Appendix
Partly **raw data** of constructed indicators.

City	Year	GDP per capita (yuan)	Per capita fiscal expenditure (yuan)	Per capita disposable income (Yuan)	Proportion of government expenditure on medical and health care (%)	Population density (people/km2)	Proportion of permanent urban population aged 65 and above and 14 and below in total permanent urban population (%)	Number of beds in hospitals and health centers per 1,000 people (units)	Annual precipitation (mm)	Average annual temperature (°C)	Annual surface runoff (billion cubic meters)	Crop sown area (thousand hectares)	Green area coverage (%)	Water conservancy project quality evaluation grade (Grade)	Year-end storage capacity of large and medium-sized urban reservoirs (100 million cubic meters)	Density of drainage network in built-up area (km/sq.km)	Per capita road area (square meters)	Number of national comprehensive disaster reduction demonstration communities (units)	Number of water conservancy and environmental management personnel per 10,000 population	Total number of statutory active public information published online by the Water Resources Bureau (pieces)
Harbin	2022	58436	11341.13	43981	10.56%	184.7	25.10839	9.103115	552.6	5.2	98.97	1492.9	33.1	B	129.66	7.24696	16.7	0	18.74796	87
	2021	56580	10518.45	42745	10.10%	177.7	25.10839	9.33	582.9	4.8	116.1	1484.7	33.1	B	129.66	8.047687	12.5	4	19.76823	65
	2020	54058	12253.03	39791	8.11%	186	25.1	9.17	790.5	5.4	218.2	1471.2	34.2	B	153.87	7.794926	10.3	3	19.38062	315
Changchun	2022	74399	10773.6	43240	10.07%	14095.31	26.29169	7.414676	774.2	3.3	54.63	1650.2	38.44	B	78.97	11.46	16.53	0	31.22381	421
	2021	78255	11347.89	43281	10.08%	13890.77	26.29169	6.712739	684.7	5.8	31.7	1641.1	40.22	B	78.97	10.43	10.43	7	31.22381	295
	2020	77634	11608.1	40001	8.37%	14065.56	15.09	7.604992	668.3	6.5	31.51	1633.2	36.03	D	9.501	10.09	16.08	12	30.58434	381
Dandong	2021	39401	8659.5692	34804	7.63%	150	0.3985143	8.1316001	1023.7	10.2	124.53	209.85	40	A	4.93	0.035775	5.124261151	0	12.78882894	23
	2020	35617	10633.728	32346	7.84%	151	0.3961887	8.0147933	1311.4	10.1	109.39	209.746	40	B	4.51	0.0334859	3.888193416	0	47.93054482	0
Dandong	2021	39401	8659.5692	34804	7.63%	150	0.3985143	8.1316001	1023.7	10.2	124.53	209.85	40	A	4.93	0.035775	5.124261151	0	12.78882894	23
	2020	35617	10633.728	32346	7.84%	151	0.3961887	8.0147933	1311.4	10.1	109.39	209.746	40	B	4.51	0.0334859	3.888193416	0	47.93054482	0
Beijing	2022	190313	34194.70769	77415	10.39%	1331	27.2	5.78	585.4	13.4	7.4	147	49.8	A	38.06	17.633904	4.9864945	20	56.855743	4390
	2021	187526	32921.1368	75002	8.78%	1334	25.14	5.59	698.4	13.6	31.6	122	49.3	A	43.1	18.278479	4.9077036	20	53.550672	5198
	2020	164158	32522.5217	69434	8.51%	1334	25.2	5.81	527.1	13.8	8.3	102	49	A	31.4	17.164738	4.8670626	30	51.037917	5084
Tianjin	2022	119200	20000	48976	6.47%	1143	31.13	4.55	589.9	13.4	11.02	44350	38.4	A	6.81	18.56	16.11	15	26.66907	1690
	2021	113732	22800	47449	8.53%	1151	28.22	4.51	979.6	13.4	30.5	43700	38.3	A	9.03	18.54	15.44	15	26.66907	1012
	2020	101068	22700	43854	5.57%	1163	28.8	4.44	600.2	13.6	8.6	41920	37.6	A	9.12	19.09	14.91	22	26.625811	1515
Jinan	2022	128287	13017.65643	59459	11.00%	800	16.75	8.111464	906.8	15.5	23.24	623.327	41.9	A	3.74	11.78019	21.4	2	27.39177	722
	2021	122873	13846.40103	57449	8.64%	797	16.75	7.801116	1043.4	15.6	26.17	614.8	41.7	A	1.35	10.581	20.8	2	27.39177	722
	2020	110199	14005.04216	53328.6	7.66%	788	16.75	7.4796792	718.3	14.5	13.09	614.3	40.69	A	1.46	10.462189	20.66	4	28.950216	36
Yantai	2022	134581	13082.49253	45143	10.34%	507	19.25	6.2613512	955.5	13.2	63.86	444.012	44.2	A	6.37	9.97	29.6	2	26.760563	596
	2021	122818	11336.35427	42629	9.75%	509.8	19.25	6.119049	1002.7	13.6	25.43	443.852	43.7	A	4.82	7.79	29.4	2	15.323944	926
	2020	110225	11900.6011	39306	8.62%	512.36454	19.25	6.0838718	760.4	13.2	13.87	291.353	39.71	A	2.61	9.06	26.21	3	14.71831	1011
Xuzhou	2022	93731	11441.09331	42610	8.58%	767	25.23	6.9308643	801.3	16.4	22.6	1189.87	44.6	A	1.31	12.3	22.5	6	6.8689427	1849
	2021	88419	11124.72947	40842	9.11%	767	25.23	6.7785346	1204.8	16.2	52.58	1181.95	43.3	A	1.31	12.9	22.7	6	7.0407489	2681
	2020	80288	10548.19956	37532	10.21%	772	25.23	6.5390416	1067.7	16	37.43	1180.37	43.1	A	1.31	6.7	23.4	7	8.027533	2266
Zhengzhou	2022	101169	11351.59782	41049	9.29%	10057	27.8	8.8601715	441.4	15.9	4.78	370.13	39.3	B	0.54	8.06	10.3	2	22.345483	1453
	2021	100092	12750.39246	39511	7.23%	9433.51	27.6	8.6087127	1570.5	16.9	24.66	373.04	41.6	B	0.82	8.33	10.57	2	19.263074	2124
	2020	94911	13639.46117	24783	7.31%	9417	28.1	8.311252	676.7	16.5	5.27	386.62	41.5	B	0.53	7.78	9.91	5	19.167987	2400
Kaifeng	2022	56075	9731.556503	15370	12.15%	5351	37	7.2904051	458.3	15.9	5.03	873.06	46.3	B	0.28	8.61	22.3	2	20.082816	1015
	2021	53173	8984.728033	24573	11.83%	5351	37.6	6.9968619	1224.1	16.6	14.96	869.77	42.6	B	0.57	8.33	22.05	2	14.078675	44
	2020	49166	8919.047619	31868	11.79%	5342	37.8	6.6695652	589.3	16.2	6.52	870.86	45.5	B	0.23	8.28	21.56	0	15.942029	368
Bengbu	2022	60739	3444.333636		10.57%	2709	24.79	3.4983379	834.4	16.7	8.4	518.303	44.42	A	0.19	9.0323	29.32	2	13.748485	86
	2021	60117	3288.08	31972.4	10.35%	2433	24.79	6.703024	948.9	16.7	14.47	634.248	43.6	A	0.14	10.430435	10.134402	2	12.242424	351
	2020	63209	3259.399	29116	10.81%	2399	24.79	6.5471211	1101.3	16.3	6.46	636.088	42.6	A	0.12	10.273128	9.8373354	2	12.966667	365
Shanghai	2022	179907	37952.162	84834	13.93%	3905	23.721494	17.36	1044.1	14.8	27.55	271.8	38.1	A	4.66262	17.95	5	25	36.696141	815
	2021	173600	33872.479	72232	7.50%	3926	23.721494	6.1	1388.2	18.1	45.59	266.8	37.73	A	4.66262	19.08	4.81	25	44.553859	634
	2020	156800	32560.04	78027	6.80%	3830	22.775194	5.8	1660.8	17.8	49.88	257.8	37.32	A	4.66262	16.8	4.76	34	44.264469	835
Nanjing	2022	178781	19336	76643	9.34%	1349	26.447368	7.45	819.8	17.6	18.6	262.27	44.96	A	17.63	12.3	26.4	7	34.549356	932
	2021	173824	19396	73593	8.27%	1639	26.447368	7.013	1267.1	17.6	28.31	260.02	44.96	A	21.34	12.51	25.78	7	30.793991	1075
	2020	159322	18866	67553	6.89%	1614	26.447368	6.753	1294.4	17.1	23.77	251.48	44.69	A	13.59	12.51	25	12	28.218884	936
Hefei	2022	125798	14326.13	48820	8.26%	5081	29.08	6.4138468	805.8	16.9	23.65	702.008	45.96	A	43.59	16.61	14.91	6	8.054429	795
	2021	121187	15547	46009	6.63%	5014	19.893276	6.2131459	1151.2	16.7	48.06	696.104	44.18	A	10.26	15.79	14.38	6	6.6872999	2164
	2020	108427	15011	41619.2	7.44%	4216	19.893276	6.3256912	1523	16.2	87.41	689.089	41.99	A	10.39	15.46	18.76	12	7.1387407	2368
Wuhu	2022	121630	15622.608	51481	9.14%	1758	30.64	6.3843474	1091.3	17.9	24.31	339.548	45.84	A	0.63	13.87	25.91	2	12.046575	1329
	2021	117526	13711.729	48668	9.02%	1759	25.01	6.45	1309.1	17.6	38.11	398.99	46.68	A	1.3	14.28	25.45	2	4.9287671	914
	2020	102964	13327.02	44588	9.18%	1794	26.396011	6.37	1888.5	17.2	60.13	225.889	41.01	A	1.28	14.08	24.41	4	4.5863014	1024
Hangzhou	2022	152588	20540.482	70281	10.36%	4392	42.2	6.550501	1501.9	18.4	126.27	247.92	40.96	A	136.06	13.92	13.81	8	29.490393	3131
	2021	150998	20829.974	67709	7.17%	4371	41.1	6.4387086	1952.1	18.8	189.11	246.26	39.74	A	145.06	13.53	12.55	8	29.490393	2419
	2020	137474	19991.977	63310	7.20%	3789	41	6.4649394	1664.2	18.3	216.69	282.21	43.36	A	144.2	13.54	12.42	8	28.869674	2705
Taizhou	2022	90572	12527.853	58040	10.19%	1670	28.488946	5.04	1456.4	18.628571	70.51	203.53	44.01	A	4.37	12.12	15.46	5	7.6229261	1060
	2021	87220	12534.604	55499	9.65%	1613	28.488946	4.73	2166.1	18.985714	140.47	203.71	42.61	A	8.16	12.49	24.67	5	5.2473605	106
	2020	79520	11087.79	50643	9.68%	1584	28.488946	4.77	1243	18.914286	59.45	200.34	43.89	A	4.37	10.36	24.50	3	5.9668175	185
Wenzhou	2022	83107	11754.685	72336	11.97%	2682	38.848882	4.8388263	1431.2	18.9	104.3	220.89	39.79	A	11.42	11.8	15.69	6	14.122002	71
	2021	79647	11060.81	69678	10.58%	2556	39.328364	4.6834629	2021.6	19.3	177.99	217.21	37.65	A	13.03	11.78	15.04	6	14.165798	57
	2020	71553	10714.18	63481	10.27%	2238	38.85349	4.5352039	266.9	19.2	82.27	215.48	37.85	A	9.66	10.92	16.72	5	6.863139	21
Changsha	2022	135200	15030.421	40678	6.95%	4338	27.747799	7.669424	1445.3	18.9	97.04	367.78	46.48	B	5.63	13.066	17.43	4	14.192843	1089
	2021	130745	15055.619	38195	5.44%	4248	27.747799	7.6954479	1390.8	18.9	99.15	361.91	44.6	B	10.64	12.14	17.39	4	14.05169	695
	2020	123297	14877.02	44588	5.20%	3305	27.747799	7.5661975	1715.8	18.2	123.2	275.34	41.46	B	7.78	8.6	22.29	6	14.146123	630
Wuhan	2022	137772	16211.078	58449	9.11%	7442	28.666654	6.2020526	1176.8	18.0	28.65	422.34	43.09	A	3.17	14.72	13.23	4	29.764801	1707
	2021	135032	16235.521	55297	6.79%	7533	28.587372	6.2237983	1205.8	17.9	49.23	418.97	44.77	A	4.29	14.7	13.07	4	25.871857	2322
	2020	130599	19343.413	50362	15.92%	5959	28.714713	6.5255429	2011.2	17.2	112.37	411.28	42.07	B	7.16	9.55	15.62	6	31.605839	5581
Fuzhou	2022	145936	11909.2	55637.75	10.55%	7650	28.796271	4.429	1318.7	17	89.24	269.73	43.1	A	24.8	11.06	15.94	3	24.158654	159
	2021	135298	11054	53421	9.80%	6789	28.796271	4.8440618	1486.6	20.6	78.49	268.441	43.09	A	24.4	11.41	15.24	3	21.84976	165
	2020	121015	11490	49300	9.89%	6352	28.796271	4.6546875	1210.5	20.5	57.07	262.782	45.4	A	19.1	12.27	13.44	7	22.915865	131
Guangzhou	2022	153625	16133.41	76849	6.99%	6070	41.41	5.4	1884.4	23.1	77.97	82.144	44.67	A	3.9	25.62	16.36	6	34.151547	233
	2021	150330	16061.051	74416	12.24%	5851	39.86	5.2	1435.5	24	49.7	87.767	43.6	A	3.64	24.7	16.85	6	32.865528	246
	2020	135315	15755.618	68304	5.95%	6142	40.41	5	1793.8	23.1	72.7	87.831	45.52	A	3.76	22.55	13.82	11	31.526147	233
Zhanjiang	2022	52787	7612.3603	28861	13.76%	2682	42.467356	5.9850186	1929.1	22.1	87.85	283.867	39.79	A	10.52	11.8	15.69	4	10.601719	163
	2021	50893	7785.4898	27646	13.94%	4799	41.920052	5.7415125	1292.7	24.3	76.43	281.074	44.46	A	7.66	12.34	14.76	4	10.601719	152
	2020	44453	7715.4154	24983	14.20%	13235	41.518409	5.5888378	1350.7	24.3	70.71	277.255	45.12	A	8.54	10.06	10.43	6	10.816619	152
Nanning	2022	58883	9182.496	33903	7.73%	4338	30.981702	6.33	1624	20	97.64	974.11	46.48	B	1.1	13.06	17.43	2	17.629714	9
	2021	58241	9497.8942	32679	11.70%	4898	38.8	6.06	1295.2	22.4	97.64	972.467	35.26	B	0.666	18.05	20.3	2	19.531429	11
	2020	54669	8888.7873	30114	10.47%	4539	38.8	5.6751	1907.5	19.9	118.81	976.167	41.14	B	0.23	16.39	20.44	4	19.508571	28
Yulin	2022	37245	7063.8846	31156	10.79%	1670	39.682294	4.31	1781.1	22.3	49.81	518.86	44.01	B	10.78	12.12	15.46	1	7	142
	2021	35638.95	6289.5904	29912	10.57%	2572	38.8	3.94	1088.4	23.3	49.81	514.57	39.68	B	10.35	11.98	17.62	1	11.304694	69
	2020	30397	6476.6286	27401	10.11%	2591	38.8	3.41	1086.2	22.9	74.76	505.49	39.63	B	10.91	12.04	17.48	1	11.103448	72
Haikou	2022	73012	7608.8887	43535	9.7590617	2557	27.55	6.078	2021	24.5	24.55	61.985	43.09	B	1.63	12	17.76	1	68.214533	365
	2021	70999	9431.1554	43605	7.5025341	3560	27.14	6.087	1863.5	25.4	21.71	60.912	41	B	1.8	11.33	23.3	1	68.114187	341
	2020	63309.6	10687.273	40049	11.752988	3681	27.09	6.05	1753.1	25.4	10.78	62.373	39.97	B	1.34	11.13	15.25	3	97.467128	626

Note: the abbreviations of indicators are instructed in the Table 1 for the article.