Appendix A:

Cluster pattern: In this pattern, point combinations are focused on one or a number of areas and form clusters.

Scatter pattern: Points are placed in almost regular and large distances from each other that form such shape.

Random pattern: This pattern is when the distribution of phenomena does not have any clustered or scattered patterns.

Appendix B:

In the first case (cluster), areas with high or low incidence of a variable are surrounded by other areas with similarly high or low (high-high, low-low) incidence, and in the second case (outlier data), regions with high rates of one variable are surrounded by other areas with low incidence (or vice versa) (high-low, low-high). In Moran’s index analyses, it can be stated that spatial arrangement of point combinations is one of the fundamental issues in spatial analysis of phenomena, because they form the location and position of the points and how they are positioned relative to others form their spatial construction process.

Appendix C:

The results of the Getis index are interpreted according to H0. Null hypothesis for global G is that “There is no spatial clustering in the studied values ​​and attributes for the complications in the desired layer.” When the standard Z value is very large and P-value is very small and close to zero, then H0 is rejected. If H0 is rejected, then the standard Z score becomes important. If the presence of clusters is confirmed by rejection of H0, then the positive Z score values ​​indicate clustering of high points and the negative Z score values ​​represent clustering of low risk points.

Appendix D:

The calculated Z score indicates where the data are clustered high or low. This index, in fact, looks at any geographic unit within its neighbors. A geographic unit with a high value is interesting and important, while it might not be a hot and statistically significant spot. For a geographic unit to be considered a hot spot and statistically significant, both the spot and the neighboring geographic unit should have high values. Local sum is a unit and its neighbors are compared relative to the total number of units. When a local sum exceeds the expected local population excessively and unexpectedly and the difference is so large that it cannot be considered the result of an accident, then Z score will be significant. Figure 2-3 shows the input and output of this analysis. By displaying Z score and P-value, hot spots or locations with clustered data can be displayed.

Table 1. Rate of pedestrian deaths based on education and marital status of the people under the study during 2012-2013 in Iran

|  |  |  |  |
| --- | --- | --- | --- |
| variable | Population | N (%) | Rate (/100,000  people) |
| Education |  |  |  |
| Illiterate | 11783636 | 1926 (44.5) | 19.7 |
| Primary school | 16966245 | 1162 (26.7) | 7.7 |
| Junior high school | 14400201 | 521 (11.8) | 4.1 |
| High school and diploma | 19416461 | 536 (12.1) | 3 |
| High education | 12583128 | 226 (4.9) | 2 |
| Marital status |  |  |  |
| <10 years\* | 11691593 | 585 (13.6) | 4.9 |
| Single | 21844379 | 825 (18.5) | 3.7 |
| Married | 41613697 | 2961 (67.9) | 7.1 |

Table 2. Incidence rate and frequency of pedestrian deaths based on demographic variables and the incidence rate and frequency of pedestrian deaths in provinces of Iran in 2012

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Number (percent)** | **Standard Mortality Rate (per 100000 people)** | **Population** | **Variables** | **Number (percent)** | **Standard Mortality Rate (per 100000 people)** | **Population** | **Standard population weight** | |
| Age |  |  |  | North Khorasan | 44 (1) | 6.8 | 867425 | 0-4 | 8.86 |
| <15 | 732 (16.8) | 4.2 | 17561778 | Khuzestan | 217 (5) | 6.2 | 4530902 | 5-9 | 8.69 |
| 15-24 | 335 (7.7) | 2.2 | 15021540 | Zanjan | 48 (1.1) | 5.2 | 1015104 | 10-14 | 8.6 |
| 25-34 | 393 (9) | 2.5 | 15644578 | Semnan | 33 (0.7) | 5.7 | 628645 | 15-19 | 8.47 |
| 35-64 | 1445 (33.1) | 6.9 | 22578682 | Sistan and Baluchestan | 101 (2.3) | 5.1 | 2533821 | 20-24 | 8.22 |
| ≥65 | 1460 (33.4) | 32.7 | 4296769 | Fars | 279 (6.4) | 8.7 | 4592632 | 25-29 | 7.93 |
| Total | 4365 (100) | 6.8 | 75103347 | Qazvin | 86 (2) | 8.5 | 1201363 | 30-34 | 7.61 |
| Sex |  |  |  | Qom | 80 (1.8) | 9.1 | 1151502 | 35-39 | 7.15 |
| Male | 3201 (73.2) | 6.9 | 37877151 | Kurdistan | 57 (1.3) | 4.7 | 1493520 | 40-44 | 6.59 |
| Female | 1170 (27.8) | 3.7 | 37226196 | Kerman | 172 (3.9) | 7.1 | 2938259 | 45-49 | 6.04 |
| East Azerbaijan | 206 (4.7) | 6 | 3724011 | Kermanshah | 142 (3.2) | 8.3 | 1944797 | 50-54 | 5.37 |
| West Azerbaijan | 177 (4) | 6.8 | 3079948 | Kohkilouye & Boyerahmad | 38 (0.9) | 7.1 | 658576 | 55-59 | 4.55 |
| Ardabil | 48 (1.1) | 4.5 | 1248389 | Golestan | 118 (2.7) | 8.6 | 1774975 | 60-64 | 3.72 |
| Isfahan | 226 (5.2) | 5.2 | 4878465 | Gilan | 275 (6.3) | 11.1 | 2480632 | 65-69 | 2.96 |
| Alborz | 143 (3.3) | 7.2 | 2411317 | Lorestan | 113 (2.6) | 8.2 | 1753930 | 70-74 | 2.21 |
| Ilam | 16 (0.4) | 4 | 557544 | Mazandaran | 269 (6.2) | 9.5 | 3073205 | 75-79 | 1.52 |
| Bushehr | 45 (1) | 5.3 | 1032414 | Markazi | 99 (2.3) | 7.4 | 1413791 | 80-84 | 0.91 |
| Tehran | 732 (16.7) | 6.6 | 12164898 | Hormozgan | 56 (1.3) | 4.8 | 1577131 | 85-89 | 0.44 |
| Chaharmahal and Bakhtiari | 56 (1.3) | 7.8 | 895189 | Hamedan | 98 (2.2) | 6.3 | 1756185 | 90-94 | 0.15 |
| South Khorasan | 18 (0.4) | 3.3 | 660372 | Yazd | 55 (1.3) | 6 | 1072738 | 95-99 | 0.04 |
| Khorasan Razavi | 324 (7.4) | 6.6 | 5991667 | ------- | -------- | -------- | ------- | >100 | 0.005 |

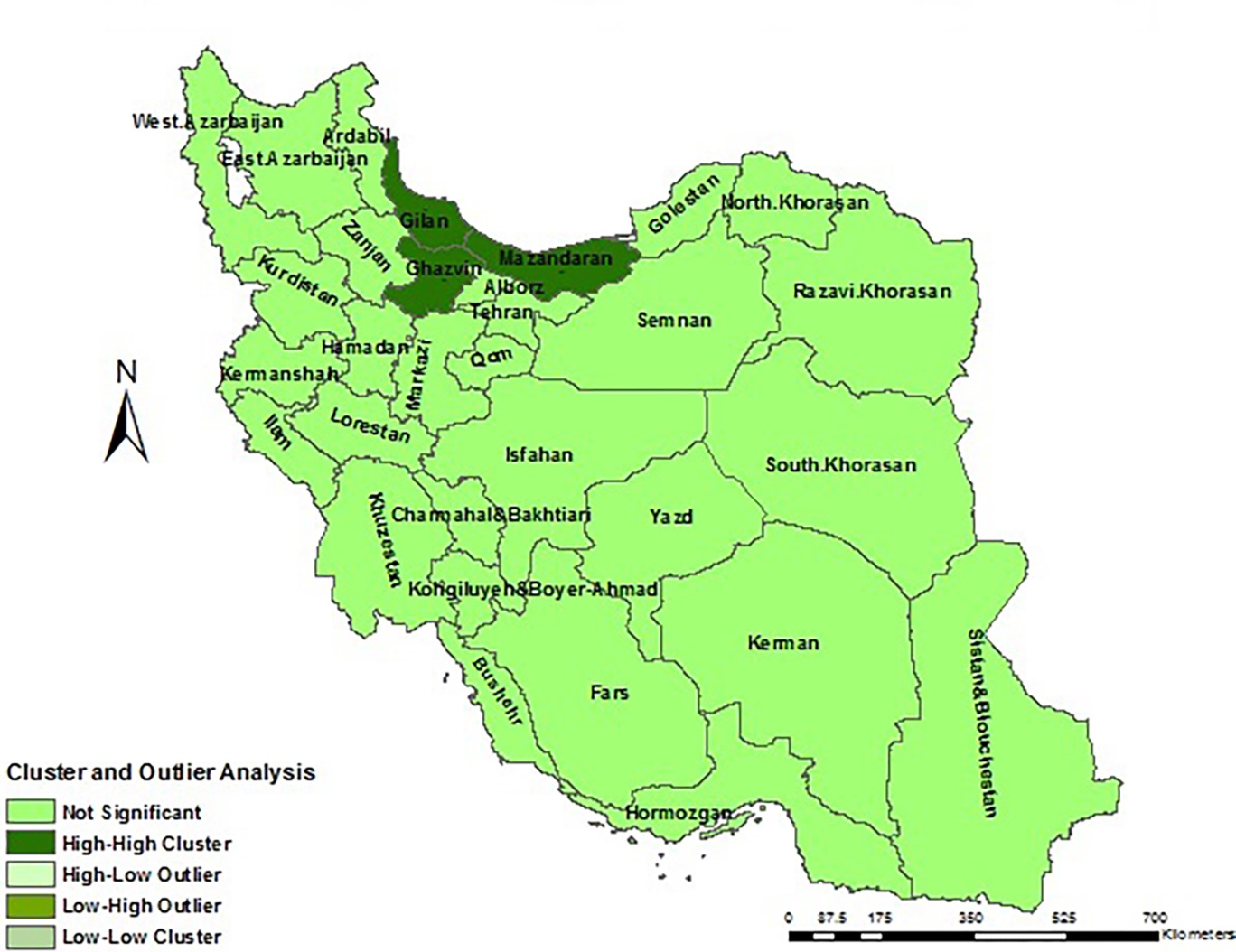


Figure 1. Pattern of mortality rate of pedestrians in per 100,000 populations in road accidents in the provinces of the country in 2012-2013 using the Local Getis Index

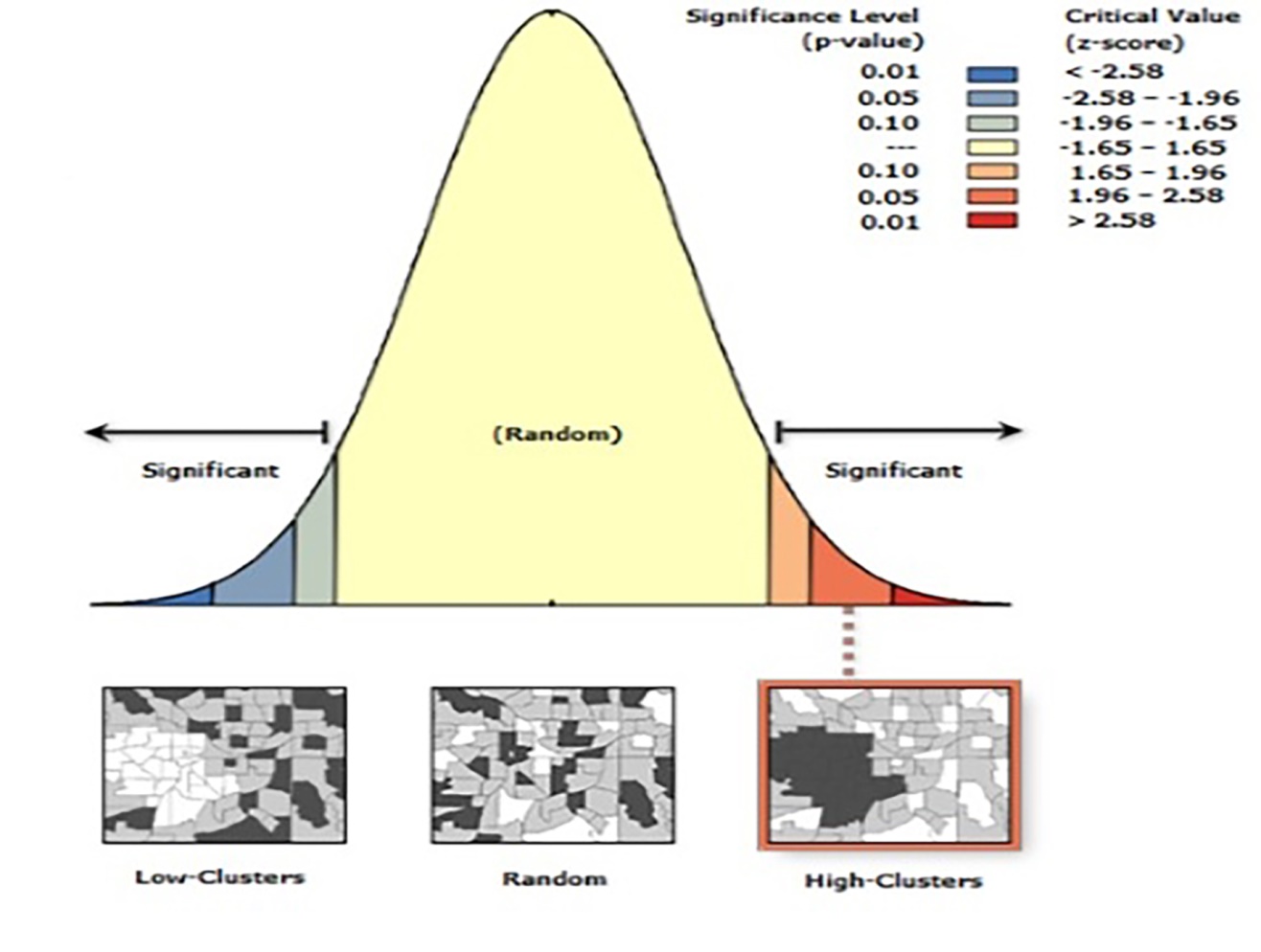


Figure 2. Investigation of the distribution of mortality rate of pedestrians in per 100,000 populations in road accidents in different provinces of the country in 2012-2013 using the Global Moran’s Index

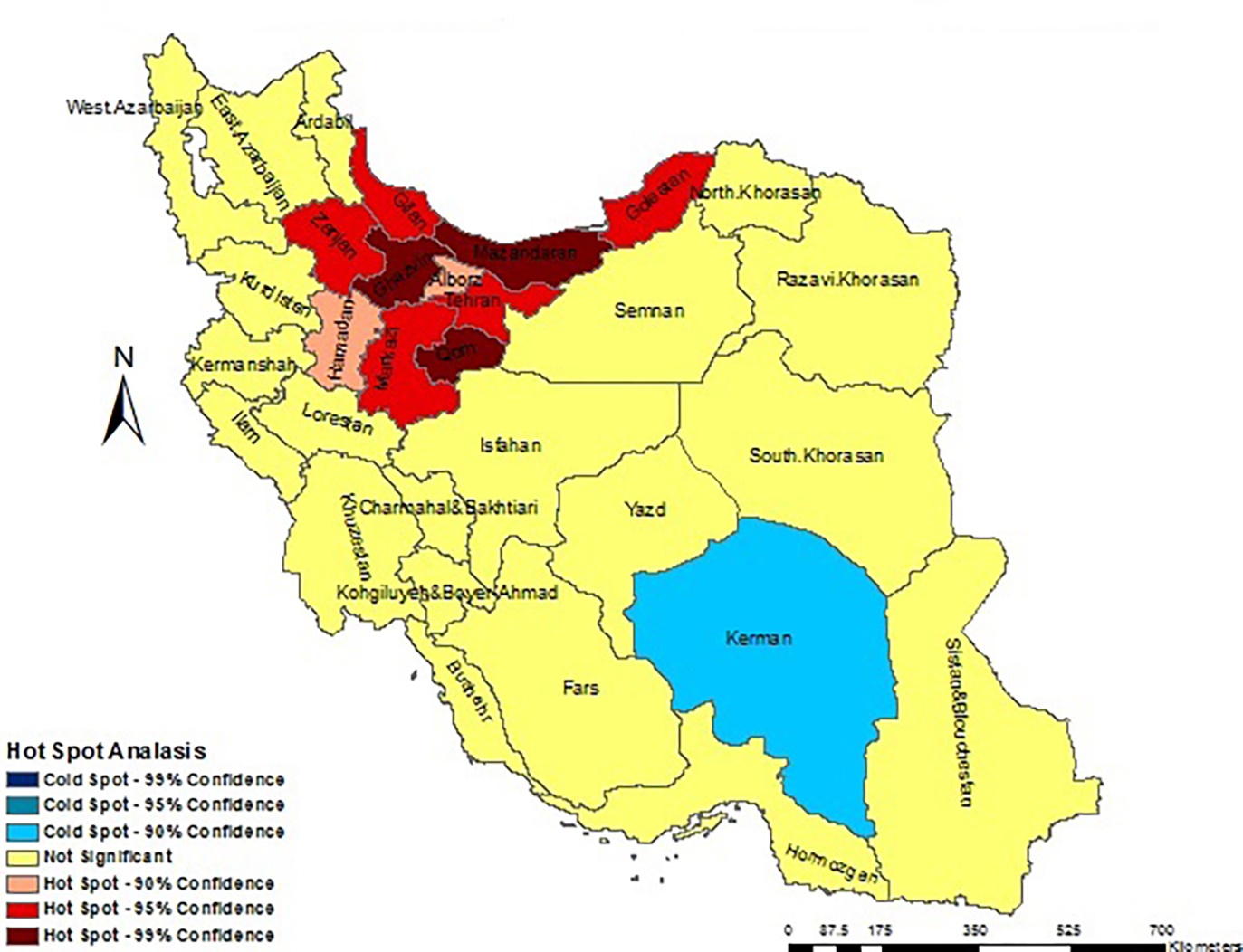


Figure 3. Pattern of mortality rate of pedestrians in per 100,000 populations in road accidents in the provinces of the country in 2012-2013 using the Local Moran