

Cities of Opportunity 2008

Definitions and sources

Intellectual capital

Top 500 universities

Each city's share of the world's top 500 universities.

Sources:

Academic Ranking of World Universities, Institute of Higher Education, Shanghai Jiao Tong University

Percent of population with higher education

The percent of the population with a higher education is derived from the number of people with a university-level education or higher, then divided by the total population.

Sources:

American Community Survey
Statistics Canada

Eurostat

www.statistiques-locales.insee.fr

Shanghai Municipal Government

Government of Singapore

Tokyo Metropolitan Government

The Government of the Hong Kong Special Administrative Region

PricewaterhouseCoopers, Beijing Office

Seoul National Statistical Office

Office of the Registrar General & Census Commissioner, India

Government of Dubai

.id demographers (Australian firm of demographers)

Statistics South Africa: Community Survey 2007

Government of the State of Sao Paulo

National Institution of Statistics and Geography Mexico

Top 100 MBA Universities

Each city's share of the world's top 100 MBA universities.

Sources:

Financial Times Global Ranking 2008

Number of medical schools

The number includes medical schools located in each city.

Sources:

Institute for International Medical Education; Harvard Medical School Dubai Center & Duke NUS Graduate medical School Singapore

Technology IQ and Innovation

Employment in high-tech services

The number of people employed in high-tech services per 1,000 inhabitants.

Sources:

Robert Huggins World Knowledge Competitiveness Index 2008

Biomedical technology transfer

The value of biotechnology transfer at the university level in each city, from knowledge creation to technology transfer and early-stage commercialization. The scores are based on total composite scores for all schools in each city.

Sources:

Milken Institute Biotech Patent Rankings

E-readiness

Measures the ability of a country's consumers, businesses and government to use information and communications technology to their benefit. Also assesses citizens' ability to utilize technology skillfully and the transparency of the business and legal systems and the extent to which governments encourage the use of digital technologies.

Sources:

The Economist E-readiness Report: Raising the Bar, 2008

Notes:

Raw score by country, based on most populous city.

Transportation and infrastructure assets

Registered taxis per 1,000 of population

The number of registered taxis in each city is divided by the city population and then multiplied by 1,000.

Sources:

Spanitz consulting

NYC taxi & Limousine Commission

City of Toronto

Greater Houston Convention and Visitors Bureau

Los Angeles Taxicab Administrator

Taxi Frankfurt eG

Transport for London

www.infotaxiparis.com

Travel China Guide

Singapore Land & Transport Authority

Japan Economy News

Transport Department HK

Xinhua news agency

Korea News

www.gulfnews.com/home/

Taxis in New South Wales

Human Sciences Research Council

One Planet Travel

Metro de la Ciudad de Mexico

Notes:

Johannesburg: Metered taxis.

Miles of mass transit track per 100,000 of population

The miles of metro, tram and light rail track within the city is divided by the city population and then multiplied by 100,000.

Sources:

Urbanrail

Metropolitan Transportation Authority, State of New York

Metro Light rail

Transit Chicago

Toronto Transit Commission

Metropolitan Transit Authority of Harris County, Houston

Los Angeles County metropolitan Transportation Authority

Notes:

Commuter rails were not counted, only mass transit (equivocal to the Subway)

Aircraft movements

Air traffic movements include civil international passenger, cargo and non-revenue flights, but exclude military and local flights.

Sources:

Airports Council International

Greater Toronto Airport Authority

Port Authority of New York and New Jersey

Midway international Airport

Long Beach Airport

Heathrow Airport

London City Airport

Stansted Airport

Gatwick Airport

Aéroports de Paris

Pudong International Airport
 Hongqiao International Airport
 Hong Kong International Airport
 Incheon International Airport Corp
 Aviation Centre of Excellence (Mumbai)
 Sydney Airport
 Airports Company South Africa
 Infraero, Aeroportos Brasileiros

Incoming/outgoing passenger flows

The total number of incoming and outgoing passengers includes originating, terminating, transfer and transit passengers in each of the airports located within each city. Transfer and transit passengers are counted twice.

Sources:

Airports Council International
 Greater Toronto Airport Authority
 Port Authority of New York and New Jersey
 Midway international Airport
 Long Beach Airport
 Heathrow Airport
 London City Airport
 Stansted Airport
 Gatwick Airport
 Aéroports de Paris
 Pudong International Airport
 Hongqiao International Airport
 Hong Kong International Airport
 Incheon International Airport Corp
 Aviation Centre of Excellence (Mumbai)
 Sydney Airport
 Airports Company South Africa
 Infraero, Aeroportos Brasileiros

Notes:

“Transit passengers” are defined as air travelers coming from different port of departures who stay at the airport for brief periods, usually one hour, with the intention of proceeding to their first port of destination (includes various transport hubs—sea/air/etc.)

Congestion management

The management-of-traffic-congestion score for each city is included from the 2008 Mercer Quality of Life Reports. The reports include the level of traffic congestion in addition to modernity, reliability and efficiency of public transport.

Sources:

Mercer Quality of Life Reports

Cost of public transport

Data for the cost of public transport for the longest mass transit rail trip within the city boundaries are included; bus trips were used when rail systems were absent.

Sources:

Transit Chicago

NY City Transit
 Toronto Transit Commission
 Metropolitan Transit Authority of Harris County, Houston, Texas
 VGF Frankfurt
 Transport for London
 Visitparis.com
 Urbanrail
 Singapore Public Transport Council
 Tokyo Metro
 MTR Corporation
 Beijing Public Transport Holdings, Ltd
 LifeinKorea.com
 whereMumbai.com
 www.tripadvisor.com
 New South Wales Government
 Johannesburg Metropolitan Bus Services (Pty) Ltd
 Government of the State of Sao Paulo
 Metro de la Ciudad de Mexico

Building—approved and under construction

The number includes building projects either approved or under construction in each city.

Sources:

<http://www.emporis.com/en/wm/>

Electricity

Total electricity consumption in megawatt hours is divided by the city population and multiplied by 1,000.

Sources:

CNT Energy, a division of the Centre for Neighbourhood Technology
 New York City Government
 City of Toronto
 Los Angeles Department of Water and Power
 Department for Business, Enterprise and Regulatory Reform
 Gestionnaire du Réseau de Transport d’Electricité
 Shanghai Statistics
 Statistics Singapore
 Tokyo Metropolitan Government Bureau of General Affairs
 International Energy Agency
 PwC Beijing
 Seoul Metropolitan Government
 Government of Dubai
 Energy Australia
 Integral Energy
 Government of the State of Sao Paulo

Demographic advantages

Density of population

The density of each city is calculated by dividing the city population by the land area of the city in square kilometers.

Sources:

US Census Bureau
 Statistics Canada
 Frankfurt Government
 Office of National Statistics
 The French National Institute for Demographic Studies
 Shanghai Municipality Government
 Statistics Singapore
 Tokyo Metropolitan Government
 The Government of Hong Kong
 Beijing Statistical Yearbook
 Seoul Metropolitan Government
 Office of the Registrar General & Census Commissioner, India
 Government of Dubai
 Australian Bureau of Statistics
 Encarta
 Statistics South Africa
 National Institute of Statistics, Geography and Informatics, Government of Mexico
 City of Chicago
 New York City, Department of City Planning
 City Data
 City of Los Angeles Department of City Planning
 City of Frankfurt
 Transport for London
 City of Paris
 UNESCO
 Benchmark Property
 Seoul Metropolitan Government
 Urban Age
 United Arab Emirates
 Statistics South Africa
 City of São Paulo

Working-age population

A city’s working-age population includes all residents aged 15 years to 64 years within the city, divided by the total city population expressed as a percentage.

Sources:

US Census Bureau
 City of Toronto
 Eurostat
 Office of National Statistics
 Swiss Office of Statistics
 Shanghai Statistics Yearbook
 Statistics Singapore
 Tokyo Metropolitan Government
 The Government of the Hong Kong Special Administrative Region of the People’s Republic of China
 Beijing Municipal Bureau of Statistics
 Seoul Government Statistics
 Office of the Registrar General & Census Commissioner, India
 Dubai Municipality Portal

Australian Bureau of Statistics
Municipal Demarcation Board of South Africa
City of São Paulo
National Institute of Statistics, Geography and Informatics, Government of Mexico
US Census Bureau
Statistics Canada
Frankfurt Government
The French National Institute for Demographic Studies
Shanghai Municipality Government
Beijing Statistical Yearbook
Seoul Metropolitan Government
Government of Dubai
Encarta
Statistics South Africa

Diversity of city population

The number of countries represented in each city for which there is more than 0.5 percent of the foreign-born population.

Sources:
Globalisation Urbanization Migration Project
Shanghai Statistics
Seoul Metropolitan Government
Mumbai Police Department of registered foreign born workers

Financial clout

Number of Global 500 HQs

The number includes the Global 500 headquarters located in each city.

Sources:
CNN Money, Fortune 500

Percent of employment in financial and business services

Ratio of employees in this sector to the total city workforce.

Sources:
US Department of Labor
The City of Toronto
Frankfurt Chamber of Commerce and Industry
Office of National Statistics
National Institute for Statistics and Economic Studies, France
Shanghai Statistics
Statistics Singapore
The Government of the Hong Kong Special Administrative Region of the People's Republic of China
Seoul Metropolitan Government
Office of the Registrar General & Census Commissioner, India
Dubai Municipality
Department of State and Regional Development
Statistics South Africa

Government of Brazil Statistics Division
www.inegi.org.mx - INEGI - Instituto Nacional de Estadística y Geografía (National Institute of Statistics and Data Processing, Mexico)

Domestic market capitalization

The market capitalization of a stock exchange is the total number of issued shares of domestic companies multiplied by their respective prices at a given time.

Sources:
World Federation of Exchanges
Chicago Stock Exchange
Ontario Economic Development

Notes:
All cities in USD millions
Houston, Los Angeles, Beijing: Country data

Level of shareholder protection

A measurement of minority shareholder protections against misuse of corporate assets by directors for their personal gain. The Strength of Investor Protection Index is the average of "transparency of transactions," "liability for self-dealing" and "shareholders' ability to sue officers and directors for misconduct."

Sources:
World Bank "Doing Business": Investor Protection Index

Inflation

Inflation reflects the rise in price of goods and services, or the Consumer Price Index (CPI).

Sources:
The Economist

Notes:
Output, prices and jobs, The index measures the average change in Consumer Prices over a period of time at each centre and as such this cannot be used for comparison of costliness among different centers. All-India CPI (UNME) on base 1984-85=100 may be converted to old base 1960=100 by multiplying it with the linking factor 5.32.

Strength of currency (SDRs per currency unit)

The IMF variable is designed to measure the strength of currencies. It is essentially the amount of a basket of major currencies that can be bought by a given currency unit (measured in dollars). To access the official definition please refer to: http://www.imf.org/external/np/fin/data/rms_sdrv.aspx.

Sources:
International Monetary Fund

Cost

Cost of business occupancy

The cost of business occupancy is measured by the annual total occupancy cost per workstation in USD within a city's central business district.

Sources:
Staubach, Global Office Occupancy Costs Survey

Notes:
Occupancy Costs: average total cost of leasing prime net usable space (defined as modern, well-specified office space of 10,000 of within a prime Central Business District location). Includes rent and outgoings, e.g. maintenance costs and property tax, (if these are normally payable by the occupier), but exclude rent-free periods, fitting-out costs and other leasing incentives. Occupancy costs do not take into account the differences in leasing practices among markets. Total occupancy costs per workstation are based on total occupancy costs and space utilization standard per workstation. Accommodation costs on a per workstation basis provides a better indication of costs to occupiers as it reflects the way organizations occupy and use the space, as well as the cost of space on a unit-area basis

Cost of living

The Cost of Living Indexes are based on Mercer's cost of living database and are modified to include housing and to reflect constant weighting and basket items.

Sources:
Mercer Consulting Cost of Living Survey, 2008

Purchasing power

A measure that establishes a link between prices and earnings.

Sources:
UBS: A comparison of purchasing power around the globe / 2006 edition: Prices and Earnings

Total tax take

The total tax take includes the total amount of taxes and mandatory contributions payable by the business as a percent of the profit.

Sources:
Doing Business, Measuring business regulations

Notes:
All cities: country data, no city data available

Lifestyle

Entertainment

Includes the quality and variety of restaurants, theatrical and musical performances, cinemas, and sport and leisure activities within each city.

Sources:
Mercer Quality of Life Report, 2008

Hotel rooms

Count of all hotel rooms within each city.

Sources:
The Official Visitor Site for Chicago
NYC visit
The City of Toronto

Opportunity Houston, Greater Houston Partnership
 Los Angeles Business Journal
 Frankfurt Tourist Board
 Visit London
 Eurostat
 China Hospitality News
 Singapore Tourism Board
 Tokyo Metropolitan Government
 Hong Kong Hotels Association
 Radio 86 All About China
 Trip Advisor
 Ministry of Tourism Government of India
 Dubai Tourism
 Australia Bureau of Statistics
 Statistics South Africa
 Travel Daily News
 Secretary of Economic Development of Mexico City

Housing

The term housing includes measures of availability, diversity, cost and quality of housing; household appliances and furniture; and household maintenance and repair.

Sources:
 Mercer Quality of Life Reports

City brand

The Anholt City Brands IndexSM is based on how a city is perceived, impacting decisions ranging from vacation destinations to business relocation. Rankings include such criteria as international status, physical assets, economic and educational opportunities, image, friendliness of citizens and basic public amenities.

Sources:
 Anholt City Brands Index

Skyline impact

A ranking of cities by the visual impact of completed high-rise buildings on their skylines.

Sources:
 Emporis Skyline Ranking

Number of international tourists

Includes international tourist arrivals for each city in 2006.

Sources:
 Euromonitor International
 Frankfurt Tourist Information

Notes:
 As Johannesburg doesn't feature in the top 150 City Destinations, it is ranked bottom place

Commute time

The commute time assesses the average commute time across all modes, measured in minutes.

Sources:
 PayScale

Notes:
 Seoul: country data, no city data available

Health, Safety & Security

Crime

Includes figures of petty and property crimes, violent crimes and street crimes.

Sources:
 Mercer Quality of Living Reports

Number of hospitals

The number includes a count of all hospitals within each city.

Sources:
 Medline Plus: US National Library of Medicine and National Institutes of Health
 City of Toronto
 Consulate General of the United States
 Embassy of the United States
 CISMEF
 Singapore Ministry of Health
 Hospital Authority
 Yellow Pages

Healthy Living Expectancy

The Healthy Living Expectancy is the average number of years that a person can expect to live in full health by taking into account years lived in less than full health due to disease and/or injury.

Sources:
 World Health Organization

Notes:
 Data by country from 2002, published in 2007, age taken as male HALE: HALE at birth. (HALE = Healthy Life Expectancy)

Infant survival rate

The probability of a child living until at least age one.

Sources:
 World Health Organization

Notes:
 Infant mortality per 1000 births by country

Natural disaster risk

The risk of natural disasters occurring in a region, including hurricane, drought, earthquake, flood, landslide and volcano hazards.

Sources:
 Centre for Hazards and Risk Research at Columbia University

Political and social environment

Governments' relationship with other countries, internal stability, law enforcement, and the sociocultural environment—limitations on personal freedom and media censorship.

Sources:
 Mercer Quality of Life Reports

Ease of doing business

Ease of hiring

Includes data on restrictions and regulations employers must follow when taking on new staff.

Sources:
 World Bank "Doing Business"

Notes:
 Country data but worked out for most populous city in the country.
 Adjusted American cities in order of minimum wage.

Rigidity of hours

Reflects the flexibility in scheduling of nonstandard work hours and annual paid leave for a business.

Sources:
 World Bank "Doing Business"

Notes:
 Country data but worked out for most populous city in the country.

Difficulty of firing

Represents notification and approval requirements for termination of a redundant worker or a group of redundant workers, obligation to reassign or retrain and priority rules for redundancy and reemployment.

Sources:
 World Bank "Doing Business"

Notes:
 Country data but worked out for most populous city in the country.

Ease of entry: number of countries with visa waiver

The number of countries whose citizens may enter the city without a visa is quantified.

Sources:
 US Department of State
 Citizenship and Immigration Canada
 Federal Foreign Office Welcome to Germany Visa Requirements
 Home Office UK Border Agency
 Ministry of Foreign Affairs, France
 Federal Office for Migration, Switzerland
 People's Daily
 Singapore Immigration & Checkpoint Authority (ICA)

The Ministry of Foreign Affairs of Japan
Embassy of the People's Republic of China in India
Embassy of the People's Republic of China in the Kingdom of Thailand
Seoul Global Centre
Bureau of Immigration, India: Ministry of Home Affairs
United Arab Emirates Government Portal
Australian Government Department of Immigration and Citizenship
South African Department of Home Affairs
Consulate General of Brazil
Mexican Foreign Ministry: Mexican Embassy to the United States

Flexibility of visa travel

Countries were ranked taking into account both the number of visa waivers available and the time the visa would be granted for. Any additional restrictions were counted as negatives.

Sources:

US Department of State
Citizenship and Immigration Canada
Federal Foreign Office Welcome to Germany Visa Requirements
Home Office UK Border Agency
Ministry of Foreign Affairs, France
People's Daily
Singapore Immigration & Checkpoint Authority (ICA)
The Ministry of Foreign Affairs of Japan
Embassy of the People's Republic of China in India
Embassy of the People's Republic of China in the Kingdom of Thailand
Seoul Global Centre
Bureau of Immigration, India: Ministry of Home Affairs
United Arab Emirates Government Portal
Australian Government Department of Immigration and Citizenship
South African Department of Home Affairs
Consulate General of Brazil
Mexican Foreign Ministry: Mexican Embassy to the United States

Notes:

Countries were ranked taking into account both the number of visa waivers available and the time the visa would be granted for. Any additional restrictions were counted as negatives.

Clarity of policy was counted as a positive—hence London wins this variable because although it does not have as many countries with visa waiver, the maximum time limit on the visa is clear (as opposed to Singapore & Hong Kong) where time limits vary by country.

Attracting FDI—number of greenfield projects

The number of greenfield (new job-creating projects) in the destination city funded by foreign direct investment.

Sources:

OCO Consulting

Sustainability

Green cities

The Green Cities Index from Reader's Digest is based on 11 variables to capture a city's local "greenness," and "good citizenry." Variables include raw data as well as qualitative analysis such as garbage production per capita, gasoline price, price of electricity, recycling laws, private vehicles per capita, public transit's share of energy consumption and smoking laws.

Sources:

Readers Digest

Notes:

Dubai and Mexico City: set to country

Air quality

Indicated by the average annual concentrations of particulate matter measured in micrograms per cubic meter in residential areas away from air pollution hot spots, such as transport corridors.

Sources:

The World Bank, 2004
Kyoto University
The Government of Hong Kong Special Administrative Region: Environmental Protection Department

Recycled waste—percent diverted

The percent of waste recycled in each city (diverted from landfills).

Sources:

City of Chicago
Department of Sanitation, New York City
City of Toronto
Waste News
City of Los Angeles, Sanitation Department of Public Works
Capital Waste Facts
City of Paris

Ministry of Environment and Water Resources, Singapore
Statistics of Tokyo
Hong Kong Waste Reduction
United Nations Environment Programme
Seoul Metropolitan Government
Municipal Corporation of Greater Mumbai
AME Info
Government of the State of Sao Paulo
National Geographic

Green space as a percentage of city's area

A city's land areas designated as recreational and green spaces out of the total land area.

Sources:

The Trust for Public Land, Conserving Land for People
City of Toronto
Regional Policy, Urban Audit, Frankfurt
Mayor of London, the London Assembly and the Greater London Authority
Ezine articles
University College, Dublin, Greenspace
China Daily
John Hopkins Bloomberg School of Public Health
The Government of Hong Kong Special Administrative Region Planning Department
Bjinvest
Seoul Metropolitan Government
Municipal Corporation of Greater Mumbai
Dubai Municipality
City of Sydney
Food and Agriculture Organisation of the United Nations
City of Chicago
New York City, Department of City Planning
City Data
City of Los Angeles Department of City Planning
City of Frankfurt
Transport for London
City of Paris
UNESCO
Benchmark Property
Seoul Metropolitan Government
Urban Age
United Arab Emirates
Statistics South Africa
City of São Paulo

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