GLOBAL POWER CITY INDEX 2009











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GPCI-2009 Introduction

Global Power City Index

-The first Japan-based comprehensive ranking of the world's major cities

Preface

Under severe global competition among cities, GPCI explores the comprehensive power of cities to attract creative people and excellent companies from around the world, and produces rankings for the world's major cities such as Tokyo, New York, and London.

This ranking is truly unique in applying new visions compared to the conventional rankings announced internationally, and it is the first ranking of world cities to be created in Japan.

The objective of the GPCI rankings is to show people the features of cities and encourage them to reconsider the attractiveness of cities. GPCI is intended to be a useful tool for establishing urban strategies for Tokyo and other cities covered by this research.

GPCI-2009 has been tuned up following advice from experts and academics in related fields since the previous version. Especially, a ranking for the "Environment," which is recognized as an important global factor, has been added, and other cities and indicators have also been added to the rankings.

Furthermore, the Scenario Analysis for Tokyo is applied, simulating the future rankings assuming that Tokyo exploits new urban strategies to overcome its weaknesses.

Additionally, the Global Circuit of international air flights between 35 cities is analyzed as well as the network of global corporations.

Features of the Global Power City Index (GPCI) 2009

- 1. GPCI-2009 is the upgraded version of GPCI-2008, which is the first Japan-based comprehensive ranking survey of the world's major cities.
- Nearly all of the rankings carried out in the past have focused on specific functions or have been country-specific; in contrast, the Global Power City Index examines a variety of functions representing the strengths of cities and uses them to create a "Comprehensive Power" ranking of the world's cities.
- 3. Thirty-five of the world's major cities are selected and evaluated based on six main functions representing city strength ("Economy," "Research & Development," "Cultural Interaction," "Livability," "Ecology and Natural Environment," and "Accessibility"), and four global actors who are leading the urban activities in their cities ("Managers," "Researchers," "Artists," and "Visitors") and one local actor ("Residents"), thus examining cities from multiple angles.
- 4. As a tool for creating urban strategies, GPCI is used to simulate rankings under various scenarios in order to improve the weaknesses identified by this survey.
- 5. The dependency relations among the 35 cities are analyzed and visualized as a "Global Circuit" on "Airline Flows" and "Global Corporation Networks" for financial and non-financial corporations.
- 6. This ranking has been produced with the involvement of academics such as Sir Peter Hall, a global authority in city planning, as well as other experts and analysts, and has been peer reviewed by third parties.

Findings of GPCI-2009

1. Function-specific Comprehensive Ranking (p. 12)

New York, London, Paris, and Tokyo rank as the top four, the same as in the 2008 survey.

Although Singapore is ranked 5th, the difference between 4th and 5th is large; the top four cities are a group with a strong presence.

2. Function-specific Ranking (p. 14)

New York and London are ranked remarkably high in the functions except for Livability and Environment, whereas Paris ranks top in Livability and Accessibility with other functions also high.

Tokyo ranks high in Economy (2nd) and Environment (4th). There is no other city ranked in the top 5 in terms of both the Economy and Environment functions like Tokyo. Tokyo is thus an economically strong yet environment-friendly city. The addition of the new Environment function in GPCI-2009 has revealed a new strength of Tokyo.

Vancouver and Toronto are ranked in the top 5 in terms of the Livability function, as well as Geneva in the Environment function. Thus, some cities may not be high up the Comprehensive ranking, but are highly regarded for specific functions.

In Asia, there are cities strong in the Economy function while in Europe, there are cities that are highly evaluated in Cultural Interaction, Livability, and Environment.

3. Actor-specific Ranking (p. 16)

The top four cities in the Comprehensive ranking are generally evaluated high by the four global actors leading urban activities as well as by the Residents.

Tokyo is ranked lower in the Manager ranking and the Visitor ranking among the top four cities.

Asian cities such as Shanghai, Beijing, and Hong Kong are ranked high in the Manager ranking and the Visitor ranking, but are not in the top group in the Comprehensive ranking.

Many of the European cities are ranked high by Artist and Resident actors.

4. Grouping of the 35 Cities (p. 18)

Based on a cluster analysis of the 35 cities with their scores in each function, the cities can be categorized into five groups under this survey.

New York, London, Paris, and Tokyo are the group of cities that are highly evaluated in every function. Other cities are grouped into those with strengths such as Economy and Research & Development, or Livability and Environment, etc.

5. Comparison of Top Four Cities (p. 20)

New York and London are respectively weak in Livability and Environment, but their other functions are strong enough to compensate for such weakness.

Paris and Tokyo both score above average in all functions, showing their overall strength as "All-round cities."

Tokyo is strong in Economy and Research & Development, as well as in Environment. Especially, the Environment score is the top among the top four cities showing its uniqueness as an economically strong yet environment-friendly city.

6. Comparison between Tokyo and Major Asian Cities (p. 21)

Tokyo is ranked top among Asian cities in the Comprehensive ranking, however, functions other than Economy and Research & Development are not always substantially higher than those of other cities.

Tokyo scores the highest in the rankings of Researcher, Artist, and Resident. Especially, Tokyo's Artist score is the only one which exceeds the average among these cities.

However, Tokyo's Manager score is lower than those of Singapore, Hong Kong, and Shanghai.

7. Comparison between the Cities in the Secondary Group (p. 23)

Five European cities ranked upper-middle, namely Berlin, Vienna, Amsterdam, Zurich, and Madrid, all have high scores in Livability and Environment.

In contrast, upper-middle ranked cities in Asia, namely Hong Kong and Seoul, both have low scores in Livability and Environment, showing clear differences between the cities in each continent.

8. Analysis of the Strengths and Weaknesses of Tokyo (p. 24)

The strongest indicators of Tokyo which are superior to those of the top three cities are Accumulation of the Top 300 Companies in the Economy function, and Number of Researchers and R&D Expenditure in the Research & Development function.

On the other hand, the weakest indicator of Tokyo is Travel Time between Inner City to the International Airport, and the Corporate Tax Rate.

Unless these weak indicators are improved, Tokyo will never become a top-three city.

To make Tokyo attractive from a Manager's point of view, the regulations and taxation systems of the business environment need to be improved.

To make Tokyo attractive from a Visitor's point of view, more resources for tourism need to be developed and provided.

9. Scenario Analysis to Overcome the Weaknesses of Tokyo (p. 26)

Scenarios to make Tokyo the top city by simulating ways to improve its weaknesses are studied.

Two scenarios are analyzed under two conditions. Under Scenario 2, Tokyo's function-specific score is simulated to be the 1st in the Comprehensive ranking assuming the International Airport Systems and other Factors demanded by Managers are improved.

10. Analysis of the Global Circuit – Feedback from GPCI (p. 28)

The other important finding of the GPCI research is how these global cities interact with each other in their industrial relationships, such as dependency, competition and complementarity.

Extensive analysis to reveal the hidden Global Circuits between these cities is conducted below.

(1) Airline Flows between the 35 cities

London is the hub in Europe and is also connected with cities in America and Asia. New York is the hub in America and is also connected tightly with London. Singapore, Hong Kong, and Tokyo are the hubs in Asia. Singapore and Hong Kong are connected with London, while Tokyo is connected with Los Angeles.

- (2) Global Corporate Networks between the 35 cities
 - Non-financial Companies
 Paris in Europe, New York in America, and Tokyo and Seoul in Asia are the centers of
 HQ-Affiliate networks. Both Paris and New York have strong networks with Tokyo,
 Seoul, and Madrid.
 - b. Financial Companies London, New York, and Tokyo are the centers of HQ-Affiliate networks, reflecting their strong connections with each other as the three major financial centers. Paris is connected with more Asian cities than London is, revealing that it is a hidden financial center.

GPCI-2009 Methodology

1-1. GPCI-2009 Research Organization

This ranking is created under the GPCI Committee, chaired by Heizo Takenaka, chairman of the Institute for Urban Strategies at the Mori Memorial Foundation and professor at Keio University. The Committee also includes scholars such as Sir Peter Hall, a global authority in city planning, as well as expert partners in various fields. A third-party peer review has been undertaken to ensure the fairness of the ranking.

GPCI-2009 is created by a research organization comprised of the four bodies shown below. The Committee, which has five scholars including Sir Peter Hall as Principal Advisor and Heizo Takenaka as Chairman, supervises the key areas of the ranking process.

The Working Group researches and analyzes each city to provide sufficient materials for evaluating cities, and creates the rankings of the cities, based on advice from the Committee and expert partners from the perspective of global actors in each important phase.

Furthermore, a third-party peer review by two reviewers has been undertaken, to obtain validation and criticism to ensure the fairness of the ranking.

As a member of the working group, Mitsubishi Research Institute is involved in gathering and analyzing the data of cities.

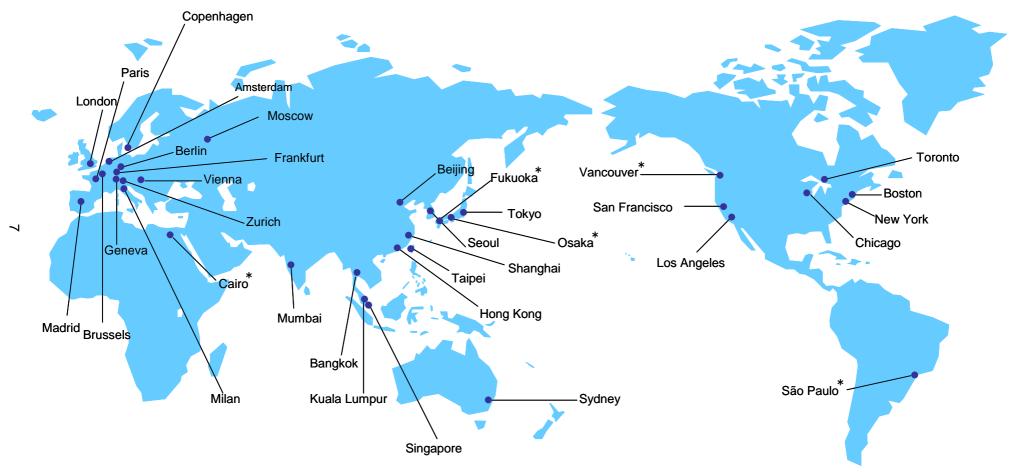
GPCI-2009 is created under the organization shown below.

Table 1-1 Research Organization

Title	Member	Role
Principal Advisor: Sir Peter Hall	Chairman: Dr. Heizo Takenaka (Professor at Keio University) Members: Dr. Richard Bender (Professor Emeritus of Architecture and former Dean at the University of California, Berkeley) Dr. Saskia Sassen (Professor at Columbia University) Dr. Hiroo Ichikawa (Professor and Dean at Meiji University)	Supervision of entire process
Peer Reviewers	Dr. Allen J. Scott (Professor of Geography and Public Policy at the University of California, Los Angeles) Dr. Peter Nijkamp (Professor at VU University Amsterdam)	Peer review
Expert Partners	Members in each "actor" category	Provision of advice from the perspective of global actors
	Principal: Dr. Hiroo Ichikawa Members: Institute for Urban Strategies The Mori Memorial Foundation Mitsubishi Research Institute, Inc.	Creation and revision of draft versions of the Index

1-2. Cities for GPCI-2009

Fig. 1-1 35 cities for GPCI



1-3. Ranking Creation Method

GPCI-2009 researches and ranks 35 major cities in the world from multiple angles. Cities are evaluated by indicators of the following six main functions representing city strength: "Economy," "Research & Development," "Cultural Interaction," "Livability," "Ecology and Natural Environment," and "Accessibility." Evaluations are also performed from the perspectives of the following four global actors, who lead urban activities in their cities: "Managers," "Researchers," "Artists," and "Visitors," and one local actor: "Residents."

(1) Function-specific Ranking

The function-specific ranking is comprised of the six main functions of "Economy," "Research & Development," "Cultural Interaction," "Livability," "Ecology and Natural Environment," and "Accessibility" which represent the main strengths of a city. Each function is composed of an "Indicator Group" categorizing each factor of the function. Sixty-nine indicators, which are based on actual data of the cities, are distributed in each Indicator Group.

Initially, data for each indicator of the city is collected and converted into an index number relative to the 35 cities. Then, these index numbers are averaged in each Indicator Group, showing each score of the Indicator Group. The function score is obtained by summing up the scores of the Indicator Group. Finally, a grand total of the function scores is obtained, called the "comprehensive score." The Comprehensive ranking and the rankings in each function are all generated by this method.

Revisions from GPCI-2008 to GPCI-2009

GPCI-2009 follows the ranking system of GPCI-2008, incorporating feedback from academics and experts on GPCI-2008. The main revisions made to increase the comprehensiveness of the ranking are as follows:

- (1) Addition of cities
- (2) Addition of one function (Environment)
- (3) Addition and modification of indicators
- (4) Addition of the concept of "indicator group"
- (5) Addition of questionnaire survey by international expert partners

Fig. 1-2 Revisions from GPCI-2008 to GPCI-2009

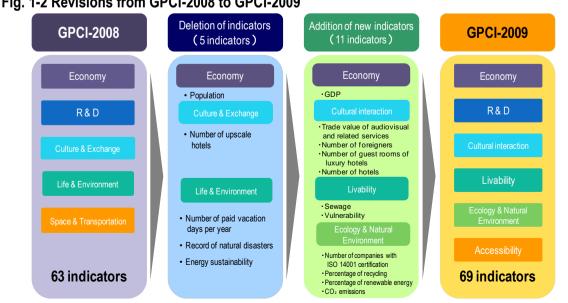
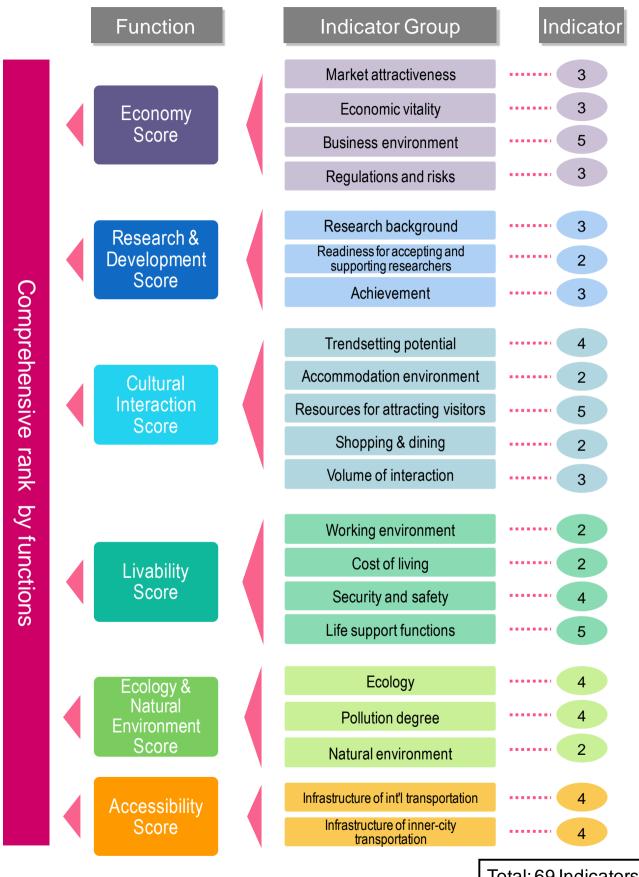


Fig. 1-3 Flow of Creating Function-based Ranking



Total: 69 Indicators

(2) Actor-specific Ranking

The other ranking created through this research shows the attractiveness of the city to those actors. Four major actors leading urban activities are defined as "Global Actors": "Managers," "Researchers," "Artists," and "Visitors", and one local actor: "Residents," who account for the majority of the city. These actors focus on creating the actor-specific ranking.

Each actor naturally has different expectations and priorities on their urban activities based on their occupations. Therefore, a profile of each actor is described and his/her demands for the city in performing his/her role are defined as "factors." Then, a matrix is constructed of the 69 indicators of the function-based ranking and each indicator corresponding to the factor of each actor is selected. Since each actor selects a suitable indicator, some indicators are used repeatedly by different actors. Finally, the scores for each actor are summed up and reflected on the actor-specific ranking.

As already explained, GPCI-2009 is composed of two different rankings, a function-specific ranking measuring the functional aspects of the cities, and an actor-specific ranking measuring the cities from the perspective of its dwellers.

The Global Power City Index aims to capture the comprehensive attractiveness of cities from multiple angles, through both function- and actor-specific rankings.

Fig. 1-4 Flow of Creating the Actor-specific Ranking



GPCI-2009 Results

2-1. Function-specific Comprehensive Ranking

New York, London, Paris, and Tokyo rank as the top four, the same as in the 2008 survey.

Although Singapore is ranked 5th, the difference between 4th and 5th is large; the top four cities are a group with a strong presence.

The function-specific Comprehensive ranking gives New York, London, and Paris as the top three, followed by Tokyo, the same as in the 2008 survey.

However, Tokyo's position has changed, closing the difference in score from the top three; thus, there is now a group of four cities at the top, including Tokyo.

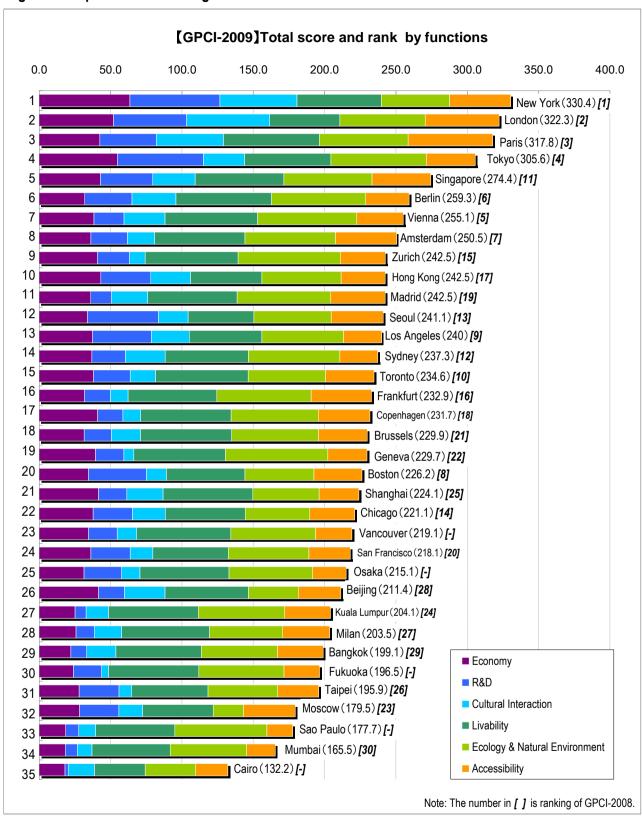
Cities with Big Changes in the Ranking

Compared to the 2008 survey, cities which fell or rose by more than 4 ranks are concentrated in the upper-middle ranked cities.

Meanwhile, although GPCI-2009 uses the ranking system of GPCI-2008, revisions such as adding cities, adding one function (Environment), adding or modifying the indicators, adding the concept of indicator group, and adding a questionnaire survey by international expert partners, have affected the rankings.

- (1) Cities Moving Up (Mainly in Asia and Europe)
 - Singapore has risen from 11th to 5th as its functions in Cultural Interaction and Accessibility have been evaluated better than last year.
 - Hong Kong and Shanghai gained higher scores in Cultural Interaction, pushing up their rank from 17th to 10th and 25th to 21st respectively.
 - Zurich and Madrid are both highly evaluated in the new function, Environment, enabling them to rise in the rankings from 15th to 9th and 19th to 11th.
- (2) Cities Moving Down (Mainly in North America)
 - Resulting from the addition of the Environment function, New York, Los Angeles, Boston, Chicago, and San Francisco in the U.S. have all been evaluated low and ranked lower than 20th in this function. All cities except New York substantially dropped in the Comprehensive rankings due to this effect; New York's other highly evaluated functions have kept the city in the top position.
 - Toronto is ranked as high as 5th in the Livability function, but is ranked 23rd in the Environmental function, so its Comprehensive ranking fell from 10th to 15th similar to the U.S. cities

Fig. 2-1 Comprehensive Ranking



Note: Maximum score for this ranking is 547.0

2-2. Function-specific Ranking

New York and London are ranked remarkably high in the functions except for Livability and Environment, whereas Paris ranks top in Livability and Accessibility with other functions also high.

Tokyo ranks high in Economy (2nd) and Environment (4th). There is no other city ranked in the top 5 in terms of both the Economy and Environment functions like Tokyo. Tokyo is thus an economically strong yet environment-friendly city. The addition of the new Environment function in GPCI-2009 has revealed a new strength of Tokyo.

Vancouver and Toronto are ranked in the top 5 in terms of the Livability function, as well as Geneva in the Environment function. Thus, some cities may not be high up the Comprehensive ranking, but are highly regarded for specific functions.

Besides the top five cities in the Comprehensive ranking, some cities rank within the top five in specific functions in which they are strong.

For instance, Vancouver (23rd), Toronto (15th), and Geneva (19th) are in the top five in the Livability ranking. Meanwhile, Frankfurt (16th) and Sao Paulo (33rd) are both within the top 10 in the Environment. Sao Paulo has a low score in the "Pollution" indicator, but a high score in the "Ecology" indicator, which measures environmental efforts such as energy reuse, and so its Environment ranking is pulled up.

Focusing on Tokyo, it is the only city which ranks within the top five in both Economy and Environment among the 35 cities. However, although Tokyo ranks among the top in Economy, Research & Development, and Environment, other functions such as Cultural Interaction, Livability, and Accessibility are beaten by Singapore. Other cities are also approaching Tokyo in these functions.

In Asia, there are cities strong in the Economy function while in Europe, there are cities that are highly evaluated in Cultural Interaction, Livability, and Environment.

Observing the cities by continent, Asian cities tend to rank high in Economy, even if they are not necessarily high in the Comprehensive ranking such as Shanghai (21st) and Beijing (26th).

On the other hand, European cities tend to be ranked high in the Livability and Environment rankings: more than 7 cities from Europe are among the top 10 in these functions.

Looking at the rankings overall, Asian cities are strong in Economy and European cities are strong in Livability and Environment.

Table 2-1 Function-specific Ranking

	Z-11 unction				Research	&	Cultural				Ecology & Na	tural		
Rank	Total Scor	re	Economy	′	Developme	ent	Interactio	n	Livability	/	Environment Accessibility		ity	
1	New York	330.4	New York	63.6	New York	63.0	London	58.2	Paris	67.2	Geneva	71.8	Paris	59.3
2	London	322.3	Tokyo	54.7	Tokyo	60.3	New York	54.1	Berlin		Zurich	71.7	London	51.8
3	Paris		London	52.1	London	51.2	Paris	47.0	Vancouver	65.9	Vienna	69.6	Amsterdam	42.9
4	Tokyo	305.6	Hong Kong	43.2	Seoul	49.7	Berlin	30.8	Zurich	65.1	Tokyo	67.0	New York	42.9
5	Singapore	274.4	Singapore	42.8	Los Angeles	41.3	Singapore	29.7	Toronto	64.9	Berlin	66.1	Frankfurt	42.3
6	Berlin	259.3	Paris	42.5	Boston	40.7	Tokyo	28.9	Vienna	64.9	Frankfurt	66.0	Singapore	41.2
7	Vienna	255.1	Beijing	41.5	Paris	39.5	Vienna	28.7	Geneva	64.2	Madrid	65.7	Madrid	38.2
8	Amsterdam	250.5	Shanghai	41.4	Singapore	36.7	Beijing	28.5	Brussels	63.9	Sao Paulo	64.5	Seoul	36.6
9	Zurich	242.5	Copenhagen	40.9	Hong Kong	34.9	Hong Kong	27.9	Copenhagen	63.4	Sydney	64.1	Moscow	36.3
10	Hong Kong	242.5	Zurich	40.7	Berlin	33.2	Sydney	27.9	Amsterdam	63.3	Amsterdam	63.4	Copenhagen	36.1
11	Madrid	242.5	Geneva	39.4	Taipei	27.9	Los Angeles	26.4	Fukuoka	63.3	Paris	62.3	Tokyo	34.3
12	Seoul	241.1	Vienna	38.3	Chicago	27.6	Shanghai	25.4	Kuala Lumpur	62.9	Singapore	61.8	Brussels	34.2
13	Los Angeles	240.0	Toronto	38.1	San Francisco	27.5	Madrid	25.3	Shanghai	62.9	Copenhagen	61.1	Toronto	33.9
14	Sydney	237.3	Chicago	37.8	Moscow	27.5	Chicago	23.1	Madrid	62.6	Brussels	60.8	Boston	33.7
15	Toronto	234.6	Los Angeles	37.4	Osaka	26.4	Seoul	20.7	Osaka	62.4	Kuala Lumpur	60.5	Milan	32.9
16	Frankfurt	232.9	Sydney	36.9	Amsterdam	25.7	Bangkok	20.5	Frankfurt	62.2	London	59.8	Vienna	32.6
17	Copenhagen	231.7	San Francisco	36.2	Toronto	25.7	Brussels	20.4	Singapore	62.2	Fukuoka	59.7	Bangkok	32.1
18	Brussels	229.9	Amsterdam	36.1	Sydney	23.6	Milan	19.1	Milan	61.6	Vancouver	59.4	Kuala Lumpur	32.1
19	Geneva	229.7	Madrid	36.1	Zurich	22.5	Amsterdam	19.1	Tokyo	60.4	Osaka	58.7	Chicago	31.5
20	Boston	226.2	Boston	34.5	Vienna	21.1	Cairo	18.4	Bangkok	59.8	Los Angeles	57.1	Zurich	31.5
21	Shanghai	224.1	Vancouver	34.5	Vancouver	20.2	Toronto	17.8	New York	59.1	San Francisco	56.5	Hong Kong	30.9
22	Chicago	221.1	Seoul	33.9	Shanghai	19.9	Moscow	16.7	Beijing	58.5	Hong Kong	55.5	Berlin	30.4
23	Vancouver	219.1	Berlin	31.9	Geneva	19.9	San Francisco	15.9	Sydney	58.3	Toronto	54.3	Beijing	29.8
24	San Francisco	218.1	Frankfurt	31.7	Fukuoka	19.8	Kuala Lumpur	15.7	Chicago	56.0	Seoul	54.1	San Francisco	29.1
25	Osaka	215.1	Brussels	31.4	Brussels	19.2	Boston	14.0	Sao Paulo	55.5	Mumbai	53.6	Taipei	28.8
26	Beijing	211.4	Osaka	31.3	Frankfurt	18.2	Vancouver	13.7	Boston	55.0	Bangkok	53.3	Shanghai	27.9
27	Kuala Lumpur	204.1	Moscow	28.2	Beijing	18.2	Osaka	12.9	Mumbai	54.8	Milan	51.3	Geneva	27.5
28	Milan	203.5	Taipei	28.0	Copenhagen	17.8	Copenhagen	12.4	Taipei	53.5	Taipei	48.8	Los Angeles	26.8
29	Bangkok	199.1	Milan	25.8	Madrid	14.6	Frankfurt	12.3	San Francisco	52.8	Boston	48.4	Sydney	26.6
30	Fukuoka	196.5	Kuala Lumpur	25.1	Milan	12.8	Sao Paulo	11.8	Los Angeles	51.0	New York	47.7	Vancouver	25.5
31	Taipei	195.9	Fukuoka	23.9	Bangkok	11.1	Zurich	11.0	Hong Kong	50.1	Shanghai	46.5	Fukuoka	24.9
32	Moscow	179.5	Bangkok	22.2	Sao Paulo		Mumbai	10.2	Moscow	49.4	Chicago	45.2	Osaka	23.5
33	Sao Paulo		Sao Paulo	18.5	Mumbai	8.4	Taipei	9.0	London	49.1	Cairo	35.4	Cairo	22.5
34	Mumbai		Mumbai	18.3	Kuala Lumpur		Geneva	7.0	Seoul		Beijing		Mumbai	20.1
35	Cairo	132.2	Cairo	18.0	Cairo	2.3	Fukuoka	4.7	Cairo	35.5	Moscow	21.3	Sao Paulo	18.1

2-3. Actor-specific Ranking

The top four cities in the Comprehensive ranking are generally evaluated high by the four global actors leading urban activities as well as by the Residents.

Tokyo is ranked lower in the Manager ranking and the Visitor ranking among the top four cities.

New York, London, Paris, and Tokyo, the top four cities in the Comprehensive ranking, score high in all actor-specific rankings. Meanwhile, Paris and Tokyo are not in the top five for the Manager ranking. Furthermore, Tokyo is 7th in the Visitor ranking whereas the other three cities are in the top three in this ranking.

New York dominates the top slot in four actor-specific rankings, Researcher, Artist, Visitor, and Resident, and second position in Manager, showing it is the most attractive city to all actors.

Asian cities such as Shanghai, Beijing, and Hong Kong are ranked high in the Manager ranking and the Visitor ranking, but are not in the top group in the Comprehensive ranking.

Many of the European cities are ranked high by Artist and Resident actors.

The Asian cities of Shanghai (21st), Beijing (26th), and Hong Kong (10th) are ranked within the top 10 in both the Manager and Visitor rankings.

European cities in the upper-middle ranks in the Comprehensive ranking are popular with Artists and Residents. Especially, Berlin, 6th in the Comprehensive ranking, is ranked 3rd in both these actor-specific rankings.

Table 2-2 Actor-specific Ranking

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Rank	Manager		Research	er	Artist		Visitor		Resident	
1	London	55.2	New York	62.6	New York	60.3	New York	59.4	New York	64.5
2	New York	55.2	London	57.7	Paris	58.9	London	57.7	Paris	61.4
3	Singapore	53.8	Tokyo	56.8	Berlin	48.9	Paris	54.8	Berlin	60.9
4	Hong Kong	48.6	Paris	51.4	London	48.8	Beijing	49.0	Tokyo	60.7
5	Shanghai	48.3	Seoul	44.4	Tokyo	46.9	Shanghai	46.9	London	59.0
6	Paris	47.5	Los Angeles	43.4	Chicago	39.5	Vienna	46.1	Amsterdam	57.9
7	Tokyo	46.5	Boston	42.7	Vienna	39.5	Tokyo	46.0	Zurich	57.6
8	Beijing	46.1	Singapore	42.6	Los Angeles	38.9	Berlin	45.5	Vienna	57.0
9	Zurich	44.6	Berlin	39.6	Amsterdam	37.6	Singapore	43.6	Copenhagen	56.5
10	Geneva	44.5	Chicago	37.0	Madrid	35.5	Hong Kong	42.3	Vancouver	56.0
11	Vienna	44.0	Hong Kong	36.4	Toronto	35.0	Madrid	41.3	Toronto	55.8
12	Amsterdam	43.9	San Francisco	36.2	Brussels	33.5	Kuala Lumpur	40.5	Geneva	55.0
13	Copenhagen	43.7	Sydney	35.8	Milan	33.4	Bangkok	40.3	Hong Kong	54.1
14	Toronto	43.2	Amsterdam	34.9	Shanghai	32.9	Brussels	40.0	Osaka	54.0
15	Madrid	41.8	Vienna	33.9	San Francisco	32.9	Amsterdam	39.8	Sydney	54.0
16	Vancouver	41.8	Zurich	32.4	Kuala Lumpur	32.4	Seoul	38.8	Fukuoka	53.1
17	Chicago	40.4	Copenhagen	32.2	Copenhagen	31.9	Toronto	38.7	Singapore	52.8
18	Seoul	40.3	Geneva	31.6	Singapore	31.9	Sydney	37.4	Chicago	52.6
19	Sydney	39.9	Moscow	30.4	Bangkok	31.5	Chicago	37.2	Brussels	52.2
20	Boston	39.8	Toronto	30.0	Frankfurt	31.2	Milan	36.8	Boston	52.1
21	Berlin	39.5	Osaka	29.7	Vancouver	31.2	Frankfurt	36.4	Frankfurt	51.7
22	Los Angeles	39.4	Brussels	28.7	Zurich	31.0	Cairo	35.1	Los Angeles	50.8
23	Brussels	39.2	Vancouver	27.2	Boston	30.9	Copenhagen	35.0	Seoul	50.6
24	Frankfurt	38.5	Shanghai	27.1	Moscow	30.5	Osaka	34.8	Shanghai	50.6
25	Kuala Lumpur	36.9	Taipei	26.3	Sydney	29.6	Vancouver	34.5	Madrid	50.0
26	San Francisco	36.3	Fukuoka	26.3	Beijing	29.3	Boston	34.4	San Francisco	49.5
27	Taipei	35.7	Beijing	26.1	Osaka	29.1	Zurich	34.2	Beijing	48.4
28	Osaka	35.3	Frankfurt	25.5	Geneva	28.3	Los Angeles	34.0	Milan	45.4
29	Bangkok	32.7	Madrid	25.4	Taipei	28.1	Taipei	33.8	Bangkok	45.1
30	Fukuoka	32.1	Bangkok	23.8	Fukuoka	26.7	San Francisco	32.2	Taipei	43.6
31	Milan	31.4	Milan	22.6	Seoul	25.8	Geneva	32.2	Kuala Lumpur	39.7
32	Moscow	30.9	Kuala Lumpur	21.3	Sao Paulo	25.5	Moscow	30.4	Mumbai	39.2
33	Mumbai		Sao Paulo	19.0	Hong Kong	24.4	Mumbai	28.9	Sao Paulo	37.4
34	Cairo	26.7	Mumbai	18.9	Mumbai	23.1	Fukuoka	28.5	Moscow	34.1
35	Sao Paulo	22.5	Cairo	11.9	Cairo	18.9	Sao Paulo	24.1	Cairo	27.2

2-4. Grouping of 35 Cities

Based on a cluster analysis of the 35 cities with their scores in each function, the cities can be categorized into five groups under this survey.

New York, London, Paris, and Tokyo are the group of cities that are highly evaluated in every function. Other cities are grouped into those with strengths such as Economy and Research & Development, or Livability and Environment, etc.

(1) Group A: Super Cities, All-round Cities

- This group is subdivided into two groups: New York & London; Tokyo & Paris.
- New York and London have absolute strength in Economy, Research & Development, Cultural Interaction, and Accessibility, however, each has weaknesses, like Superman has, such as Environment for New York, and Livability for London.
- Tokyo and Paris have all-round power in every function, but none of their strengths is as powerful as the strongest functions of New York and London.

(2) Group B: Cities predominant in Livability and Environment

- This group includes European upper-middle ranked cities (above 15th), Canadian cities, and Asian cities in advanced countries.
- Cities in this group are strong in Livability and Environment.

(3) Group C: Cities inferior in Economy and Research & Development

- This group includes Asian cities in countries that do not use Chinese characters and BRICs cities except for China.
- Cities in this group are evaluated lower than the average in all functions, and Economy and Research & Development are weak in particular.

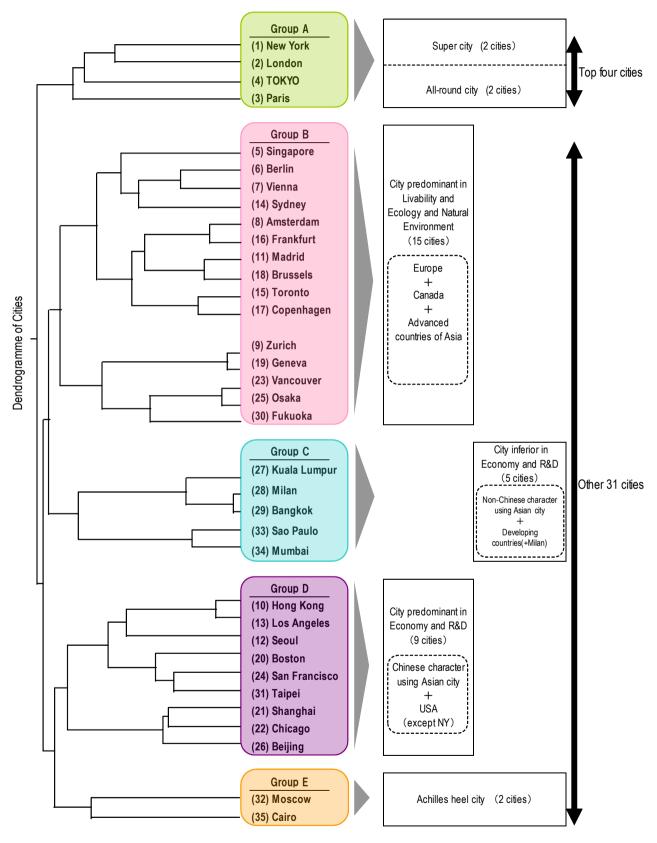
(4) Group D: Cities predominant in Economy and Research & Development

- This group includes Asian cities in countries that use Chinese characters and American cities except for New York.
- Cities in this group mostly have average power in each function, and they are especially strong in Economy and Research & Development.

(5) Group E: Vulnerable Cities

- Moscow and Cairo are categorized in this group.
- These cities are generally weak in all of the functions and remarkably weak in Livability and Environment, showing their vulnerability in these functions.

Fig.2-2 Tree Diagram Based on Grouping Analysis on 35 Cities



Note: Number in () is rank by function.

2-5. Comparison of Top 4 Cities

New York and London are respectively weak in Livability and Environment, but their other functions are strong enough to compensate for such weakness.

Paris and Tokyo both score above average in all functions, showing their overall strength as "All-round cities."

Tokyo is strong in Economy and Research & Development, as well as in Environment. Especially, the Environment score is the top among the top four cities showing its uniqueness as an economically strong yet environment-friendly city.

Comparing the top four cities in the Comprehensive ranking, the following deviation chart shows that New York and London have their own weaknesses in Livability and Environment. However, other functions are strong enough to compensate for such weaknesses, pulling up their Comprehensive ranking to the top and 2nd, respectively.

Paris and Tokyo both score above average in all functions showing their overall strength as "All-round cities." Comparing Paris and Tokyo, Paris has higher scores in Cultural Interaction, Livability, and Accessibility than Tokyo, thus maintaining its 3rd position.

Tokyo is strong in Economy and Research & Development, as well as in Environment. Especially, the Environment score is the top among the four cities, showing that Tokyo is unique as an economically strong yet environment-friendly city. Besides its advantage in these functions, Livability and Accessibility are both around the average score among the 35 cities.

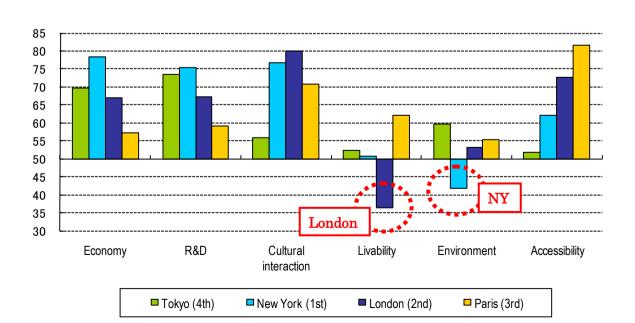


Fig. 2-3 Deviation Analysis for Top 4 Cities (Function)

2-6. Comparison between Tokyo and Major Asian Cities

Comparison of Function-specific Ranking

Tokyo is ranked top among Asian cities in the Comprehensive ranking, however, functions other than Economy and Research & Development are not always substantially higher than those of other cities.

Tokyo has overall strength in Economy, R&D, and Environment while Singapore is strong in Cultural Interaction, Livability, and Accessibility.

Tokyo is ranked top among Asian cities in the Comprehensive ranking, however, functions except for Economy and R&D are not always substantially higher than those of other cities. Tokyo's Comprehensive score benefits from its strength in Economy and R&D.

Hong Kong is strong in Economy and Cultural Interaction while Livability, Environment, and Accessibility are relatively weak.

Seoul has remarkable strength in R&D but considerable weakness in Livability.

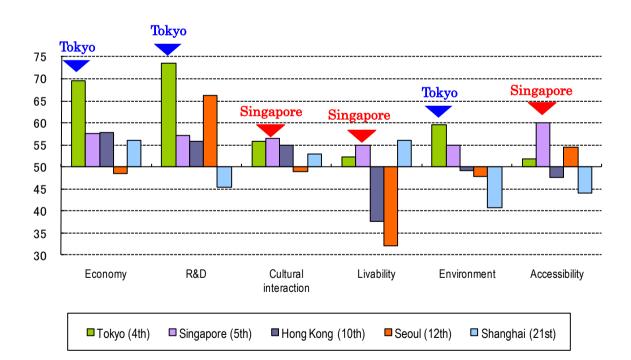


Fig. 2-3 Deviation Analysis for Major Asian Cities (Function)

Comparison of Actor-specific Ranking

Tokyo scores the highest in the rankings of Researcher, Artist, and Resident. Especially, Tokyo's Artist score is the only one which exceeds the average among these cities.

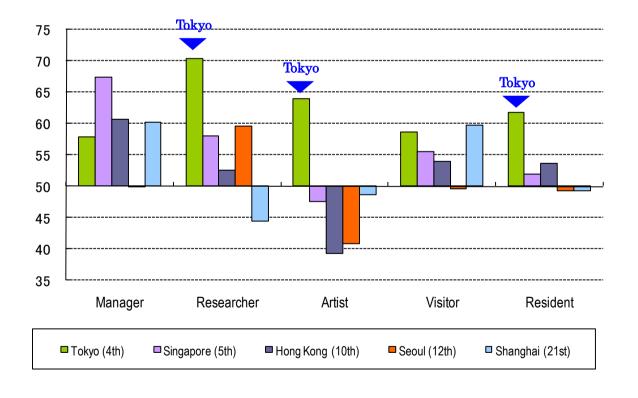
However, Tokyo's Manager score is lower than those of Singapore, Hong Kong, and Shanghai.

The following deviation chart shows that the difference in score between these cities is large in the Researcher ranking and small in the Visitor and Resident rankings.

Tokyo is scored the highest in the Researcher, Artist, and Resident rankings, with a particularly high score for Researcher. Furthermore, Tokyo's Artist score is the only one which exceeds the overall average while the other four cities all score below the average.

Meanwhile, Tokyo's Manager score is the second lowest among the five cities, being evaluated lower than Singapore, Hong Kong, and Shanghai by this actor.

Fig. 2-5 Deviation Analysis for Major Asian Cities (Actor)



2-7. Comparison of Cities in the Secondary Group

Five European cities ranked upper-middle, namely Berlin, Vienna, Amsterdam, Zurich, and Madrid, all have high scores in Livability and Environment.

In contrast, upper-middle ranked cities in Asia, namely Hong Kong and Seoul, both have low scores in Livability and Environment, showing clear differences between the cities in each continent.

Deviation analysis is also applied to the cities ranked 6th to 12th in the Comprehensive ranking. These cities are all from Europe and Asia, composing the secondary group in the Comprehensive ranking.

Five cities in Europe, Berlin, Vienna, Amsterdam, Zurich, and Madrid, score high in Livability and Environment while Hong Kong and Seoul score low in these functions, showing clear differences between the cities in each continent.

The weakness of each European city reflects its character. For instance, Berlin is weak in Economy; Vienna and Madrid are weak in R&D; and Zurich and Amsterdam are weak in Cultural Interaction.

Hong Kong and Seoul are both strong in Research & Development, but weak in Livability and Environment compared to European cities.

70 65 60 55 50 45 40 35

Cultural

Interaction

Livability

R&D

Main Cities in Asia

Accessibility

Environment

30

Economy

Fig. 2-6 Deviation Analysis for European and Asian Cities in the Secondary Group (Function)

■ Berlin (6th) ■ Vienna (7th) ■ Amsterdam (8th) ■ Zurich (9th) ■ Madrid (11th) ■ Hong Kong (10th) ■ Seoul (12th)

2-8. Analysis of the Strengths and Weaknesses of Tokyo

Deviation Analysis for the 69 Indicators of Tokyo

The strongest indicators of Tokyo which are superior to those of the top three cities are Accumulation of the Top 300 Companies in the Economy function, and Number of Researchers and R&D Expenditure in the Research & Development function.

On the other hand, the weakest indicator of Tokyo is Travel Time between Inner City to the International Airport, and the Corporate Tax Rate.

Unless these weak indicators are improved, Tokyo will never become a top-three city.

Tokyo's strengths and weaknesses are analyzed below based on deviation analysis of the 69 indicators.

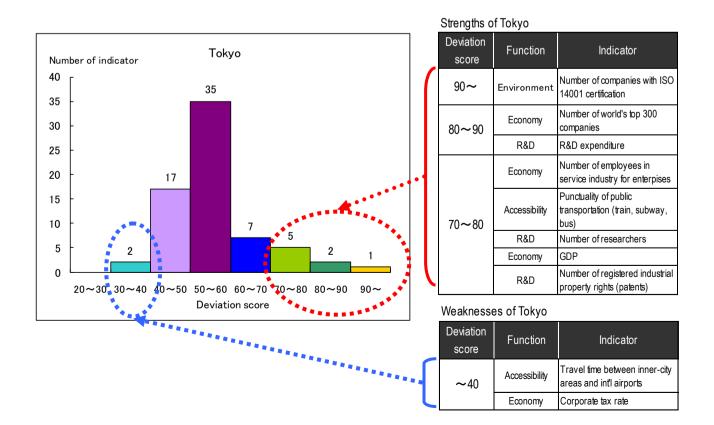
Indicators with remarkably high scores are those in the Economy, Research & Development, and Environment functions.

The number of ISO 14001 Certified Companies, Number of Top 300 Companies in the World, and R&D Expenditure are excellent compared to other cities.

Indicators with low scores among the 35 cities are those in Livability and Accessibility functions.

Especially, Travel Time between Inner City to the International Airport is extremely inferior to those of the other cities. Furthermore, Corporate Tax Rate is the worst among the 35 cities, making it difficult for overseas companies to do business in Tokyo.

Fig. 2-7 Deviation Analysis for the 69 Indicators of Tokyo



Deviation Analysis of the Important Factors for Actors in Tokyo

To make Tokyo attractive from a Manager's point of view, the regulations and taxation systems of the business environment need to be improved.

To make Tokyo attractive from a Visitor's point of view, more resources for tourism need to be developed and provided.

A deviation analysis of the important factors for actors giving low scores for Tokyo is studied below.

From a Manager's point of view, #2 Potential for Business Growth, #3 Ease of Business, #4 Business Surroundings, and #5 Pool of Human Resources are the weaknesses among the important factors for Managers. Especially, the regulations and taxation systems of the business environment must be improved to make Tokyo attractive for Managers.

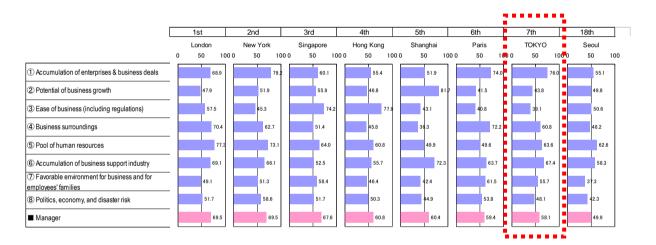


Fig. 2-8 Evaluation of Major Cities in Important Factors for Managers

From a Visitor's point of view, #2 Atmosphere of the City and #3 Destinations for Tourists are the weaknesses among the important factors for Visitors. In order to make Tokyo attractive for Visitors, more resources for tourism must be developed and provided.

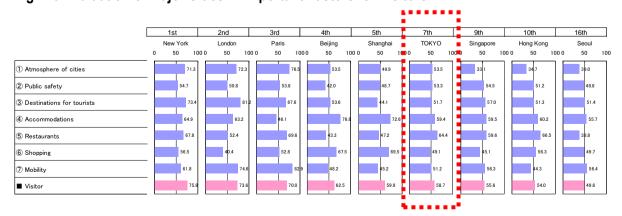


Fig. 2-9 Evaluation of Major Cities in Important Factors for Visitors

2-9. Scenario Analysis to Overcome the Weaknesses of Tokyo

Scenarios to make Tokyo the top city by simulating ways to improve its weaknesses are studied.

Two scenarios are analyzed under two conditions. Under Scenario 2, Tokyo's function-specific score is simulated to be the 1st in the Comprehensive ranking assuming the International Airport Systems and other Factors demanded by Managers are improved.

The ultimate goal for GPCI is not only to create rankings. Utilizing the data on the 69 indicators for the 35 cities, it is possible to simulate the rankings under certain scenarios for any city. Outputs obtained by this scenario analysis will help identify the urban strategy that a particular city needs. Two scenarios for Tokyo are simulated here.

Scenario 1: Improve international airport systems of Tokyo to the same level as Singapore.

- Achieve a 30-minute <u>Travel Time from Inner City to the International Airport</u>
- Increase the <u>Number of Cities with Direct International Flights</u> to the same level as Singapore
- Increase the Capacity of International Direct Flights to the same level as Singapore
- Increase the Number of Visitors from Abroad to the same level as Singapore

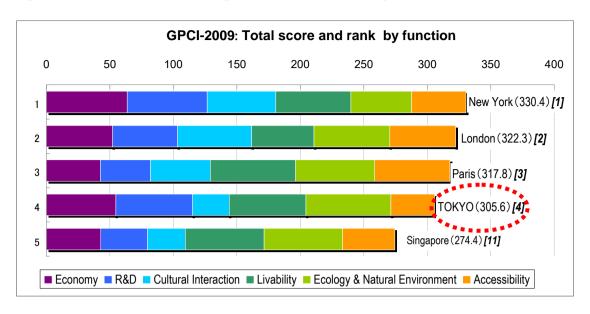
Result: Comprehensive Ranking stays 4th, approaching the level of Paris

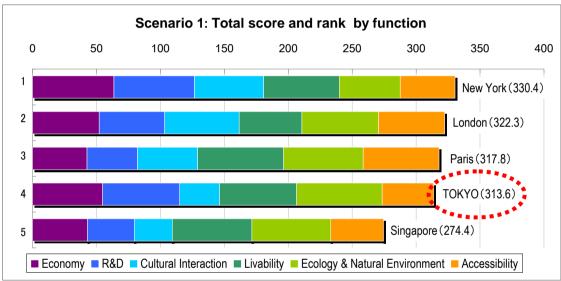
Scenario 2: Improve the indicators pulling the Manager score down in the actor-specific ranking.

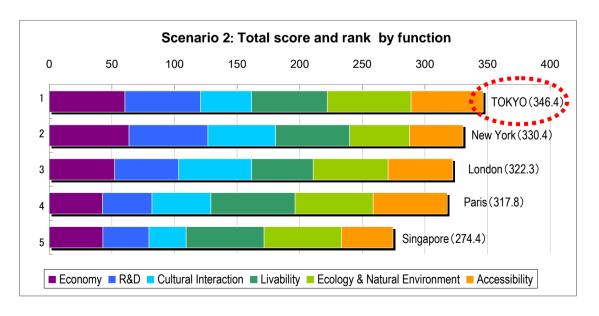
- Make Economic Freedom the same level as London
- Make the Corporate Tax Rate the same as London
- Increase the <u>Number of Foreigners</u> to the same level as London
- Increase the Number of Foreign Students to the same level as London
- Increase the Number of Visitors from Abroad to the same level as London
- Achieve a 30-minute <u>Travel Time from Inner City to the International Airport</u>
- Increase the Number of Cities with Direct International Flights to the same level as London
- Increase the Capacity of International Direct Flights to the same level as London

Result: Comprehensive ranking rises from 4th to 1st.

Fig. 2-10 GPCI-2009 Top 5 Ranking and Simulations for Tokyo with Scenario 1 and Scenario 2







2-10. Analysis of the Global Circuit - Feedback from GPCI

The other important finding of the GPCI research is how these global cities interact with each other in their industrial relationships, such as dependency, competition and complementarity.

Extensive analysis to reveal the hidden Global Circuits between these cities is conducted below.

(1) Airline Flows between the 35 cities

London is the hub in Europe and is also connected with cities in America and Asia. New York is the hub in America and is also connected tightly with London. Singapore, Hong Kong, and Tokyo are the hubs in Asia. Singapore and Hong Kong are connected with London, while Tokyo is connected with Los Angeles.

- (2) Global Corporate Networks between the 35 cities
 - a. Non-financial Companies
 Paris in Europe, New York in America, and Tokyo and Seoul in Asia are the centers of HQ-Affiliate networks. Both Paris and New York have strong networks with Tokyo, Seoul, and Madrid.
 - b. Financial Companies London, New York, and Tokyo are the centers of HQ-Affiliate networks, reflecting their strong connections with each other as the three major financial centers. Paris is connected with more Asian cities than London is, revealing that it is a hidden financial center.

(1) Airline Flows between the 35 cities

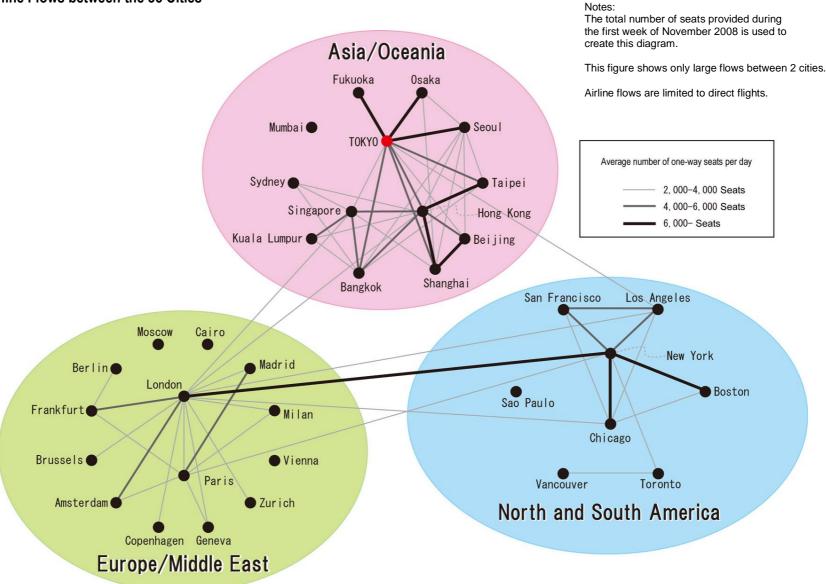
The Global Circuit for the 35 cities is analyzed based on international airline flows. This diagram is created based on the total number of seats provided during the first week of November 2008 in the Official Airline Guide (OAG).

This figure shows only large flows with a score of more than 60/100 points on the deviation, and flows are limited to direct flights. The width of a line shows the amount of seats provided between the cities. This analysis reveals the following:

- London is the hub in Europe and is also connected with cities in America and Asia.
- New York is the hub in America and is also connected tightly with London.
- Singapore, Hong Kong, and Tokyo are the hubs in Asia.
- Besides connections in Asia, Singapore and Hong Kong are connected with London, while Tokyo is connected with Los Angeles.



Fig. 2-11 Airline Flows between the 35 Cities



Data Source:

OAG (Official Airline Guide)

(2) Global Corporate Networks between the 35 cities

The Global Circuit for the 35 cities is analyzed based on the networks for global corporations. Two types of analyses are conducted, one for non-financial corporations and the other for financial corporations.

For the non-financial corporation network, data of the top 100 companies with HQs in the 35 cities listed in the "World's top 300 companies" in Newsweek (October 28, 2008 edition) is analyzed to create this diagram. Companies in the Oil & Gas, Electricity, Metals & Mining, Communication Services, and Financial Services industries are excluded from this process.

To create the financial corporation circuit, data of the top 50 financial companies listed in Fortune 2009 "Global 500, 2009" with HQs in the 35 cities are used.

The locations of all head offices and their affiliates of these top companies are identified from their websites and used to create these diagrams. The Global Circuit is expressed by the line by the sum of the connections between each company's HQ and affiliate. This analysis reveals the following.

a. Non-financial Companies

- Paris in Europe, New York in America, Tokyo and Seoul in Asia are the centers of the HQ-Affiliate network.
- Both Paris and New York have strong HQ-Affiliate networks with Tokyo, Seoul, and Madrid.

b. Financial Companies

- London in Europe, New York in America, and Tokyo in Asia are the centers in the network with strong connections with each other as the three major financial centers.
- Paris is connected with a number of Asian cities, more than London is, revealing that it is a hidden financial center.
- In Asia, Tokyo, Hong Kong, and Beijing are connected strongly in a triangle while Tokyo, Singapore, and Paris form a larger triangle across continents.

Fig. 2-12 Global Corporate Networks between the 35 Cities (Non-financial Companies)

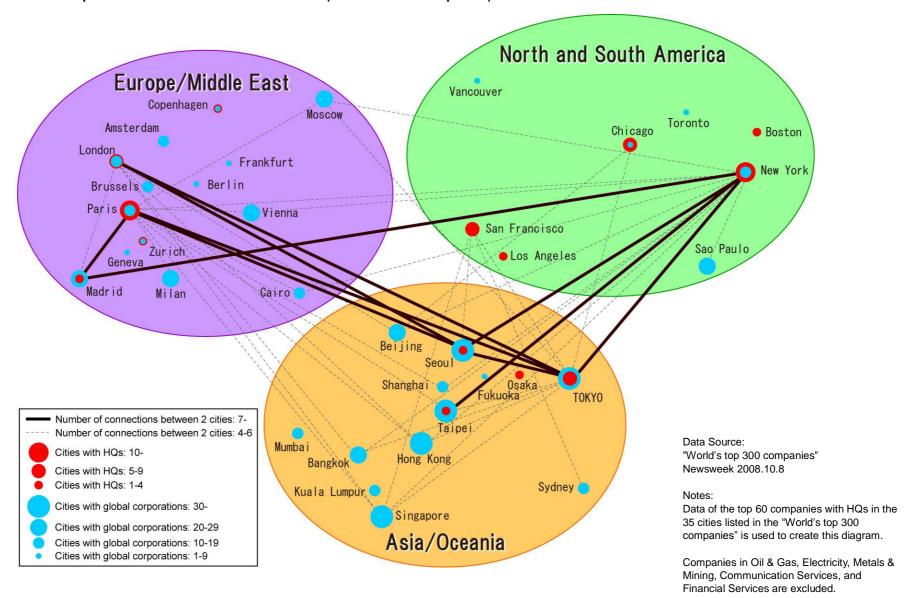
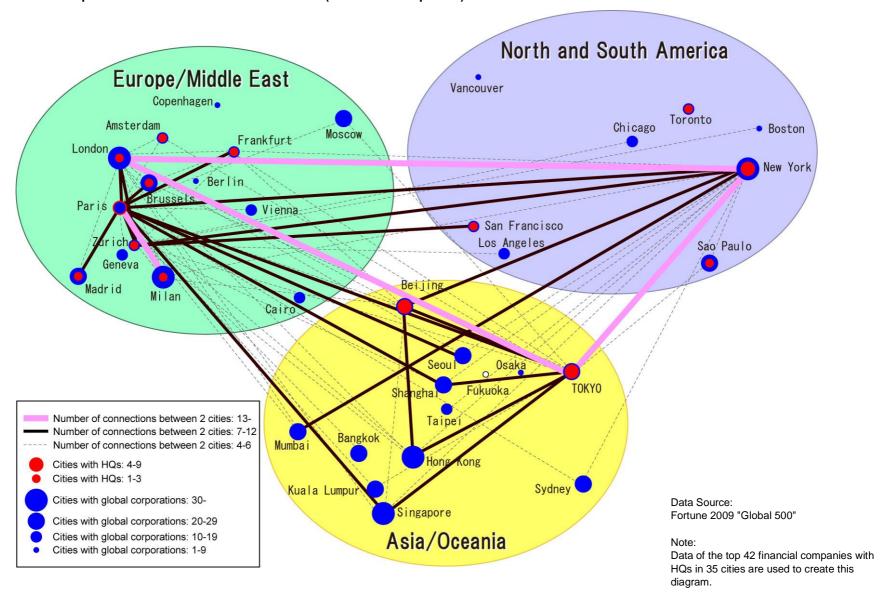


Fig. 2-13 Global Corporate Networks between the 35 Cities (Financial Companies)



Appendix

Principal Advisor

Sir Peter Hall

Bartlett Professor of Planning and Regeneration at The Bartlett, University College London



<Profile>

Sir Peter Hall was born in 1932. He graduated with a Master's Degree and Doctorate from Cambridge University.

Notable appointments include professorships at the University of Reading and the University of California, Berkeley.

He is a Fellow of the British Academy and a member of the Academia Europa.

In 1998 he received a knighthood in recognition of his contributions to the City Planning Association.

He is one of the Honorary Founders of the Globalization and World Cities Research Network

He is involved in urban planning for cities such as London, Singapore, the Adelaide metropolitan area (Australia) and Leipzig (Germany). He convened the World Commission of 21st Century Urbanization He is a special advisor on strategic planning to the British Government <Major Books Authored>

London 2000

The World Cities

Cities of Tomorrow: An Intellectual History of Urban Planning and Design

in the Twentieth Century

Cities in Civilization: Culture, Technology, and Urban Order

Committee Members

Heizo Takenaka

Professor at Keio University and the Director of the Global Security Research Institute / Chariman of the Institute for Urban Strategies, the Mori Memorial Foundation



<Profile>

Professor Takenaka was born in Wakayama Prefecture in 1951. He received his B.A. in Economics from Hitotsubashi University and his Ph.D. in Economics from Osaka University. He worked in the Development Bank of Japan, served as a Visiting Associate Professor at Harvard University, and taught as a Professor in the Faculty of Policy Management at Keio University before being chosen in 2001 as the Minister of State for Economic and Fiscal Policy, with responsibilities which included serving as the Minister of State for Financial Services and the Minister of State for Privatization of the Postal Services. He was later appointed as the Minster of Internal Affairs and Communications. He has held his current position since 2006.

<Maior Books Authored>

"The Structural Reforms of the Koizumi Cabinet" (in Japanese / in English) and others.

Richard Bender

Professor Emeritus of Architecture and former Dean at the University of California, Berkeley / Visiting Chair in Urban Planning and Design at the University of Tokyo



<Profile>

Graduate of the Massachusetts Institute of Technology. He completed his Master's course at Harvard University.

Professor Bender is a major figure in the fields of architecture and urban planning and is active in the United States, Europe and Asia.

In Japan he serves as an advisor on both private and public urban development.

In 2004 he received the International Exchange Award from the City Planning Institute of Japan.

<Major Books Authored>

A Crack in the Rearview Mirror: Views of the Industrialization of Building. The Future of Housing, in "A Global Strategy for Housing"

Saskia Sassen

Professor at Columbia University, and Visiting Professor at the London School of Economics



<Profile>

Professor Sassen graduated from the Universidad de Buenos Aires and the Università degli Studi di Roma. She obtained a Master's in sociology and a Doctorate in economics from the University of Notre Dame, Indiana. She has taught at Harvard University, the City University of New York, Chicago University and the University of London before coming to her current position as a professor of sociology at Columbia University and member of The Columbia University Committee on Global Thought.

She is an Honorary Founder of the Globalization and World Cities Research Network. She is a member of the Knowledge Panel of the MasterCard Centers of Commerce Index

<Major Books Authored>

Cities in a World Economy, The global city: New York, London, Tokyo Globalization and its Discontents.

Essays on the New Mobility of People and Money

Hiroo Ichikawa

Professor and Dean of the Graduate School of Governance Studies Meiji University



<Profile>

Professor Ichikawa was born in Tokyo in 1947. He received his undergraduate and Master's degree from Waseda University's School of Architecture and his Doctorate from the University of Waterloo. Professor Ichikawa has long studied Tokyo as well as global city theory and has served as an advisor on 91 white papers for Tokyo and elsewhere. He has participated as a core member of the "Urban Planning Vision", served as a member of the "Council on Tokyo Self-Government" and other groups and has been active both within Japan and overseas.

<Major Books Authored>

"Global Front Tokyo", "Urban Space as Culture", "Encyclopedia of Metropolitan Tokyo", "The Conflicting Futures of the Tokyo Metropolitan Region", "Future of Tokyo as Matured Society", "Tokyo's Future reformed by Relocation of Capital and Decentralization", "Future of World Cities and their Development of Infrastructure – New York, London and Paris"

Peer Reviewer

Allen J. Scott

Professor of Geography and Public Policy at the University of California, Los Angeles



<Profile>

Allen J. Scott holds the rank of distinguished professor with joint appointments in the Department of Public Policy and the Department of Geography at the University of California – Los Angeles. He was awarded a Guggenheim Fellowship in 1986-87, and was granted honors by the Association of American Geographers in 1987. He was elected fellow of the British Academy in 1999, and was the recipient of the Prix Vautrin Lud for 2003. He has occupied the Andre Siegfried Chair at the Institutd'Etudes Politiques, Paris (1999), the First Trust Bank Chair of Innovation at Queen's University, Belfast (2004), the Chaired'Excellence Pierre de Fermat at the University of Toulouse-Le Mirail(2005), and the Wibaut Chair at the University of Amsterdam (2006). He was awarded the Anders Retzius Gold Medal of the Swedish Society for Anthropology and Geography in 2009. His book "On Hollywood: the Place, the Industry" (Princeton University Press, 2005) was awarded the Meridian Book Prize in March 2006. His most recent book, "The Social Economy of the Metropolis," was published by Oxford University Press in 2008.

Peter Nijkamp

Professor at VU University Amsterdam / fellow at the Tinbergen Institute Professor at VU University Amsterdam / fellow at the Tinbergen Institute



Profeesor Nijkamp completed the Master's and Doctoral course at Erasmus University, Rotterdam (Tinbergen Institute Fellow, Amsterdam), He was for several years President of the Netherlands Organization for Scientific Research. He serves as an advisor to the Dutch Government, European Commission, World Bank and the OECD, among others.

<Major Books Authored>

Regional Cohesion and Competition in the Age of Globalization Innovation, Space and Economic Development Advances in Modern Tourism Research

Comparison of Major Rankings for Global Cities and the Global Power City Index

Organization	The Mori Memorial Foundation	MasterCard
Name	Global Power City Index	Worldwide Centers of Commerce Index
Function	Total	Business
Target Country / City (year announced)	Worldwide: 35 cities (2009)	Worldwide: 75 cities (2008)
Evaluation Axis	6 Functions 5 Actors [Economy] [Managers] [Research & Development] [Researchers] [Cultural Interaction] [Artists] [Livability] [Visitors] [Environment] [Residents] [Accessibility]	1. Legal and Political Framework (10%) 2. Economic Stability (10%) 3. Ease of Doing Business (20%) 4. Financial Flow (22%) 5. Business Center (12%) 6. Knowledge Creation and Information Flow (16%) 7. Ease of Living (10%)
Evaluation Method	 Establish a ranking for each evaluation axis and then calculate the function—specific, overall ranking Perform a multifaceted evaluation for the five functions and five actors 	The six indicators above are weighted according to the values shown The evaluation axes and evaluation indicators are selected by experts Evaluation is performed using seven evaluation axes comprised of 43 indicators and 74 subindicators
Number of Indicators	69 Indicators	74 Indicators
Tokyo's Rank	Function-specific Overall Rank: 4th	3rd

Organization	City of London	Globalization and World Cities (Loughborough University)
Name	Global Financial Centres Index 6	Leading World Cities
Function	Finance	Total
Target Country / City (year announced)	Worldwide: 75 cities (September 2009)	Worldwide: 52 cities (2004)
Evaluation Axis	A. People B. Business Environment C. Market Access D. Infrastructure E. General Competitiveness	A. Economic globalization B. Cultural globalization C. Political globalization D. Social globalization
Evaluation Method	 Statistical data is supplemented by a questionnaire Evaluation is performed using five evaluation axes comprised of 57 indicators" 	• Four factors are assessed in terms of (1) scale and (2) network
Number of Indicators	64 Indicators	16 Indicators
Tokyo's Rank	7th	Global cities contributing to specified factors

	City	Country
Organization	PricewaterhouseCoopers (PwC)	World Economic Forum (WEF)
Name	Cities of Opportunity: Business-readiness Indicators for the 21st Century	World Competitiveness
Function	Business	Economic
Target Country / City	Worldwide: 20cities (2008)	Worldwide: 133 countries and regions (200-2010)
Evaluation Target	Business Environment	National Productivity
Organization	Economist Intelligence Unit (EIU)	International Institute for Management Development (IMD)
Name	Livability Ranking	Global Competitiveness Index
Function	Living	Economic
Target Country / City	Worldwide: 140 cities (2009)	Worldwide: 57 countries and regions (2009)
Evaluation Target	Livability	Corporate Competitiveness Environment
Organization	Munich Re Group	Japan Center for Economic Research
Name	Natural Hazard Index	Latent Competitiveness Ranking
Function	Disaster	Economic
Target Country / City	Worldwide: 50 cities (2005)	Worldwide: 50 countries (2008)
Evaluation Target	Risk	How much will per capita GDP be increased over the next 10 years?
Organization	Mercer LLC	World Bank
Name	Cost-of-Living Survey	Ease of Doing Business
Function	Lifestyle	Business
Target Country / City	Worldwide: 143 cities (2009)	Worldwide: 183 countries and regions (2009)
Evaluation Target	Cost of Living	Business Regulatory Environment
Organization	Mercer LLC	Economist Intelligence Unit (EIU)
Name	Quality of Life Survey	IT Industry Competitiveness Index
Function	Lifestyle	IT
Target Country / City	Worldwide: 215 cities (2009)	Worldwide: 66 countries (2009)
Evaluation Target	Quality of Life Survey	IT Corporate Competitiveness Environment
Organization	UBS	Yale University
Name	Price and Income Survey	Environmental Performance Index (EPI)
Function	Lifestyle	Environmental
Target Country / City	Worldwide: 73 cities (2009)	Worldwide: 149 countries (2008)
Evaluation Target	Price and Income Survey	Environmental Performance
Organization	Chinese Academy of Social Sciences	
Name	Global Urban Competitiveness Report(2007-2008)	
Function	Business	
Target Country / City	Worldwide: 500 cities(2008)	
Evaluation Target	Business worth	

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Global Power City Index Working Group

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