**Supplementary Table**

Table 1 Analysis results of WinBUGS software in different provinces of China

|  |  |  |
| --- | --- | --- |
| Province | Probability(exp (si)>1) | Probability(exp (b1i)>1) |
| Beijing | 0.4769 | 0.8696 |
| Shanxi  | 0.385 | 0.5388 |
| Liaoning | 0.4512 | 0.6182 |
| Jilin | 0.4155 | 0.664 |
| Shanghai  | 0.154 | 0.3449 |
| Tianjin  | 0.556 | 0.9665 |
| Hebei  | 0.5157 | 0.993 |
| Heilongjiang  | 0.5525 | 0.9842 |
| Jiangsu | 0.3301 | 0.9655 |
| Guizhou | 0.8839 | 5.05E-04 |
| Hunan | 0.7131 | 0.9753 |
| Ningxia | 0.6267 | 0.9979 |
| Hainan | 1 | 1 |
| Shaanxi  | 0.5823 | 0.7892 |
| Guangdong | 0.3432 | 0.2368 |
| Guangxi  | 0.7244 | 0.7338 |
| Gansu  | 0.6757 | 0.3203 |
| Inner Mongolia | 0.6481 | 0.0999 |
| Qinghai | 0.6557 | 0.04762 |
| Jiangxi  | 0.323 | 0.3025 |
| Anhui  | 0.3144 | 0.2089 |
| Zhejiang  | 0.2715 | 0.1229 |
| Henan  | 0.2924 | 0.5172 |
| Shandong  | 0.3202 | 0.5701 |
| Tibet  | 0.6693 | 0.7019 |
| Hubei  | 0.4193 | 0.3886 |
| Yunnan  | 0.8116 | 0.184 |
| Xinjiang  | 0.5939 | 0.9551 |
| Chongqing | 0.7554 | 0.06471 |
| Sichuan  | 0.8052 | 0.005132 |
| Hong Kong | 0.2732 | 0.09537 |
| Macao | 0.3195 | 0.02594 |
| Taiwan  | 1 | 1 |
| Fujian | 0.4593 | 0.7565 |

Data of Table 1 came from the operation results of the WinBUGS software.

Table 2 Analysis results of WinBUGS software in different cities of Hubei Province

|  |  |  |
| --- | --- | --- |
| City | Probability(exp (si)>1) | Probability(exp (b1i)>1) |
| Wuhan | 0.3363 | 0.2563 |
| Huangshi | 0.5783 | 0.9291 |
| Shiyan | 0.7753 | 0.1089 |
| Yichang | 0.626 | 0.7855 |
| Xiangyang | 0.5343 | 0.2616 |
| Ezhou | 0.6285 | 0.2083 |
| Jingmen | 0.352 | 0.2025 |
| Xiaogan | 0.184 | 0.6151 |
| Jingzhou | 0.3427 | 0.644 |
| Huanggang | 0.4802 | 0.8308 |
| Xianning | 0.435 | 0.5423 |
| Suizhou | 0.836 | 1.36E-05 |
| Enshizhou | 0.288 | 0.9887 |
| Xiantao | 0.628 | 0.5455 |
| Qianjiang | 0.5476 | 0.2918 |
| Tianmen | 0.7013 | 0.6441 |
| Shennongjia | 0.3286 | 0.8336 |

Data of Table 2 came from the operation results of the WinBUGS software.

Table 3 Emigration index and number of confirmed cases in different cities of Hubei Province

|  |  |  |
| --- | --- | --- |
| City | Emigration index | Confirmed *,n* |
| Xiaogan | 14.63  | 541  |
| Huanggang | 13.92  | 573  |
| Jingzhou | 7.03  | 221  |
| Xianning | 5.38  | 166  |
| Ezhou | 4.25  | 189  |
| Xiangyang | 4.24  | 286  |
| Yellowstone | 4.05  | 168  |
| Jingmen | 3.53  | 227  |
| Suizhou | 3.42  | 228  |
| Xiantao | 3.17  | 90  |
| Yichang | 3.03  | 167  |
| Tianmen | 2.24  | 67  |
| Shiyan | 1.99  | 150  |
| Enshi | 1.95  | 75  |
| Qianjiang | 1.23  | 12  |
| Shennongjia | 0.04  | 7  |

Data of Table 3 came from Baidu Qianxi and the official website of health departments.

Table 4 Emigration index and number of confirmed cases in different provinces of China

|  |  |  |
| --- | --- | --- |
| Province | Emigration index | Confirmed*,n* |
| Tibet | 0.04  | 1 |
| Qinghai  | 0.06  | 8 |
| Ningxia | 0.09  | 21 |
| Tianjin | 0.16  | 31 |
| Jilin  | 0.18  | 14 |
| Inner Mongolia | 0.19  | 20 |
| Xinjiang | 0.20  | 17 |
| Heilongjiang  | 0.30  | 59 |
| Liaoning  | 0.35  | 45 |
| Gansu  | 0.37  | 29 |
| Hainan | 0.40  | 49 |
| Yunnan  | 0.57  | 76 |
| Guizhou  | 0.60  | 15 |
| Shanxi  | 0.64  | 39 |
| Shanghai | 0.72  | 128 |
| Shaanxi  | 0.77  | 63 |
| Guangxi | 0.85  | 87 |
| Beijing | 0.94  | 132 |
| Fujian  | 0.97  | 120 |
| Hebei  | 1.01  | 82 |
| Zhejiang  | 1.15  | 537 |
| Shandong  | 1.18  | 178 |
| Sichuan  | 1.33  | 177 |
| Chongqing | 1.36  | 206 |
| Jiangsu  | 1.57  | 168 |
| Guangdong  | 2.04  | 393 |
| Jiangxi  | 2.28  | 240 |
| Anhui  | 2.44  | 237 |
| Hunan  | 3.74  | 332 |
| Henan  | 6.11  | 352 |
| Hubei  | 74.22  | 5806 |

Data of Table 4 came from Baidu Qianxi and the official website of health departments.

Table 5 Lockdown time of different cities in Hubei Province

|  |  |
| --- | --- |
| City | Lock down date |
| Wuhan | 23-Jan-20 |
| Ezhou | 23-Jan-20 |
| Xiantao | 23-Jan-20 |
| Zhijiang | 23-Jan-20 |
| Qianjiang | 23-Jan-20 |
| Huanggang | 23-Jan-20 |
| Enshi | 24-Jan-20 |
| Jingmen | 24-Jan-20 |
| Xianning | 24-Jan-20 |
| Chibi | 24-Jan-20 |
| Yellowstone | 24-Jan-20 |
| Jingzhou | 24-Jan-20 |
| Dangyang | 24-Jan-20 |
| Xiaogan | 24-Jan-20 |
| Suizhou | 24-Jan-20 |
| Shiyan | 25-Jan-20 |
| Yichang City | 25-Jan-20 |
| Xiangyang | 26-Jan-20 |
| Shennongjia | 26-Jan-20 |