



indra



smart cities

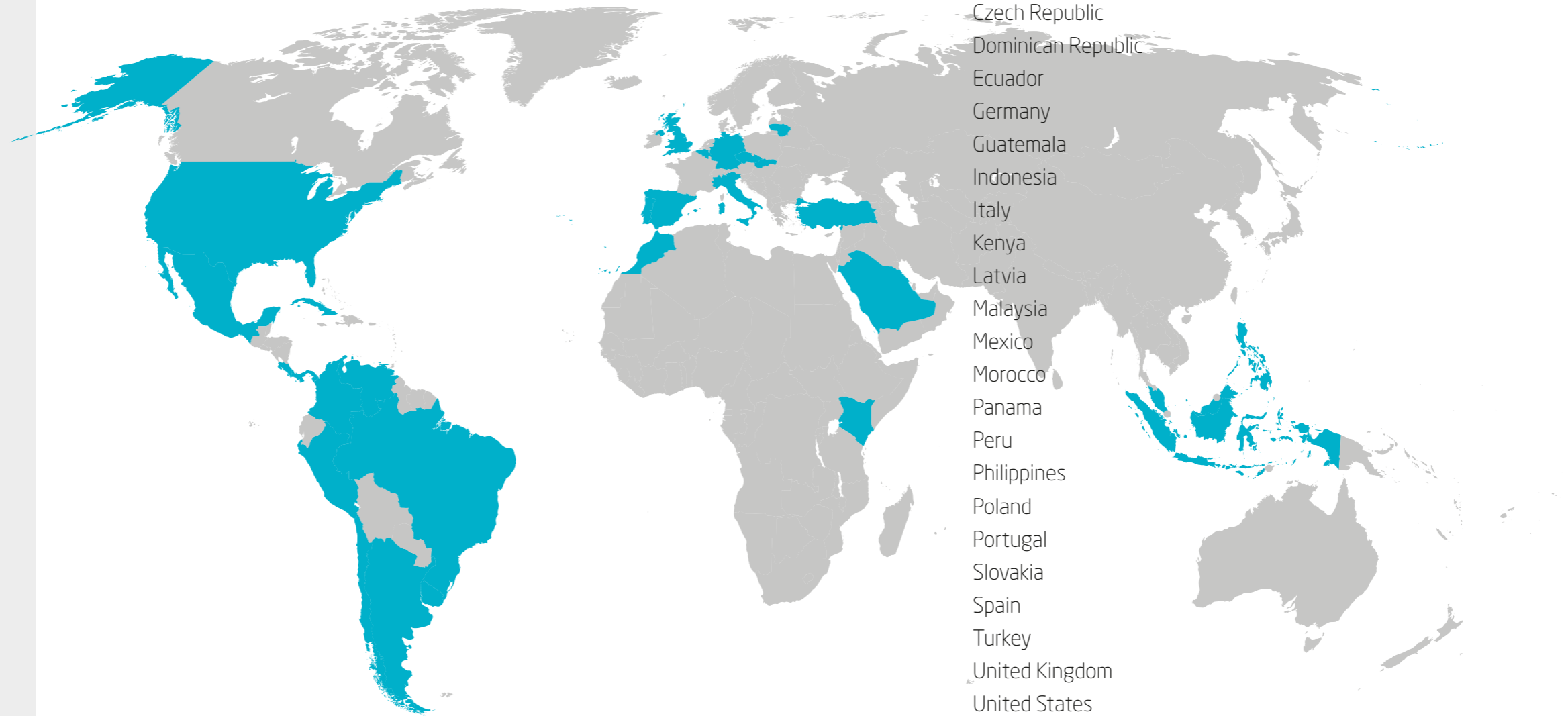
Smart cities

Global survey
on the status
of Smart Cities

2014

Smart cities

32 countries took part



- Argentina
- Australia
- Bahrain
- Belgium
- Bolivia
- Brazil
- Bulgaria
- Chile
- Colombia
- Czech Republic
- Dominican Republic
- Ecuador
- Germany
- Guatemala
- Indonesia
- Italy
- Kenya
- Latvia
- Malaysia
- Mexico
- Morocco
- Panama
- Peru
- Philippines
- Poland
- Portugal
- Slovakia
- Spain
- Turkey
- United Kingdom
- United States
- Uruguay
- Venezuela



A Coruña	Cartagena	Guatire	Maracaibo	Pompen	Sao Paulo
Aceuchal	Cartagena de Indias	Guildford	Maracanaú	Ponferrada	Sao Sebastiao
Adroque	Cártama	Hortolandia	Marchamalo	Pontevedra	Saronno
Alcalá de Henares	Cascais	Hospitalet de Llobregat	Mari	Portsmouth	Segovia
Alcobendas	Castellar del Valles	Huesca	Marikina	Portugalete	Sestao
Alcorcón	Cavite City	Humanes de Madrid	Marino	Pozuelo de Alarcón	Seville
Alejandro Korn	Cerdanyola del Valles	Ibague	Matará	Prague	Soacha
Amadora	Chiriqui	Igualada	Mauá	Puente Piedra	Sobradinho
Anápolis	Ciempozuelos	Imus	Meco	Puerto de Sagunto	Sofia
Antipolo	Ciudad Real	Indalatuba	Medellin	Puertollano	Sumaré
Aparecida	Ciudalcampo	Inhumas Go	Mejorada del Campo	Queimados	Sydney
Aracaju	Cobefia	Istanbul	Melque de Cercos	Queretaro	Taguatinga
Aranjuez	Collado Villalba	Itatiba	Mexico City	Quezon City	Taguatinga
Arapiraca	Colmenar Viejo	Itzaingó	Miami	Quito	Taguig
Arauca	Colmenarejo	Jaboatao	Miami Platja	Rabat	Tarragona
Areal	Con-Con	Jakarta	Miguelturra	Ramos Mejia	Toledo
Arganda del Rey	Cordoba	Joao Pessoa	Milan	Recife	Toluca
Armenia	Cordovilla	José C. Paz	Mollerussa	Rio Branco	Torredembarra
Arroyomolinos	Cornellá de Llobregat	Kuala Lumpur	Mollet del Valles	Rio de Janeiro	Torrejón de Ardoz
Arujá	Coslada	La Eliana	Montevideo	Riohacha	Torres de la Alameda
Astorga	Cuatla Izcalli	La Plata	Moraleja de Enmedio	Rionegro	Tres Cantos
Avellaneda	Cucuta	La Punta	Moreno	Rivas Vaciamadrld	Valdemoro
Aviles	Cuenca	Landriano	Moro	Robledo de Chavela	Valdoviño
Badajoz	Daganzo	Lanus	Mosquera	Rome	Valencia
Badalona	Diadema	Las Palmas de Gran Canaria	Móstoles	Rosario	Valenzuela City
Barakaldo	Duque de Caxlas	Las Pinas	Munich	Sabadell	Valparaíso
Barberá del Valles	Düsseldorf	Las Rozas de Madrid	Muntinlupa	Salamanca	Velilla de San Antonio
Barcelona	Ecatepec	Lauro de Freitas	Murcia	Salvador	Vigo
Barrancabermeja	El Casar de Talamanca	Leganés	Nairobi	San Fernando de Henares	Viladecans
Barranquilla	El Escorial	León	Naples	San Isidro	Vilafranca del Penedés
Barueri	El Jadida	Lérida	Natal	San Isidro	Vilanova i la Geltrú
Bell-lloc d'Urgell	El Vendrell	Les Franqueses	Navalcarnero	San Juan City	Villa Alemana
Belo Horizonte	Embu	Libertad	Nelva	San Lorenzo de El Escorial	Villalbilla
Berlin	Ferrol	Lima	Netzahualcóyotl	San Luis	Villanueva de la Cañada
Big	Figueres	Limbiate	Niterói	San Sebastián de los Reyes	Villanueva de la Torre
Bilbao	FlavantTown	Lisbon	Olías del Rey	Sant Celoní	Villanueva del Pardillo
Boadilla del Monte	Florencio Varela	Lleida	Ontígola	Sant Cugat del Valles	Villaviciencio
Bogota	Florianopolis	Llepaja	Oporto	Sant Joan Despí	Villaviciosa de Odón
Brasilia	Fortaleza	Llombai	Osasco	Sant'Angelo d'Alife	Warsaw
Bratislava	Frankfurt	Lomas de Zamora	Ostrava	Santa Cruz	Yebes
Bruñete	Fuenlabrada	London	Ovar	Santa Cruz de Tenerife	Zafra
Brussels	Galapagar	Los Olivos	Oviedo	Santa Fé	Zaragoza
Buenos Aires	Gama	Los Teques	Palmira	Santander	
Burgos	Genova	Lugo	Pamplona	Santiago de Cali	
Cabanillas Del Campo	Getafe	Macapá	Panama	Santiago de Chile	
Cáceres	Gijón	Macelo	Parla	Santiago de Compostela	
Cachoeira Paulista	Girona	Madrid	Pasig City	Santiago de Querétaro	
Cádiz	Glasgow	Majadahonda	Paterna	Santo André	
Caleta	Goiania	Malacky	Pereria	Santo Domingo	
Caleta de Vélez	Granada	Malaga	Pererira	Santos	
Cali	Granollers	Malamcbo	Philadelphia	Sao Bernardo do Campo	
Camarma de Esteruelas	Guadalajara	Manama	Pilas	Sao Caetano do Sul	
Campina Grande	GuaratInguetá	Mandaluyong City	Pinto	Sao Goncalo	
Campiñas	Guarulhos	Manila	Planaltina	São José de Mipibu	
Caracas	Guatemala	Manizales	Poblete	Sao José dos Campos	

Public opinion is of vital importance. That's why we at Indra decided to conduct a survey, giving citizens the opportunity to voice their opinions on the services provided by their cities and to submit suggestions on how they could be improved.

Among other issues, we asked them about: how long they spend commuting to work, their perception of security in their city, response to emergency situations, the quality of healthcare services, sustainability, e-governance and cleaning.

Looking at the global scores from this survey, which polled over 2,000 people in 234 different cities, we can conclude that overall services just about get a passing grade. The perception of security got the highest score (6.1), while sustainability and e-governance were at the back of the field (5.2).

Europe and Asia are the continents where service quality perception is generally higher, over Africa and America (mainly Latin America), where all services recorded poorer scores.

Looking at specific cities (selecting some that were most representative), we highlight the following:

Bogota recorded a higher than average sustainability score, but citizens take longer than one hour to commute to work. The TransMilenio system looks like a good step forward, but more work needs to be done to improve mobility.

In **Sao Paulo**, just like Bogota, mobility remains one of the main challenges, with citizens taking 63 minutes to commute to work. The general services rating is very low, with the best score going to response to emergency situations and cleaning, with 3.8, while the lowest score came in healthcare, at 2.9.

Malaga stands out as a pleasant city to live, with most services earning a score above the global average, although cleaning and sustainability did fall short of this threshold. Malaga's involvement in the Smart Cities City 2020 R&D project should help to drive sustainability.

Madrid, like **Malaga**, saw most services score above average, with just cleaning and sustainability rating worse than the average. One of the city's strong points is its response to emergency situations (scoring 7), with the CISEM project (Comprehensive Security and Emergency Center) almost certainly helping Madrid to achieve such a high number.

Santiago de Chile earned very good grades compared to other Latin American cities (where services generally scored lower). The only service with a score below the global average was sustainability, coming just one tenth short of the average. The quality of healthcare services, e-governance and city cleaning all scored nearly one point higher than the global average. In fact, in 2012 the United Nations conducted its own survey on e-governance, with Chile topping the Latin America standings and ranking 39th worldwide.

Rome was one of the European cities that delivered a surprise. It fell short of the global average score in all areas, with the lowest grade coming in e-government and cleaning, at 3.5. Time spent commuting to work was also longer than the global average (50 minutes). An urban platform incorporating comprehensive information from the entire city could help drive up the overall quality of services.

Rio de Janeiro also received a fail grade in all services, with healthcare recording the lowest score (a 3) and cleaning the best (4.3). The low public perception of emergency response services came as something of a surprise, as the city has benefitted from an integrated control center operational since 2011.

In **Quezon City** the high score in sustainability was unexpected (one point above the global average), as was the low number for e-governance (3.9). Sustainability was so highly rated thanks to a government order in 2009 requiring that all new buildings be designed and constructed based on green infrastructure standards.

Also in **Mexico City** all public services scored below the global average. The worst scores were for emergency response services, healthcare services and cleaning (with 4.2), while sustainability was rated the highest at 4.9. We believe a city of this size should have an urban platform to integrate comprehensive city data.

Lisbon was rated above the global average in all services and seems a good city to live in. The perception of security scored highest, at 7.5, while e-governance was the lowest, at 5.5 (global average of 5.2). We believe the city needs to improve its electronic governance systems.

Medellin was one of the highest scoring cities in Latin America. All services scored higher than or above the global average, with sustainability recording the highest grade (7.8) and security perception the lowest, matching the global average at 6.1. This was the only Latin American city included in the survey to record a shorter commute to work than the global average. This was due to the rollout of smart traffic and transport management technology.

Barcelona is another city where all services are rated higher than the global average. Security perception stands out as the highest scorer (7.2), while e-governance was the worst (5.7). Seeking to further buoy service quality, Barcelona is deploying an urban platform that will integrate information for all services and support cross-functional oversight.

Smart cities

User scores and suggestions

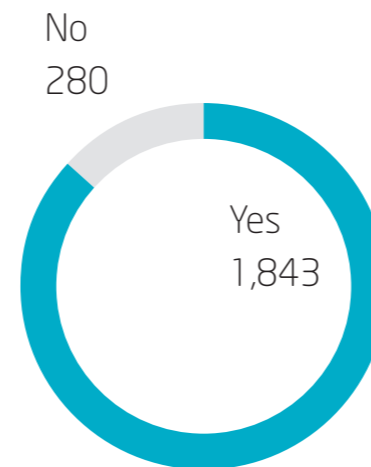
Mode of transport

Car or motorbike:	1,135
Bus, subway and/or train:	795
On foot:	78
Car/motorbike and public transport:	51
Bicycle and/or other:	29
Car or public transport:	22
Taxi and/or other:	9
On foot or by car:	3
I work from home:	1

Suggestions to improve mobility

- Cut down the number of cars looking for parking spaces
- Have buses run on time and more frequently
- Improve traffic signal synchronization
- Promote working from home
- Make the city more bike-friendly
- Shared transport
- Promote public-private intermodal transport
- Community-sourced apps to warn of heavy traffic, accidents, etc.
- Make the bus lines easier to understand

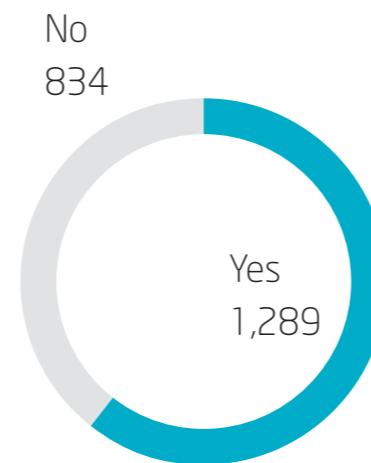
Take energy-saving measures



Suggestions to improve energy efficiency

- Promote renewable energy
- A reward system to incentivize efficiency, with each citizen provided with information on daily consumption
- Change street lighting for LEDs and sensors
- Collect rainwater for watering green spaces
- Promote self-sufficient buildings
- Promote electric vehicles, providing recharging stations
- Optimize smart grids

Use e-governance



Suggestions to improve e-governance

- Public awareness raising and training campaigns
- More accessible and intuitive use for the public
- Citizen files and cards
- Provide a good, free telephone support line
- Benefits for completing formalities online
- Make sure websites are always up to date
- Support online payments
- A larger catalog of online formalities
- Greater document fluidity

User scores and suggestions

Ideas for a safer city

- Camera surveillance
- Public awareness raising
- Better lighting on certain streets
- Greater police presence
- Reduce social inequality
- Stronger penalties
- Promote employment and culture
- Improve emergency response
- Make it easier to report issues or emergencies with a mobile app

Suggestions to improve healthcare

- Cut waiting times with lists of integrated health centers
- Improve waste collection services in certain problematic areas and hygiene.
- Speed up logistics between hospitals and ambulances
- Promote a healthy lifestyle and other public awareness programs. Improve IT systems and flexibly adapt the same to demand. Promote telemedicine
- Use a health card with full patient information. Penalize patients when they miss medical appointments. Better hospital equipment.
- Regular evaluation of hospital performance and greater transparency

Suggestions to improve education

- Provide more support resources to teachers
- Evaluate teachers and schools and make the results public
- Provide certain groups with teletraining
- Create interactive learning systems
- Bear in mind diverse abilities when teaching
- More public libraries
- Increased education spending
- Greater Internet connectivity and greater access to ICTs. Change the education system and cut down reforms. Implement international and language teaching programs from an early age



Time spent commuting to work (in minutes)

46

Perception of **security** in your city

6.1

Rating of response to **emergency** situations

5.8

Quality of **healthcare service**

5.6

Perception of **sustainability**

5.2

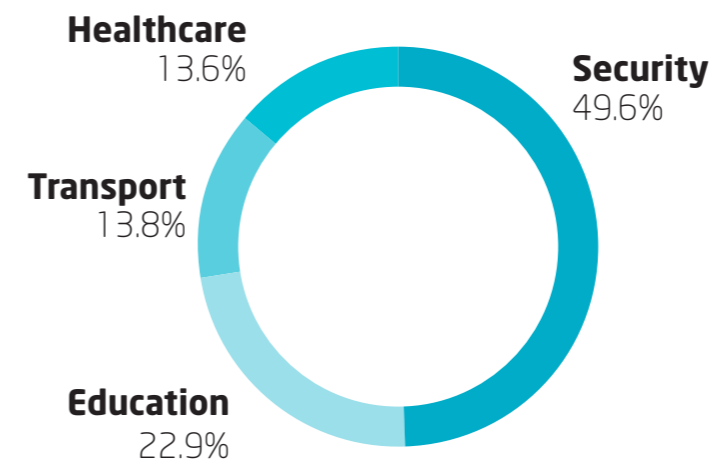
e-governance in your city

5.2

Cleanliness in your city

5.4

Main reason you would choose to live in a city



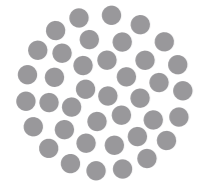
Smart cities

Average scores by continent



	Time spent commuting to work (in minutes)	Perception of security in your city	Rating of response to emergency situations
Africa	58.75 ▼	4.13 ▼	3.50 ▼
America	57.69	4.51	4.47
Asia	54.10	5.98	5.55
Europe	38.07 ▲	7.05 ▲	6.72 ▲
Total overall	45.83	6.06	5.84

	Quality of healthcare service	How do you rate the level of sustainability in your city?	e-governance in your city	Cleanliness in your city
Africa	4.88	4.38 ▼	3.13 ▼	3.88 ▼
America	4.40 ▼	4.78	4.22	4.90
Asia	5.71	6.29 ▲	4.60	5.48
Europe	6.49 ▲	5.39	5.54 ▲	5.75 ▲
Total overall	5.68	5.18	5.02	5.42



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smart cities

Score by cities



Time spent commuting to work (in minutes)

14 ▲

Global average **46**

Perception of **security** in your city

7.5 ▲

Global average **6.1**

Rating of response to **emergency** situations

6.1 ▲

Global average **5.8**

Quality of **healthcare service**

6.7 ▲

Global average **5.6**

Perception of **sustainability**

5.2 ▲

Global average **5.2**

e-governance in your city

5.1 ▼

Global average **5.2**

Cleanliness in your city

6.0 ▲

Global average **5.4**



Time spent commuting to work (in minutes)

29 ▲

Global average **46**

Perception of **security** in your city

7.2 ▲

Global average **6.1**

Rating of response to **emergency** situations

6.4 ▲

Global average **5.8**

Quality of **healthcare service**

6.4 ▲

Global average **5.6**

Perception of **sustainability**

5.8 ▲

Global average **5.2**

e-governance in your city

5.7 ▲

Global average **5.2**

Cleanliness in your city

5.9 ▲

Global average **5.4**



Time spent commuting
to work (in minutes)

65 ▼

Global average **46**

Perception of
security in your city

4.7 ▼

Global average **6.1**

Rating of response to
emergency situations

4.7 ▼

Global average **5.8**

Quality of
healthcare service

5.6 =

Global average **5.6**

Perception
of **sustainability**

5.5 ▲

Global average **5.2**

e-governance
in your city

4.8 ▼

Global average **5.2**

Cleanliness
in your city

5.3 ▼

Global average **5.4**

City
Buenos Aires

Surface area: 203 km²
Population: 2.9 million



Time spent commuting to work (in minutes)

64 ▼

Global average **46**

Perception of **security** in your city

4.1 ▼

Global average **6.1**

Rating of response to **emergency** situations

5.4 ▼

Global average **5.8**

Quality of **healthcare service**

5.2 ▼

Global average **5.6**

Perception of **sustainability**

4.6 ▼

Global average **5.2**

e-governance in your city

5.6 ▼

Global average **5.2**

Cleanliness in your city

4.3 ▼

Global average **5.4**



Time spent commuting to work (in minutes)

24 ▲

Global average **46**

Perception of **security** in your city

7.5 ▲

Global average **6.1**

Rating of response to **emergency** situations

6.6 ▲

Global average **5.8**

Quality of **healthcare service**

5.8 ▲

Global average **5.6**

Perception of **sustainability**

6.1 ▲

Global average **5.2**

e-governance in your city

5.5 ▲

Global average **5.2**

Cleanliness in your city

5.8 ▲

Media mundial **5.4**



Time spent commuting to work (in minutes)

24 ▲

Global average **46**

Perception of **security** in your city

6.7 ▲

Global average **6.1**

Rating of response to **emergency** situations

6.2 ▲

Global average **5.8**

Quality of **healthcare service**

6.2 ▲

Global average **5.6**

Perception of **sustainability**

4.9 ▼

Global average **5.2**

e-governance in your city

5.3 ▲

Global average **5.2**

Cleanliness in your city

4.5 ▼

Global average **5.4**

City
Madrid

Surface area: 395 km²
Population: 4.3 million



Time spent commuting to work (in minutes)

42 ▲

Global average 46

Perception of **security** in your city

6.9 ▲

Global average 6.1

Rating of response to **emergency** situations

7.0 ▲

Global average 5.8

Quality of **healthcare service**

6.6 ▲

Global average 5.6

Perception of **sustainability**

4.9 ▼

Global average 5.2

e-governance in your city

5.8 ▲

Global average 5.2

Cleanliness in your city

5.4 ▼

Global average 5.4



Time spent commuting to work (in minutes)

42 ▲

Global average **46**

Perception of **security** in your city

6.1 ▲

Global average **6.1**

Rating of response to **emergency** situations

6.8 ▲

Global average **5.8**

Quality of **healthcare service**

7.3 ▲

Global average **5.6**

Perception of **sustainability**

7.8 ▲

Global average **5.2**

e-governance in your city

7.5 ▲

Global average **5.2**

Cleanliness in your city

7,2 ▲

Global average **5.4**



Time spent commuting to work (in minutes)

65 ▼

Global average **46**

Perception of **security** in your city

4.8 ▼

Global average **6.1**

Rating of response to **emergency** situations

4.2 ▼

Global average **5.8**

Quality of **healthcare service**

4.2 ▼

Global average **5.6**

Perception of **sustainability**

4.9 ▼

Global average **5.2**

e-governance in your city

4.5 ▼

Global average **5.2**

Cleanliness in your city

4.2 ▼

Global average **5.4**



Time spent commuting to
work (in minutes)

50 ▼

Global average **46**

Perception of
security in your city

5.9 ▼

Global average **6.1**

Rating of response to
emergency situations

5.5 ▼

Global average **5.8**

Quality of
healthcare service

5.6 ▲

Global average **5.6**

Perception of
sustainability

6.2 ▲

Global average **5.2**

e-governance
in your city

3.9 ▼

Global average **5.2**

Cleanliness
in your city

4.9 ▼

Global average **5.4**



Time spent commuting to work (in minutes)

55 ▼

Global average **46**

Perception of **security** in your city

3.9 ▼

Global average **6.1**

Rating of response to **emergency** situations

3.9 ▼

Global average **5.8**

Quality of **healthcare service**

3.0 ▼

Global average **5.6**

Perception of **sustainability**

3.8 ▼

Global average **5.2**

e-governance in your city

3.4 ▼

Global average **5.2**

Cleanliness in your city

4.3 ▼

Global average **5.4**

City
**Rivas
Vaciamadrid**

Surface area: 67 km²
Population: 0.075 million



Time spent commuting
to work (in minutes)

40 ▲

Global average **46**

Perception of
security in your city

7.4 ▲

Global average **6.1**

Rating of response to
emergency situations

6.4 ▲

Global average **5.8**

Quality of
healthcare service

5.3 ▼

Global average **5.6**

Perception
of **sustainability**

7.4 ▲

Global average **5.2**

e-governance
in your city

7.1 ▲

Global average **5.2**

Cleanliness
in your city

7.8 ▲

Global average **5.4**

City
Rome

Surface area: 1,285 km²
Population: 2.7 million



Time spent commuting
to work (in minutes)

50 ▼

Global average **46**

Perception of
security in your city

5.0 ▼

Global average **6.1**

Rating of response to
emergency situations

4.7 ▼

Global average **5.8**

Quality of
healthcare service

5.1 ▼

Global average **5.6**

Perception
of **sustainability**

4.3 ▼

Global average **5.2**

e-governance
in your city

3.5 ▼

Global average **5.2**

Cleanliness
in your city

3.5 ▼

Global average **5.4**



Time spent commuting to
work (in minutes)

51 ▼

Global average **46**

Perception of
security in your city

6.6 ▲

Global average **6.1**

Rating of response to
emergency situations

5.8 ▲

Global average **5.8**

Quality of
healthcare service

6.3 ▲

Global average **5.6**

Perception of
sustainability

5.1 ▼

Global average **5.2**

e-governance
in your city

6.1 ▲

Global average **5.2**

Cleanliness
in your city

6.4 ▲

Global average **5.4**



Time spent commuting to work (in minutes)

63 ▼

Global average **46**

Perception of **security** in your city

3.4 ▼

Global average **6.1**

Rating of response to **emergency** situations

3.8 ▼

Global average **5.8**

Quality of **healthcare service**

2.9 ▼

Global average **5.6**

Perception of **sustainability**

3.7 ▼

Global average **5.2**

e-governance in your city

3.2 ▼

Global average **5.2**

Cleanliness in your city

3.8 ▼

Global average **5.4**

Thank you

About the sample

Total surveyed:
2123

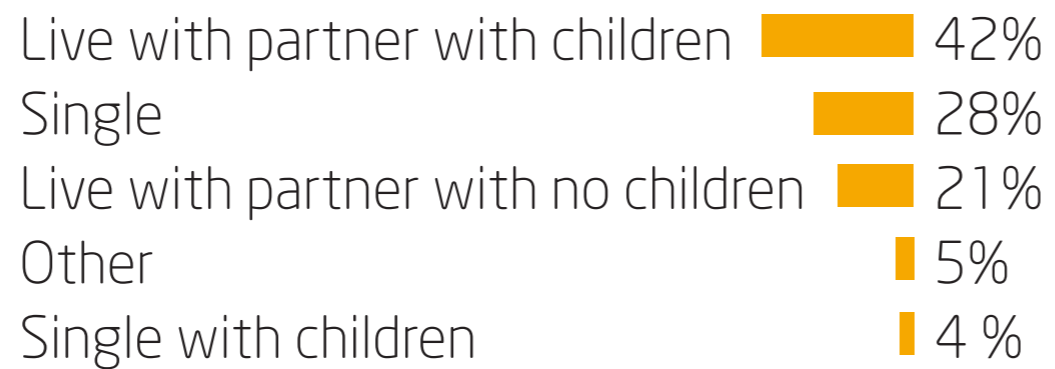


Men: 68%

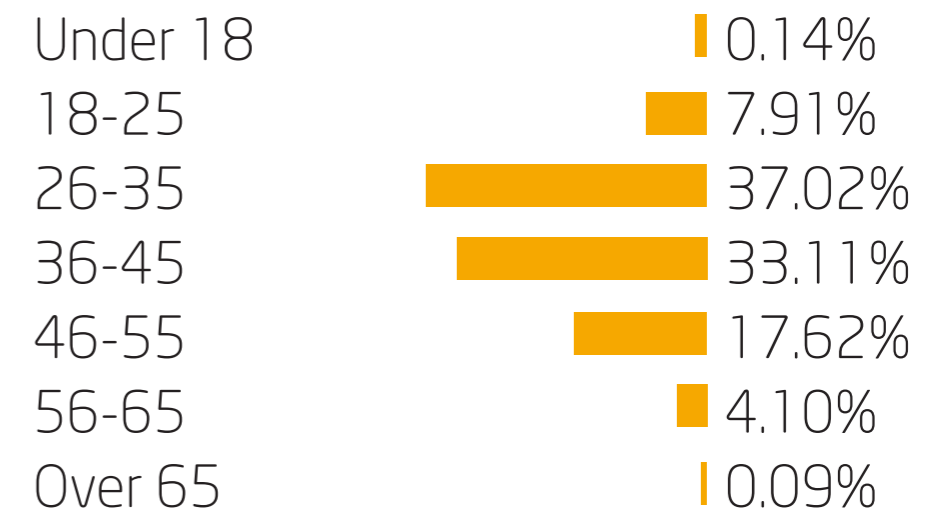


Women: 32%

Family situation:



Age distribution:



Voluntary survey conducted online and worldwide during April and May of 2014.