

Table S1. The resistance values of different factors and different categories of each factor in landslide disaster according to Golden Section Method.

| landslide | | | | |
|----------------------|------------|-----------------------|-------------|------------|
| The primary factors | | The secondary factors | | |
| Parameters | Resistance | Category | Split ratio | Resistance |
| Rainfall | 1.309 | 700mm | 1 | 1.309 |
| | | 800mm | 0.618 | 0.809 |
| | | 900mm | 0.382 | 0.500 |
| | | 1000mm | 0.236 | 0.309 |
| Earthquake intensity | 0.809 | V | 1 | 0.809 |
| | | VI | 0.618 | 0.500 |
| | | VII | 0.382 | 0.309 |
| Slope aspect | 13.71 | 0~45 °, 315 °~360 ° | 1 | 13.71 |
| | | 45 °~135 ° | 0.618 | 8.473 |
| | | 225 °~315 ° | 0.382 | 5.236 |
| | | 135 °~225 ° | 0.236 | 3.236 |
| Distance to rivers | 8.473 | >1km | 1 | 8.473 |
| | | ≤1km | 0.618 | 5.236 |
| Distance to faults | 5.236 | >2km | 1 | 5.236 |
| | | 1km~2km | 0.618 | 3.236 |
| | | ≤1km | 0.382 | 2.000 |
| Elevation | 3.236 | <1000m | 1 | 3.236 |
| | | >2000m | 0.618 | 2.000 |
| | | 1000m~1500m | 0.382 | 1.236 |
| | | 1500m~2000m | 0.236 | 0.764 |
| Lithology | 2.000 | Very hard rock | 1 | 2.000 |
| | | Hard rock | 0.618 | 1.236 |
| | | Soft rock | 0.382 | 0.764 |
| | | Very soft rock | 0.236 | 0.472 |
| Slope | 1.236 | <15 ° | 1 | 1.236 |

| | | |
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| >45 ° | 0.618 | 0.764 |
| 15 °~30 ° | 0.382 | 0.472 |
| 30 °~45 ° | 0.236 | 0.292 |

Table S2. The resistance values of different factors and different categories of each factor in debris flow disaster according to Golden Section Method.

| Debris flow | | | | |
|----------------------|------------|-----------------------|-------------|------------|
| The primary factors | | The secondary factors | | |
| Parameters | Resistance | Category | Split ratio | Resistance |
| Earthquake intensity | 2.619 | V | 1 | 2.619 |
| | | VI | 0.618 | 1.619 |
| | | VII | 0.382 | 1.000 |
| Rainfall | 1.619 | 700mm | 1 | 1.619 |
| | | 800mm | 0.618 | 1.000 |
| | | 900mm | 0.382 | 0.618 |
| | | 1000mm | 0.236 | 0.382 |
| landslide | 1.000 | Very low | 1 | 1.000 |
| | | Low | 0.618 | 0.618 |
| | | Medium | 0.382 | 0.382 |
| | | High | 0.236 | 0.236 |
| | | Very high | 0.146 | 0.146 |
| NDVI | 37.35 | Very high | 1 | 37.35 |
| | | High | 0.618 | 23.08 |
| | | Medium | 0.382 | 14.26 |
| | | Low | 0.236 | 8.816 |
| Land use | 23.08 | Forest land | 1 | 23.08 |
| | | Grassland | 0.618 | 14.26 |
| | | Wetland | 0.382 | 8.816 |
| | | Agriculture, dwell | 0.236 | 5.448 |
| Slope aspect | 14.26 | 0~45 °, 315 °~360 ° | 1 | 14.26 |
| | | 45 °~135 ° | 0.618 | 8.816 |
| | | 225 °~315 ° | 0.382 | 5.448 |
| | | 135 °~225 ° | 0.236 | 3.367 |
| Distance to fault | 8.816 | >2km | 1 | 8.816 |

| | | | | |
|-------------------|-------|----------------|-------|-------|
| | | 1~2km | 0.618 | 5.448 |
| | | ≤1km | 0.382 | 3.367 |
| Lithology | 5.448 | Very hard rock | 1 | 5.448 |
| | | Hard rock | 0.618 | 3.367 |
| | | Soft rock | 0.382 | 2.081 |
| | | Very soft rock | 0.236 | 1.286 |
| Distance to river | 3.367 | >1km | 1 | 3.367 |
| | | ≤1km | 0.618 | 2.081 |
| Elevation | 2.081 | <1000m | 1 | 2.081 |
| | | >2000m | 0.618 | 1.286 |
| | | 1000m~1500m | 0.382 | 0.795 |
| | | 1500~2000m | 0.236 | 0.491 |
| Slope | 1.286 | <15 ° | 1 | 1.286 |
| | | >45 ° | 0.618 | 0.795 |
| | | 15 °~30 ° | 0.382 | 0.491 |
| | | 30 °~45 ° | 0.236 | 0.303 |