

**Table S1 Chongqing new infrastructure classification and subordinate department code table**

New Infra-structure Category	New Infrastructure Project of Chongqing	Code	Management Department	Code
Information Infrastructure A	China Mobile Edge Computing Platform	A1	Municipal Big Data Development Bureau	M1
	Banan Tenglong 5G Park	A2	Banan District Government	M2
	Chongqing Tencent Cloud Computing Data Center Phase II	A3	Liangjiang New Area Administrative Committee	M3
	China Mobile Data Center Phase I	A4	Nan'an District Government	M4
	5g Construction	A5	Municipal Communications Administration	M5
	Universal Data Chongqing Data Center	A6	Liangjiang New Area Administrative Committee	M3
	Sino-Singapore International Supercomputing Center Project	A7	Municipal Big Data Development Bureau	M1
Convergence Infrastructure B	Chongqing Cable Smart Broadcasting Data Center Phase I	B8	Municipal Culture and Tourism Commission	M6
	Jiulongpo Runze Smart Industry Innovation City Phase I	B9	Jiulongpo District Government	M7
	Smart Guangyang Island	B10	Guangyang Island Construction Leadership Office	M8
	Rongchang National Pig Data Cente	B11	Rongchang District Government	M9
	Wanzhou Tencent Cloud Digital Economy Talent Innovation Center	B12	Wanzhou District Government	M10
	Nanan Data Lake Industrial Park	B13	Nanan District Government	M4
	Yongchuan Smart Transportation Pilot	B14	Yongchuan District Government	M11
	Yongchuan Smart Medical Pilot	B15	Yongchuan District Government	M11
	Digital Chongqing High-tech Zone Construction	B16	Chongqing High-tech Zone Administrative Committee	M12
	Chongqing "two rivers and four banks" core area IOT integration construction	B17	Municipal Housing and Urban-Rural Development Commission	M13
	Banan Zongshen Kumi Industrial Internet	B18	Banan District Government	M2
	Gaozhu New District Dual Innovation Center	B19	Yubei District Government	M14
	Agricultural Science and Technology Innovation Platform	B20	Municipal Agriculture and Rural Committee	M15
Innovation in- frastructure C	Chongqing aerospace remote sensing image coordination and Beidou positioning service application	C21	Municipal Bureau of Planning and Natural Resources	M16
	Wireless Energy Transmission and Environmental Impact Science Project	C22	Municipal Science and Technology Bureau	M17
	Chongqing International Institute of Immunology	C23	Banan District Government	M2
	Upstream of Yangtze River Germplasm Creation Science Center	C24	Municipal Science and Technology Bureau	M17
	Chongqing Science Center of Chinese Academy of Sciences	C25	Municipal Science and Technology Bureau	M17
	Chongqing Center for Natural Population Biological Resources of China	C26	Municipal Science and Technology Bureau	M17
	Shapingba Qingfeng High-tech Innovation Incubation Center	C27	Shapingba District Government	M18

## S2 ERGM model specific construction process

Model 1 is a null model, containing only the edge ( $E_D$ ) statistical term in the network, i.e., the number of all new infrastructure subjects associated in the new infrastructure association network in Chongqing, which will be used as a control variable to be referenced in the subsequent model construction. The model equation for the edge is:

$$P(Y = y|X) = \frac{\exp(\theta_1 E_D)}{k}$$

Model 2 adds individual attribute variables (betweenness centrality  $N_B$ , node centrality  $N_D$ ) and node homogeneity variables (organizational homogeneity  $N_O$ , geographic homogeneity  $N_L$ ) to model 1 to consider the influence of the nodes' individual attribute features and node feature interaction terms on the overall association network, and how the connected edges with the same attribute nodes affect the overall new infrastructure association network construction. The corresponding ERGM model equation is:

$$P(Y = y|X) = \frac{\exp(\theta_1 E_D + \theta_2 N_B + \theta_3 N_D + \theta_4 N_O + \theta_5 N_L)}{k}$$

Model 3 adds reciprocity ( $M_U$ ), 2-path ( $T_W$ ) and geometrically weighted edge-wise shared partners ( $G_E$ ) to model 1 as indicators to examine the impact of reciprocity structures and closed triangles formed among new infrastructures on the overall association formation. The corresponding ERGM model equation is:

$$P(Y = y|X) = \frac{\exp(\theta_1 E_D + \theta_6 M_U + \theta_7 T_W + \theta_8 G_E)}{k}$$

Model 4 is an integrated model, which incorporates network structure variables, individual attribute variables and homogeneity variables into the same statistical model to analyze the influence of different variables on the formation of network relationships in an integrated manner; simultaneously comparing the goodness-of-fit of the integrated model with other models to determine whether the integrated model is better at portraying the true characteristics of the new infrastructure association network. The ERGM integrated model equation is:

$$P(Y = y|X) = \frac{\exp(\theta_1 E_D + \theta_2 N_B + \theta_3 N_D + \theta_4 N_O + \theta_5 N_L + \theta_6 M_U + \theta_7 T_W + \theta_8 G_E)}{k}$$