

J P C

J A P A N P O W E R C I T I E S

JAPAN POWER CITIES

Profiling Urban Attractiveness

2 0 1 8



Preface



Hiroo Ichikawa

Ten years have passed since the Mori Memorial Foundation’s Institute for Urban Strategies first published the Global Power City Index in 2008. At the time, it was one of the first indices published from the viewpoint of evaluating “comprehensive power”, and after drawing notice first from global media, and then policy makers and business figures, it is now used as a benchmark by several cities around the world for urban policymaking.

As awareness of the GPCI has spread throughout the world, a large number of cities from within Japan have expressed their desire to be included among the target cities and have their comprehensive power evaluated. The GPCI’s objective so far has been to compare the urban power, or “magnetism”, of cities to attract people, goods, and capital amidst intense international competition. However, this approach could not be applied to Japan’s domestic cities in its current form, and so a different system of evaluation became necessary.

Currently, while the tertiary industry in Japan continues to expand in the largest cities, there is concern over the decreasing population and industrial decline throughout smaller regional cities. The questions of what would be ideal for large cities, and how regional cities could recapture their vitality, are becoming urgent challenges. Because of this, objectively evaluating the special characteristics of both large and regional cities, and clarifying their strengths and weaknesses, is indispensable. Accordingly, an expert committee of Japanese urban specialists was established to provide direction, after which the steering committee continued the work, carrying out a concrete evaluation and analysis of Japan’s major cities. With that, the “Japan Power Cities – Profiling Urban Attractiveness (JPC) report was compiled. It is our hope that the JPC will be utilized as material in strategic plans aiming to improve the vitality of Japan, and become a benchmark in deriving the ideal form of both cities and the nation, while providing solutions for regional revitalization.

Japan Power Cities, Steering Committee, Chairman
Hiroo Ichikawa
October, 2018

Research Organization

Steering Committee

Creating the assessment system, as well as performing evaluation & analysis

Chairman

Hiroo Ichikawa
Professor Emeritus, Meiji University

Members

Institute for Urban Strategies, Mori Memorial Foundation
Mitsubishi Research Institute, Inc.

Expert Committee

Providing a technical point-of-view as well as advice to the Steering Committee

Members

- Yasushi Asami Professor, University of Tokyo, Graduate School of Engineering
- Kazuhiro Ichikawa President, Japan Lutheran College; Professor, Department of Human Studies, Social Work, and Clinical Psychology; Professor, Graduate School of Social Work
- Takayuki Kishii Specially Appointed Professor, Nihon University, Department of Civil Engineering
- Norihiro Nakai Director and Professor, Tokyo Institute of Technology, School of Environment and Society
- Masayuki Nakagawa Professor, Nihon University, College of Economics
- Keisuke Hanaki Professor, Toyo University, Department of Information Networking for Innovation and Design; Professor Emeritus, University of Tokyo
- Shunya Yoshimi Professor, University of Tokyo, Graduate School of Interdisciplinary Information Studies



Prof. Asami



Prof. K. Ichikawa



Prof. Kishii



Prof. Nakai



Prof. Nakagawa



Prof. Hanaki



Prof. Yoshimi

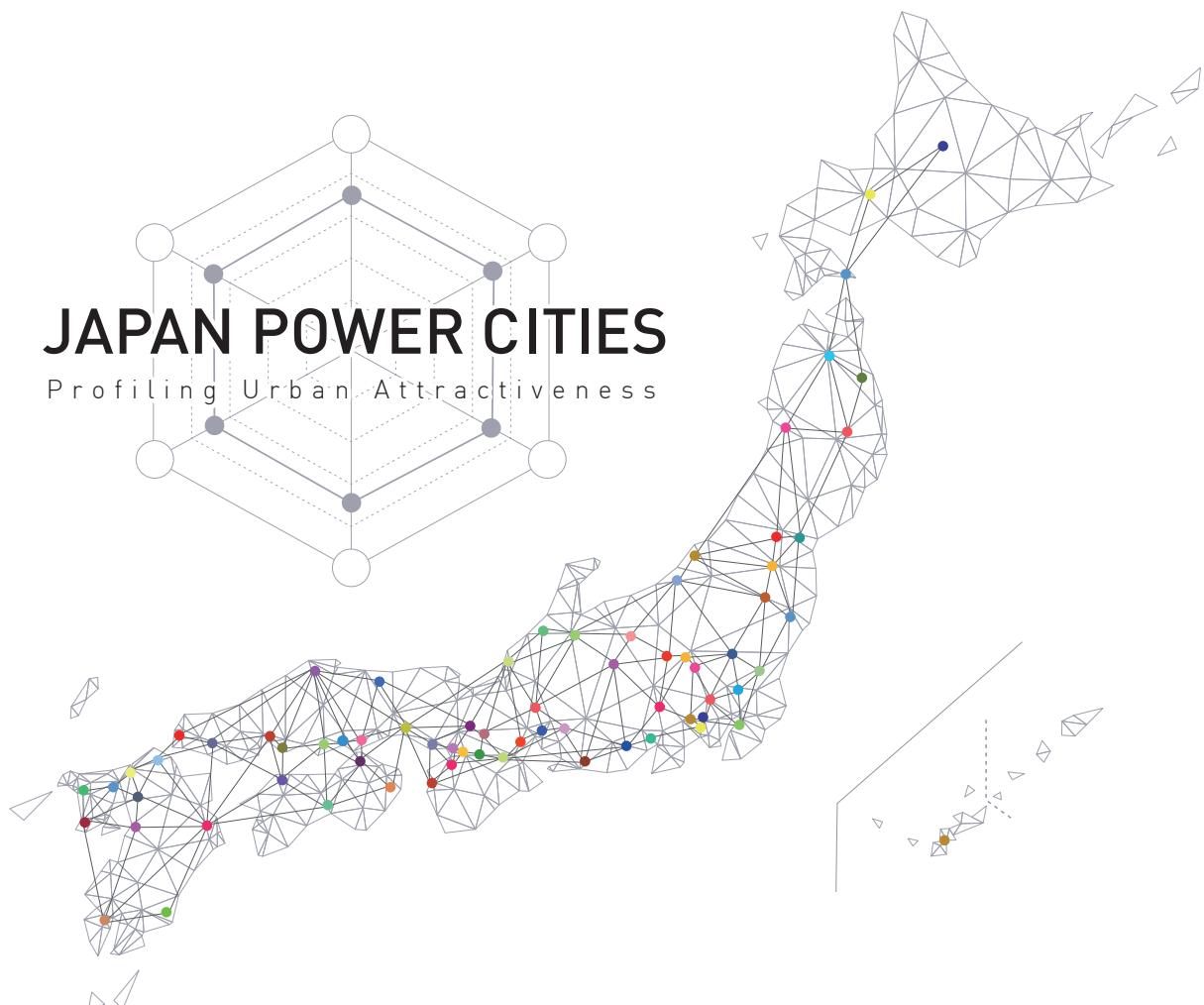
Japan Power Cities 2018

About JPC 2018

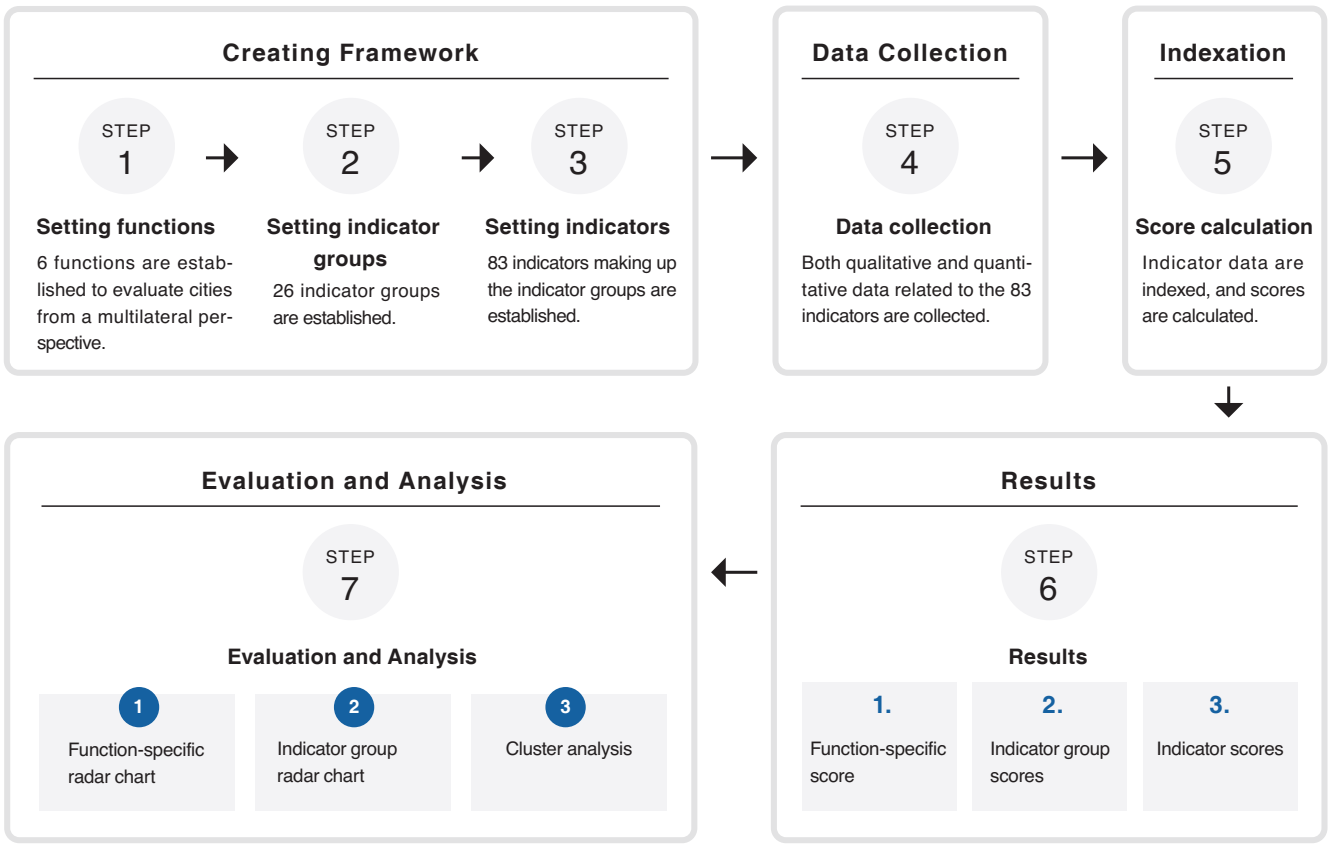
■ Background and Objective

While the world's population is predicted to keep on growing in the years ahead, the population of Japan is expected to shrink rapidly as a result of a declining birth rate and an aging society. In facing such circumstances head on, **cities across Japan, in order to maintain their dynamism, must harness their respective characteristics and push ahead with urban development**, while maintaining the “magnetism” required to attract people and companies, as well as the “growth potential” that continually demonstrates their urban appeal and strengths.

For this to be achieved, cities need to gain an objective understanding of their own strengths and then formulate and execute an urban strategy plan for the next generation. As part of “Japan Power Cities—Profiling Urban Attractiveness”, a study was carried out on the major cities of Japan for the purpose of conducting **comparative and multi-faceted analyses of city strengths based on quantitative and qualitative data and to shed light on city characteristics such as strengths and attractiveness.**

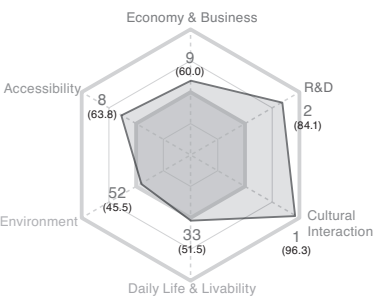


Flow of Research



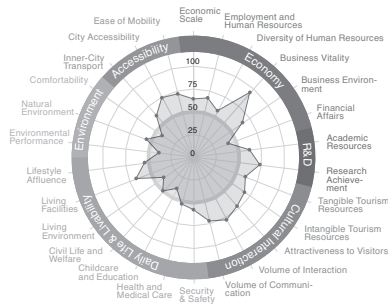
Evaluation and Analysis

1 Function-specific radar chart



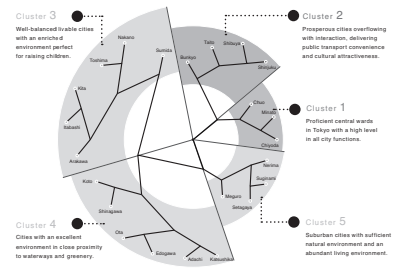
6 functions are established in order to evaluate cities from a multilateral perspective, and radar charts are created using the deviation and rank of scores derived from those functions.

2 Indicator group radar chart



Radar charts are used to clearly indicate the indicator groups in which each city possesses strengths.

3 Cluster analysis



A cluster analysis was performed based on the individual scores of all 83 cities in order to clarify the special characteristics of cities and city groups.

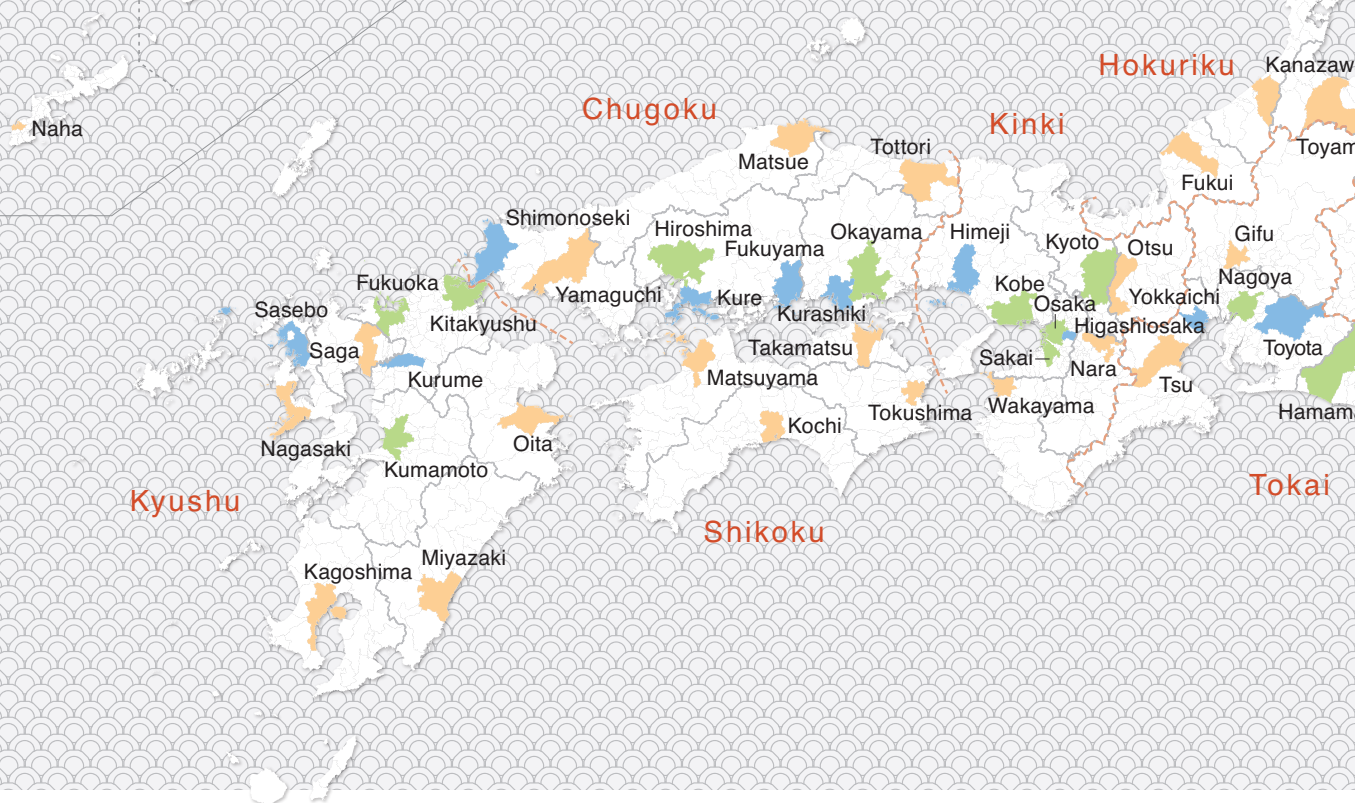
Target Cities

The 72 major Japanese cities and the 23 wards of Tokyo were included as target cities in this study. The 72 major cities comprise those designated by government ordinance, prefectural capitals, and the three biggest cities by population in each prefecture (cities with a population of more than 200,000

72 Target Cities
Tokyo

Region	Ordinance-Designated City	(not included as ordinance-designated cities) Prefectural Capitals	Cities with Top 3 Largest Populations within their Prefecture
Hokkaido	Sapporo		Hakodate, Asahikawa
Tohoku	Sendai	Aomori, Morioka, Akita, Yamagata, Fukushima	Hachinohe, Koriyama, Iwaki
Kanto	Saitama, Chiba, Yokohama, Kawasaki, Sagami-hara	Mito, Utsunomiya, Maebashi, Kofu, Nagano	Tsukuba, Takasaki, Ota, Matsumoto
Tokai	Shizuoka, Hamamatsu, Nagoya	Gifu, Tsu	Fuji, Toyota, Yokkaichi
Hokuriku	Niigata	Toyama, Kanazawa, Fukui	Nagaoka
Kinki	Kyoto, Osaka, Sakai, Kobe	Otsu, Nara, Wakayama	Higashiosaka, Himeji
Chugoku	Okayama, Hiroshima	Tottori, Matsue, Yamaguchi	Kurashiki, Kure, Fukuyama, Shimonoseki
Shikoku		Matsuyama, Takamatsu, Kochi, Tokushima	
Kyushu	Kitakyushu, Fukuoka, Kumamoto	Saga, Nagasaki, Oita, Miyazaki, Kagoshima	Kurume, Sasebo
Okinawa		Naha	
Tokyo	Chiyoda, Chuo, Minato, Shinjuku, Bunkyo, Taito, Sumida, Koto, Shinagawa, Meguro, Ota, Setagaya, Shibuya, Nakano, Suginami, Toshima, Kita, Arakawa, Itabashi, Nerima, Adachi, Katsushika, Edogawa		

Okinawa



and a daytime-nighttime population ratio of more than 1.0 for those located within Japan's big three metropolitan areas, or more than 0.9 for cities elsewhere).



72 Target Cities

Tokyo 23 Wards

- Ordinance-Designated Cities
- Prefectural Capitals
- Cities with Top 3 Largest Populations within their Prefecture

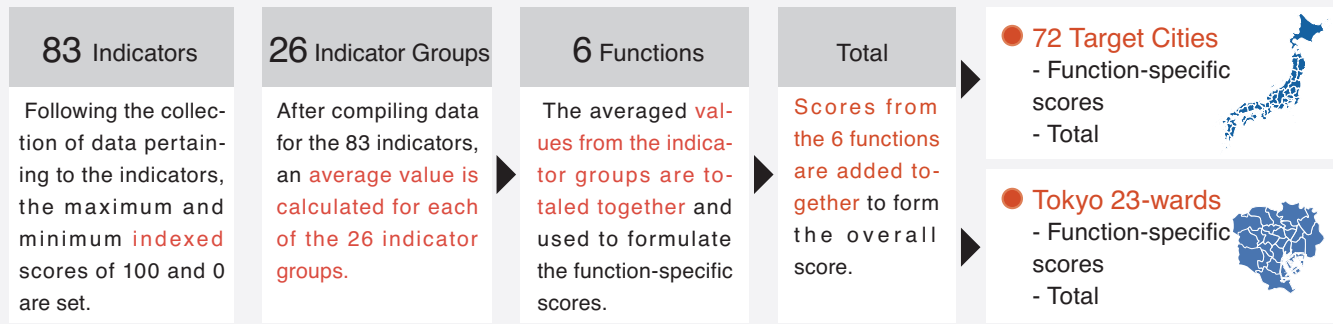
※ Cities with a population of more than 200,000 and a daytime-nighttime population ratio of more than 1.0 for those located within Japan's big three metropolitan areas, or more than 0.9 for cities elsewhere

Evaluation Methodology

In Japan Power Cities, 6 functions (Economy & Business, Research & Development, Cultural Interaction, Daily Life & Livability, Environment, and Accessibility) were created to represent the components of cities. Furthermore, 26 indicator groups were established to represent the primary components of those functions, with 83 indicators finally being determined.

Function	Indicator Group	Indicator	
Economy & Business	6 Indicator Groups	Economic Scale	1 Total Value Added
			2 Intra-regional Gross Expenditure
			3 Daytime-Nighttime Population Ratio
		Employment and Human Resources	4 Total Employment
			5 Wage Level
			6 Higher-Education Completion Rate
		7 Intake/Outflow of Young Employees	
		8 Female Employment Ratio	
	Diversity of Human Resources	9 Foreign Employment Ratio	
		10 Elderly Employment Rate	
	Business Vitality	11 Ratio of New Businesses	
		12 Labor Productivity	
		13 Number of Certified Special Zones	
	Business Environment	14 Ratio of Employees in Service Industry for Business Enterprises	
		15 Total Supply Area of New Offices	
		16 Density of Flexible Workplaces	
	Financial Affairs	17 Financial Capability Index	
		18 Public Account Balance Ratio	
		19 Real Debt Expenditure Ratio	
		20 Future Burden Ratio	
Research & Development	2 Indicator Groups	Academic Resources	21 Ratio of Academic and Development Research Institution Employees
			22 Number of Leading Universities
	Research Achievement	23 Number of Papers Submitted	
		24 Number of Leading Firms in Global Niches	
Cultural Interaction	5 Indicator Groups	Tangible Tourism Resources	25 Number and Rating of Tourist Attractions
			26 Number of Designated Cultural Assets
			27 Active Approach to Scenic Town Planning
		Intangible Tourism Resources	28 Number and Rating of Events
			29 Number of Local Specialties
		30 Opportunities for Cultural, Historical, and Traditional Interaction	
	Attractiveness to Visitors	31 Number of Accommodation Facilities	
		32 Number of Luxury Guest Rooms	
		33 Number of Event Halls	
		34 Multilingual Services at Tourist Information Desks and Hospitals	
	Volume of Interaction	35 Weekend Visitor Population	
		36 Volume of People Visiting for Tourism or Sightseeing	
		37 Number of International Conferences and Exhibitions Held	
Volume of Communication	38 Active Approach to Attracting Tourists		
	39 Number of Followers of Local Government SNS Accounts		
	40 Level of Attractiveness, Recognition, and Intention to Visit		

Score Calculation Method



Function	Indicator Group	Indicator	
Daily Life & Livability	7 Indicator Groups	Security & Safety	41 Recognized Criminal Offenses
			42 Traffic Accident Fatalities
			43 Fire Outbreaks
			44 Vacancy Rate
		Health and Medical Care	45 Number of Doctors
			46 Number of Hospitals and Clinics
			47 Life Expectancy and Healthy Life Expectancy Rate
	Childcare and Education	48 Total Fertility Rate	
		49 Number of Childcare Centers	
		50 Assistance for Children's Medical Costs	
		51 Number of High Schools with High Deviation Scores	
	Civil Life and Welfare	52 Social Education Costs	
		53 Number of Elderly Requiring Assistance or Care	
	Living Environment	54 Number of Regional Comprehensive Assistance Centers	
		55 Satisfaction with Living Environment	
		56 Volume of New Housing Supply	
		57 Size of Residences	
	Living Facilities	58 Ratio of Barrier-free Homes	
		59 Density of Retail Businesses	
		60 Density of Restaurants	
		61 Density of Convenience Stores	
	Lifestyle Affluence	62 Disposable Income	
		63 Price Level	
		64 Cost of Housing	
Environment	3 Indicator Groups	Environmental Performance	65 Percentage of Waste Recycled
			66 CO2 Emissions
			67 Rate of Self-Sufficient Renewable Energy
		Natural Environment	68 Number of EV Charging Stations
	69 Satisfaction with Natural Environment		
	70 Green Coverage Ratio in Urban Areas		
	Comfortability	71 Number of Waterfront Areas	
		72 Annual Sunshine Hours	
		73 Number of Comfortable Temperature / Humidity Days	
	74 Air Quality		
Accessibility	3 Indicator Groups	Inner-City Transport	75 Convenience of Public Transport
			76 Density of Train Stations and Bus Stops
			77 Frequency of Traffic Congestion
	City Accessibility	78 Convenience of Air Transportation	
		79 Convenience of High-Speed Railway	
	Ease of Mobility	80 Number of Interchanges	
		81 City Compactness	
		82 Commuting Time	
		83 Ratio of Barrier-free Stations	

Japan Power Cities 2018 Results and Analysis

Function-specific, as well as indicator group-specific radar charts were used to analyze the strengths and attractiveness of the top 10 cities based on total score.

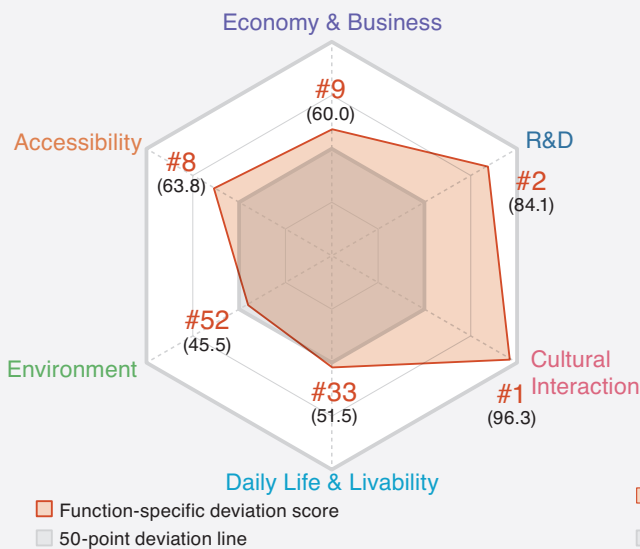


KYOTO

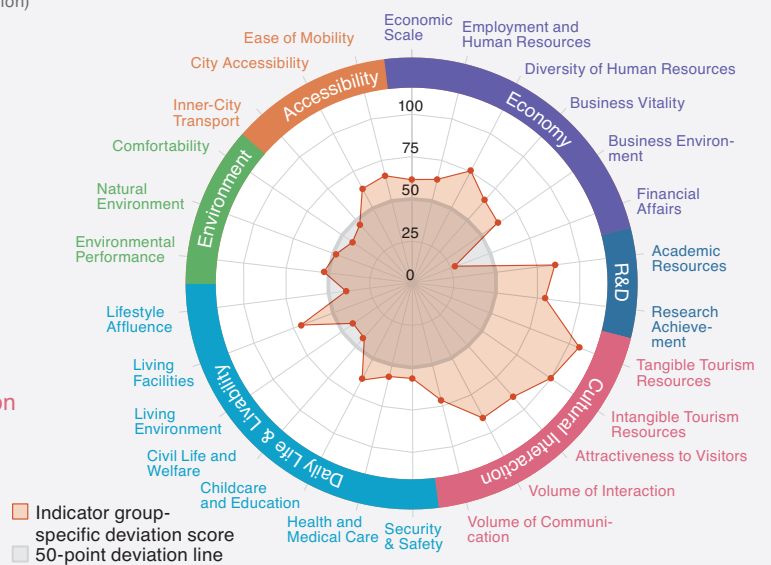
A city where history and tradition coexist with intellectual resources

Famous as an international tourist destination, Kyoto's evaluation for **Cultural Interaction** is overwhelmingly high. The city shows strengths not only in "Tangible Tourism Resources" due to its abundant *Number of Designated Cultural Assets*, but also in "Intangible Tourism Resources" with *Number and Rating of Events* and *Number of Local Specialties*. Also matching **Cultural Interaction** with considerably high scores is **Research & Development**. Kyoto possesses the largest *Number of Leading Universities* and *Number of Papers Submitted* among all target cities, showing it is rich in intellectual resources.

Function-specific rank and deviation
(numbers in parentheses are deviation scores) (The graph shows deviation)



Indicator group-specific strengths and weaknesses



2

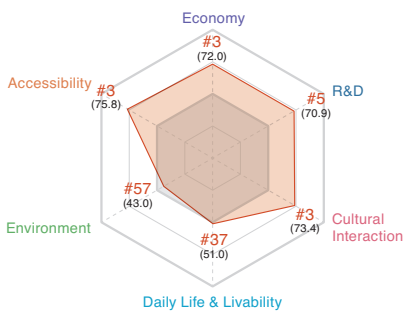
FUKUOKA



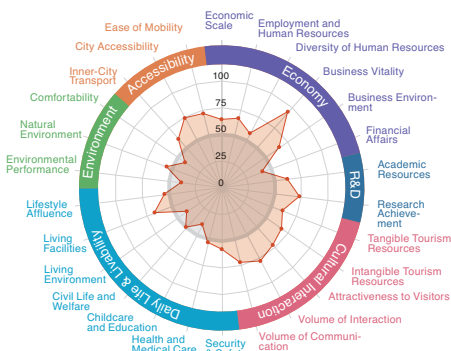
A balanced city filled with business vitality

Compared with other cities, Fukuoka's "Business Vitality" evaluation in **Economy & Business** is exceedingly high. This is evident as its scores for *Ratio of New Offices* and *Number of Certified Special Zones* are highest among target cities. In **Cultural Interaction**, 5 indicator groups return well-balanced strong scores, while in **Accessibility**, all 3 indicator groups "Inner-city Transport", "City Accessibility", and "Ease of Getting Around", likewise perform well. Aiming to be an Asian base, Fukuoka shows it has a well-balanced urban power.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



3

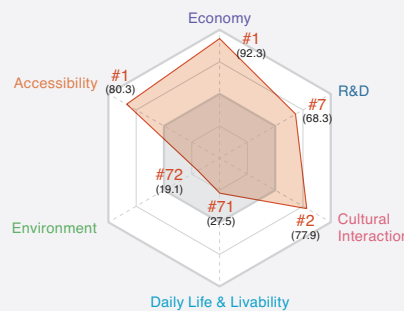
OSAKA



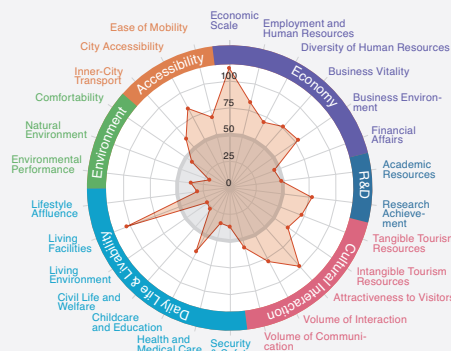
A large city overflowing with the energy of accumulated people and business

The city's scores in **Economy & Business** and **Accessibility** are excellent. As a commercially prosperous city, Osaka's *Total Value Added* and *Intra-regional Gross Expenditure* in "Economic Scale" are highest among all target cities. Furthermore, "Employment and Human Resources", "Business Environment", "Business Vitality", and "Diversity of Human Resources" are also evaluated highly. In **Accessibility**, "City Accessibility" receives the top assessment among target cities, with strength being shown particularly in the central area of the Greater Osaka Area. "Attractiveness to Visitors" in **Cultural Interaction** also receives strong scores due to advanced *Multilingual Services* at *Tourist Information Desks* and *Hospitals*.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



4

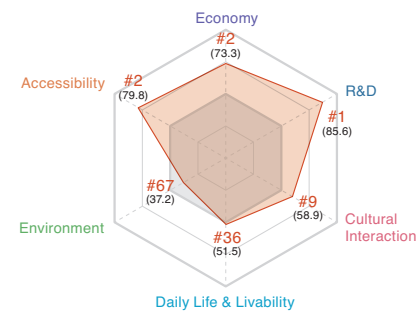
NAGOYA



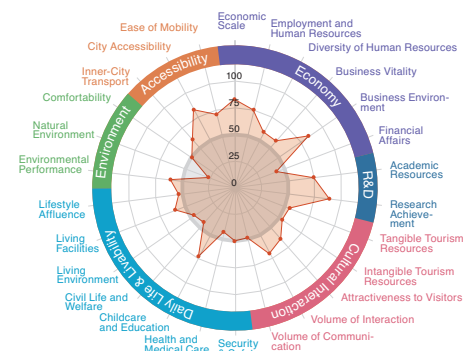
A central city in the Chubu region with an accumulation of research and business

It can be said that Nagoya is a scholarly city with an abundance of high-grade educational and research institutions, as the city achieves very strong scores in **Research & Development**. This is especially the case for *Number of Papers Submitted* in "Research Achievement" which receives a high score. Also, as local industries and knowledge-driven industries have developed, results for "Economic Scale" and "Business Environment" are also relatively high, making **Economy & Business** a strength. Continuing to leverage and develop its advantageous geographic position with regards to transportation, Nagoya's attractiveness can be seen in the city's high-speed rail and expressways, with "City Accessibility" receiving strong marks.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



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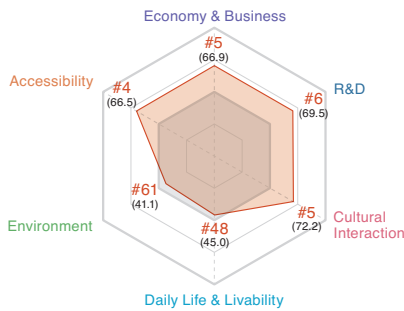
YOKOHAMA



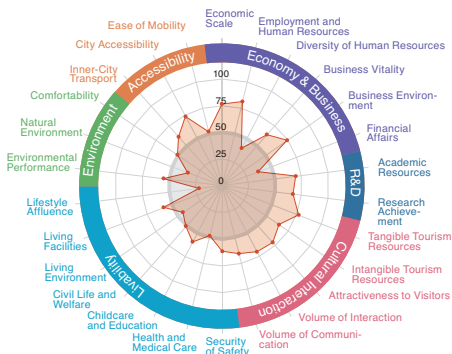
A multipurpose city where residents and the administration participate together

Yokohama is a city with plentiful urban functions such as business, trade, residences, and tourism, as well as easy access to Tokyo. Four functions—**Economy & Business**, **Research & Development**, **Cultural Interaction**, and **Accessibility**—all return high marks. Due especially to Yokohama's unique historical background, all 4 indicator groups in **Cultural Interaction** perform strongly. In addition, with the city's exceptional results in *Active Approach to Scenic Town Planning* and *Percentage of Waste Recycled*, it is clear that both residents and the administration possess a powerful awareness concerning scenery and the environment.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



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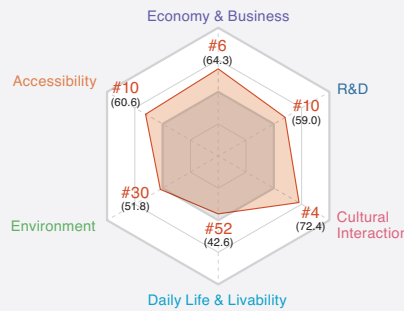
KOBE



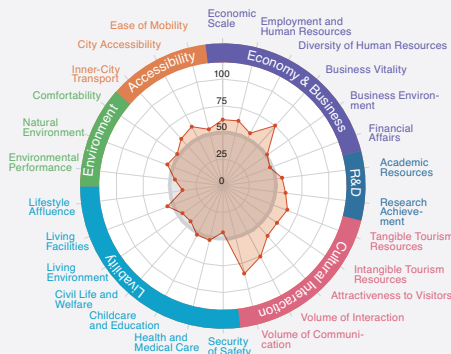
A cultural city possessing economic strength and an abundant natural environment

The city performs well in **Economy & Business** as it is evaluated highly for "Business Vitality". In Environment, Kobe returns remarkably high results when compared with cities of similar economic scales and strengths, with an especially strong score for *Satisfaction with Natural Environment*. In that sense, Kobe not only possesses economic strength, but also an exceeding abundance of natural environment. In addition to returning the highest score among target cities for "Volume of Communication" within Cultural Interaction, "Volume of Interaction" and "Tangible Tourism Resources" are also strengths. Kobe appears to be fostering human interaction by strategically broadcasting its cultural attractiveness.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



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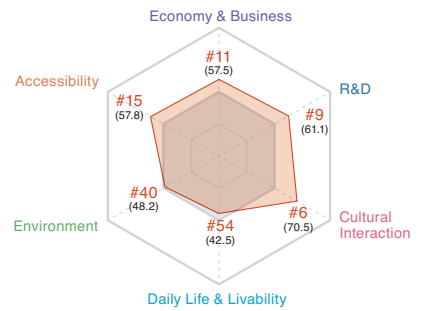
SAPPORO



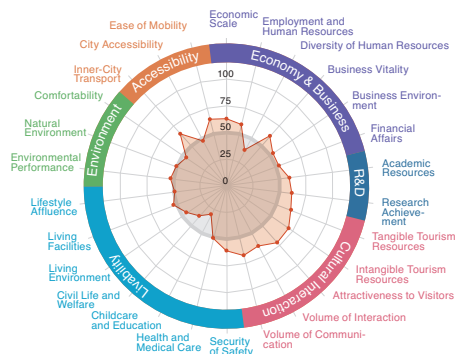
A tourism hotspot with both tangible and intangible resources

Sapporo is evaluated relatively well for **Cultural Interaction**. Second only to Kyoto, "Intangible Tourism Resources" is rated especially high, while *Level of Attractiveness*, *Recognition*, and *Intention to Visit* in "Volume of Communication" is extremely strong. As the city also possesses abundant tourist sites, *Tangible Tourism Resources* receives comparatively high results as well. In addition to its significant attractiveness as a tourist city, the Northern city of Sapporo performs well in **Accessibility**. Its high marks in "Inner-city Transport" place it 3rd for that indicator group among all target cities.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



8

SENDAI

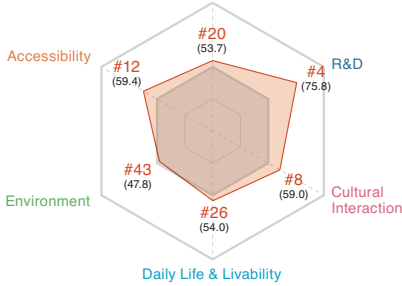


An academic & research city with cultural attractiveness

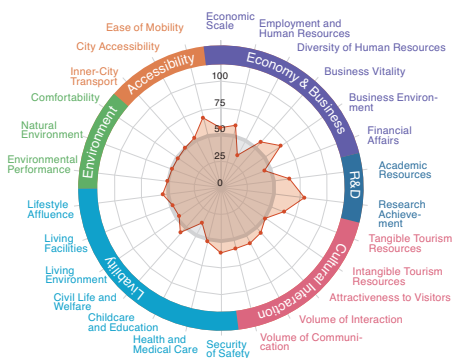
While being a large city with excellent urban functions, Sendai also manages to be an attractive city to residents and workers due to its strong evaluations in **Livability** and **Environment**. In Livability, "Security & Safety" is evaluated highly, as is "Environmental Performance" in Environment. Also prominent is **Research & Development**, where "Research Achievement" scores are high due to such indicators as *Number of Papers Submitted*. Developed as a castle town with plentiful history, Sendai's strength can also be seen in **Cultural Interaction** due to an *Active Approach to Scenic Town Planning* and abundant "Tangible Tourism Resources".

Function-specific rank and deviation
(numbers in parentheses are deviation scores)

Economy & Business



Indicator group-specific strengths and weaknesses



9

TSUKUBA

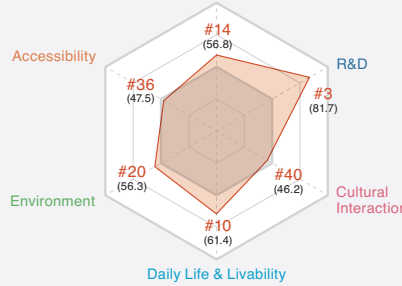


A university town surrounded by abundant natural environment

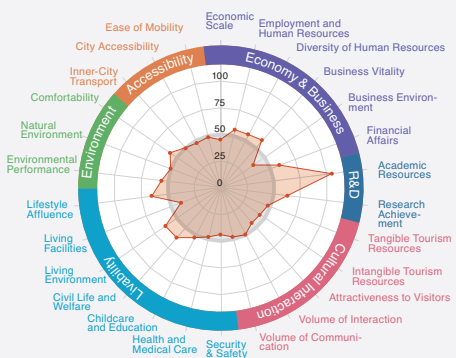
The university town of Tsukuba possesses strengths in **Research & Development**. The score for *Ratio of Academic and Development Research Institute Employees* is exceptionally high, bringing strong results to "Academic Resources". In addition to a favourable "Living Environment", "Civic Life and Welfare" is also substantially enriched, giving the highly livable city an excellent evaluation in **Livability**. Tsukuba's strengths in **Environment** are clear from the indicators related to clean air which return outstanding results, as well as from its plentiful natural environment including mountains and countryside stretching out far and wide.

Function-specific rank and deviation
(numbers in parentheses are deviation scores)

Economy & Business



Indicator group-specific strengths and weaknesses



10

HAMAMATSU

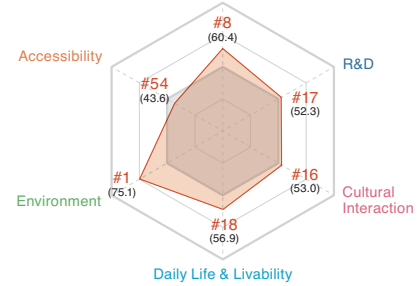


A city with an advanced environment, making use of its diversity

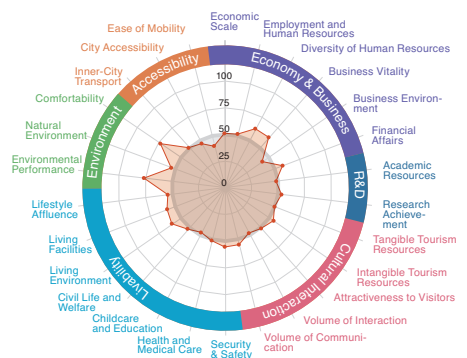
Hamamatsu returns very high scores for **Environment**. The city's comfortability is also high as the city experiences a large amount of *Annual Sunshine Hours*. Furthermore, the *Rate of Self-sufficient Renewable Energy* is high, with "Environmental Performance" performing very well. In **Economy**, Hamamatsu shows strengths in "Diversity of Human Resources" and "Business Vitality". The elevated *Foreign Employee Ratio* and *Elderly Employment Rate* demonstrates that Hamamatsu is a city where people from a wide range of countries and ages are engaging in daily activities.

Function-specific rank and deviation
(numbers in parentheses are deviation scores)

Economy & Business



Indicator group-specific strengths and weaknesses



Function-Specific Scores

Economy & Business			R & D			Cultural Interaction			Daily Life & Livability		
Rank	City	Score	Rank	City	Score	Rank	City	Score	Rank	City	Score
1	Osaka	254.8	1	Nagoya	106.9	1	Kyoto	390.0	1	Fukui	350.8
2	Nagoya	199.5	2	Kyoto	103.0	2	Osaka	276.7	2	Matsumoto	350.7
3	Fukuoka	195.8	3	Tsukuba	97.2	3	Fukuoka	249.1	3	Nagano	350.2
4	Toyota	185.3	4	Sendai	83.3	4	Kobe	243.2	4	Takasaki	350.0
5	Yokohama	180.9	5	Fukuoka	71.3	5	Yokohama	242.0	5	Toyama	348.9
6	Kobe	173.4	6	Yokohama	67.9	6	Sapporo	231.3	6	Kurume	346.6
7	Gifu	166.5	7	Osaka	65.1	7	Kanazawa	195.5	7	Toyota	341.6
8	Hamamatsu	162.0	8	Hiroshima	48.2	8	Sendai	160.5	8	Yamagata	335.1
9	Kyoto	160.9	9	Sapporo	47.7	9	Nagoya	159.9	9	Kagoshima	332.8
10	Kawasaki	154.5	10	Kobe	42.8	10	Hakodate	159.0	10	Tsukuba	331.7
11	Sapporo	153.6	11	Kitakyushu	41.7	11	Nagasaki	147.4	11	Maebashi	331.6
12	Matsumoto	153.2	12	Chiba	35.1	12	Nara	144.7	12	Ota	331.4
13	Okayama	153.0	13	Okayama	31.7	13	Hiroshima	144.7	13	Fukushima	328.4
14	Tsukuba	151.7	14	Niigata	29.6	14	Naha	140.6	14	Saga	328.1
15	Saitama	151.1	15	Hakodate	27.1	15	Kumamoto	125.4	15	Tottori	325.6
16	Higashiosaka	148.4	16	Kanazawa	26.7	16	Hamamatsu	123.8	16	Kanazawa	323.8
17	Nagano	144.4	17	Hamamatsu	26.5	17	Himeji	121.8	17	Kumamoto	319.3
18	Fukuyama	143.5	18	Kumamoto	24.8	18	Kitakyushu	119.9	18	Hamamatsu	318.4
19	Kanazawa	143.2	19	Utsunomiya	23.8	19	Kurashiki	119.1	19	Kofu	318.2
20	Sendai	142.6	20	Kawasaki	23.1	20	Shizuoka	118.9	20	Miyazaki	317.3
21	Shizuoka	141.9	21	Saitama	21.9	21	Matsumoto	116.9	21	Nagaoka	316.4
22	Hiroshima	141.4	22	Shizuoka	20.0	22	Matsue	115.1	22	Niigata	313.2
23	Kurume	140.9	23	Sagamihara	19.2	23	Takamatsu	108.1	23	Utsunomiya	311.5
24	Tsu	140.5	24	Akita	19.0	24	Sasebo	103.2	24	Matsue	310.6
25	Fuji	140.0	25	Nagasaki	17.5	25	Kagoshima	103.1	25	Tokushima	309.9
26	Saga	138.2	26	Nagaoka	17.4	26	Nagano	102.9	26	Sendai	309.9
27	Himeji	137.6	27	Kagoshima	15.6	27	Mito	101.4	27	Koriyama	308.9
28	Utsunomiya	137.0	28	Sakai	15.5	28	Matsuyama	100.3	28	Oita	308.2
29	Sakai	136.5	29	Gifu	14.4	29	Chiba	94.2	29	Kure	307.1
30	Takamatsu	136.0	30	Tokushima	14.1	30	Miyazaki	93.5	30	Akita	306.0
31 ~ 72	Hakodate, Asahikawa, Aomori, Hachinohe, Morioka, Akita, Yamagata, Fukushima, Koriyama, Iwaki, Mito, Maebashi, Takasaki, Ota, Chiba, Saga-mihara, Niigata, Nagaoka, Toyama, Fukui, Kofu, Yokkaichi, Otsu, Nara, Wakayama, Tottori, Matsue, Kurashiki, Kure, Shimonoseki, Yamaguchi, Tokushima, Matsuyama, Kochi, Kitakyushu, Nagasaki, Sasebo, Kumamoto, Oita, Miyazaki, Kagoshima, Naha (Listed by city code)		31 ~ 72	Asahikawa, Aomori, Hachinohe, Morioka, Yamagata, Fukushima, Koriyama, Iwaki, Mito, Maebashi, Takasaki, Ota, Toyama, Fukui, Kofu, Nagano, Matsumoto, Fuji, Toyota, Tsu, Yokkaichi, Otsu, Higashiosaka, Himeji, Nara, Wakayama, Tottori, Matsue, Kurashiki, Kure, Fukuyama, Shimonoseki, Yamaguchi, Takamatsu, Tokushima, Matsuyama, Kochi, Kurume, Saga, Sasebo, Oita, Miyazaki, Naha (Listed by city code)		31 ~ 72	Asahikawa, Aomori, Hachinohe, Morioka, Akita, Yamagata, Fukushima, Koriyama, Iwaki, Tsukuba, Utsunomiya, Maebashi, Takasaki, Ota, Saitama, Kawasaki, Sagamihara, Niigata, Nagaoka, Toyama, Fukui, Kofu, Gifu, Fuji, Toyota, Tsu, Yokkaichi, Otsu, Sakai, Higashiosaka, Wakayama, Tottori, Okayama, Kure, Fukuyama, Shimonoseki, Yamaguchi, Tokushima, Kochi, Kurume, Saga, Oita (Listed by city code)		31 ~ 72	Sapporo, Hakodate, Asahikawa, Aomori, Hachinohe, Morioka, Iwaki, Mito, Saitama, Chiba, Yokohama, Kawasaki, Sagamihara, Gifu, Shizuoka, Fuji, Nagoya, Tsu, Yokkaichi, Otsu, Kyoto, Osaka, Sakai, Higashiosaka, Kobe, Himeji, Nara, Wakayama, Okayama, Kurashiki, Hiroshima, Fukuyama, Shimonoseki, Yamaguchi, Takamatsu, Matsuyama, Kochi, Kitakyushu, Fukuoka, Nagasaki, Sasebo, Naha (Listed by city code)	

Environment		
Rank	City	Score
1	Hamamatsu	206.2
2	Matsumoto	196.8
3	Matsue	192.6
4	Kure	192.2
5	Sasebo	187.1
6	Kochi	183.2
7	Iwaki	182.9
8	Maebashi	182.1
9	Yamaguchi	180.3
10	Miyazaki	178.1
11	Toyota	177.7
12	Shimonoseki	176.6
13	Tottori	176.5
14	Saga	175.4
15	Shizuoka	175.0
16	Toyama	172.9
17	Tsu	172.4
18	Ota	171.5
19	Kofu	170.5
20	Tsukuba	170.5
21	Tokushima	170.3
22	Takasaki	167.4
23	Nagano	166.7
24	Matsuyama	166.3
25	Chiba	166.1
26	Hiroshima	165.5
27	Koriyama	163.9
28	Okayama	162.0
29	Sagamihara	161.9
30	Kobe	161.8
31 ~ 72	Sapporo, Hakodate, Asahikawa, Aomori, Hachinohe, Morioka, Sendai, Akita, Yamagata, Fukushima, Mito, Utsunomiya, Saitama, Yokohama, Kawasaki, Niigata, Nagaoka, Kanazawa, Fukui, Gifu, Fuji, Nagoya, Yokkaichi, Otsu, Kyoto, Osaka, Sakai, Higashiosaka, Himeji, Nara, Wakayama, Kurashiki, Fukuyama, Takamatsu, Kitakyushu, Fukuoka, Kurume, Nagasaki, Kumamoto, Oita, Kagoshima, Naha (Listed by city code)	

Accessibility		
Rank	City	Score
1	Osaka	204.3
2	Nagoya	203.1
3	Fukuoka	193.3
4	Yokohama	170.6
5	Kawasaki	167.1
6	Higashiosaka	166.4
7	Kitakyushu	165.0
8	Kyoto	164.1
9	Naha	160.4
10	Kobe	156.1
11	Saitama	154.5
12	Sendai	153.2
13	Chiba	152.1
14	Sakai	150.9
15	Sapporo	149.4
16	Kagoshima	145.8
17	Toyota	144.7
18	Gifu	144.6
19	Sagamihara	143.8
20	Hiroshima	143.8
21	Nara	143.3
22	Otsu	143.0
23	Yokkaichi	141.7
24	Hakodate	139.6
25	Shizuoka	139.1
26	Niigata	132.7
27	Kurume	131.6
28	Nagasaki	131.1
29	Himeji	130.2
30	Maebashi	129.3
31 ~ 72	Asahikawa, Aomori, Hachinohe, Morioka, Akita, Yamagata, Fukushima, Koriyama, Iwaki, Mito, Tsukuba, Utsunomiya, Takasaki, Ota, Nagaoka, Toyama, Kanazawa, Fukui, Kofu, Nagano, Matsumoto, Hamamatsu, Fuji, Tsu, Wakayama, Tottori, Matsue, Okayama, Kurashiki, Kure, Fukuyama, Shimonoseki, Yamaguchi, Tokushima, Takamatsu, Matsuyama, Kochi, Saga, Sasebo, Kumamoto, Oita, Miyazaki (Listed by city code)	

Total Score		
Rank	City	Score
1	Kyoto	1,270.2
2	Fukuoka	1,155.3
3	Osaka	1,131.8
4	Nagoya	1,104.5
5	Yokohama	1,086.0
6	Kobe	1,053.6
7	Sapporo	1,012.9
8	Sendai	1,003.7
9	Tsukuba	957.7
10	Hamamatsu	951.5
11	Kanazawa	951.4
12	Hiroshima	931.8
13	Matsumoto	931.4
14	Toyota	913.3
15	Shizuoka	897.1
16	Kumamoto	888.3
17	Nagano	884.4
18	Kagoshima	883.1
19	Kitakyushu	865.3
20	Okayama	857.3
21	Toyama	857.3
22	Saitama	853.0
23	Nara	851.4
24	Nagasaki	851.4
25	Kurume	851.0
26	Takasaki	846.9
27	Hakodate	844.9
28	Gifu	844.2
29	Niigata	842.7
30	Matsue	837.9
31 ~ 72	Asahikawa, Aomori, Hachinohe, Morioka, Akita, Yamagata, Fukushima, Koriyama, Iwaki, Mito, Utsunomiya, Maebashi, Ota, Chiba, Kawasaki, Sagamiara, Nagaoka, Fukui, Kofu, Fuji, Tsu, Yokkaichi, Otsu, Sakai, Higashiosaka, Himeji, Wakayama, Tottori, Kurashiki, Kure, Fukuyama, Shimonoseki, Yamaguchi, Tokushima, Takamatsu, Matsuyama, Kochi, Saga, Sasebo, Oita, Miyazaki, Naha (Listed by city code)	

72 Target Cities-Function-Specific Score

Japan Power Cities 2018 Results and Analysis

Using function-specific and indicator group-specific radar charts, the top 3 wards are analysed to determine strengths and attractiveness.



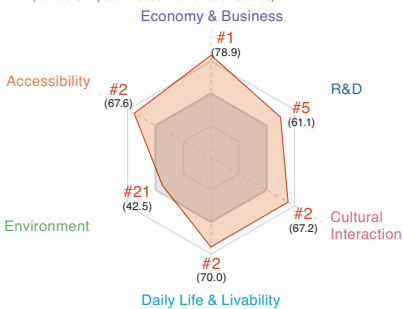
1

CHIYODA-CITY

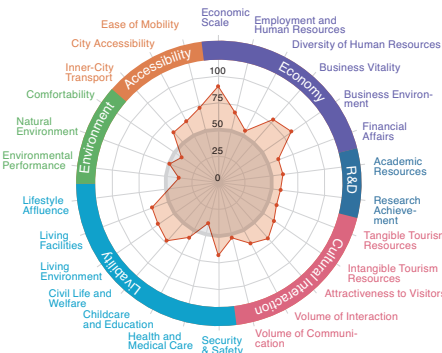
A bustling city full of economic vitality located in the center of Tokyo

Chiyoda shows overwhelming strength in **Economy & Business** 'Economic Scale', "Business Vitality", and "Business Environment". This is evident from especially high scores in the indicators *Total Value Added*, *Labor Productivity*, *Total Supply Area of New Offices*, and *Density of Flexible Workplaces*. It is also clear that the ward possesses attractiveness as a tourist area due to strong evaluations for "Intangible Tourism Resources", "Attractiveness to Visitors", and "Volume of Interaction" in **Cultural Interaction**. Regarding **Green Coverage Ratio in Urban Areas**, since the Imperial Palace grounds comprise 12% of the ward's total area, Chiyoda is evaluated top among the 23 wards in this indicator.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



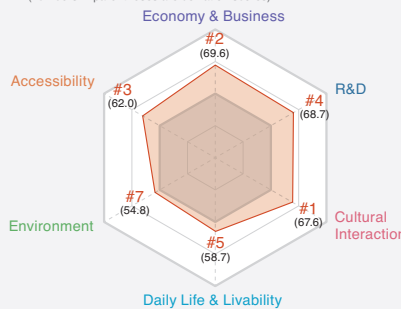
2

MINATO-CITY

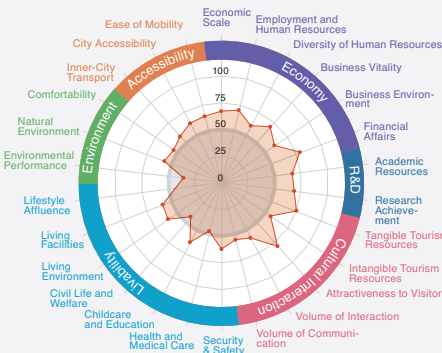
An international city with economic vitality and cultural attractiveness

Minato is endowed with well-balanced high scores across all 6 functions. In **Economy & Business**, the ward is evaluated strongly in *Wage Level* and "Financial Affairs", holding a stable economic vitality. As a tourist city, Minato possesses plentiful resources and functions, with the ward returning the highest scores among the 23 wards for "Tangible Tourism Resources" and "Attractiveness to Visitors" in **Cultural Interaction**. It is also considered an international city, as it performs particularly well in *Number of Luxury Guest Rooms* and *Multilingual Services at Tourist Information Desks and Hospitals*.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



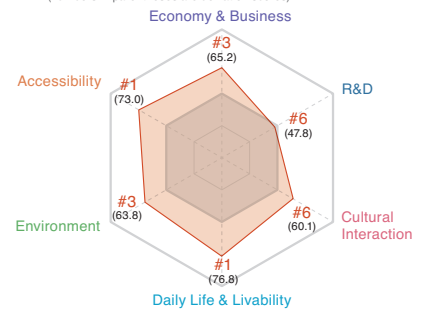
3

CHUO-CITY

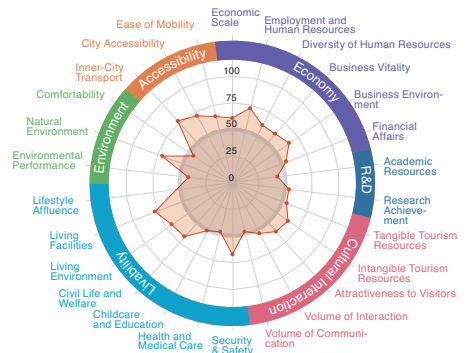
A balanced city with both livability and convenience

Chuo ward, which receives the highest scores among the 23 wards for "Living Environment" and "Living Facilities" in **Daily & Livability**, has both livability and convenience while being situated in the heart of the city. The city also shows its transport convenience and safety as it returns the lowest *Number of Traffic Accident Fatalities* while having the highest *Density of Train Stations and Bus Stops* within the 23 wards. In addition, young talent living within the city center, along with business activity of young enterprises, are pulling forward Chuo ward's economic activity, evident in the high *Intake/Outflow of Young Employees* in **Economy & Business** and the high *Number of Leading Firms in Global Niches* in **Research & Development**.

Function-specific rank and deviation (numbers in parentheses are deviation scores)



Indicator group-specific strengths and weaknesses



Function-Specific Scores

Economy & Business		
Rank	City	Score
1	Chiyoda	447.9
2	Minato	376.5
3	Chuo	342.9
4	Shibuya	322.2
5	Shinjuku	268.4
6	Shinagawa	245.6
7	Taito	231.9
8	Meguro	229.9
9	Toshima	227.8
10	Bunkyo	227.7
11	Koto	215.6
12	Suginami	205.0
13	Setagaya	194.5
14	Sumida	189.5
15	Nakano	187.7
16 ~ 23	Ota, Kita, Arakawa, Itabashi, Nerima, Adachi, Katsushika, Edogawa (Listed by city code)	

R & D		
Rank	City	Score
1	Bunkyo	90.0
2	Meguro	80.5
3	Shinjuku	80.1
4	Minato	77.7
5	Chiyoda	55.8
6	Chuo	17.8
7	Setagaya	16.4
8	Shibuya	15.3
9	Arakawa	13.5
10	Koto	13.5
11	Ota	12.9
12	Katsushika	12.5
13	Nerima	12.3
14	Shinagawa	9.9
15	Suginami	7.6
16 ~ 23	Taito, Sumida, Nakano, Toshima, Kita, Itabashi, Adachi, Edogawa (Listed by city code)	

Cultural Interaction		
Rank	City	Score
1	Minato	174.8
2	Chiyoda	173.0
3	Shinjuku	165.7
4	Taito	155.9
5	Shibuya	140.2
6	Chuo	139.8
7	Bunkyo	123.6
8	Koto	118.8
9	Sumida	118.1
10	Toshima	92.8
11	Setagaya	81.3
12	Shinagawa	80.3
13	Katsushika	76.9
14	Ota	73.6
15	Meguro	68.7
16 ~ 23	Nakano, Suginami, Kita, Arakawa, Itabashi, Nerima, Adachi, Edogawa (Listed by city code)	

Daily & Livability		
Rank	City	Score
1	Chuo	389.1
2	Chiyoda	361.2
3	Bunkyo	335.7
4	Shibuya	322.3
5	Minato	314.7
6	Shinjuku	296.4
7	Meguro	288.1
8	Shinagawa	285.7
9	Taito	283.2
10	Toshima	281.6
11	Sumida	273.8
12	Suginami	269.6
13	Setagaya	266.3
14	Nerima	258.3
15	Itabashi	252.7
16 ~ 23	Koto, Ota, Nakano, Kita, Arakawa, Adachi, Katsushika, Edogawa (Listed by city code)	

Environment		
Rank	City	Score
1	Edogawa	132.7
2	Koto	131.5
3	Chuo	122.8
4	Katsushika	114.1
5	Suginami	113.7
6	Nerima	112.1
7	Minato	111.0
8	Kita	108.1
9	Arakawa	105.8
10	Shinagawa	105.6
11	Ota	104.3
12	Meguro	101.6
13	Setagaya	100.7
14	Sumida	99.9
15	Shinjuku	99.8
16 ~ 23	Chiyoda, Bunkyo, Taito, Shibuya, Nakano, Toshima, Itabashi, Adachi (Listed by city code)	

Accessibility		
Rank	City	Score
1	Chuo	227.9
2	Chiyoda	218.6
3	Minato	209.1
4	Shibuya	205.2
5	Shinagawa	205.0
6	Shinjuku	200.2
7	Bunkyo	199.1
8	Taito	198.2
9	Koto	194.7
10	Meguro	191.1
11	Toshima	187.1
12	Ota	186.7
13	Sumida	183.0
14	Nakano	182.2
15	Arakawa	180.6
16 ~ 23	Setagaya, Suginami, Kita, Itabashi, Nerima, Adachi, Katsushika, Edogawa (Listed by city code)	

Total Score		
Rank	City	Score
1	Chiyoda	1,351.5
2	Minato	1,263.8
3	Chuo	1,240.3
4	Shinjuku	1,110.5
5	Shibuya	1,103.6
6	Bunkyo	1,075.2
7	Taito	971.0
8	Meguro	959.9
9	Shinagawa	932.1
10	Koto	924.4
11	Sumida	867.6
12	Toshima	867.2
13	Setagaya	833.5
14	Suginami	831.1
15	Ota	795.6
16 ~ 23	Nakano, Kita, Arakawa, Itabashi, Nerima, Adachi, Katsushika, Edogawa (Listed by city code)	

Cluster Analysis Results

A cluster analysis based on the individual scores of 83 indicators was carried out in order to further clarify the special characteristics of target cities. The cluster analysis uses an analytical method to create groups of individuals that closely resemble each other, and this time the process was used to categorize the most similar cities in a hierarchical order—classifying 72 target cities into 13 clusters, and Tokyo’s 23 wards into 5 clusters.

Cluster Groups and Features

Cluster 5

A group of cities with comprehensive nursing and medical support, featuring strong participation of women in society.

Cluster 6

A group of cities in Northern Japan and on the Japan Sea coast, with large living spaces and little traffic congestion in a greenery-filled environment.

Cluster 7

A group of coastal cities with safety and security, as well as low living costs.

Cluster 8

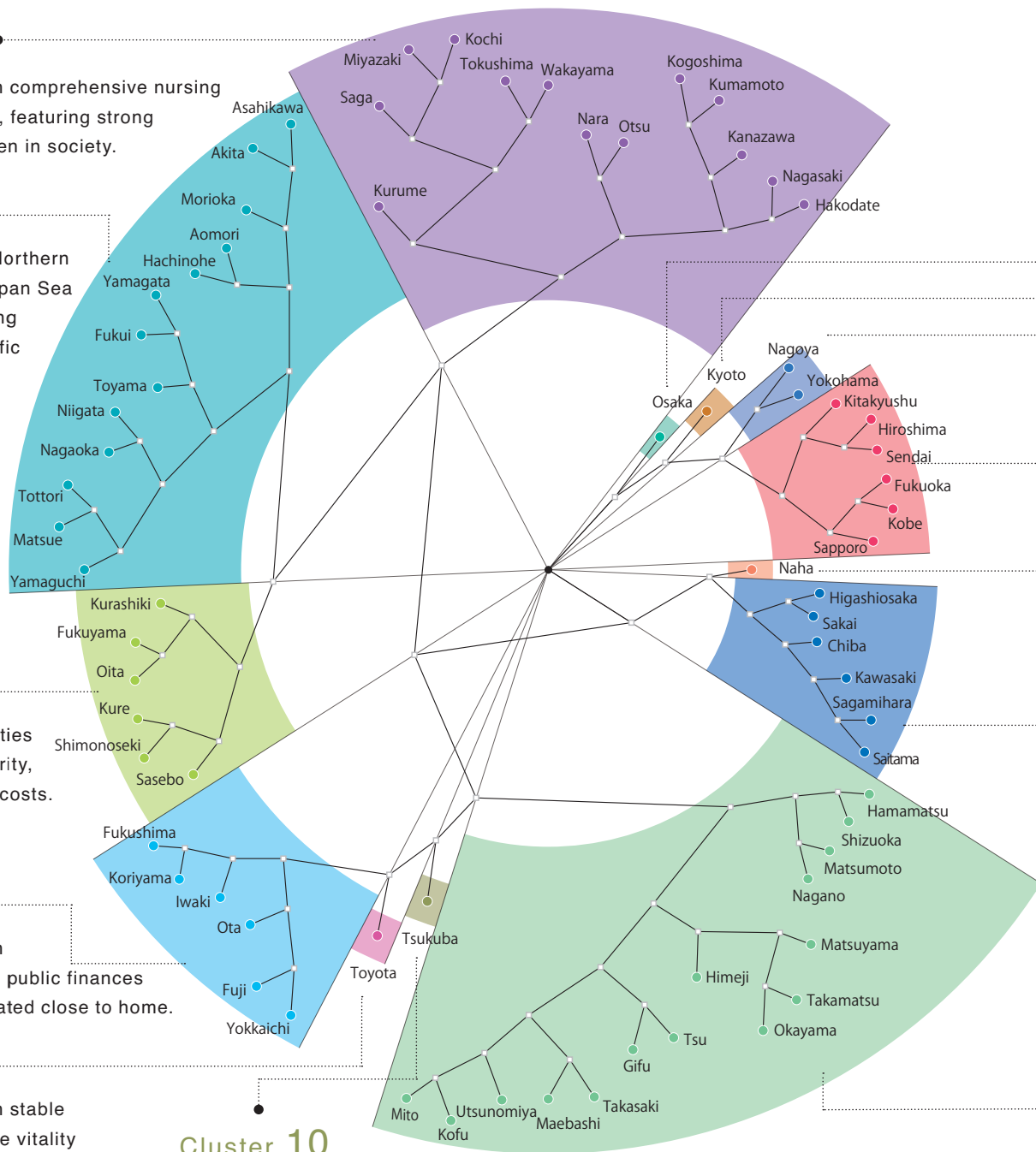
A group of cities with comparatively stable public finances and employment located close to home.

Cluster 9

A business town with stable public finances where vitality and livability coexist: Toyota

Cluster 10

A city combining both livability and the accumulation of knowledge: Tsukuba



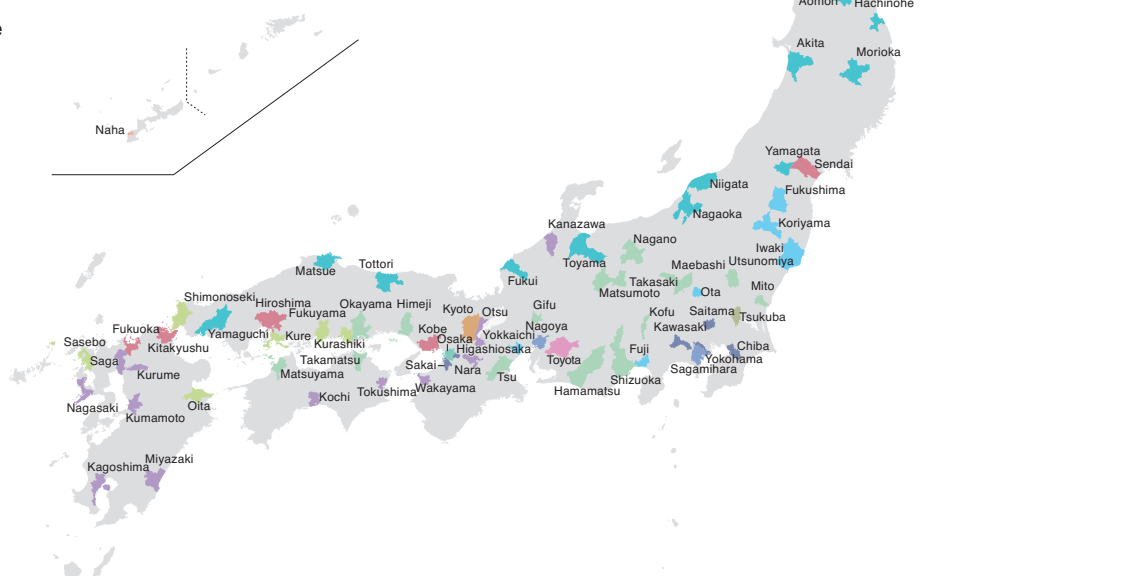
About the Naming of Clusters

The categorized clusters were each assigned colors on the map, after which geographic features (GIS information) such as road & rail networks, and rivers & lakes were overlaid. Based on the cluster analysis results and GIS information, as well as separate individual indicator data, each city or city group was considered and allocated an appropriate title.

Cluster Classification

Cluster	No.	City Names
Cluster 1	6	Sapporo, Kobe, Fukuoka, Sendai, Hiroshima, Kitakyushu
Cluster 2	2	Yokohama, Nagoya
Cluster 3	1	Kyoto
Cluster 4	1	Osaka
Cluster 5	13	Hakodate, Nagasaki, Kanazawa, Kumamoto, Kagoshima, Otsu, Nara, Wakayama, Tokushima, Kochi, Miyazaki, Saga, Kurume
Cluster 6	13	Asahikawa, Akita, Morioka, Aomori, Hachinohe, Yamagata, Fukui, Toyama, Niigata, Nagaoka, Tottori, Matsue, Yamaguchi
Cluster 7	6	Kurashiki, Fukuyama, Oita, Kure, Shimonoseki, Sasebo
Cluster 8	6	Fukushima, Koriyama, Iwaki, Ota, Fuji, Yokkaichi
Cluster 9	1	Toyota
Cluster 10	1	Tsukuba
Cluster 11	15	Mito, Kofu, Utsunomiya, Maebashi, Takasaki, Gifu, Tsu, Himeji, Okayama, Takamatsu, Matsuyama, Nagano, Matsumoto, Shizuoka, Hamamatsu
Cluster 12	6	Saitama, Sagami-hara, Kawasaki, Chiba, Sakai, Higashiosaka
Cluster 13	1	Naha

Cluster Classification Map



72 Target Cities-Cluster Analysis Results

Cluster 4

Source of vitality that stimulates the exchange of people, goods, and capital: Osaka

Cluster 3

Cultural and academic core city: Kyoto

Cluster 2

Large cities with economic vitality and intellectual accumulation: Yokohama, Nagoya

Cluster 1

Cities with high comprehensive power and a high-degree of balance

Cluster 13

A tourist city filled with intangible tourism resources and beautiful climate conditions: Naha

Cluster 12

Satellite cities with excellent accessibility, situated around large metropolitan regions.

Cluster 11

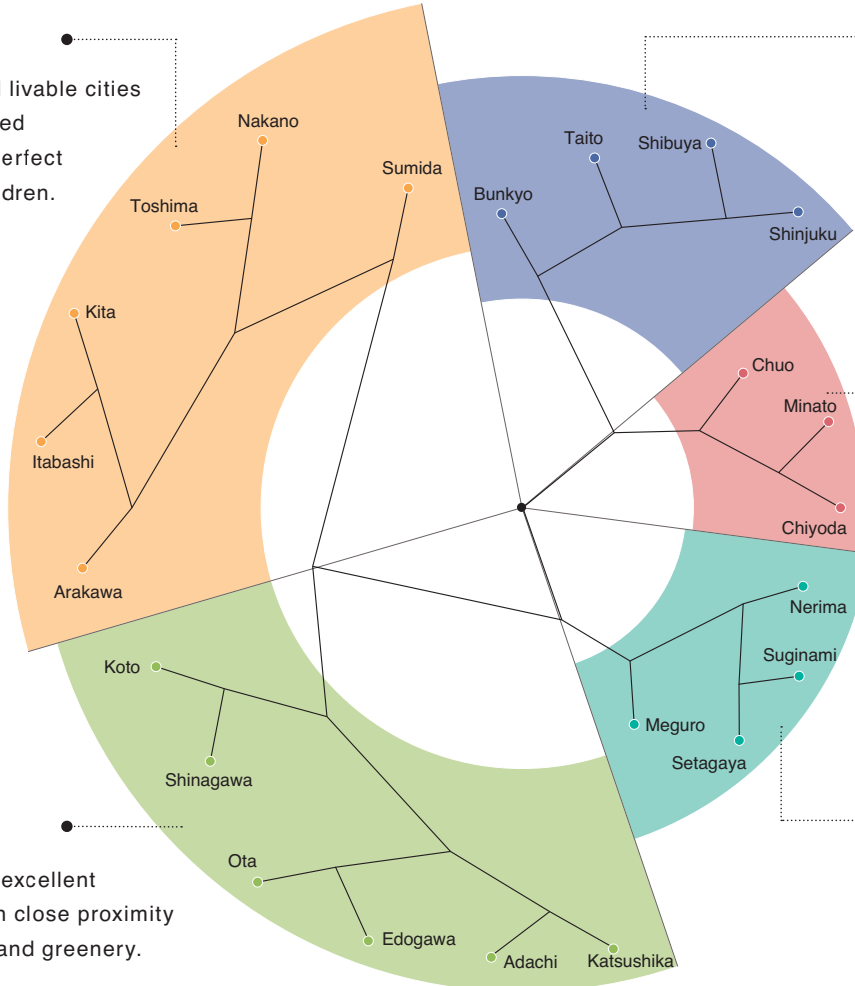
A group of major local cities that possess a balanced comprehensive power.

Cluster Analysis Results

Cluster Groups and Features

Cluster 3

Well-balanced livable cities with an enriched environment perfect for raising children.



Cluster 2

Prosperous cities overflowing with interaction, delivering public transport convenience and cultural attractiveness.

Cluster 1

Proficient central wards in Tokyo with a high level in all city functions.

Cluster 4

Cities with an excellent environment in close proximity to waterways and greenery.

Cluster 5

Suburban cities with sufficient natural environment and an abundant living environment.

Cluster Classification Map



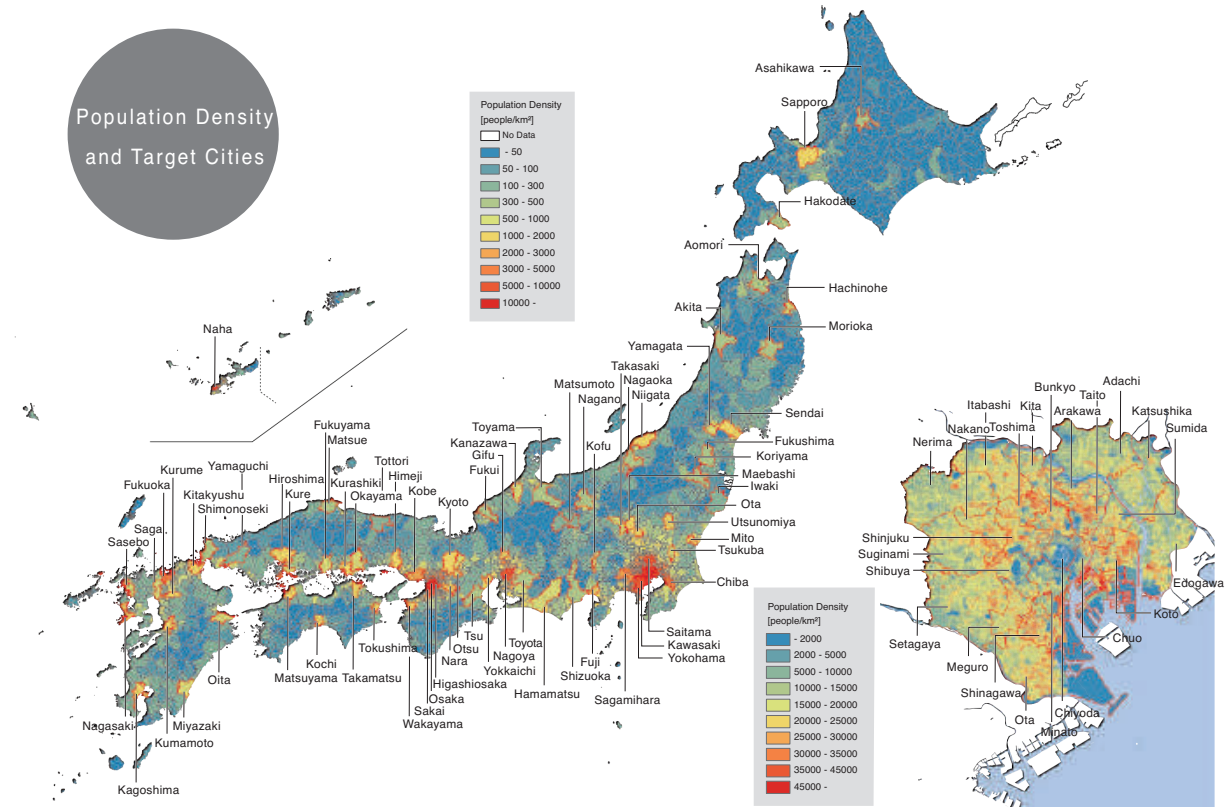
Cluster Classification

Cluster	No.	City Names
Cluster 1	3	Chiyoda, Minato, Chuo
Cluster 2	4	Shinjuku, Shibuya, Taito, Bunkyo
Cluster 3	6	Sumida, Nakano, Toshima, Kita, Itabashi, Arakawa
Cluster 4	6	Koto, Shinagawa, Ota, Edogawa, Adachi, Katsushika
Cluster 5	4	Meguro, Setagaya, Suginami, Nerima

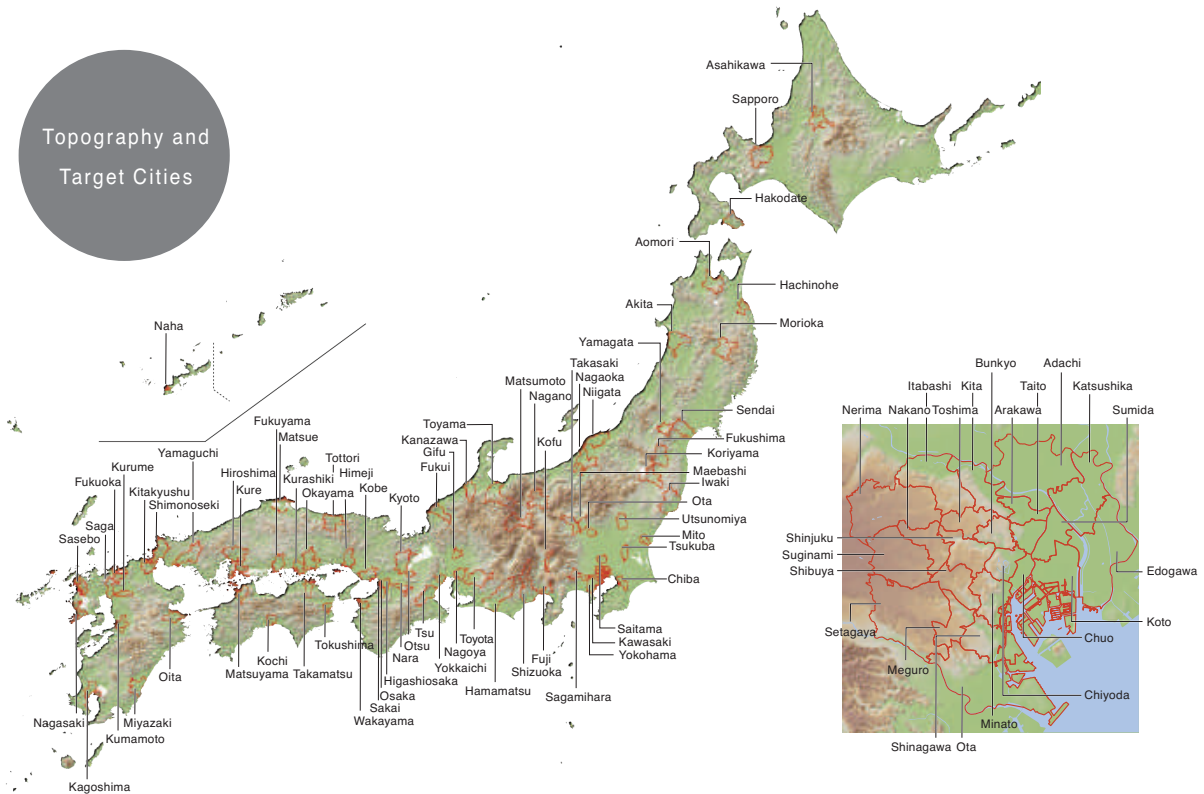
For Reference: Population Density and Topography of Target Cities

Information on the population densities and topography of this report's target cities (72 major domestic cities as well as Tokyo's 23 wards) is displayed on a geographical map of Japan.

Population Density and Target Cities



Topography and Target Cities



Definitions of Indicators

Indicators were established based on quantitative data (79 indicators) drawn from statistical materials, and survey data (4 indicators) obtained from a resident questionnaire carried out by the Mori Memorial Foundation. Data acquisition methods are outlined in (1) and (2) below.

(1) Data derived from statistical materials (79 indicators)

- When available, data is taken from official public sources.
- Regarding data not obtained from public statistics, other reputable sources are used.
- Data was collected in the period of August 2017 – March 2018.

(2) Resident Questionnaire (4 indicators)

- Survey method: internet questionnaire
- Respondents: residents aged 20 years and above, living in one of the 95 target cities.
- Number of responses: 9,500 responses (100 per city) with a 1:1 male-female ratio. Respondent age ranges were set at a ratio of 6:4 for 20-59 year-olds to those 60 years old and over.
- Survey period: January, 2018
- Survey items: Respondents were asked to answer 6 questions on a 4-step scale regarding the level of satisfaction for the city in which they are living.
- Surveyed by: Survey Research Center Co., Ltd.

Function	Indicator Group	No.	Indicator	Definition
Economy & Business	Economic Scale	1	Total Value Added	The total value added in terms of number of enterprises.
		2	Intra-regional Gross Expenditure	The total expenditure recorded intraregionally. For Tokyo's 23 wards, data was estimated using population figures and total-employment, with values being added together for each ward as a ratio of the total value of gross expenditure for all wards.
		3	Daytime-Nighttime Population Ratio	The ratio of the population commuting to work or school in the area divided by the residential population in the target city.
	Employment and Human Resources	4	Total Employment	The number of employees in the target city.
		5	Wage Level	The sum values for total salary and total welfare payments divided by the total number of employees in the target city or ward.
		6	Higher-Education Completion Rate	The ratio of post-secondary graduates (junior college, national college of technology, undergraduate, etc.) that exist among the total graduates aged 15 and above.
		7	Intake/Outflow of Young Employees	The ratio of the population in 2005 who had not yet entered higher-education (aged 15-19), against the population in 2015 who had completed their higher-education (aged 25-29).
	Diversity of Human Resources	8	Female Employment Ratio	The ratio of female employees between the ages of 15-64 to the total number of employees aged 15-64.
		9	Foreign Employment Ratio	The ratio of foreign employees aged 15 and above to the total number of employees aged 15-64.
		10	Elderly Employment Rate	The elderly employment rate calculated as the number of employees aged 65 and above divided by the total population aged 65 and above.
	Business Vitality	11	Ratio of New Businesses	The ratio of newly established businesses to the total number of businesses in the target city or ward.
		12	Labor Productivity	The ratio of total value added to the number of employees in general industries (excluding public entities).
		13	Number of Certified Special Zones	The indexed value related to the number of businesses registered within certified national strategic special zones, as well as the total number of special zones that exist within the target city or ward.
	Business Environment	14	Ratio of Employees in Service Industry for Business Enterprises	The ratio of employees in business service professions (goods leasing, special services, and advertising) to the total number of employees in the workforce.
		15	Total Supply Area of New Offices	The total floor area of newly constructed real-estate buildings divided by the total number of employees in the workforce.
		16	Density of Flexible Workplaces	Calculated based on the following criteria: (1) an indexed value of the number of coffee shops / cafes divided by the total area zoned for urban use in the city, and (2) an indexed value of the number of hits returned in a Google search of "coworking spaces" in the target city and municipalities.
	Financial Affairs	17	Financial Capability Index	The value in the Ministry of Internal Affairs and Communications' Financial Strength Index. (For Tokyo's 23 wards, the value in the Tokyo Metropolitan Government General Affairs Bureau's Economic Strength Index is used.)
		18	Public Account Balance Ratio	The current account balance ratio for the target city or ward.
		19	Real Debt Expenditure Ratio	The total value of debt payments divided by the annual public income for the target city or ward. (For Tokyo's 23 wards, the value in the Tokyo Metropolitan Government General Affairs Bureau's Economic Strength Index is used.)
		20	Future Burden Ratio	The total outstanding debt divided by the annual public income for the target city or ward. (For Tokyo's 23 wards, the value in the Tokyo Metropolitan Government General Affairs Bureau's Economic Strength Index is used.)

Function	Indicator Group	No.	Indicator	Definition
Research & Development	Academic Resources	21	Ratio of Academic and Development Research Institution Employees	The total number of employees in research & development institutions divided by the total number of employees in the workforce for the target city or ward.
		22	Number of Leading Universities	Calculated based on the following criteria: (1) the indexed score based on the rank of universities featured in Benesse's World Ranking of Top 150 Universities - Japan Edition that are located in the target city or ward; and (2) the indexed score based on the rank of universities featured in Times Higher Education's The World University Rankings 2018 that are located in the target city or ward. For both (1) and (2), universities with campuses in several different cities are counted for each target city or ward.
	Research Achievement	23	Number of Papers Submitted	The number of papers on National Institute of Informatics' CiNii Articles in the past year submitted from the 136 universities which have published 1000 or more theses for the 10-year period between 2004-2013 according to NISTEP's 2015 Japanese Universities' Research Theses Benchmarking report. For universities with campuses in different cities, the total number of theses was divided by the number of campuses.
		24	Number of Leading Firms in Global Niches	The number of headquarters, offices, and factories maintained by companies featured in the Ministry of Economy, Trade & Industry's "Global Niche Top 100 Companies".
Cultural Interaction	Tangible Tourism Resources	25	Number and Rating of Tourist Attractions	The indexed value of the number of tourism areas and comments based on Tripadvisor's tourism information page for each target city or ward.
		26	Number of Designated Cultural Assets	The number of designated cultural assets recognized by the Agency for Cultural Affairs and by UNESCO. Points awarded as follows: UNESCO world heritage site (3 points); national treasures, special historical landmark, special place of scenic beauty, important traditional architecture preservation district (2 points); important cultural property, registered tangible cultural properties, historical landmark, place of scenic beauty, important cultural scenery (1 point).
		27	Active Approach to Scenic Town Planning	Calculated based on the following criteria: (1) the existence of scenery planning as well as scenic town planning model districts; (2) the number of prizes awarded and activities carried out after 2011 in the categories of urban space, scenic town planning activities-training, and scenery planning activities, according to the Executive Committee of Scenic Planning Day; the number of districts awarded the "Beautiful Townscape Prize" between the years 2001-2010; and the number of districts recognized in the "Urban Scenery 100" between the years 1991-2000 (1 point / award).
	Intangible Tourism Resources	28	Number and Rating of Events	The indexed value of the number of events and comments recorded in Tripadvisor's "Events" listing for "Sightseeing" in the target city or ward.
		29	Number of Local Specialties	The number of listings recorded under "Food & Drink" in the Japan Travel Bureau's Register of Tourist Attractions.
		30 Q	Opportunities for Cultural, Historical, and Traditional Interaction	Based on responses from a resident questionnaire asking whether there are abundant opportunities for cultural, historical, and traditional interaction for people visiting from other cities.
	Attractiveness to Visitors	31	Number of Accommodation Facilities	The number of lodging facilities recorded on a representative travel website.
		32	Number of Luxury Guest Rooms	The number of guest rooms in lodging facilities rated as "High Class" according to a representative travel website.
		33	Number of Event Halls	The number of theatres and concert halls according to the MEXT 2017 Social Education Survey, as well as the number of "High Class" hotels offering banquet hall facilities according to a representative travel website.
		34	Multilingual Services at Tourist Information Desks and Hospitals	Calculated based on the following criteria: (1) the weighted value of the number of tourist information centers offering multilingual services and sightseeing guidance according to the JNTO; (2) the number of medical institutions suited to accepting foreigners according to the JNTO.
	Volume of Interaction	35	Weekend Visitor Population	The number taken as the ratio of the average weekend daytime population (15-80 years old) over a 12-month period divided by the daytime population.
		36	Volume of People Visiting for Tourism or Sightseeing	The percentage of visitors to the target city or ward selecting "Pleasure / Sightseeing" as their purpose of visit according to the "2017 Regional Brand Survey" conducted by the Brand Research Institute.
		37	Number of International Conferences and Exhibitions Held	The added index values of the number of conference events held and the number of exhibitions held in the target city or ward.
	Volume of Communication	38	Active Approach to Attracting Tourists	Calculated based on the following criteria: (1) An indexed value of total points based on 1 point given for each Destination Marketing Organization (DMO) registered in the target city or ward, and 0.5 points given for each wide-area cooperation DMO or regional cooperation DMO located in the target city or ward; (2) the indexed value of total points based on 1 point given for each exhibition organization (excluding private companies) in the target city or ward registered on Tourism Expo Japan, and 0.5 points given for each prefectural-level organization.
		39	Number of Followers of Local Government SNS Accounts	The indexed value of the number of followers on social media accounts (Facebook, Twitter and YouTube) attributed to local self-governing bodies or organizations, excluding disaster information services and election-related channels.
		40	Level of Attractiveness, Recognition, and Intention to Visit	The total points given for level of attractiveness, recognition, and intention to visit as assigned in the "2017 Regional Brand Survey" conducted by the Brand Research Institute.

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Function	Indicator Group	No.	Indicator	Definition
Daily Life & Livability	Security & Safety	41	Recognized Criminal Offenses	Calculated based on the total number of criminal offenses as provided by police headquarters, prefectural police stations, or the publically released information on acknowledged criminal offenses, divided by the daytime population (000s) of the target city or ward.
		42	Traffic Accident Fatalities	The total number of traffic-related fatalities divided by the daytime population (000s) of the target city or ward.
		43	Fire Outbreaks	The total number of building fire outbreaks divided by the daytime population (000s) of the target city or ward.
		44	Vacancy Rate	The total number of vacant residential units divided by the total number of residential units in the target city or ward.
	Health and Medical Care	45	Number of Doctors	The total number of doctors employed at medical facilities divided by the daytime population (000s) of the target city or ward.
		46	Number of Hospitals and Clinics	Calculated based on the indexed value of the total number of hospitals, as well as the total number of general medical clinics, divided by the daytime population (per million people) in the target city or ward.
		47	Life Expectancy and Healthy Life Expectancy Rate	Calculated based on the following criteria: (1) life expectancy for the target city or ward; (2) the average number of years a person can remain independently active in daily life in the prefecture of the target city or ward. As this data is taken from the prefectural level, (2) is weighted at half of (1).
	Childcare and Education	48	Total Fertility Rate	The total fertility rate (Bayes estimate) for the target city or ward.
		49	Number of Childcare Centers	The total number of nursery schools divided by the total population aged 0-3 years (per 1000 people) in the target city or ward.
		50	Assistance for Children's Medical Costs	The total points awarded for medical costs of a "visit" and "hospitalization" based on age categories (before entering school: 1 point; up to 9 years old: 2 points; up to 12 years old: 3 points; up to 15 years old: 4 points; up to 18 years old: 5 points) in the target city or ward, as well as the total points awarded based on income restrictions or partial self-payment requirements (1 point given if none exist).
		51	Number of High Schools with High Deviation Scores	The number of high schools returning deviation scores of 65 or above in the target city or ward according to a representative high school deviation score site.
	Civic Life and Welfare	52	Social Education Costs	The average value of social education costs for the 3-year period between 2013-2015 divided by the nighttime population of the target city or ward.
		53	Number of Elderly Requiring Assistance or Care	The number of people aged 65 and above requiring primary nursing care as of November 2017, divided by the total population aged 65 and above in the target city.
		54	Number of Regional Comprehensive Assistance Centers	The number of regional comprehensive assistance centers that are open to the public (including branches, sub-centers, annexes) within the target city or ward, as well as the total number of centers offering at-home support, divided by the total elderly population (000s).
	Living Environment	55 Q	Satisfaction with Living Environment	Based on responses from a resident questionnaire regarding the level of satisfaction with their living environment (including disaster prevention, crime, convenience, etc.).
		56	Volume of New Housing Supply	The total number of newly constructed residential buildings divided by the nighttime population (per 10,000 people) of the target city or ward.
		57	Size of Residences	The gross floor area per residence in the target city or ward.
		58	Ratio of Barrier-free Homes	The number of barrier-free households in which a family member aged 65 and above resides divided by the number of households in which a family member aged 65 or over resides in the target city or ward.
	Living Facilities	59	Density of Retail Businesses	The number of retail businesses (small goods; textiles, clothing, personal effects; food and drink; mechanical parts; and other small retail shops) divided by the total land area in use for the target city or ward.
		60	Density of Restaurants	The total number of food and drink establishments as well as take-out and delivery services divided by the total area zoned for urban use in the target city or ward.
		61	Density of Convenience Stores	The total number of convenience stores divided by the total area zoned for urban use in the target city or ward.
	Lifestyle Affluence	62	Disposable Income	The total monthly disposable income (income after expenses) in a household with 2 or more members within the target city or ward. For Tokyo's 23 wards, the average value of special wards of Tokyo is applied.
		63	Price Level	The total indexed value of the 2016 regional differentiation in price level (where that national level = 100), excluding rent. For cities not hosting a prefectural office, or not defined as ordinance-designated cities, data was unavailable and thus taken from prefectural sources.
		64	Cost of Housing	The total cost of homeownership-related expenses and rental expenses (for those not owning a home) for an occupied dwelling. For Tokyo's 23 wards, the average value of special wards of Tokyo is applied.

Function	Indicator Group	No.	Indicator	Definition
Environment	Environmental Performance	65	Percentage of Waste Recycled	The percentage of waste recycled in the target city or ward. For Tokyo's 23 wards, the average value of special wards of Tokyo is applied.
		66	CO2 Emissions	The total estimated amount of CO2 emissions for 2014 divided by the daytime population (per 10,000 people) in the target city or ward.
		67	Rate of Self-Sufficient Renewable Energy	The rate of self-sufficient renewable energy use for 2015 (electric and thermal) in the target city or ward.
		68	Number of EV Charging Stations	The number of electric vehicle charging stations divided by the daytime population of the target city or ward.
	Natural Environment	69 Q	Satisfaction with Natural Environment	Based on responses from a resident questionnaire regarding the level of satisfaction with the natural environment (mountains, forests, ocean, rivers, green parks, roadside trees etc.) in the target city or ward.
		70	Green Coverage Ratio in Urban Areas	The total area of green coverage (including rice fields, agricultural fields, forests, vacant land, parks, green tracts, golf courses) divided by the total area of the target city or ward. The total area of the target city or ward is defined as the "urban area", taken from the 5-types of planning areas delineated by the national government.
		71	Number of Waterfront Areas	The estimated total area of waterfronts divided by the total area of the target city or ward. The estimate is based on the following rules: (1) For areas with polygonal water features (mostly ocean), the area is calculated within a 100m radius from shore; (2) for areas with line-based water features (mostly rivers), the length of line-data within a 100m radius of the shore is calculated and a width of 10m is used to attain the applicable area.
	Comfortability	72	Annual Sunshine Hours	The total number of sunshine hours in a one-year period for the target city or ward.
		73	Number of Comfortable Temperature / Humidity Days	The number of days in a calendar year (2016) with a discomfort index score between 60-75 according to the observation point nearest to the target city or ward's primary local government office. The discomfort index is calculated using the average daily temperature as well as the average daily humidity. The discomfort index (DI) is drawn from the following equation: $DI=0.81T(\text{temperature})+0.01H(\text{humidity})\times(0.99T-14.3)+46.3$
		74	Air Quality	The indexed value of the average daily concentration of Nitrous Oxide and PM2.5 in the air for the target city or ward.
Accessibility	Inner-City Transport	75 Q	Convenience of Public Transport	Based on responses from a resident questionnaire regarding the level of satisfaction with public transport (railroad and bus operations, facilities & equipment, service etc.) in the target city or ward.
		76	Density of Train Stations and Bus Stops	The indexed value of the number of rail and bus stations divided by the total area as defined by city planning in the target city or ward.
		77	Frequency of Traffic Congestion	The average daytime speed of traffic over a 12-hour period on roads (excluding automobile-exclusive roads) traveling out from, and into, the center of the target city or ward.
	City Accessibility	78	Convenience of Air Transportation	Calculated based on the following criteria: (1) the indexed value of the total access time (on a weekday, by car, with an arrival time of 10:00am) from the city or ward office to the nearest airport based on Google Maps estimates; (2) the indexed value of the total council number of domestic cities that can be reached from the nearest airport to the target city or ward's council office.
		79	Convenience of High-Speed Railway	Calculated based on the following criteria: (1) for cities with Shinkansen stations, the total number of passengers using a Shinkansen station (including Yamagata and Akita Shinkansen lines) is counted. For cities without Shinkansen stations, the number of passengers of the nearest Shinkansen station is divided by traveling time (which allows the traveler to arrive no later than 10:00am by train) from the most centrally-located train station within the target city or ward to the Shinkansen station. For cities with Shinkansen stations, the travel time is set at 0. Data is not recorded for cities from which it would not be possible to reach the Shinkansen station by 10:00am using the morning's first train.
		80	Number of Interchanges	The number of general interchanges as well as 'smart interchanges'.
	Ease of Mobility	81	City Compactness	The concentration of population divided by the nighttime population expressed as a ratio. The concentration of population is determined by (1) joining the districts within the city or ward that show densities above 4,000 people / km ² , and (2) selecting those adjoined districts that possess populations above 5,000 people according to the national census.
		82	Commuting Time	The median value for the commuting time of a household's primary supporter in the target city or ward.
		83	Ratio of Barrier-free Stations	The points value for stations with barrier-free facilities awarded as follows: access routes with no difference in level = 1 point; station attendant assistance available = 0.5 points; no assistance available = 0 points. Furthermore, points are awarded based on information provided by the railway corporation. If no information is available, the station is awarded 0 points.

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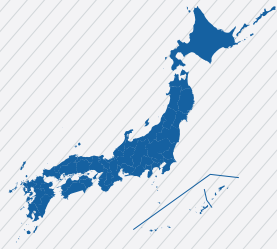
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