

Figure S1. Global Moran's I values of PM_{2.5} concentrations in 2000, 2005, 2010, and 2017. Note: Labels (a), (b), (c), and (d) correspond with the years 2000, 2005, 2010, and 2017.

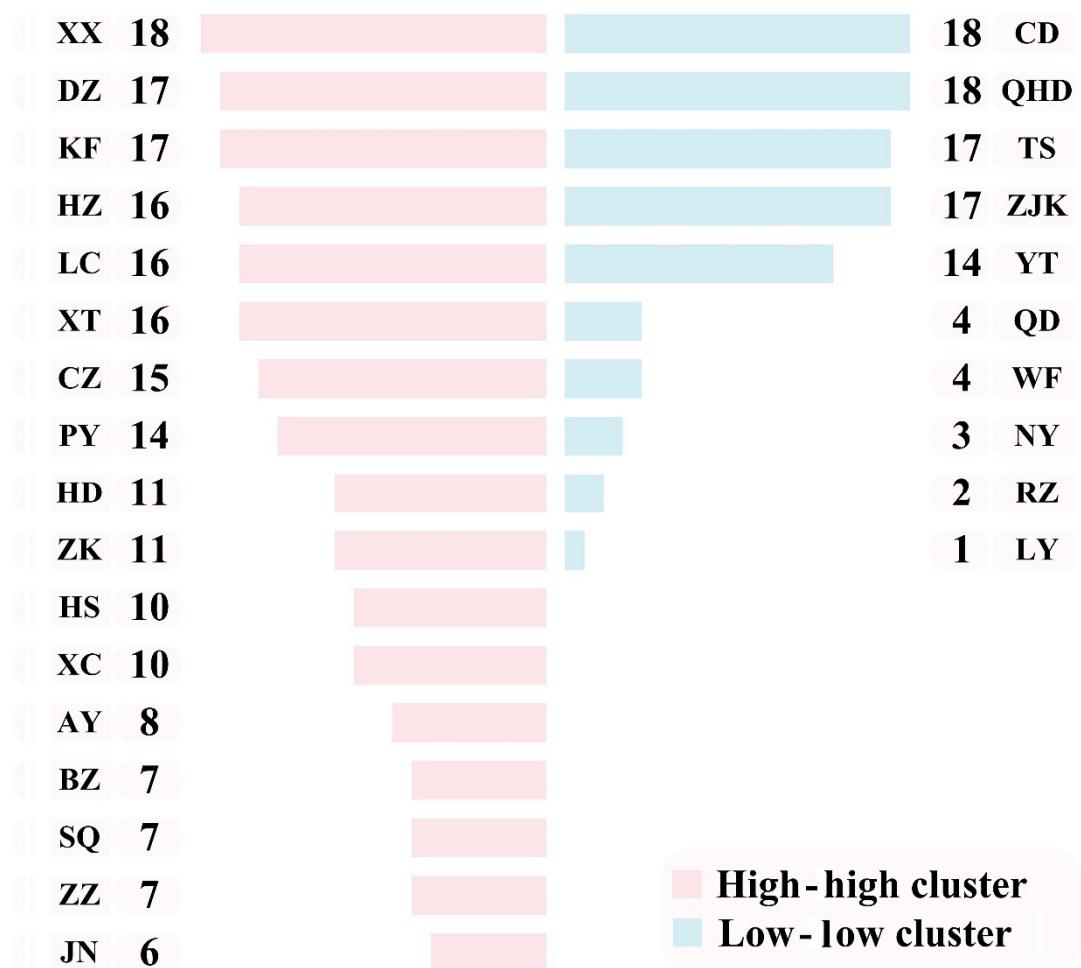


Figure S2. Frequency of high-high (HH) and low-low (LL) clusters from 2000-2017. Abbreviation: XX, Xinxiang; DZ, Dezhou; KF, Kaifeng; HZ, Heze; LC, Liaocheng; XT, Xingtai; CZ, Cangzhou; PY, Puyang; HD, Handan; ZK, Zhoukou; HS, Hengshui; XC, Xuchang; AY, Aayang; BZ, Binzhou; SQ, Shangqiu; ZZ, Zhengzhou; JN, Jinan; CD, Chengde; QHD, Qinhuangdao; TS, Tangshan; ZJK, Zhangjiakou; YT, Yantai; QD, Qingdao; WF, Weifang; NY, Nanyang; RZ, Rizhao; LY, Linyi.

Note: HH with frequency less than 5 times are not displayed in the Figure.