Table S1. Criteria for calculating the value of buildings.

Building structure types	Criteria for calculating value
Steel and reinforced concrete structure	1,467 RMB yuan/m^2
Concrete structure	1,285 RMB yuan/m^2
Mixed structure	1,134 RMB yuan/m^2
Brick-wood structure	907 RMB yuan/m^2
Other structure	227 RMB yuan/m^2

Table S2. Criteria for calculating the value of roads.

Road types	Criteria for calculating value
Railways	30,000,000 RMB yuan/km
Rural roads	2,500,000 RMB yuan/km
Highways (expressways)	10,000,000 RMB yuan/m^2
Urban roads	4,000,000 RMB yuan/m^2

Table S3. Land price list for Yu'nan County.

Area Number	Area Composite Land Value (RMB 10,000 yuan/acre)	Scope of area
1	5.05	Ducheng town (Contains 16 administrative villages) Dawan town (Contains 8 administrative villages) Pingtai town (Contains 1 administrative villages)
2	4.64	Liantan town (Contains 12 administrative villages) Nanjiangkou town (Contains 15 administrative villages) Pingtang town (Contains 13 administrative villages)
3	4.18	Dongba town (Contains 12 administrative villages) Songgui town (Contains 8 administrative villages) Hekou town (Contains 12 administrative villages) Jiancheng town (Contains 22 administrative villages) Qianguan town (Contains 21 administrative villages) Tongmen town (Contains 12 administrative villages) Guiyu town (Contains 22 administrative villages) Baozhu town (Contains 6 administrative villages) Lidong town (Contains 13 administrative villages) Dafang town (Contains 7 administrative villages)

The formulas for calculating T and VIF are as follows.

$$T = 1 - P_k^2 \quad \text{(S1)}$$

$$\mathrm{VIF} = 1/(1 - P_k^2) \quad \text{(S2)}$$

where P_k^2 is the coefficient of determination between the *k-th* independent variable x_k and the remaining independent variables. If the *VIF* of the corresponding factor is greater than 10 or T is less than 0.1, it means that it has multicollinearity, then it can be removed from the modeling.

Table S4. The correlation calculation results of each evaluation factor.

Evaluation factor	T	VIF
Population density	0.431	1.952
Building value	0.417	1.987
Road value	0.690	2.078
Land value	0.784	3.924
Technical schools and above	0.767	2.909
Disaster prevention drills in 2023	0.640	1.012
Disaster publicity in 2023	0.896	1.388
Under 14 and over 65	0.904	1.510
Monthly income over 4000	0.351	2.316
Disaster protection facilities	0.766	3.639