

Identifying the spatiotemporal patterns of traditional villages in China: a multiscale perspective

Table S1. Changes of related parameters of traditional villages' WSDs in China

Batch	Rotation θ	XStdDist	YStdDist	Oblateness
First	66.542°	821.553	932.806	0.119
Second	70.587°	584.627	946.388	0.382
Third	67.151°	755.002	1044.276	0.277
Forth	73.095°	812.001	934.570	0.131
Fifth	79.515°	728.202	794.514	0.083

Table S2. The related parameters of traditional villages' WSDEs in geographical zones

Zone	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Central China	First	29.166	234.392	395.330	0.407
	Second	14.576	205.485	540.102	0.620
	Third	27.811	251.182	414.245	0.394
	Forth	14.126	230.329	400.932	0.426
	Fifth	15.201	217.803	461.733	0.528
East China	First	15.818	229.320	422.980	0.458
	Second	28.670	216.371	389.246	0.444
	Third	12.089	204.680	465.234	0.560
	Forth	3.990	213.761	411.303	0.480
	Fifth	11.188	197.087	394.115	0.500
South China	First	85.228	265.563	362.637	0.268
	Second	87.505	169.037	377.219	0.552
	Third	46.059	267.415	397.556	0.327
	Forth	21.922	261.135	358.550	0.272
	Fifth	82.137	244.494	370.974	0.341
Southwest China	First	89.673	357.186	611.686	0.416
	Second	82.935	283.642	598.313	0.526
	Third	75.176	310.806	560.962	0.446
	Forth	83.456	453.738	521.214	0.129
	Fifth	100.480	408.972	627.996	0.349
North China	First	26.603	165.148	302.022	0.453
	Second	25.103	126.476	592.420	0.787
	Third	26.489	271.550	394.627	0.312
	Forth	26.526	168.644	440.627	0.617
	Fifth	27.980	129.853	229.389	0.434
Northeast China	Second	175.169	540.753	64.164	0.881
	Third	63.135	133.072	476.426	0.721
	Forth	55.489	211.132	406.936	0.481
	Fifth	36.550	240.607	596.469	0.597
Northwest China	First	126.125	793.505	311.762	0.607
	Second	127.047	1127.747	404.799	0.641
	Third	127.549	1027.560	418.628	0.593
	Forth	105.800	627.669	295.601	0.529
	Fifth	97.601	634.852	263.968	0.584

Table S3. The related parameters of traditional villages' WSDEs in provinces of central China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Henan	First	140.010	175.555	140.546	0.199
	Second	179.300	163.375	150.458	0.079
	Third	156.453	226.161	136.777	0.395
	Forth	154.154	162.526	134.175	0.174
	Fifth	20.545	132.330	176.889	0.252
Hubei	First	89.084	91.153	325.526	0.720
	Second	86.442	42.375	357.437	0.881
	Third	91.928	329.071	113.922	0.654
	Forth	96.661	320.130	116.399	0.636
	Fifth	93.672	313.036	119.055	0.620
Hunan	First	143.923	220.421	107.066	0.514
	Second	135.566	213.024	106.241	0.501
	Third	140.452	183.478	65.066	0.645
	Forth	137.250	248.856	92.723	0.627
	Fifth	141.578	241.835	91.441	0.622

Table S4. The related parameters of traditional villages' WSDEs in provinces of eastern China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Anhui	First	89.729	50.737	77.596	0.346
	Second	122.676	90.113	39.713	0.559
	Third	146.518	110.338	74.146	0.328
	Forth	101.555	94.442	76.851	0.186
	Fifth	87.960	61.425	62.886	0.023
Henan	First	51.061	75.743	189.488	0.600
	Second	39.190	89.622	186.731	0.520
	Third	31.667	96.094	182.633	0.474
	Forth	40.999	92.076	182.984	0.497
	Fifth	42.289	93.431	178.222	0.476
Fujian	Second	113.592	99.288	17.260	0.826
	Third	153.442	134.050	63.951	0.523
	Fifth	10.212	33.314	46.854	0.289
Jiangxi	First	37.904	77.331	223.319	0.654
	Second	42.181	82.574	223.162	0.630
	Third	32.636	88.780	208.147	0.573
	Forth	25.405	98.079	190.369	0.485
	Fifth	35.375	86.946	181.550	0.521
Shandong	First	76.594	73.613	207.516	0.645
	Second	63.425	36.569	73.488	0.502
	Third	56.050	61.519	246.613	0.751
	Forth	61.582	94.632	181.398	0.478
	Fifth	67.096	77.131	248.959	0.690
Zhejiang	First	39.362	89.623	131.600	0.319
	Second	64.342	91.917	116.643	0.212
	Forth	60.056	93.137	110.490	0.157

Table S5. The related parameters of traditional villages' WSDEs in provinces of southern China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Guangdong	First	67.632	101.079	304.125	0.668
	Second	67.891	89.318	298.451	0.701
	Third	65.502	97.053	315.439	0.692
	Forth	72.232	98.366	226.557	0.566
	Fifth	82.516	101.707	216.322	0.530
Guangxi	First	68.163	123.824	195.347	0.366
	Second	40.159	107.287	217.648	0.507
	Third	4.164	28.971	103.787	0.721
	Forth	46.711	121.000	157.764	0.233
	Fifth	23.721	91.718	188.015	0.512
Hainan	First	39.787	15.240	96.624	0.842

Table S6. The related parameters of traditional villages' WSDEs in provinces of southwestern China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Chongqing	First	39.203	91.161	99.085	0.080
	Second	135.392	97.035	81.211	0.163
	Third	96.901	139.613	103.545	0.258
	Forth	18.900	115.999	131.225	0.116
	Fifth	170.379	123.423	73.756	0.402
Guizhou	First	61.018	90.474	117.324	0.229
	Second	1.322	67.043	87.092	0.230
	Third	63.302	100.590	195.414	0.485
	Forth	59.112	107.861	187.891	0.426
	Fifth	78.150	102.133	139.637	0.269
Sichuan	First	93.787	312.452	219.586	0.297
	Second	117.399	305.558	233.036	0.237
	Third	107.293	307.167	216.315	0.296
	Forth	102.047	289.609	232.462	0.197
	Fifth	83.746	188.679	395.443	0.523
Guangxi	First	61.018	90.474	117.324	0.229
	Second	1.322	67.043	87.092	0.230
	Third	63.302	100.590	195.414	0.485
	Forth	59.112	107.861	187.891	0.426
	Fifth	78.150	102.133	139.637	0.269
Yunnan	First	173.600	253.638	223.021	0.121
	Second	138.538	281.887	162.479	0.424
	Third	131.031	288.917	167.022	0.422
	Forth	121.542	294.674	157.103	0.467
	Fifth	118.798	253.638	223.021	0.121

Table S7. The related parameters of traditional villages' WSDEs in provinces of northern China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Beijing	First	52.222	24.225	41.785	0.420
	Second	60.336	1.961	68.244	0.971
	Forth	51.806	17.278	70.983	0.757
Hebei	First	6.319	18.810	262.972	0.928
	Second	7.744	28.283	209.719	0.865
	Third	10.855	113.038	294.786	0.617
	Forth	8.542	59.974	264.415	0.773
	Fifth	9.641	57.067	190.139	0.700
Inner Mongolia	First	93.825	107.997	80.664	0.253
	Third	63.153	240.573	651.964	0.631
	Forth	45.650	269.893	780.233	0.654
Shanxi	First	9.407	89.762	216.035	0.585
	Second	9.069	40.850	157.682	0.741
	Third	8.890	102.973	188.315	0.453
	Forth	8.913	91.844	197.294	0.534
	Fifth	9.390	92.437	188.998	0.511

Table S8. The related parameters of traditional villages' WSDEs in provinces of north-eastern China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Heilongjiang	Fifth	107.492	279.715	210.143	0.249
Jilin	Forth	69.514	99.854	115.770	0.137
Liaoning	Third	73.571	68.483	235.177	0.709
	Forth	83.207	42.710	88.159	0.516
	Fifth	77.039	65.418	173.407	0.623

Table S9. The related parameters of traditional villages' WSDEs in provinces of north-western China

Province	Batch	Rotation θ (°)	XStdDist (km)	YStdDist (km)	Oblateness
Gansu	First	155.777	202.455	62.162	0.693
	Second	131.127	169.054	88.586	0.476
	Forth	152.726	265.959	159.070	0.402
	Fifth	153.242	234.955	123.835	0.473
Qinghai	First	84.279	86.921	314.563	0.724
	Second	84.894	63.137	411.725	0.847
	Third	84.764	87.266	256.146	0.659
	Forth	83.610	67.048	429.523	0.844
	Fifth	84.399	86.246	455.425	0.811
Shanxi	First	11.101	56.863	244.645	0.768
	Second	11.920	77.811	212.772	0.634
	Third	13.570	85.425	369.593	0.769
	Forth	10.251	66.229	309.088	0.786
	Fifth	13.992	85.158	259.279	0.672
Xinjiang	First	114.067	573.466	66.772	0.884