Osmanabad	Yavatmal	Dhule	Nandurbar			
Uttarakhand	Tehri Garhwal						
West Bengal	Puruliya						

