

Table 1 Eigenvector centrality for Functional Purposes (Level 1)

Node Name	Number of links	EC centrality	EC rank by level
Physical settlement	7	0.002385	1
Social opportunity and care	7	0.002098	2
Safety and security	8	0.002090	3
Knowledge transfer and diffusion of innovation	6	0.001525	4
Cultural heritage and sense of place	4	0.001396	5
Pooling of resources	6	0.001269	6
Globalised connectivity	6	0.001249	7
Economic opportunity	4	0.001121	8

Table 2 Eigenvector centrality for Values and Priority Measures (Level 2)

Node Name	Number of links	EC centrality	EC rank by level
Socio-economic equality and equity	23	0.025975	1
Minimal vulnerability	17	0.018140	2
Effective provision of critical services	18	0.014114	3
Sustainable economy	12	0.012732	4
Environmental sustainability	17	0.012712	5
Effective safeguards to human health and life	11	0.011837	6
Collective identity and community support	17	0.011541	7
Reduced exposure and fragility	13	0.011020	8
Integrated development and planning	14	0.010846	9
Effective leadership and management	15	0.010054	10
Empowered stakeholders	11	0.008836	11
Comprehensive security and rule of law	7	0.005898	12
Diverse livelihoods and employment	8	0.005693	13
Reliable communications and mobility	12	0.004643	14

Table 3 Eigenvector centrality for Generalised Functions (Level 3)

Node name	Number of links	EC centrality	EC rank by level
Public health	68	0.204397	1
Employment provision	26	0.145205	2
Goods and services provision	52	0.093531	3
Housing provision	27	0.089796	4
Foster social cohesion	28	0.084374	5
Social interaction	20	0.083639	6
Biological hazard regulation	34	0.074792	7
Physical security	25	0.067352	8
Clean water	23	0.064329	9
Tourism	18	0.063089	10

Community activities and engagement	21	0.062984	11
Historical and cultural value contribution	16	0.062324	12
Recreational activities	12	0.059440	13
Environmental conservation	34	0.058060	14
Energy supply	18	0.057976	15
Emergency services	35	0.057273	16
Food provision	18	0.051157	17
Hydrometeorological hazard regulation	29	0.050963	18
Communication systems	17	0.044569	19
Governance	52	0.044093	20
Learning and education	16	0.042708	21
Sanitation provision	18	0.039226	22
Distribution of goods (logistics)	26	0.029343	23
Law and order	26	0.025388	24
Travel (people, not goods)	27	0.023191	25
Animal welfare	17	0.022950	26
Environmental and geohazard regulation	20	0.022646	27
Road conditions and safety	21	0.020907	28
Technological hazard regulation	22	0.019085	29
Societal hazard regulation	24	0.017312	30
Planning activities	18	0.014703	31
Clean air	10	0.013068	32
Financial services	13	0.011928	33
Waste management	16	0.011840	34
Clothing provision	8	0.010135	35
Ceremonies and services for major life events	5	0.009737	36
Observance of religion	4	0.003963	37

Table 4 Eigenvector centrality for Object-Related Processes (Level 4)

Node name	Number of links	EC centrality	EC rank by level
Provide working environment	184	1.000000	1
Act as access point for sanitation	179	0.997860	2
Act as access point for potable water	177	0.992278	3
Act as access point for electricity	176	0.991733	4
Act as access point for telecommunication	180	0.990805	5
Enforce health and safety	176	0.983323	6
Act as access point for food	171	0.977095	7
Act as access point for gas	170	0.975654	8
Provide employment	173	0.975403	9
Provide temporary shelter	167	0.951431	10
Facilitate leisure or recreation	98	0.451200	11
Provide other discretionary services	64	0.366922	12
Act as place of historical or cultural importance	71	0.306817	13
Provide qualification services	56	0.297058	14
Advise on community activities	48	0.278362	15

Act as community meeting space	60	0.263350	16
Facilitate cultural events	49	0.248892	17
Provide IT services	40	0.224695	18
Facilitate creative expression	42	0.215477	19
Provide discretionary goods	38	0.209513	20
Support physical health and fitness	47	0.205495	21
Provide recreational learning	38	0.204920	22
Support mental health	51	0.204846	23
Provide marketing and media services	34	0.194467	24
Provide social support	36	0.193479	25
Provide staple goods	33	0.177588	26
Provide cleaning and maintenance services	30	0.151331	27
Display items of significance	29	0.143571	28
Provide aesthetic value	44	0.142373	29
Store vehicles	31	0.123333	30
Undertake research	28	0.117528	31
Manage pests	31	0.116336	32
Support nutrient cycles	40	0.116309	33
Administrate healthcare services	21	0.116073	34
Sequester carbon	38	0.111463	35
Secure place to keep your possessions	22	0.111171	36
Support microclimate regulation	38	0.107139	37
Support species habitat	35	0.106981	38
Act as access point to cash	18	0.100766	39
Screen media	17	0.097106	40
Provide general healthcare services	17	0.093766	41
Support air filtration	28	0.091941	42
Support water purification	34	0.088039	43
Act as access point for traffic information	21	0.087463	44
Act as point of contact for public to raise social and civic issues	20	0.084541	45
Advise carers	15	0.084159	46
Provide place of worship	18	0.083928	47
Respond to emergencies	24	0.083791	48
Direct traffic	38	0.083089	49
Administrate provision of traffic information	18	0.081030	50
Provide drainage	29	0.080594	51
Act as access point for petrol or oil	17	0.078851	52
Advise or regulate implementation of workplace policies	14	0.075429	53
Advise or set government policy	13	0.074147	54
Provide financial services (business)	14	0.069306	55
Generate traffic information	23	0.068234	56
House animals	13	0.067724	57
Store wholesale goods	17	0.066716	58
Maintain vehicles	16	0.064527	59
Administrate large-scale transport of goods or people	16	0.063655	60
Provide mental healthcare services	11	0.060183	61
Store water	25	0.058533	62

Support access to employment	11	0.057766	63
Provide access to planning resources and services	15	0.057482	64
Provide financial services (household)	12	0.057179	65
Support excess water storage	25	0.056787	66
Provide supported learning	10	0.053703	67
Provide death-care services	12	0.051976	68
Provide physiotherapy services	9	0.051745	69
Provide rehabilitation services	10	0.050099	70
Administrate emergency services	11	0.049477	71
Monitor environment	18	0.048569	72
Provide insurance	11	0.046180	73
Animal rescue	11	0.045833	74
Administrate taxes	18	0.045760	75
Criminal investigation	14	0.045372	76
Administrate educational facilities	9	0.045103	77
Provide older childcare	10	0.044605	78
Act as access point for public transport	11	0.044445	79
Administrate provision of temporary accommodation	10	0.043780	80
Administrate transport to healthcare services	9	0.042995	81
Maintain watercourses	10	0.041963	82
Provide education services	9	0.040795	83
Connect buildings to services	11	0.040189	84
Provide public communications service	16	0.040018	85
Administrate banking operations	10	0.039389	86
Provide assisted living	10	0.039110	87
Maintain clothing	8	0.036839	88
Administrate political duties	9	0.035031	89
Provide retributive justice and criminal deterrence	11	0.034432	90
Administrate business support	8	0.034134	91
Provide legal advice	8	0.033923	92
Provide animal healthcare	8	0.033603	93
Act as transport hub	8	0.032987	94
Transmit money	8	0.031404	95
Provide sexual healthcare services	6	0.030759	96
Dispense medicines	7	0.029160	97
Provide a psychological sense of home	8	0.027806	98
Administrate welfare benefits	7	0.027788	99
Administrate armed forces operations	8	0.027002	100
Enforce environmental standards	15	0.026870	101
Provide street care and cleaning	9	0.026602	102
Administrate community grants	8	0.025613	103
Manage property	8	0.024846	104
Sort and organise delivery of goods	6	0.024735	105
Store wastewater	10	0.024666	106
Grow food	7	0.024622	107
Act as access point for goods distribution	6	0.023608	108
Provide younger childcare	7	0.023487	109
Design buildings and urban spaces	16	0.023348	110

Administrate diplomacy	7	0.023177	111
Process waste and recycling	7	0.022963	112
Survey buildings	7	0.022194	113
Administrate provision of wastewater services	7	0.021943	114
Administrate sales	8	0.021284	115
Treat wastewater	7	0.021218	116
Administrate waste and recycling	7	0.020619	117
Provide interior trades	5	0.020445	118
Administrate provision of potable water	6	0.019611	119
Provide dental healthcare services	4	0.019367	120
Manufacture materials	10	0.019068	121
Generate electricity	6	0.019039	122
Maintain roads	11	0.018847	123
Enforce building standards	9	0.018362	124
Act as mode of transport	16	0.017651	125
Act as grid point for wastewater	7	0.017486	126
Provide optical healthcare services	3	0.017430	127
Charge electric vehicles	7	0.016676	128
Monitor neighbourhood	10	0.016444	129
Act as grid point for electricity	5	0.016336	130
Rent vehicles	7	0.016291	131
Treat water	7	0.016266	132
Provide removal and storage services	6	0.016131	133
Dispose waste and recycling	6	0.015855	134
Enforce food standards	6	0.015530	135
Undertake legal proceedings	8	0.015511	136
Manufacture consumer staples	6	0.015484	137
Facilitate registrar services	5	0.015243	138
Provide life-threatening healthcare services	5	0.015125	139
Manufacture healthcare equipment and supplies	6	0.015007	140
Construct buildings	4	0.014724	141
Act as access point for waste and recycling	7	0.014698	142
Act as grid point for water	5	0.014263	143
Administrate provision of telecommunications	5	0.014161	144
Provide other specialist healthcare services	3	0.012603	145
Administrate provision of gas	4	0.011846	146
Administrate provision of electricity	4	0.011825	147
Act as training grounds for armed forces exercise	6	0.010996	148
Accommodate prisoners	6	0.010565	149
Transport water	7	0.010256	150
Transport wastewater	6	0.010138	151
Provide street lighting	6	0.010121	152
Provide barrier to movement	7	0.009861	153
Coordinate construction work	4	0.009760	154
Manufacture industrial equipment and supplies	5	0.009564	155
Calm traffic	8	0.009304	156
Manufacture gas and oil equipment and supplies	3	0.008639	157
Manufacture telecommunication equipment and supplies	3	0.008332	158

Manufacture consumer discretionary	4	0.008240	159
Transport waste and recycling	5	0.008116	160
Administrate political campaigns	3	0.007893	161
Store gas	5	0.006012	162
Transmit gas	3	0.006002	163
Act as grid point for gas	3	0.006002	164
Transmit electricity	3	0.005999	165
Allow road crossing	7	0.003017	166
Provide flood barrier	3	0.002705	167
Provide covered passageway	4	0.002554	168
Act as grid point for telecommunications	4	0.002331	169
Transmit telecommunications	4	0.002331	170

Table 5 Eigenvector centrality for Physical Objects (Level 5)

Node name	Number of links	EC centrality	EC rank by level
Higher education	40	0.343032	1
Schools	33	0.320326	2
Botanical gardens	31	0.316894	3
Fishing clubs	33	0.310171	4
Sports facilities (outdoor, permeable, with club)	30	0.306946	5
Conference and exhibition centres (general)	26	0.304963	6
Community centres	28	0.303827	7
Conference and exhibition centres (animal racing)	26	0.301586	8
Libraries and archives	26	0.300135	9
Assisted living (health)	33	0.299844	10
Creative spaces	24	0.298850	11
Hospitals	38	0.298293	12
Learned societies	23	0.297838	13
Music and theatre venues	23	0.296498	14
Museums and art galleries	23	0.296393	15
Agriculture	31	0.295837	16
Religious buildings	27	0.295494	17
Aquariums	26	0.293881	18
Day centres	24	0.289264	19
Assisted living (social)	27	0.286650	20
Sports facilities (outdoor, impermeable, with club)	21	0.286341	21
Sports facilities (indoor)	21	0.286118	22
Airports (minor)	30	0.282747	23
Train stations (major)	27	0.282097	24
Council offices	45	0.279729	25
Airports (major)	30	0.278115	26
Children's clubs	21	0.278099	27
Shopping centres	20	0.277398	28
Observatories	21	0.277368	29

Zoos	29	0.274835	30
Parliamentary buildings	34	0.274755	31
Hotels	18	0.274333	32
Sports clubhouses	18	0.272280	33
Charity organisations	27	0.271488	34
Supermarkets	19	0.271148	35
Attractions	17	0.271042	36
Bars and nightclubs	17	0.270776	37
Multi-line retail	17	0.270278	38
Casinos and gaming	17	0.269286	39
Eateries	16	0.268557	40
Police stations	27	0.268126	41
Medical practices	24	0.268037	42
Cinemas	17	0.267695	43
Air bases	29	0.266769	44
Prisons and jails	25	0.266613	45
Playgrounds (indoor)	16	0.265885	46
Castles and fortifications	17	0.264931	47
Healthcare (homecare)	21	0.263783	48
Cafes	15	0.262869	49
Nurseries	19	0.262492	50
Marinas	24	0.262221	51
Broadcasting	19	0.261809	52
Other discretionary services	15	0.261774	53
National government buildings	31	0.261208	54
Opticians and ophthalmologists	18	0.260006	55
Ferry terminals	24	0.259850	56
Beauty services	15	0.259248	57
Tourism offices	16	0.258719	58
Auction houses	19	0.257513	59
Events management	15	0.256509	60
Charity shops	15	0.256237	61
Animal care	16	0.254639	62
Social work offices	21	0.254406	63
Bus stations	20	0.254313	64
Mental health services	18	0.254129	65
Travel agencies	15	0.254111	66
Medical laboratories	19	0.254111	67
Healthcare (specialist)	18	0.253547	68
Computer and electronics retail and services	14	0.253400	69
Subway stations	20	0.253393	70
Furnishing retail	14	0.253189	71
Smaller food markets	15	0.253063	72
Aquaculture	23	0.253056	73
Post offices	21	0.253025	74
Other discretionary goods retail	14	0.251815	75
Dental and orthodontal practices	16	0.251204	76
Takeaways and fast food	13	0.250488	77

Locksmiths and cobblers	16	0.249510	78
Harbours	21	0.249400	79
Dining and catering services	13	0.249165	80
Research and consulting services	19	0.248993	81
Other staple goods retail	14	0.248527	82
Healthcare (physiotherapy)	16	0.248240	83
Pharmacies	16	0.247814	84
Citizens Advice Bureaus	19	0.246502	85
Union offices	18	0.246490	86
Sexual health clinics	17	0.246430	87
Home and outdoor maintenance retail	14	0.246328	88
Diplomatic buildings	18	0.246175	89
Furnishing services	14	0.246131	90
Automotive retail	15	0.245974	91
Transport providers and control centres	16	0.245437	92
Training centres	15	0.245221	93
Environmental regulators	25	0.245164	94
Apparel retail	13	0.244804	95
Lifeboat stations	18	0.244769	96
Sports and outdoor retail	13	0.244575	97
Ambulance stations	18	0.244345	98
Veterinary practices	17	0.244335	99
Internet cafes	12	0.243477	100
Legal services	18	0.242771	101
Fire stations	17	0.242311	102
Wholesale retail	14	0.241280	103
Bank headquarters	18	0.240703	104
Real estate management offices	16	0.240476	105
Home and outdoor maintenance services	14	0.240274	106
Registrar offices	14	0.239908	107
Courthouses	15	0.239765	108
Food banks	13	0.239621	109
Water provider offices	18	0.239610	110
Off-licenses	12	0.239150	111
Political offices	16	0.238966	112
Insurance provider offices	15	0.238305	113
Vehicle maintenance services	15	0.238045	114
Homeless shelters	16	0.237937	115
Vehicle depots	14	0.237664	116
Accountancy firms	15	0.237229	117
Broadband provider offices	15	0.236915	118
Gas provider offices	15	0.236862	119
Headquarters (other)	14	0.236300	120
Armed forces offices	15	0.236063	121
Banks	18	0.235967	122
Utility trades	13	0.235945	123
Electricity provider offices	14	0.235943	124
Interior building trades	13	0.235494	125

Publishing offices	13	0.235273	126
Water treatment works	17	0.235142	127
Armed forces barracks	13	0.234726	128
Wastewater treatment works	17	0.234555	129
Apparel services	12	0.234007	130
Manufacturing (consumer discretionary)	14	0.233939	131
Removal services	12	0.233534	132
Business services	13	0.233222	133
Coworking office spaces	11	0.233165	134
Exterior building trades	12	0.231905	135
Blood banks	12	0.231619	136
Driving schools	11	0.231568	137
Manufacturing (materials)	13	0.231528	138
Vehicle impounds	15	0.231279	139
Distribution centres	14	0.231143	140
Manufacturing (consumer staples)	14	0.230717	141
Consumer finance	14	0.230691	142
IT software and services	12	0.230401	143
Financial advisors	15	0.230063	144
Offices (other)	12	0.229915	145
Stables	21	0.229618	146
Waste collection service offices	13	0.229317	147
Advertising	11	0.229224	148
Construction and engineering	16	0.229045	149
Animal shelters	13	0.228143	150
Vehicle rental services	12	0.227970	151
Career and employment support services	12	0.227823	152
Environmental consulting and quantity surveying firms	13	0.227710	153
Manufacturing (healthcare)	12	0.226647	154
Manufacturing (industrials)	12	0.226523	155
Manufacturing (energy)	12	0.226502	156
Manufacturing (IT hardware)	12	0.226495	157
Integrated waste facilities	14	0.226475	158
Security services	12	0.226284	159
Death-care services	11	0.225967	160
Couriers	12	0.225884	161
Power stations	12	0.225588	162
Waste sorting centres	11	0.225304	163
Train stations (minor)	16	0.218414	164
Camping grounds	19	0.213614	165
Recycling centres	11	0.203896	166
Residential properties	16	0.200358	167
Traveller sites	21	0.184953	168
Airplanes and helicopters	8	0.138293	169
Boats	7	0.136378	170
Nature reserves	21	0.131679	171
Landfills and endpoint waste sites	9	0.118206	172

Cemeteries	14	0.101050	173
Trains	6	0.092930	174
Public toilets	4	0.090423	175
Wastewater pumping stations	5	0.089761	176
Armed forces training grounds	5	0.070318	177
Water pumping stations	5	0.069281	178
Taxis	5	0.068390	179
Parks	17	0.063010	180
Rivers and streams	18	0.059455	181
Sports facilities (outdoor, permeable)	15	0.059013	182
Lakes and ponds	17	0.057693	183
Grasslands and meadows	16	0.057322	184
Common green areas	15	0.056024	185
Residential gardens	17	0.053964	186
Canals	15	0.053057	187
Playgrounds (outdoor)	13	0.052028	188
Beaches	13	0.049396	189
Reservoirs	14	0.048645	190
Buses and trams	4	0.047460	191
Wetlands	15	0.046979	192
Piers and boardwalks	8	0.043561	193
Other communal resources	7	0.039970	194
Public art	7	0.039484	195
Sports facilities (outdoor, impermeable)	6	0.038408	196
Town squares	7	0.038013	197
Wildlife	8	0.035568	198
Springs and wells	7	0.034273	199
Private motor vehicles	3	0.033569	200
Personal devices	4	0.031126	201
Historic points of interest	5	0.029877	202
Seas and tidal range	10	0.028843	203
Stormwater basins	13	0.028432	204
EV charging stations	4	0.027763	205
Taxi ranks	3	0.027571	206
Emergency vehicles	5	0.027077	207
Tram stops	4	0.026657	208
ATMs	4	0.026564	209
Toll booths and weighbridges	4	0.026019	210
Public drinking water points	2	0.025931	211
Subway trains	3	0.024816	212
Public telephones	1	0.022644	213
Roads (minor) and pathways	4	0.021588	214
Public information boards	5	0.021485	215
Brownfield sites	6	0.017959	216
Aqueducts and viaducts	6	0.014977	217
Vehicle sharing points	3	0.013503	218
Bridges	4	0.012233	219
Bicycles	2	0.010715	220

Maintenance vehicles	5	0.006037	221
Street lights	3	0.005384	222
Helipads	2	0.004717	223
Absorption towers	2	0.004649	224
Water tanks and towers	3	0.004648	225
Road traffic lights and signage	4	0.004179	226
Bus stops	2	0.002915	227
Self-storage	2	0.002909	228
Parking	1	0.002819	229
Wastewater pipes	3	0.002807	230
Wastewater tanks	2	0.002576	231
Traffic calming measures	3	0.002180	232
Barriers, gates, and fences	2	0.002124	233
Rail signalling and switches	2	0.002112	234
Crossings	2	0.001968	235
Lorries	2	0.001963	236
Tunnels	2	0.001957	237
Surveillance cameras	2	0.001935	238
Roads (major) and railways	1	0.001899	239
Potable water pipes	2	0.001572	240
Post boxes	1	0.000540	241
Independent or renewable power sources	1	0.000435	242
Power poles, towers, and converter stations	1	0.000373	243
Bins	1	0.000336	244
Gas terminals	2	0.000275	245
Gas pipelines	2	0.000275	246
Gas storage tanks	1	0.000137	247
Power lines	1	0.000137	248
Telecommunications towers	2	0.000107	249
Structural defences	1	0.000062	250
ICT cables and wireless communication modes	1	0.000053	251
Telephone exchanges	1	0.000053	252