

# IMD Smart City

Index  
Report  
2023



IMD / World Competitiveness  
Center

In partnership with

WeGO  
World Smart Sustainable Cities Organization

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“I have never felt salvation in nature. I love cities above all.”

— Michelangelo

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“The mark of a great city isn’t how it treats its special places –everybody does that right –but how it treats its ordinary ones.”

— Aaron M. Renn  
(The Urban State of Mind:  
Meditations on the City)

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# IMD Smart City Index 2023

## **Introduction**

A New Beginning: A More Precise,  
Relevant and Impactful Smart City Index

# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index

### Welcome to the 2023 edition of the IMD Smart City Index Report (SCI Report).

This edition marks a significant step in the history of this report, which has now acquired global recognition and respect. After a break in 2022, three major changes have been brought to the Index and accompanying report.

1

The World Smart Sustainable Cities Organization (WeGO) has joined us as a knowledge partner;

2

The number of cities in the SCI has significantly increased; and

3

The SCI's methodology has been improved thanks to the acquisition of new data.

Each of these changes has significant consequences. They make us even more enthusiastic about the impact and relevance of the Index, and about its future. Here's why:

### A New Knowledge Partner



The World Smart Sustainable Cities Organization (WeGO), is a membership-based international association of local governments, smart tech solution providers, and institutions committed to the transformation of cities into smart, sustainable cities through facilitating public-private partnerships (PPP). It was founded by 50 member cities in 2010 as the World e-Governments Organization, hence the acronym. However, as the concept of “smart cities” continued evolving, during the 4th General Assembly (2017) WeGO expanded its mandate and changed its name to the World Smart Sustainable Cities Organization.

For its members, WeGO serves as an international platform to improve the quality of life, innovate in the delivery of public services, and strengthen regional competitiveness. The WeGO network currently includes over 200 cities, 26 are covered by this edition of the SCI index and report.

WeGO as a partner strives to support the development of human-centered cities and progress in seeking solutions to smart city challenges. WeGO's vision is set in the direction of mitigating the digital divide by providing smart cities with a guideline through the smart city index.

### From 118 to 141 Cities

The coverage of the SCI and SCI Report has increased by 20 per cent to include 141 cities (previously 118 were measured), distributed across the world. This reflects the SCI's ongoing efforts to be a global index, and to facilitate the benchmarking of all kinds of cities, whatever their size or level of development. This year, we have made a concerted effort to include more capital cities from all continents, while keeping an eye on 'second-tier cities' showing signs of dynamism, and an appetite for designing and implementing innovative solutions to their key problems.

# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index



### New Data at City Level

The SCI's methodology has been improved thanks to the acquisition of new data at the city level.

The SCI was designed as a tool for action. Since it is based on people's perceptions (surveys), it is critically important that the answers collected are calibrated to the specific context of the cities studied.

For the 2021 Index and all prior editions, we relied on country-level Human Development Index (HDI) data provided by the United Nations Development Programme (UNDP). Throughout the course of 2022, we explored the possibility of using city-level HDI data that could provide a more granular (and realistic) vision of the socio-economic environment of specific cities. The new SCI methodology is described in detail below. We believe that time invested in furthering our methodological approach was incredibly well spent and are excited by the applicability of the results obtained.

# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index



The SCI's value rests greatly on its ability to generate time series, and this is where citizens and decision makers can track the evolution of their city's performance over time, and compare it with that of other cities around the world. It follows that deciding to change an index's methodology isn't easy and often comes at the cost of breaking the continuity necessary to build such a series. We are proud to announce that in the case of the SCI, we have been able to not only improve the methodology but also to preserve our users' ability to work on time series. We did so by 'building back' the data and rankings that would have been those of the cities covered if the new methodology had been applied at the time. This means that the rankings of the SCI 2023 should not be compared to those published in previous SCI reports as they are the result of different approaches. However, comparisons across time can be made and used with recourse to the tables included in this report that reflect the 2019-2023 rankings of the cities covered using the most recent methodology. See pages 39-40 of this report.

Against the background of these three significant changes, what key messages emerge from this revamped 2023 Index and Report? They can be summarized as follows:

1

The global landscape of smart cities is changing, and lessons can be learned from the experience of "SCI champions" – the top 20.

2

Globally, a new world is shaping up, and **changes at the city level are a precious indicator** of what the future may hold.

# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index

### Lessons from the champions: who is in the top 20, and how did they do it?

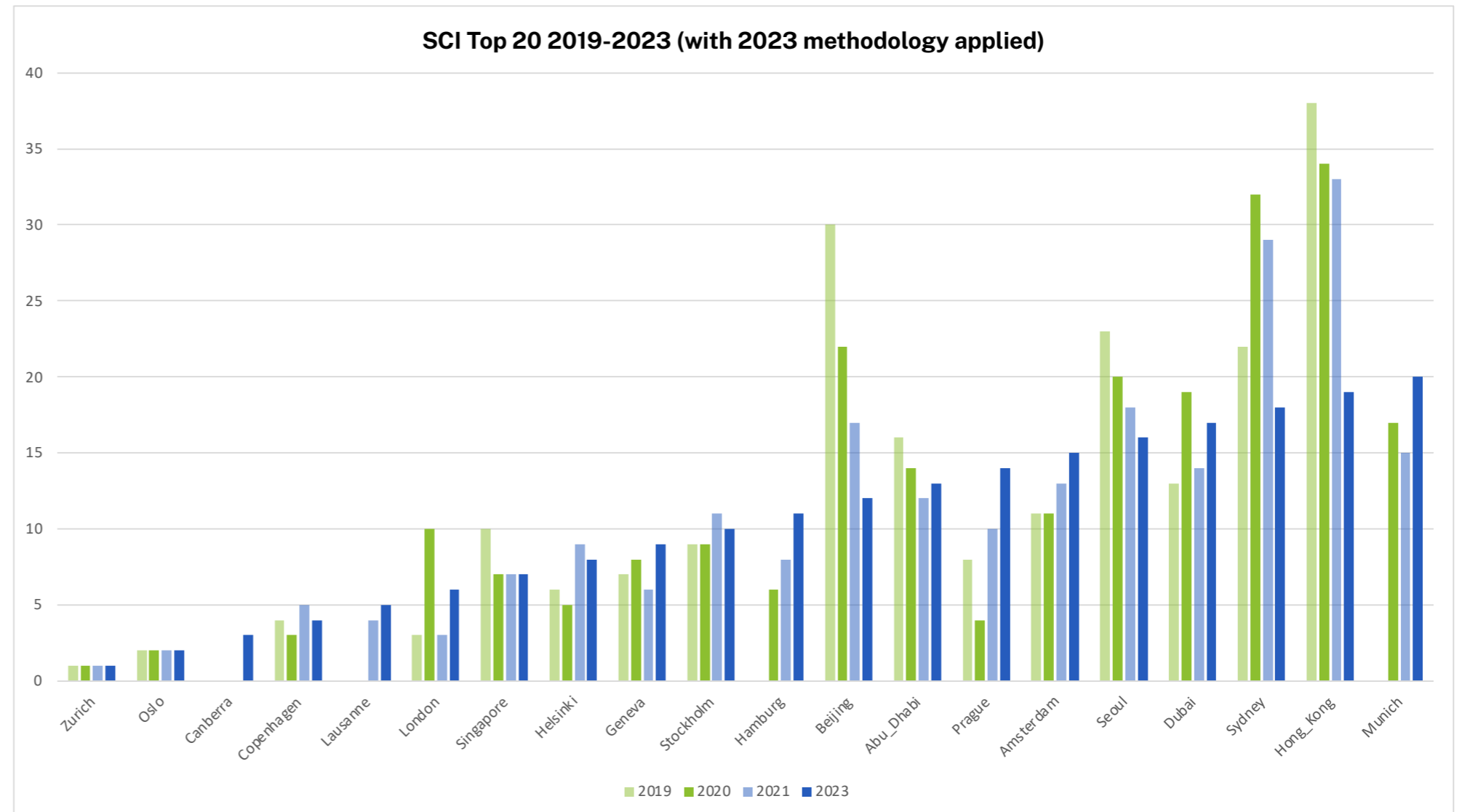
In 2023, the upper echelons of the SCI comprise the 20 cities in the table below. Rankings prior to 2023 have been adjusted according to the new methodology for the purposes of homogeneity and to allow comparison.

City	Rank 2023	Rank 2021	Rank 2020	Rank 2019
Zurich	1	1	1	1
Oslo	2	2	2	2
Canberra	3	—	—	—
Copenhagen	4	5	3	4
Lausanne	5	4	—	—
London	6	3	10	3
Singapore	7	7	7	10
Helsinki	8	9	5	6
Geneva	9	6	8	7
Stockholm	10	11	9	9
Hamburg	11	8	6	—
Beijing	12	17	22	30
Abu Dhabi	13	12	14	16
Prague	14	10	4	8
Amsterdam	15	13	11	11
Seoul	16	18	20	23
Dubai	17	14	19	13
Sydney	18	29	32	22
Hong Kong	19	33	34	38

# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index

Several observations can be made by analyzing this list. Most strikingly, out of the top 20, 17 cities have been part of the SCI since its creation. Among those 17, six cities show either a continuous improvement or stability, year-upon-year. These 'super-champions' are: Zurich, Oslo, Singapore, Beijing, Seoul, and Hong Kong.)





# IMD Smart City Index 2023

## Introduction: A More Precise, Relevant and Impactful Smart City Index

### A New World is Shaping Up. Cities Tell Us Where to Look

- 1. Asia and Europe ahead of the pack?** Apart from Abu Dhabi and Dubai, all of the cities occupying the top 20 are either in Europe or in Asia-Pacific. The absence of American or African cities is notable. New York ranks 22nd while Cairo (108th) is the leading African city. Medellin (118th) is the leading South American one. The 2023 rankings reflect a growing interest and higher levels of concern about the quality of life that residents are expecting to enjoy in their respective cities. Size is often a handicap rather than an advantage in this regard. This explains why most large metropolises such as Boston (34th) or Paris (46th) rank relatively low in the index, in spite of remarkable progress in a number of key areas such as sustainability and mobility.
- 2. ‘Second tier’ cities continue to do better than the rest.** Although the SCI’s top 20 include 12 capital cities (such as Oslo and Canberra), and several ‘economic capitals’ (like Zurich and Dubai), the picture is different when one looks at the top half of the rankings (1 to 70); a significant number of medium-sized cities show both solid positions and a continuous ability to move up. In Europe, this is the case for Lausanne, Munich and Bilbao, for example, and elsewhere in the world it rings true for Montreal, Mecca and Denver.

- 3. Smart city strategies are undergoing deep changes.** The basic principle that led to the creation of the Smart City Index in 2019 was that if cities wanted to be smarter, they needed to be less technology-centric, and more human-focused. Since then, this way of conceiving the nature and purpose of smart cities has moved closer to being mainstream. Many city officials are now routinely using a variety of different expressions in lieu of ‘smart cities’: ‘open and innovative cities’, ‘inclusive and diverse cities’, ‘sustainable cities’ and ‘citizen-centric cities’ are becoming part of the new labelling of ‘smart cities’ that were. But this is not merely a semantic change; it reflects deep changes in the way smart cities (and cities in general) will be designed and managed. Thanks to its initial design and philosophy, the Smart City Index is emerging as a critical tool to benchmark progress along those new lines. The SCI’s updated methodology will further enhance its relevance as these changes gather momentum.
- 4. Inclusion and diversity are emerging as key benchmarks for success.** An increasing number of cities are deploying new efforts to encourage diversity and inclusion as part of their smart strategies, variously linked to strategies to attract or retain talent, or to pre-existing conditions. Higher levels of tolerance for immigrants and minorities are becoming a marker in the ‘quality of life’ category, and in ‘leaving no one behind’ – a key phrase in defining the future of smart cities. Moreover, cities continue to accept (and, sometimes, seek) new roles, as central governments strive to become more agile through decentralization. Even at the international level, at a time in which many multilateral efforts seem to be losing momentum at the nation-states level, cities and their leaders are becoming more visible. Openness and inter-city collaboration may very well become key components of the next wave of globalization.

### Continuing to Improve the SCI

There are different ways to improve the quality of the SCI. Expanding the number of cities studied will always extend the scope of the index. Employing more focused data will improve the accuracy of the index and allow for a meaningful comparison among different qualities of cities. Finally, fine tuning the construction of the ranking improves its relevance as an action tool, and allows for better comparisons between cities. The 2023 SCI makes advances in all three dimensions.

As flagged earlier, the city coverage of the SCI index and report has increased by almost 20 per cent, bringing the total number of smart cities to 141. Using city-specific data for the construction of the Index was the focus of our research in 2022. In its new design, the SCI employs a city-specific measure of the HDI initially produced by the United Nations Development Program (UNDP).

HDI is a composite index that combines information about life expectancy, expected years of schooling and the mean years of education completed, as well as the per capita income of a country’s citizens. Until this year, the SCI used country-level HDI information as a proxy to evaluate the dimensions of health, knowledge and standard of living in each city. The 2023 SCI features city-level HDI, provided by the Global Data Lab. This allows for a more accurate ranking of each city, whilst also allowing readers to compare the performance of any given city to that of the country in which it is found.

Finally, city-level HDI facilitates a more academically rigorous comparison among cities. The 2023 SCI standardizes the performance of a city with the average of the city-HDI and the average of the surveys. This allows for a meaningful classification of a city relative to all other cities covered by the Index.

# IMD Smart City Index 2023

## Table of Contents

<b>Introduction</b>	03	Auckland	44	Canberra	67	Ho Chi Minh City	90
<b>Table of Contents</b>	10	Bangkok	45	Cape Town	68	Hong Kong	91
<b>The IMD World Competitiveness Center</b>	12	Barcelona	46	Cardiff	69	Hyderabad	92
<b>City Performance Overview</b>	13	Beijing	47	Chengdu	70	Islamabad	93
In 2023 City Ranking Order with HDI Context and 2019-2023 Ranking Comparison	14	Beirut	48	Chicago	71	Istanbul	94
In Alphabetical Order By City with 2023 Deep Dive and 2021 Comparison	17	Belfast	49	Chongqing	72	Jakarta	95
In Alphabetical Order by City with HDI Context and 2019-2023 Rankings	22	Bengaluru	50	Copenhagen	73	Jeddah	96
In Alphabetical Order by Country with HDI Context and 2019-2023 Rankings	26	Berlin	51	Delhi	74	Kiel	97
<b>A User's Guide</b>	30	Bilbao	52	Denver	75	Krakow	98
<b>Methodology</b>	33	Birmingham	53	Doha	76	Kuala Lumpur	99
<b>City Profiles</b>	35	Bogota	54	Dubai	77	Lagos	100
Abu Dhabi	36	Bologna	55	Dublin	78	Lausanne	101
Abuja	37	Bordeaux	56	Dusseldorf	79	Leeds	102
Accra	38	Boston	57	Geneva	80	Lille	103
Algiers	39	Brasilia	58	Glasgow	81	Lima	104
Amman	40	Bratislava	59	Gothenburg	82	Lisbon	105
Amsterdam	41	Brisbane	60	Guangzhou	83	Ljubljana	106
Amkara	42	Brussels	61	Guatemala City	84	London	107
Athens	43	Bucharest	62	Hamburg	85	Los Angeles	108
		Budapest	63	Hangzhou	86	Luxembourg	109
		Buenos Aires	64	Hanoi	87	Lyon	110
		Busan	65	Hanover	88	Madrid	111
		Cairo	66	Helsinki	89	Makassar	112

# IMD Smart City Index 2023

## Table of Contents

Manchester	113	Philadelphia	136	Taipei City	159
Manila	114	Phoenix	137	Tallinn	160
Marseille	115	Prague	138	Tel Aviv	161
Mecca	116	Rabat	139	The Hague	162
Medan	117	Reykjavic	140	Tianjin	163
Medellin	118	Riga	141	Tokyo	164
Medina	119	Rio de Janeiro	142	Toronto	165
Melbourne	120	Riyadh	143	Tunis	166
Mexico City	121	Rome	144	Vancouver	167
Milan	122	Rotterdam	145	Vienna	168
Montreal	123	San Francisco	146	Vilnius	169
Mumbai	124	San José	147	Warsaw	170
Munich	125	Sana'a	148	Washington D.C.	171
Muscat	126	Santiago	149	Wellington	172
Nairobi	127	Sao Paulo	150	Zagreb	173
Nanjing	128	Seattle	151	Zaragoza	174
New York	129	Seoul	152	Zhuhai	175
Newcastle	130	Shanghai	153	Zurich	176
Nicosia	131	Shenzhen	154		
Osaka	132	Singapore	155		
Oslo	133	Sofia	156		
Ottawa	134	Stockholm	157		
Paris	135	Sydney	158		

# IMD Smart City Index 2023

The IMD World Competitiveness Center

For over thirty years, the IMD World Competitiveness Center has pioneered research on how countries and companies compete to lay the foundations for sustainable value creation. The competitiveness of nations is probably one of the most significant developments in modern management and IMD is committed to leading the field.

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# IMD Smart City Index 2023

A Series of Tables Showcasing  
the Results in Different Ways

# IMD Smart City Index 2023: Results

In 2023 City Ranking Order with HDI Context and 2019-2023 Ranking Comparison (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Switzerland	0.962	Zurich	0.989	1	1	1	1
Norway	0.961	Oslo	0.98	2	2	2	2
Australia	0.951	Canberra	0.98				3
Denmark	0.948	Copenhagen	0.967	4	3	5	4
Switzerland	0.962	Lausanne	0.966			4	5
United Kingdom	0.929	London	0.973	3	10	3	6
Singapore	0.939	Singapore	0.939	10	7	7	7
Finland	0.94	Helsinki	0.96	6	5	9	8
Switzerland	0.962	Geneva	0.966	7	8	6	9
Sweden	0.947	Stockholm	0.972	9	9	11	10
Germany	0.942	Hamburg	0.972		6	8	11
China	0.768	Beijing	0.907	30	22	17	12
United Arab Emirates	0.911	Abu Dhabi	0.911	16	14	12	13
Czech Rep.	0.889	Prague	0.96	8	4	10	14
Netherlands	0.941	Amsterdam	0.962	11	11	13	15
Korea South	0.925	Seoul	0.952	23	20	18	16
United Arab Emirates	0.911	Dubai	0.911	13	19	14	17
Australia	0.951	Sydney	0.952	22	32	29	18
Hong Kong	0.949	Hong Kong	0.946	38	34	33	19
Germany	0.942	Munich	0.95		17	15	20
USA	0.921	New York	0.938	34	12	19	21
New Zealand	0.937	Auckland	0.951	5	15	16	22

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
New Zealand	0.937	Wellington	0.958				23
Australia	0.951	Brisbane	0.944	42	27	40	24
China	0.768	Shanghai	0.88	37	42	32	25
Iceland	0.959	Reykjavik	0.959				26
Spain	0.905	Bilbao	0.932	18	25	23	27
Austria	0.916	Vienna	0.942	12	18	20	28
Taiwan	0.916	Taipei City	0.916	24	23	25	29
Saudi Arabia	0.875	Riyadh	0.9	55	44	39	30
Australia	0.951	Melbourne	0.948	35	33	36	31
Estonia	0.89	Tallinn	0.932		39	24	32
Germany	0.942	Berlin	0.959	19	21	21	33
USA	0.921	Boston	0.949	15	24	22	34
Belgium	0.937	Brussels	0.953	51	16	45	35
Sweden	0.947	Gothenburg	0.944	33	43	46	36
Spain	0.905	Madrid	0.94	25	30	37	37
Germany	0.942	Dusseldorf	0.939	17	37	27	38
USA	0.921	Washington D.C.	0.94	26	13	26	39
Canada	0.936	Ottawa	0.943				40
Netherlands	0.941	Rotterdam	0.941	40	35	43	41
Canada	0.936	Vancouver	0.944	20	40	28	42
Netherlands	0.941	The Hague	0.941	36	38	35	43
Poland	0.876	Warsaw	0.926	14	48	41	44

# IMD Smart City Index 2023: Results

In 2023 City Ranking Order with HDI Context and 2019-2023 Ranking Comparison (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Luxembourg	0.93	Luxembourg	0.93				45
France	0.903	Paris	0.949	39	47	49	46
Slovenia	0.918	Ljubljana	0.953				47
Canada	0.936	Toronto	0.943	29	46	31	48
Korea South	0.925	Busan	0.936	45	29	47	49
USA	0.921	Los Angeles	0.931	44	36	30	50
Italy	0.895	Bologna	0.924	41	50	48	51
Saudi Arabia	0.875	Mecca	0.871				52
USA	0.921	Denver	0.942	27	31	34	53
Spain	0.905	Zaragoza	0.912	58	53	51	54
USA	0.921	Seattle	0.94	31	41	38	55
Saudi Arabia	0.875	Jeddah	0.871				56
Germany	0.942	Hanover	0.93	43	51	53	57
China	0.768	Nanjing	0.81	65	59	57	58
Qatar	0.855	Doha	0.855				59
China	0.768	Zhuhai	0.799	53	56	52	60
USA	0.921	Chicago	0.929	57	54	56	61
Slovakia	0.848	Bratislava	0.944	32	26	42	62
Ireland	0.945	Dublin	0.95	21	28	44	63
France	0.903	Lyon	0.914	54	61	62	64
Lithuania	0.875	Vilnius	0.913				65
China	0.768	Shenzhen	0.799	61	66	60	66

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
China	0.768	Tianjin	0.844	48	45	50	67
USA	0.921	San Francisco	0.931	28	49	54	68
Canada	0.936	Montreal	0.923	50	52	55	69
China	0.768	Hangzhou	0.801	66	60	63	70
China	0.768	Guangzhou	0.799	67	64	66	71
Japan	0.925	Tokyo	0.951	46	73	67	72
United Kingdom	0.929	Manchester	0.915		57	58	73
United Kingdom	0.929	Birmingham	0.913	63	68	73	74
Spain	0.905	Barcelona	0.916	56	58	70	75
United Kingdom	0.929	Leeds	0.908			64	76
United Kingdom	0.929	Newcastle	0.901		62	61	77
France	0.903	Bordeaux	0.9			68	78
Poland	0.876	Krakow	0.888	47	69	76	79
United Kingdom	0.929	Glasgow	0.921			65	80
Germany	0.942	Kiel	0.921			72	81
Italy	0.895	Milan	0.915	52	70	69	82
Latvia	0.863	Riga	0.929				83
France	0.903	Lille	0.88			82	84
Saudi Arabia	0.875	Medina	0.871			79	85
China	0.768	Chongqing	0.774	69	65	74	86
Hungary	0.846	Budapest	0.922	64	63	78	87
Thailand	0.8	Bangkok	0.839	75	78	86	88

# IMD Smart City Index 2023: Results

In 2023 City Ranking Order with HDI Context and 2019-2023 Ranking Comparison (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Malaysia	0.803	Kuala Lumpur	0.858	59	71	80	89
Turkey	0.838	Ankara	0.854	73	74	75	90
Israel	0.919	Tel Aviv	0.919	49	55	59	91
USA	0.921	Philadelphia	0.923	71	79	85	92
USA	0.921	Phoenix	0.908		72	77	93
Wales	0.929	Cardiff	0.898				94
Northern Ireland	0.929	Belfast	0.896				95
Oman	0.816	Muscat	0.816				96
China	0.768	Chengdu	0.74	74	77	84	97
Japan	0.925	Osaka	0.928	68	84	90	98
Portugal	0.866	Lisbon	0.9	62	75	81	99
Vietnam	0.703	Hanoi	0.744	77	82	89	100
France	0.903	Marseille	0.899		83	91	101
Indonesia	0.705	Jakarta	0.759	80	81	92	102
Vietnam	0.703	Ho Chi Minh City	0.714	76	86	93	103
Romania	0.821	Bucharest	0.926	60	76	87	104
India	0.633	Delhi	0.73	78	85	94	105
Croatia	0.858	Zagreb	0.916				106
Turkey	0.838	Istanbul	0.867			88	107
Egypt	0.731	Cairo	0.779	96	100	105	108
India	0.633	Mumbai	0.688	83	89	95	109
India	0.633	Bengaluru	0.667	85	96	97	110

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Bulgaria	0.795	Sofia	0.856	87	87	103	111
Indonesia	0.705	Medan	0.711	89	94	96	112
Greece	0.887	Athens	0.909	94	98	108	113
Indonesia	0.705	Makassar	0.699	86	90	102	114
Philippines	0.699	Manila	0.76	93	95	100	115
India	0.633	Hyderabad	0.647	81	91	101	116
Cyprus	0.896	Nicosia	0.896				117
Colombia	0.752	Medellin	0.757	82	88	99	118
Chile	0.855	Santiago	0.886	79	102	107	119
Pakistan	0.544	Islamabad	0.659				120
Mexico	0.758	Mexico City	0.815	90	103	110	121
Italy	0.895	Rome	0.917	97	97	111	122
Algeria	0.745	Algiers	0.767				123
Argentina	0.842	Buenos Aires	0.812	88	93	104	124
South Africa	0.713	Cape Town	0.751	92	99	106	125
Morocco	0.683	Rabat	0.702	99	101	109	126
Costa Rica	0.809	San José	0.826			112	127
Brazil	0.754	Brasilia	0.816				128
Colombia	0.752	Bogota	0.797	91	104	113	129
Brazil	0.754	Sao Paulo	0.78	95	108	117	130
Kenya	0.575	Nairobi	0.636	100	107	115	131
Nigeria	0.535	Lagos	0.681	101	105	116	132



# IMD Smart City Index 2023: Results

In 2023 City Ranking Order with HDI Context and 2019-2023 Ranking Comparison (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Nigeria	0.535	Abuja	0.646	98	106	114	133
Peru	0.762	Lima	0.82				134
Jordan	0.72	Amman	0.737				135
Brazil	0.754	Rio de Janeiro	0.783	102	109	118	136
Tunisia	0.731	Tunis	0.775				137
Ghana	0.632	Accra	0.707				138
Lebanon	0.706	Beirut	0.677				139
Yemen	0.455	Sana'a	0.521				140
Guatemala	0.627	Guatemala City	0.722				141

# IMD Smart City Index 2023: Results

In Alphabetical Order By City with 2023 Deep Dive and 2021 Comparison (2023 Methodology Applied)

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Abu Dhabi	13	BB	BB	BB	12	▼ -1
Abuja	133	D	C	D	114	▼ -19
Accra	138	D	D	D	NEW	—
Algiers	123	C	C	C	NEW	—
Amman	135	D	D	D	NEW	—
Amsterdam	15	A	BBB	A	13	▼ -2
Ankara	90	CCC	B	CCC	75	▼ -15
Athens	113	C	C	C	108	▼ -5
Auckland	22	A	A	A	16	▼ -6
Bangkok	88	B	CCC	B	86	▼ -2
Barcelona	75	BB	BB	BB	70	▼ -5
Beijing	12	BB	BB	BB	17	▲ 5
Beirut	139	D	D	D	NEW	—
Belfast	95	CC	CCC	CC	NEW	—
Bengaluru	110	CC	CC	CC	97	▼ -13
Berlin	33	BBB	BBB	BBB	21	▼ -12
Bilbao	27	BBB	BBB	BBB	23	▼ -4
Birmingham	74	BB	BB	BB	73	▼ -1
Bogota	129	D	D	C	113	▼ -16
Bologna	51	BB	BBB	BB	48	▼ -3
Bordeaux	78	CCC	CCC	CC	68	▼ -10
Boston	34	A	A	A	22	▼ -12

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Brasilia	128	C	C	C	NEW	—
Bratislava	62	BB	BB	BBB	42	▼ -20
Brisbane	24	AA	A	A	40	▲ 16
Brussels	35	BBB	BB	A	45	▲ 10
Bucharest	104	CCC	CCC	B	87	▼ -17
Budapest	87	B	B	BB	78	▼ -9
Buenos Aires	124	C	C	C	104	▼ -20
Busan	49	BB	BB	BBB	47	▼ -2
Cairo	108	CC	C	CC	105	▼ -3
Canberra	3	AA	AA	A	NEW	—
Cape Town	125	C	C	C	106	▼ -19
Cardiff	94	CC	CCC	CC	NEW	—
Chengdu	97	CCC	CCC	CCC	84	▼ -13
Chicago	61	BB	BB	BB	56	▼ -5
Chongqing	86	CCC	CCC	CCC	74	▼ -12
Copenhagen	4	AA	AAA	A	5	▲ 1
Delhi	105	CC	CC	CC	94	▼ -11
Denver	53	BBB	BBB	BBB	34	▼ -19
Doha	59	BB	BB	B	NEW	—
Dubai	17	BB	BB	B	14	▼ -3
Dublin	63	BB	BB	BBB	44	▼ -19
Dusseldorf	38	BB	BBB	BB	27	▼ -11

# IMD Smart City Index 2023: Results

In Alphabetical Order By City with 2023 Deep Dive and 2021 Comparison (2023 Methodology Applied)

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Geneva	9	AA	AA	A	6	▼ -3
Glasgow	80	BB	BB	B	65	▼ -15
Göteborg	36	A	A	A	46	▲ 10
Guangzhou	71	CCC	CCC	CCC	66	▼ -5
Guatemala City	141	D	D	D	NEW	—
Hamburg	11	A	A	BBB	8	▼ -3
Hangzhou	70	CCC	CCC	CCC	63	▼ -7
Hanoi	100	CCC	CCC	CCC	89	▼ -11
Hanover	57	BB	BBB	B	53	▼ -4
Helsinki	8	AAA	AA	A	9	▲ 1
Ho Chi Minh City	103	CCC	CCC	CCC	93	▼ -10
Hong Kong	19	AA	BBB	AAA	33	▲ 14
Hyderabad	116	CC	CC	CC	101	▼ -15
Islamabad	120	CC	CC	CC	NEW	—
Istanbul	107	CC	CC	CC	88	▼ -19
Jakarta	102	CC	CC	CC	92	▼ -10
Jeddah	56	B	B	B	NEW	—
Kiel	81	BB	BBB	CCC	72	▼ -9
Krakow	79	CCC	B	CCC	76	▼ -3
Kuala Lumpur	89	CCC	B	CCC	80	▼ -9
Lagos	132	D	D	C	116	▼ -16
Lausanne	5	AA	AA	A	4	▼ -1

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Leeds	76	CCC	CCC	CC	64	▼ -12
Lille	84	CCC	CCC	CCC	82	▼ -2
Lima	134	C	C	C	NEW	—
Lisbon	99	CC	CC	CC	81	▼ -18
Ljubljana	47	BBB	BB	BBB	NEW	—
London	6	A	BBB	AA	3	▼ -3
Los Angeles	50	BB	BB	BBB	30	▼ -20
Luxembourg	45	BB	BBB	B	NEW	—
Lyon	64	BB	BB	BB	62	▼ -2
Madrid	37	BB	BB	BBB	37	—
Makassar	114	CC	CC	CC	102	▼ -12
Manchester	73	BB	BB	BB	58	▼ -15
Manila	115	C	C	CC	100	▼ -15
Marseille	101	CC	CC	CC	91	▼ -10
Mecca	52	B	B	B	NEW	—
Medan	112	CC	CC	CC	96	▼ -16
Medellin	118	C	C	C	99	▼ -19
Medina	85	CCC	CCC	CCC	79	▼ -6
Melbourne	31	A	BBB	A	36	▲ 5
Mexico City	121	C	C	CC	110	▼ -11
Milan	82	BB	BB	BB	69	▼ -13
Montreal	69	BB	BBB	B	55	▼ -14

# IMD Smart City Index 2023: Results

In Alphabetical Order By City with 2023 Deep Dive and 2021 Comparison (2023 Methodology Applied)

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Mumbai	109	CC	CC	CCC	95	▼ -14
Munich	20	AA	AA	A	15	▼ -5
Muscat	96	B	B	CCC	NEW	—
Nairobi	131	C	C	C	115	▼ -16
Nanjing	58	CCC	CCC	CCC	57	▼ -1
New York	21	BBB	BBB	A	19	▼ -2
Newcastle	77	CCC	B	CC	61	▼ -16
Nicosia	117	C	CC	C	NEW	—
Osaka	98	B	BB	CCC	90	▼ -8
Oslo	2	AAA	AAA	A	2	—
Ottawa	40	A	AA	BBB	NEW	—
Paris	46	BBB	BB	A	49	▲ 3
Philadelphia	92	B	B	B	85	▼ -7
Phoenix	93	CC	CCC	CC	77	▼ -16
Prague	14	AA	A	A	10	▼ -4
Rabat	126	C	C	C	109	▼ -17
Reykjavik	26	BBB	A	BBB	NEW	—
Riga	83	B	B	B	NEW	—
Rio de Janeiro	136	D	D	D	118	▼ -18
Riyadh	30	BB	B	BB	39	▲ 9
Rome	122	CCC	CCC	CCC	111	▼ -11
Rotterdam	41	A	BBB	A	43	▲ 2

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
San Francisco	68	BB	BB	BB	54	▼ -14
San José	127	C	CC	C	112	▼ -15
Sana'a	140	D	D	D	NEW	—
Santiago	119	C	C	C	107	▼ -12
Sao Paulo	130	D	D	C	117	▼ -13
Seattle	55	BB	BB	B	38	▼ -17
Seoul	16	AA	BBB	AAA	18	▲ 2
Shanghai	25	BB	BB	BB	32	▲ 7
Shenzhen	66	CCC	CCC	CCC	60	▼ -6
Singapore	7	A	A	A	7	—
Sofia	111	CC	CC	CC	103	▼ -8
Stockholm	10	A	A	A	11	▲ 1
Sydney	18	AA	A	AA	29	▲ 11
Taipei City	29	A	BBB	A	25	▼ -4
Tallinn	32	BBB	BBB	BB	24	▼ -8
Tel Aviv	91	B	B	BB	59	▼ -32
The Hague	43	A	A	A	35	▼ -8
Tianjin	67	BB	B	BB	50	▼ -17
Tokyo	72	BB	BB	BB	67	▼ -5
Toronto	48	BBB	BBB	BBB	31	▼ -17
Tunis	137	D	D	D	NEW	—
Vancouver	42	A	A	BBB	28	▼ -14

# IMD Smart City Index 2023: Results

In Alphabetical Order By City with 2023 Deep Dive and 2021 Comparison (2023 Methodology Applied)

City	Smart City Rank 2023	Smart City Rating 2023	Structure 2023	Technology 2023	Smart City Rank 2021	Change
Vienna	28	AA	AA	A	20	▼ -8
Vilnius	65	BB	BB	BBB	NEW	—
Warsaw	44	BBB	BBB	BBB	41	▼ -3
Washington D.C.	39	BB	BB	BB	26	▼ -13
Wellington	23	A	A	BBB	NEW	—
Zagreb	106	CCC	B	CCC	NEW	—
Zaragoza	54	CCC	B	CC	51	▼ -3
Zhuhai	60	CCC	CCC	CCC	52	▼ -8
Zurich	1	AAA	AAA	A	1	—

# IMD Smart City Index 2023: Results

In Alphabetical Order by City with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
United Arab Emirates	0.911	Abu Dhabi	0.911	16	14	12	13
Nigeria	0.535	Abuja	0.646	98	106	114	133
Ghana	0.632	Accra	0.707				138
Algeria	0.745	Algiers	0.767				123
Jordan	0.72	Amman	0.737				135
Netherlands	0.941	Amsterdam	0.962	11	11	13	15
Turkey	0.838	Ankara	0.854	73	74	75	90
Greece	0.887	Athens	0.909	94	98	108	113
New Zealand	0.937	Auckland	0.951	5	15	16	22
Thailand	0.8	Bangkok	0.839	75	78	86	88
Spain	0.905	Barcelona	0.916	56	58	70	75
China	0.768	Beijing	0.907	30	22	17	12
Lebanon	0.706	Beirut	0.677				139
Northern Ireland	0.929	Belfast	0.896				95
India	0.633	Bengaluru	0.667	85	96	97	110
Germany	0.942	Berlin	0.959	19	21	21	33
Spain	0.905	Bilbao	0.932	18	25	23	27
United Kingdom	0.929	Birmingham	0.913	63	68	73	74
Colombia	0.752	Bogota	0.797	91	104	113	129
Italy	0.895	Bologna	0.924	41	50	48	51
France	0.903	Bordeaux	0.9			68	78
Usa	0.921	Boston	0.949	15	24	22	34

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Brazil	0.754	Brasilia	0.816				128
Slovakia	0.848	Bratislava	0.944	32	26	42	62
Australia	0.951	Brisbane	0.944	42	27	40	24
Belgium	0.937	Brussels	0.953	51	16	45	35
Romania	0.821	Bucharest	0.926	60	76	87	104
Hungary	0.846	Budapest	0.922	64	63	78	87
Argentina	0.842	Buenos Aires	0.812	88	93	104	124
Korea South	0.925	Busan	0.936	45	29	47	49
Egypt	0.731	Cairo	0.779	96	100	105	108
Australia	0.951	Canberra	0.98				3
South Africa	0.713	Cape Town	0.751	92	99	106	125
Wales	0.929	Cardiff	0.898				94
China	0.768	Chengdu	0.74	74	77	84	97
Usa	0.921	Chicago	0.929	57	54	56	61
China	0.768	Chongqing	0.774	69	65	74	86
Denmark	0.948	Copenhagen	0.967	4	3	5	4
India	0.633	Delhi	0.73	78	85	94	105
Usa	0.921	Denver	0.942	27	31	34	53
Qatar	0.855	Doha	0.855				59
United Arab Emirates	0.911	Dubai	0.911	13	19	14	17
Ireland	0.945	Dublin	0.95	21	28	44	63
Germany	0.942	Dusseldorf	0.939	17	37	27	38

# IMD Smart City Index 2023: Results

In Alphabetical Order by City with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Switzerland	0.962	Geneva	0.966	7	8	6	9
United Kingdom	0.929	Glasgow	0.921			65	80
Sweden	0.947	Gothenburg	0.944	33	43	46	36
China	0.768	Guangzhou	0.799	67	64	66	71
Guatemala	0.627	Guatemala City	0.722				141
Germany	0.942	Hamburg	0.972		6	8	11
China	0.768	Hangzhou	0.801	66	60	63	70
Vietnam	0.703	Hanoi	0.744	77	82	89	100
Germany	0.942	Hanover	0.93	43	51	53	57
Finland	0.94	Helsinki	0.96	6	5	9	8
Vietnam	0.703	Ho Chi Minh City	0.714	76	86	93	103
Hong Kong	0.949	Hong Kong	0.946	38	34	33	19
India	0.633	Hyderabad	0.647	81	91	101	116
Pakistan	0.544	Islamabad	0.659				120
Turkey	0.838	Istanbul	0.867			88	107
Indonesia	0.705	Jakarta	0.759	80	81	92	102
Saudi Arabia	0.875	Jeddah	0.871				56
Germany	0.942	Kiel	0.921			72	81
Poland	0.876	Krakow	0.888	47	69	76	79
Malaysia	0.803	Kuala Lumpur	0.858	59	71	80	89
Nigeria	0.535	Lagos	0.681	101	105	116	132
Switzerland	0.962	Lausanne	0.966			4	5

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
United Kingdom	0.929	Leeds	0.908			64	76
France	0.903	Lille	0.88			82	84
Peru	0.762	Lima	0.82				134
Portugal	0.866	Lisbon	0.9	62	75	81	99
Slovenia	0.918	Ljubljana	0.953				47
United Kingdom	0.929	London	0.973	3	10	3	6
Usa	0.921	Los Angeles	0.931	44	36	30	50
Luxembourg	0.93	Luxembourg	0.93				45
France	0.903	Lyon	0.914	54	61	62	64
Spain	0.905	Madrid	0.94	25	30	37	37
Indonesia	0.705	Makassar	0.699	86	90	102	114
United Kingdom	0.929	Manchester	0.915		57	58	73
Philippines	0.699	Manila	0.76	93	95	100	115
France	0.903	Marseille	0.899		83	91	101
Saudi Arabia	0.875	Mecca	0.871				52
Indonesia	0.705	Medan	0.711	89	94	96	112
Colombia	0.752	Medellin	0.757	82	88	99	118
Saudi Arabia	0.875	Medina	0.871			79	85
Australia	0.951	Melbourne	0.948	35	33	36	31
Mexico	0.758	Mexico City	0.815	90	103	110	121
Italy	0.895	Milan	0.915	52	70	69	82
Canada	0.936	Montreal	0.923	50	52	55	69

# IMD Smart City Index 2023: Results

In Alphabetical Order by City with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
India	0.633	Mumbai	0.688	83	89	95	109
Germany	0.942	Munich	0.95		17	15	20
Oman	0.816	Muscat	0.816				96
Kenya	0.575	Nairobi	0.636	100	107	115	131
China	0.768	Nanjing	0.81	65	59	57	58
Usa	0.921	New York	0.938	34	12	19	21
United Kingdom	0.929	Newcastle	0.901		62	61	77
Cyprus	0.896	Nicosia	0.896				117
Japan	0.925	Osaka	0.928	68	84	90	98
Norway	0.961	Oslo	0.98	2	2	2	2
Canada	0.936	Ottawa	0.943				40
France	0.903	Paris	0.949	39	47	49	46
Usa	0.921	Philadelphia	0.923	71	79	85	92
Usa	0.921	Phoenix	0.908		72	77	93
Czech Rep.	0.889	Prague	0.96	8	4	10	14
Morocco	0.683	Rabat	0.702	99	101	109	126
Iceland	0.959	Reykjavik	0.959				26
Latvia	0.863	Riga	0.929				83
Brazil	0.754	Rio De Janeiro	0.783	102	109	118	136
Saudi Arabia	0.875	Riyadh	0.9	55	44	39	30
Italy	0.895	Rome	0.917	97	97	111	122
Netherlands	0.941	Rotterdam	0.941	40	35	43	41

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Usa	0.921	San Francisco	0.931	28	49	54	68
Costa Rica	0.809	San José	0.826			112	127
Yemen	0.455	Sana'a	0.521				140
Chile	0.855	Santiago	0.886	79	102	107	119
Brazil	0.754	Sao Paulo	0.78	95	108	117	130
Usa	0.921	Seattle	0.94	31	41	38	55
Korea South	0.925	Seoul	0.952	23	20	18	16
China	0.768	Shanghai	0.88	37	42	32	25
China	0.768	Shenzhen	0.799	61	66	60	66
Singapore	0.939	Singapore	0.939	10	7	7	7
Bulgaria	0.795	Sofia	0.856	87	87	103	111
Sweden	0.947	Stockholm	0.972	9	9	11	10
Australia	0.951	Sydney	0.952	22	32	29	18
Taiwan	0.916	Taipei City	0.916	24	23	25	29
Estonia	0.89	Tallinn	0.932		39	24	32
Israel	0.919	Tel Aviv	0.919	49	55	59	91
Netherlands	0.941	The Hague	0.941	36	38	35	43
China	0.768	Tianjin	0.844	48	45	50	67
Japan	0.925	Tokyo	0.951	46	73	67	72
Canada	0.936	Toronto	0.943	29	46	31	48
Tunisia	0.731	Tunis	0.775				137
Canada	0.936	Vancouver	0.944	20	40	28	42



# IMD Smart City Index 2023: Results

In Alphabetical Order by City with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Austria	0.916	Vienna	0.942	12	18	20	28
Lithuania	0.875	Vilnius	0.913				65
Poland	0.876	Warsaw	0.926	14	48	41	44
Usa	0.921	Washington D.c.	0.94	26	13	26	39
New Zealand	0.937	Wellington	0.958				23
Croatia	0.858	Zagreb	0.916				106
Spain	0.905	Zaragoza	0.912	58	53	51	54
China	0.768	Zhuhai	0.799	53	56	52	60
Switzerland	0.962	Zurich	0.989	1	1	1	1

# IMD Smart City Index 2023: Results

In Alphabetical Order by Country with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Algeria	0.745	Algiers	0.767				123
Argentina	0.842	Buenos Aires	0.812	88	93	104	124
Australia	0.951	Brisbane	0.944	42	27	40	24
Australia	0.951	Canberra	0.98				3
Australia	0.951	Melbourne	0.948	35	33	36	31
Australia	0.951	Sydney	0.952	22	32	29	18
Austria	0.916	Vienna	0.942	12	18	20	28
Belgium	0.937	Brussels	0.953	51	16	45	35
Brazil	0.754	Brasilia	0.816				128
Brazil	0.754	Rio de Janeiro	0.783	102	109	118	136
Brazil	0.754	Sao Paulo	0.78	95	108	117	130
Bulgaria	0.795	Sofia	0.856	87	87	103	111
Canada	0.936	Montreal	0.923	50	52	55	69
Canada	0.936	Ottawa	0.943				40
Canada	0.936	Toronto	0.943	29	46	31	48
Canada	0.936	Vancouver	0.944	20	40	28	42
Chile	0.855	Santiago	0.886	79	102	107	119
China	0.768	Beijing	0.907	30	22	17	12
China	0.768	Chengdu	0.74	74	77	84	97
China	0.768	Chongqing	0.774	69	65	74	86
China	0.768	Guangzhou	0.799	67	64	66	71
China	0.768	Hangzhou	0.801	66	60	63	70

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
China	0.768	Nanjing	0.81	65	59	57	58
China	0.768	Shanghai	0.88	37	42	32	25
China	0.768	Shenzhen	0.799	61	66	60	66
China	0.768	Tianjin	0.844	48	45	50	67
China	0.768	Zhuhai	0.799	53	56	52	60
Colombia	0.752	Bogota	0.797	91	104	113	129
Colombia	0.752	Medellin	0.757	82	88	99	118
Costa Rica	0.809	San José	0.826			112	127
Croatia	0.858	Zagreb	0.916				106
Cyprus	0.896	Nicosia	0.896				117
Czech Rep.	0.889	Prague	0.96	8	4	10	14
Denmark	0.948	Copenhagen	0.967	4	3	5	4
Egypt	0.731	Cairo	0.779	96	100	105	108
Estonia	0.89	Tallinn	0.932		39	24	32
Finland	0.94	Helsinki	0.96	6	5	9	8
France	0.903	Bordeaux	0.9			68	78
France	0.903	Lille	0.88			82	84
France	0.903	Lyon	0.914	54	61	62	64
France	0.903	Marseille	0.899		83	91	101
France	0.903	Paris	0.949	39	47	49	46
Germany	0.942	Berlin	0.959	19	21	21	33
Germany	0.942	Dusseldorf	0.939	17	37	27	38

# IMD Smart City Index 2023: Results

In Alphabetical Order by Country with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Germany	0.942	Hamburg	0.972		6	8	11
Germany	0.942	Hanover	0.93	43	51	53	57
Germany	0.942	Kiel	0.921			72	81
Germany	0.942	Munich	0.95		17	15	20
Ghana	0.632	Accra	0.707				138
Greece	0.887	Athens	0.909	94	98	108	113
Guatemala	0.627	Guatemala City	0.722				141
Hong Kong	0.949	Hong Kong	0.946	38	34	33	19
Hungary	0.846	Budapest	0.922	64	63	78	87
Iceland	0.959	Reykjavik	0.959				26
India	0.633	Bengaluru	0.667	85	96	97	110
India	0.633	Delhi	0.73	78	85	94	105
India	0.633	Hyderabad	0.647	81	91	101	116
India	0.633	Mumbai	0.688	83	89	95	109
Indonesia	0.705	Jakarta	0.759	80	81	92	102
Indonesia	0.705	Makassar	0.699	86	90	102	114
Indonesia	0.705	Medan	0.711	89	94	96	112
Ireland	0.945	Dublin	0.95	21	28	44	63
Israel	0.919	Tel Aviv	0.919	49	55	59	91
Italy	0.895	Bologna	0.924	41	50	48	51
Italy	0.895	Milan	0.915	52	70	69	82
Italy	0.895	Rome	0.917	97	97	111	122

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Japan	0.925	Osaka	0.928	68	84	90	98
Japan	0.925	Tokyo	0.951	46	73	67	72
Jordan	0.72	Amman	0.737				135
Kenya	0.575	Nairobi	0.636	100	107	115	131
Korea South	0.925	Busan	0.936	45	29	47	49
Korea South	0.925	Seoul	0.952	23	20	18	16
Latvia	0.863	Riga	0.929				83
Lebanon	0.706	Beirut	0.677				139
Lithuania	0.875	Vilnius	0.913				65
Luxembourg	0.93	Luxembourg	0.93				45
Malaysia	0.803	Kuala Lumpur	0.858	59	71	80	89
Mexico	0.758	Mexico City	0.815	90	103	110	121
Morocco	0.683	Rabat	0.702	99	101	109	126
Netherlands	0.941	Amsterdam	0.962	11	11	13	15
Netherlands	0.941	Rotterdam	0.941	40	35	43	41
Netherlands	0.941	The Hague	0.941	36	38	35	43
New Zealand	0.937	Auckland	0.951	5	15	16	22
New Zealand	0.937	Wellington	0.958				23
Nigeria	0.535	Abuja	0.646	98	106	114	133
Nigeria	0.535	Lagos	0.681	101	105	116	132
Northern Ireland	0.929	Belfast	0.896				95
Norway	0.961	Oslo	0.98	2	2	2	2

# IMD Smart City Index 2023: Results

In Alphabetical Order by Country with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Oman	0.816	Muscat	0.816				96
Pakistan	0.544	Islamabad	0.659				120
Peru	0.762	Lima	0.82				134
Philippines	0.699	Manila	0.76	93	95	100	115
Poland	0.876	Krakow	0.888	47	69	76	79
Poland	0.876	Warsaw	0.926	14	48	41	44
Portugal	0.866	Lisbon	0.9	62	75	81	99
Qatar	0.855	Doha	0.855				59
Romania	0.821	Bucharest	0.926	60	76	87	104
Saudi Arabia	0.875	Jeddah	0.871				56
Saudi Arabia	0.875	Mecca	0.871				52
Saudi Arabia	0.875	Medina	0.871			79	85
Saudi Arabia	0.875	Riyadh	0.9	55	44	39	30
Singapore	0.939	Singapore	0.939	10	7	7	7
Slovakia	0.848	Bratislava	0.944	32	26	42	62
Slovenia	0.918	Ljubljana	0.953				47
South Africa	0.713	Cape Town	0.751	92	99	106	125
Spain	0.905	Barcelona	0.916	56	58	70	75
Spain	0.905	Bilbao	0.932	18	25	23	27
Spain	0.905	Madrid	0.94	25	30	37	37
Spain	0.905	Zaragoza	0.912	58	53	51	54
Sweden	0.947	Gothenburg	0.944	33	43	46	36

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
Sweden	0.947	Stockholm	0.972	9	9	11	10
Switzerland	0.962	Geneva	0.966	7	8	6	9
Switzerland	0.962	Lausanne	0.966			4	5
Switzerland	0.962	Zurich	0.989	1	1	1	1
Taiwan	0.916	Taipei City	0.916	24	23	25	29
Thailand	0.8	Bangkok	0.839	75	78	86	88
Tunisia	0.731	Tunis	0.775				137
Turkey	0.838	Ankara	0.854	73	74	75	90
Turkey	0.838	Istanbul	0.867			88	107
United Arab Emirates	0.911	Abu Dhabi	0.911	16	14	12	13
United Arab Emirates	0.911	Dubai	0.911	13	19	14	17
United Kingdom	0.929	Birmingham	0.913	63	68	73	74
United Kingdom	0.929	Glasgow	0.921			65	80
United Kingdom	0.929	Leeds	0.908			64	76
United Kingdom	0.929	London	0.973	3	10	3	6
United Kingdom	0.929	Manchester	0.915		57	58	73
United Kingdom	0.929	Newcastle	0.901		62	61	77
USA	0.921	Boston	0.949	15	24	22	34
USA	0.921	Chicago	0.929	57	54	56	61
USA	0.921	Denver	0.942	27	31	34	53
USA	0.921	Los Angeles	0.931	44	36	30	50
USA	0.921	New York	0.938	34	12	19	21

# IMD Smart City Index 2023: Results

In Alphabetical Order by Country with HDI Context and 2019-2023 Rankings (2023 Methodology Applied)

Country	Country HDI	City	City HDI	Rankings			
				2019	2020	2021	2023
USA	0.921	Philadelphia	0.923	71	79	85	92
USA	0.921	Phoenix	0.908		72	77	93
USA	0.921	San Francisco	0.931	28	49	54	68
USA	0.921	Seattle	0.94	31	41	38	55
USA	0.921	Washington D.C.	0.94	26	13	26	39
Vietnam	0.703	Hanoi	0.744	77	82	89	100
Vietnam	0.703	Ho Chi Minh City	0.714	76	86	93	103
Wales	0.929	Cardiff	0.898				94
Yemen	0.455	Sana'a	0.521				140

# IMD Smart City Index 2023

A User's Guide

# IMD Smart City Index 2023

## A User's Guide

SMART CITY RANKING

**13**

Out of 141



12 out of 118 in 2021

SMART CITY RATING

**BB**

A in 2021

FACTOR RATINGS

**BB**

STRUCTURES

**BB**

TECHNOLOGIES

GROUP

**3**

All ratings range from AAA to D

## Smart City Ranking

**Smart City Ranking:** The Ranking position of the city amongst the 141 cities measured, based upon the Rating and its components.

**Group:** Each city is assigned to one of four groups, based upon its HDI values.

**Smart City Rating and Factor Ratings:** The Ratings for each city are calculated from the city's performance relative to the other cities within the group.

The Methodology section provides the exact procedure for these calculations.

The 2021 Ranking and Rating are also shown for the 118 cities included in the last edition's index (2021).

### BACKGROUND INFORMATION

#### City

Population 3,652,029  
HDI 0.911

(UN World Urbanisation Prospects 2022 estimate)



#### Country

	2018	2019	2020	2021	1 yr change
HDI	0.866	0.890	0.912	0.911	-0.001
Life expectancy at birth	77.8	78.0	79.0	78.7	-0.2
Expected years of schooling	13.6	14.3	15.7	15.7	+0.0
Mean years of schooling	11.0	12.1	12.7	12.7	+0.0
GNI per capita (PPP \$)	66,912	67,462	63,016	62,574	-443

## Background Information

This section presents the Human Development Index (HDI) at the city level taken from the Global Data Lab, and the population of the city as defined through the United Nations World Urbanization Prospects for the majority of cities, or Eurostat for some of European cities.

It also presents the United Nations HDI (country-level - for the parent economy of a given city) and its four components, as well as the city's position on the map. Please note: for Taipei City only, the data is calculated using the same methodology and comparable data.

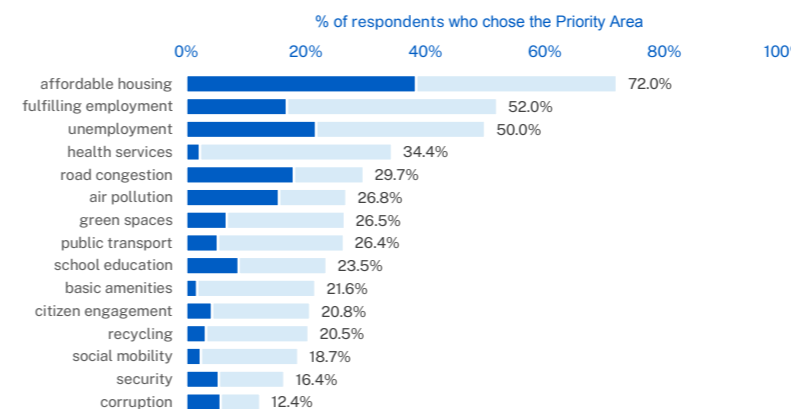
## Priority Areas

Summarizes the areas that the respondents perceive as the priority area for their city. From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. The total bar indicates the percentage of the respondents that included a given area as one of their five choices. The higher the percentage of responses per area, the greater the priority for the city. The left-hand section of each bar shows the Alignment - the proportion of those respondents who also answered the corresponding survey questions low. A strong Alignment implies that these areas also demand priority attention.

### PRIORITY AREAS

From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.

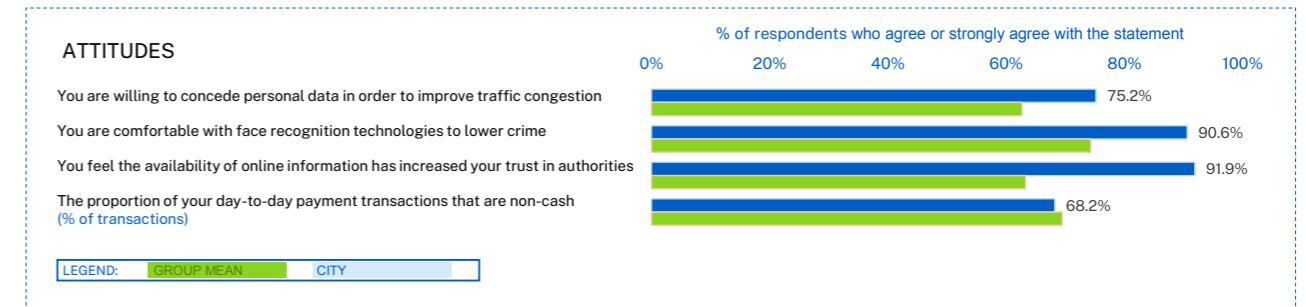


# IMD Smart City Index 2023

## A User's Guide

### Attitudes

Shows and compares the responses to three key privacy aspects (willingness to concede personal data, comfort vis-à-vis face recognition, and whether online information has increased trust in authorities) and the percentage of day-to-day transactions that are non-cash. The city is represented by the blue bar, while the group average is shown by the light red bar.



### Structures and Technologies

Key survey data collected on Structures (left side) and Technologies (right side), under five key areas: health and safety, mobility, activities, opportunities, and governance.

Each indicator presents the Score for the city and a comparison with its Group (1-4). Showing the Group's Minimum, Mean, and Maximum Scores (light red bar) alongside with the city (blue circle) allows a clear comparison of the city's performance in this indicator. The Methodology section provides the exact calculation of the Score.

This table can be read in two ways: down to examine all Structures or Technologies indicators, or across to examine a key area in both Structures and Technologies.





# IMD Smart City Index 2023

Methodology

# IMD Smart City Index 2023

## Methodology

- The IMD Smart City Index 2023 assesses the perceptions of residents on issues related to structures and technology applications available to them in their city.
- This edition of the SCI ranks 141 cities worldwide by capturing the perceptions of 120 residents in each city. The final score for each city is computed by using the perceptions of the last three years of the survey, with the weight of 3:2:1 for 2023:2021:2020.
- There are two pillars for which perceptions from residents are solicited: The Structures pillar referring to the existing infrastructure of the cities, and the Technology pillar describing the technological provisions and services available to the inhabitants.
- Each pillar is evaluated over five key areas: health and safety, mobility, activities, opportunities, and governance.

- The cities are distributed into four groups based on the Global Data Lab's Human Development Index (HDI) score of the city they are part of.
- Within each HDI group, cities are assigned a 'rating scale' (AAA to D) based on the perceptions-score of a given city compared to the scores of all other cities within the same group.

**For group 1** (highest HDI quartile), scale  
**AAA-AA-A-BBB-BB**

**For group 2** (second HDI quartile), scale  
**A-BBB-BB-B-CCC**

**For group 3** (third HDI quartile), scale  
**BB-B-CCC-CC-C**

**For group 4** (lowest HDI quartile), scale  
**CCC-CC-C-D**
- Rankings are then presented in two formats:**

  - an overall ranking (1 to 141)
  - a rating for each pillar and overall

# IMD Smart City Index 2023

City Profiles

# Abu Dhabi

## SMART CITY RANKING

13

Out of 141



12 out of 118 in 2021

## SMART CITY RATING

BB

A in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,652,029  
HDI 0.911

(UN World Urbanisation Prospects 2022 estimate)

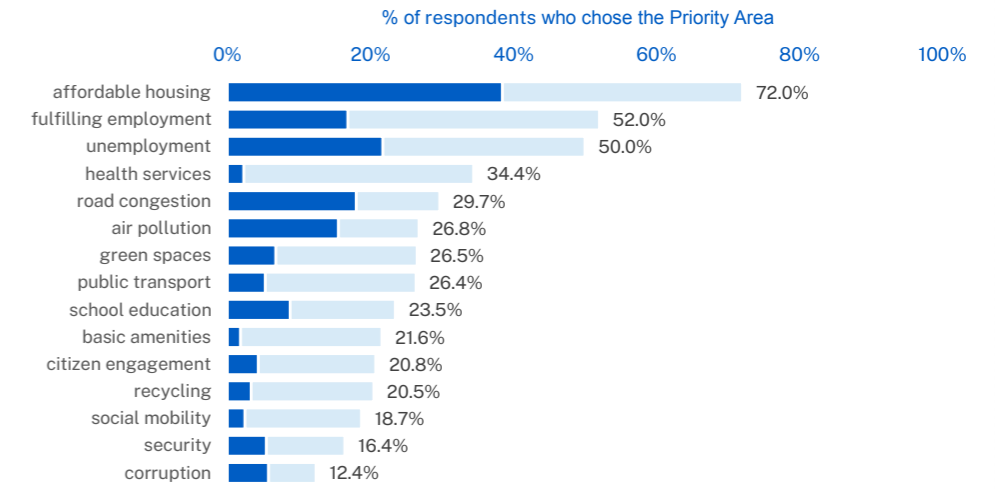


Country	2018	2019	2020	2021	1 yr change
HDI	0.866	0.890	0.912	0.911	-0.001
Life expectancy at birth	77.8	78.0	79.0	78.7	-0.2
Expected years of schooling	13.6	14.3	15.7	15.7	+0.0
Mean years of schooling	11.0	12.1	12.7	12.7	+0.0
GNI per capita (PPP \$)	66,912	67,462	63,016	62,574	-443

## PRIORITY AREAS

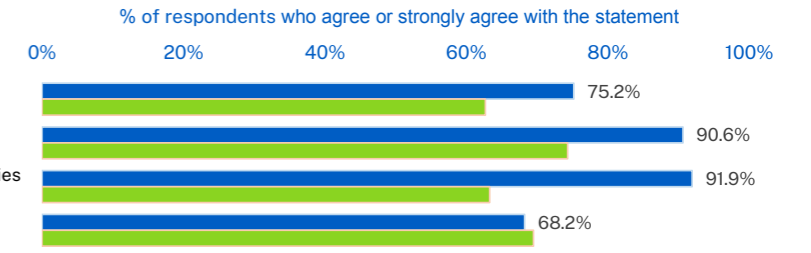
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

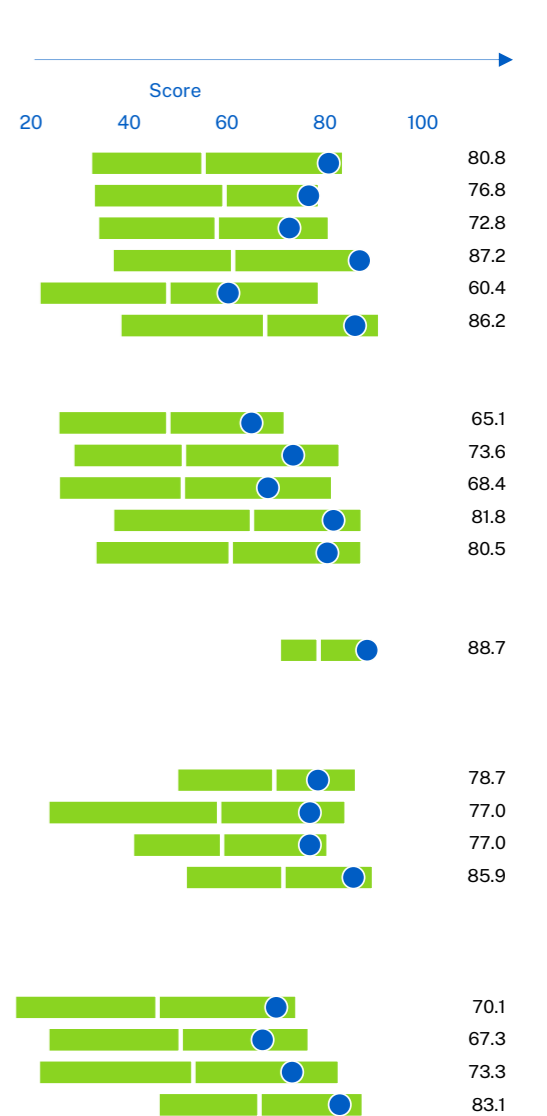
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 133

Out of 141



114 out of 118 in 2021

## SMART CITY RATING

# D

D in 2021

## FACTOR RATINGS

# C

STRUCTURES

# D

TECHNOLOGIES

GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,652,029  
HDI 0.646

(UN World Urbanisation Prospects 2022 estimate)



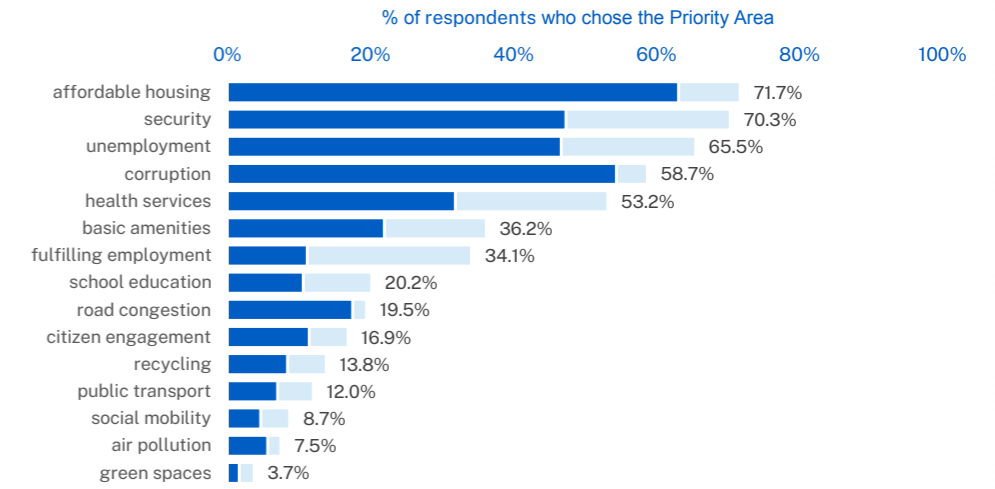
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.534	0.539	0.535	0.535	+0.000
Life expectancy at birth	54.3	54.7	52.9	52.7	-0.2
Expected years of schooling	9.7	10.0	10.1	10.1	+0.0
Mean years of schooling	6.5	8.1	8.6	8.6	+0.0
GNI per capita (PPP \$)	24,905	27,701	28,317	31,033	+2,715

## PRIORITY AREAS

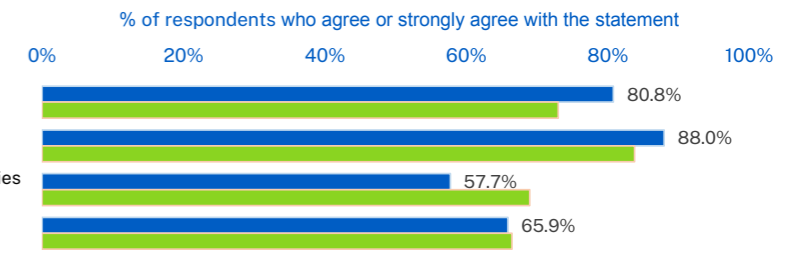
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

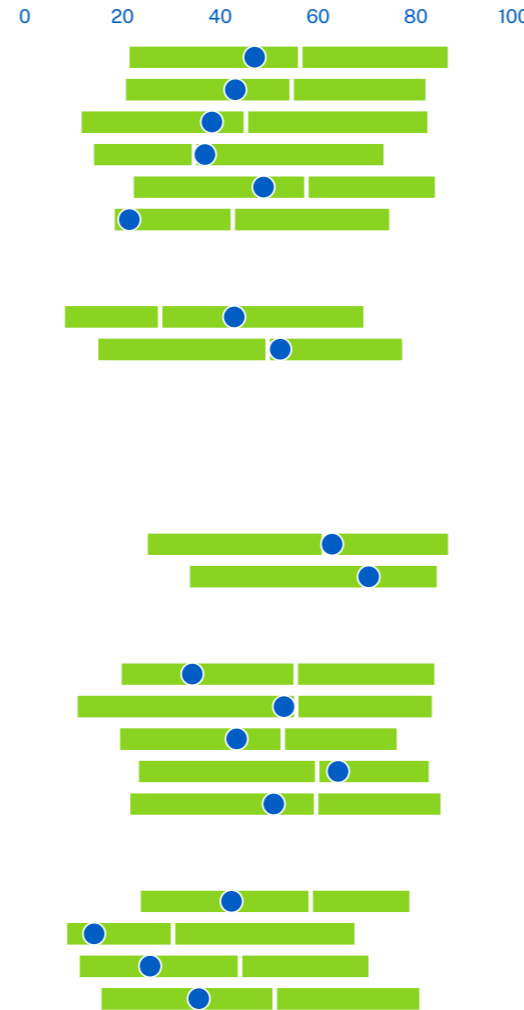
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

## Score



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

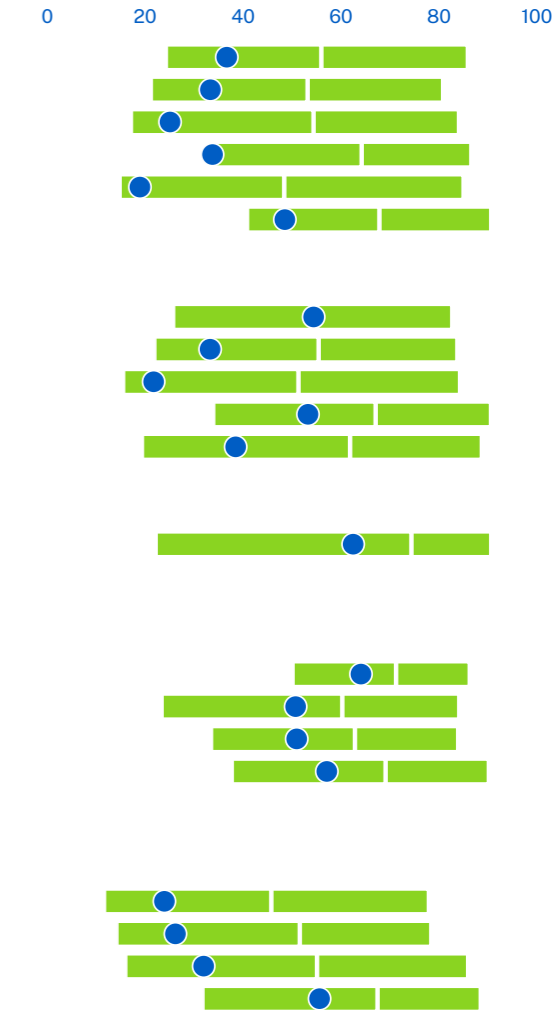
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

## Score



SMART CITY RANKING  
**138**

Out of 141

not out of 118 in 2021

SMART CITY RATING

**D**

not in 2021

FACTOR RATINGS

**D**

STRUCTURES

**D**

TECHNOLOGIES

GROUP

**4**

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,605,402  
HDI 0.707

(UN World Urbanisation Prospects 2022 estimate)



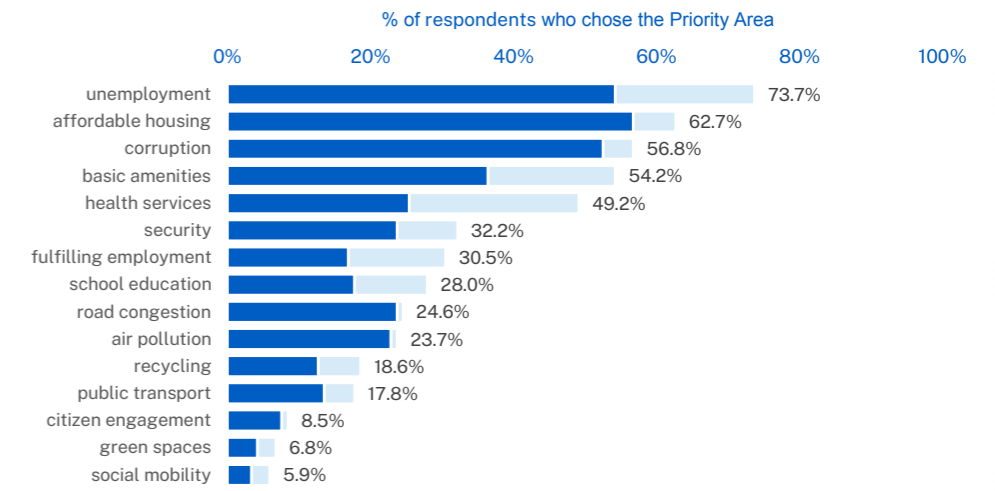
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.620	0.631	0.632	0.632	+0.000
Life expectancy at birth	64.1	64.7	64.1	63.8	-0.3
Expected years of schooling	11.5	11.9	12.1	12.1	+0.0
Mean years of schooling	8.2	8.3	8.3	8.3	+0.0
GNI per capita (PPP \$)	5,072	5,307	5,601	5,745	+143

## PRIORITY AREAS

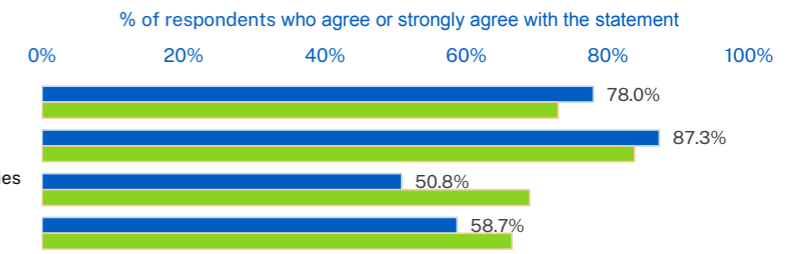
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## ATTITUDES

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LEGEND: ■ GROUP MEAN ■ CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
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### Mobility

- Traffic congestion is not a problem
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- Green spaces are satisfactory
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### Opportunities (Work & School)

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### Governance

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## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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### Mobility

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### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Algiers

## SMART CITY RANKING

123

Out of 141

not out of 118 in 2021

## SMART CITY RATING

C

not in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,853,959  
HDI 0.767

(UN World Urbanisation Prospects 2022 estimate)



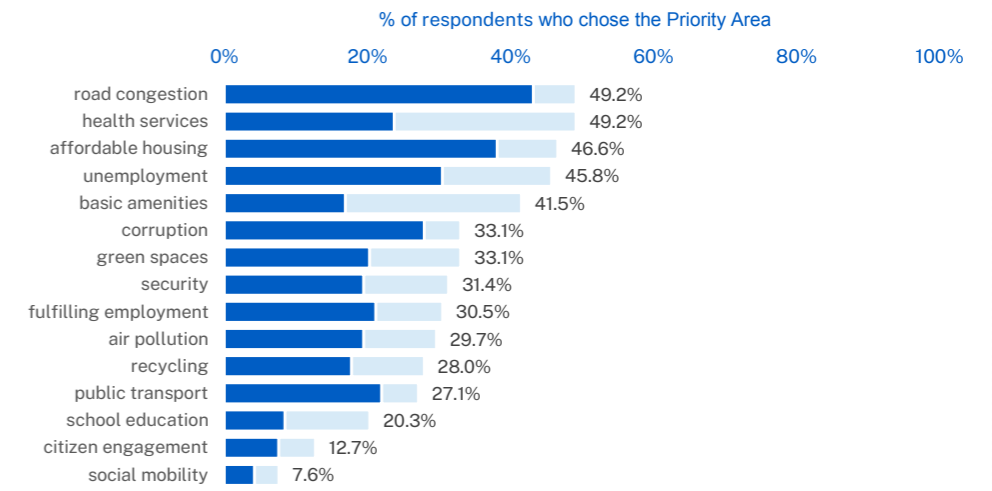
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.745	0.748	0.736	0.745	+0.009
Life expectancy at birth	76.1	76.5	74.5	76.4	+1.9
Expected years of schooling	14.6	14.6	14.6	14.6	+0.0
Mean years of schooling	8.0	8.1	8.1	8.1	+0.0
GNI per capita (PPP \$)	11,344	11,242	10,530	10,800	+270

## PRIORITY AREAS

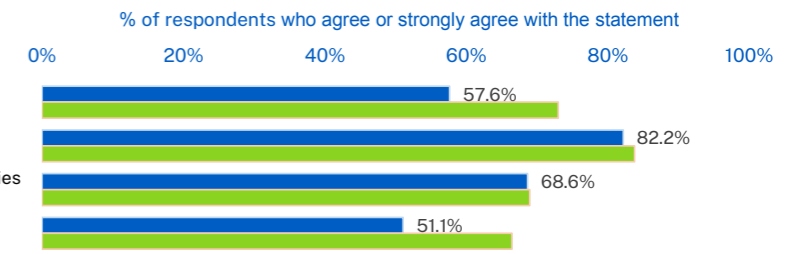
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

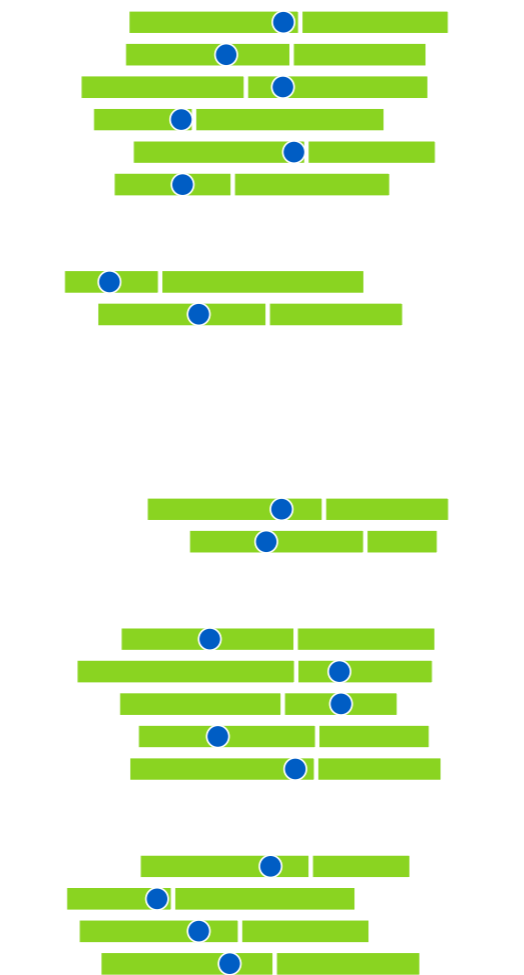
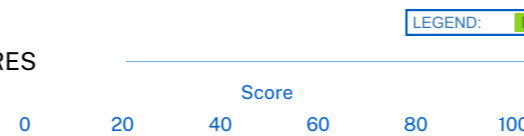
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

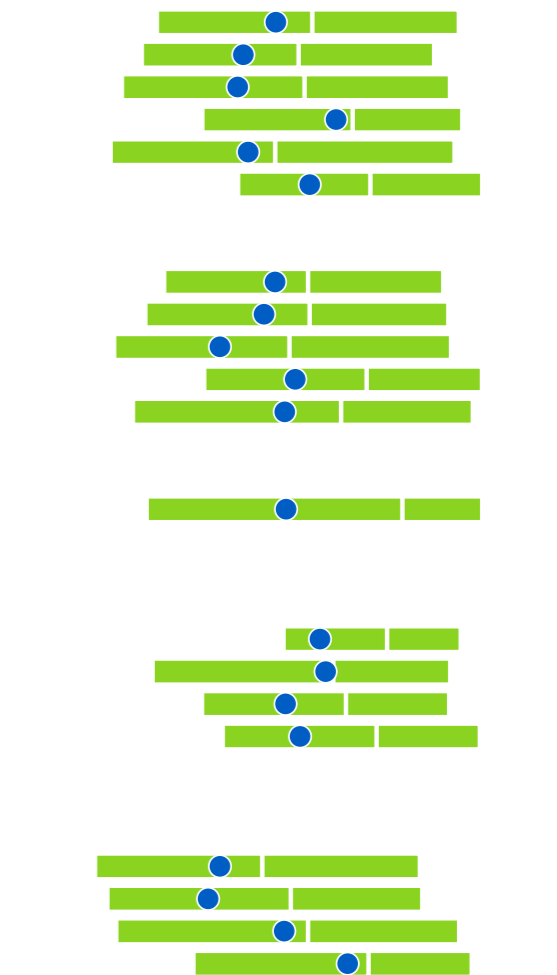
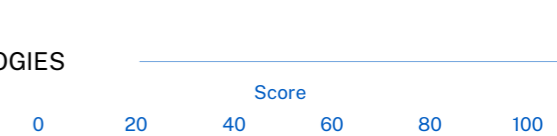
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Amman

SMART CITY RANKING

135

Out of 141

not out of 118 in 2021

SMART CITY RATING

D

not in 2021

FACTOR RATINGS

D

STRUCTURES

D

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,007,526  
HDI 0.737

(UN Data)



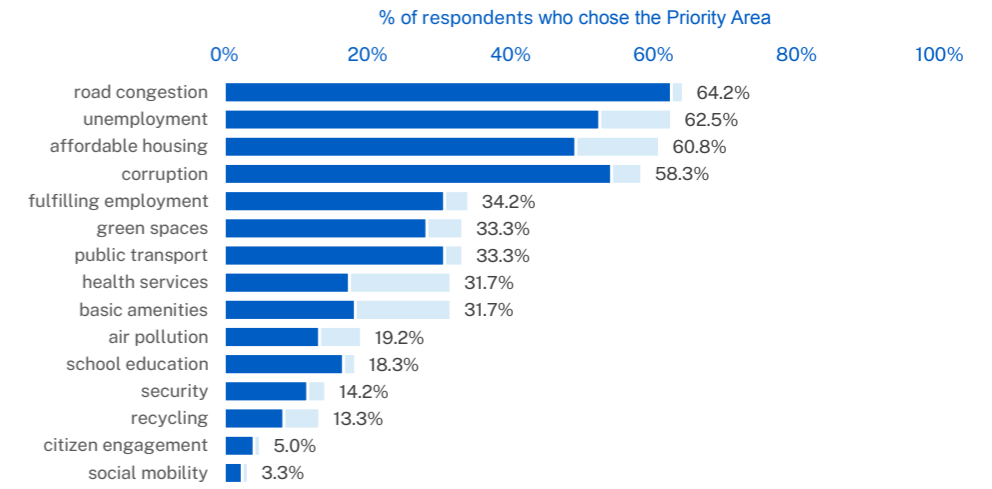
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.723	0.727	0.723	0.720	-0.003
Life expectancy at birth	75.8	76.0	75.2	74.3	-0.9
Expected years of schooling	10.4	10.6	10.7	10.7	+0.0
Mean years of schooling	10.4	10.4	10.5	10.5	+0.0
GNI per capita (PPP \$)	9,967	10,073	9,789	9,924	+135

## PRIORITY AREAS

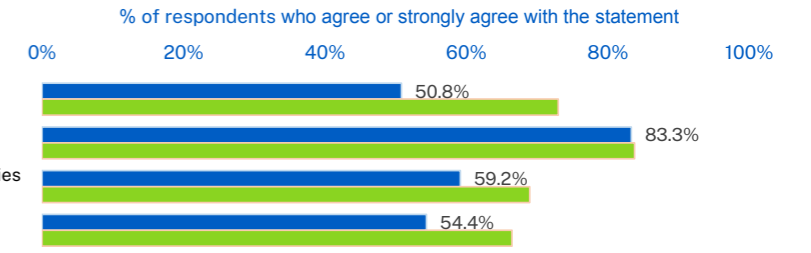
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

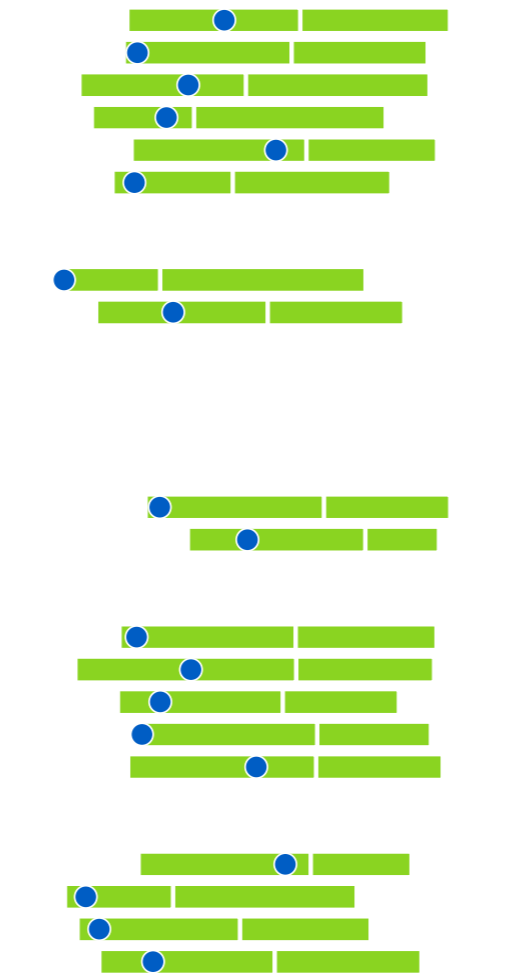
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

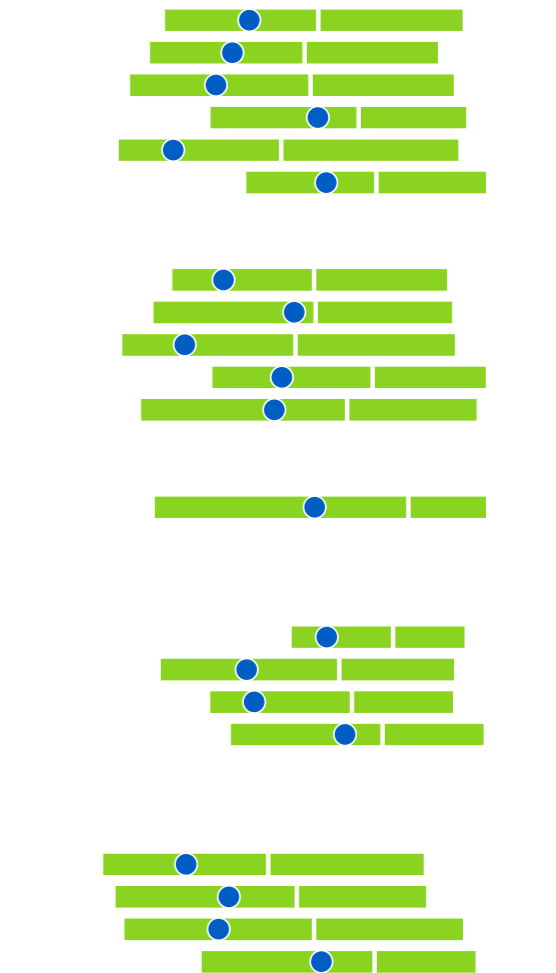
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





# Amsterdam

SMART CITY RANKING

15

Out of 141



13 out of 118 in 2021

SMART CITY RATING

A

A in 2021

FACTOR RATINGS

BBB

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,888,486  
HDI 0.962

(Eurostat)

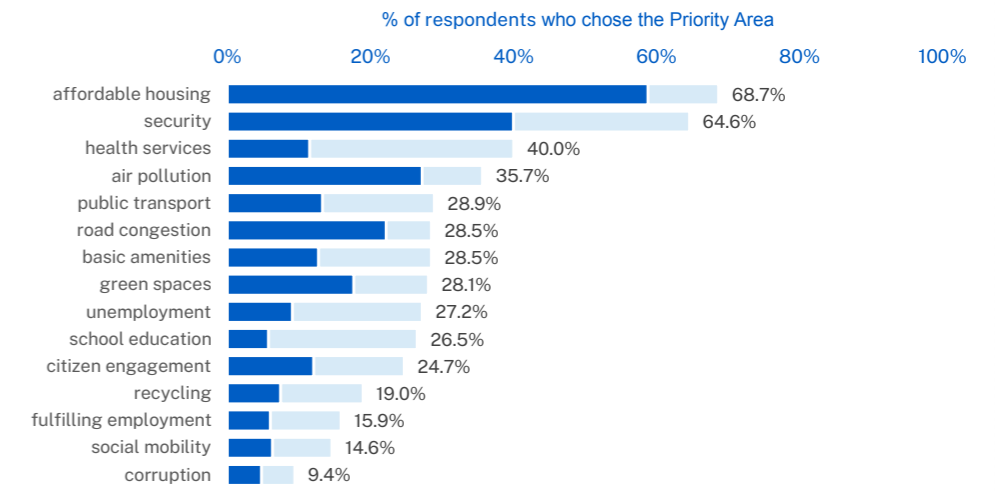


Country	2018	2019	2020	2021	1 yr change
HDI	0.934	0.944	0.939	0.941	+0.002
Life expectancy at birth	82.1	82.3	81.6	81.7	+0.0
Expected years of schooling	18.0	18.5	18.0	18.0	+0.0
Mean years of schooling	12.2	12.4	12.6	12.6	+0.0
GNI per capita (PPP \$)	50,013	57,707	53,504	55,979	+2,476

## PRIORITY AREAS

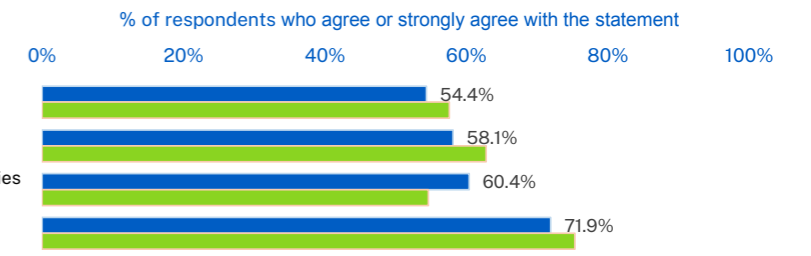
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

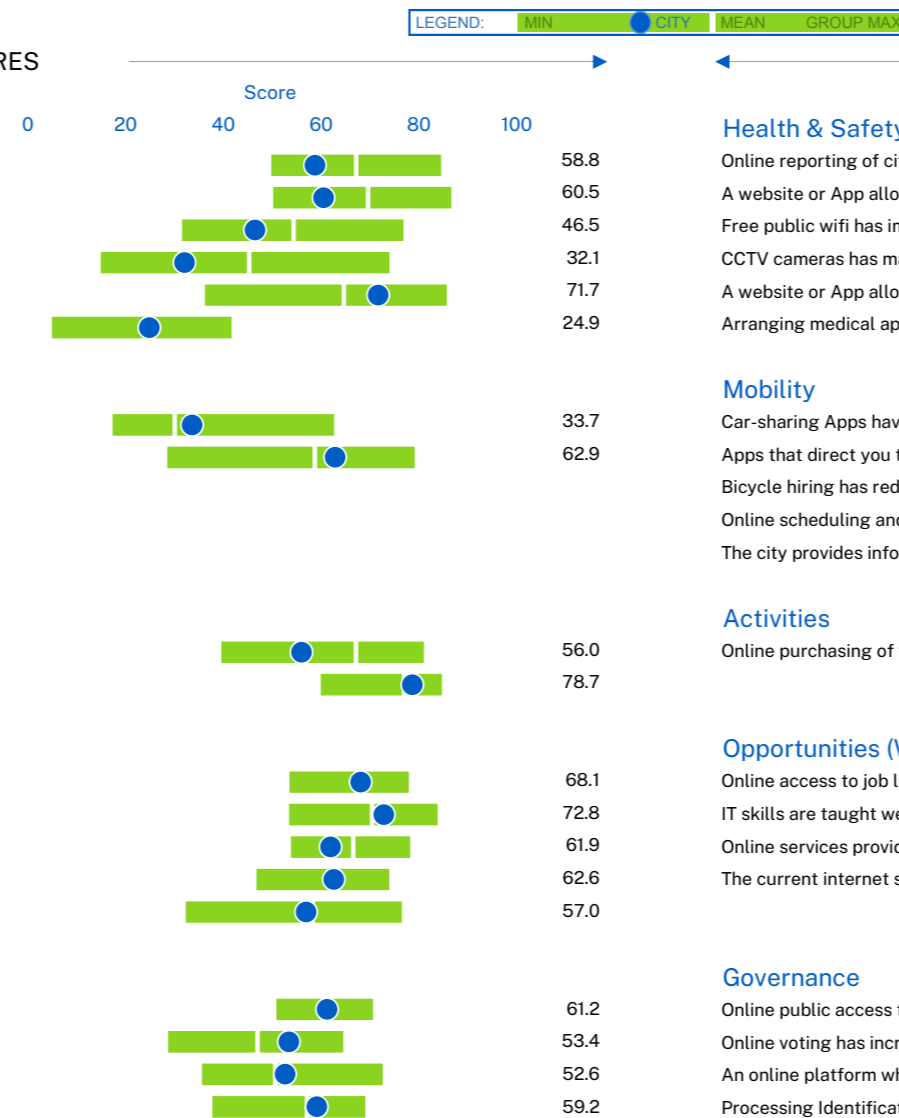
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

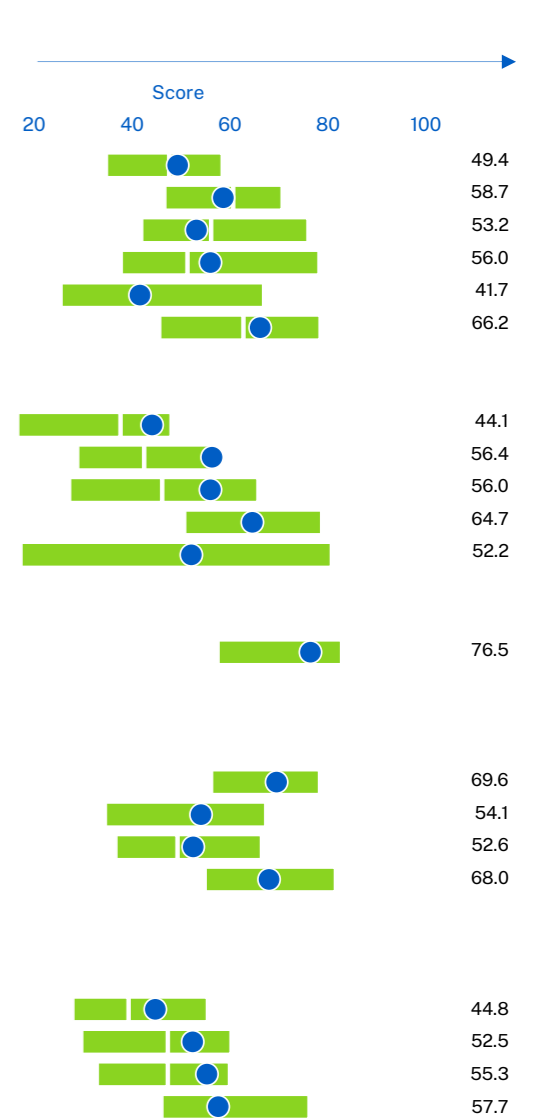
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Ankara

## SMART CITY RANKING

90

Out of 141



75 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

B

STRUCTURES

CCC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,663,322  
HDI 0.854

(Eurostat)

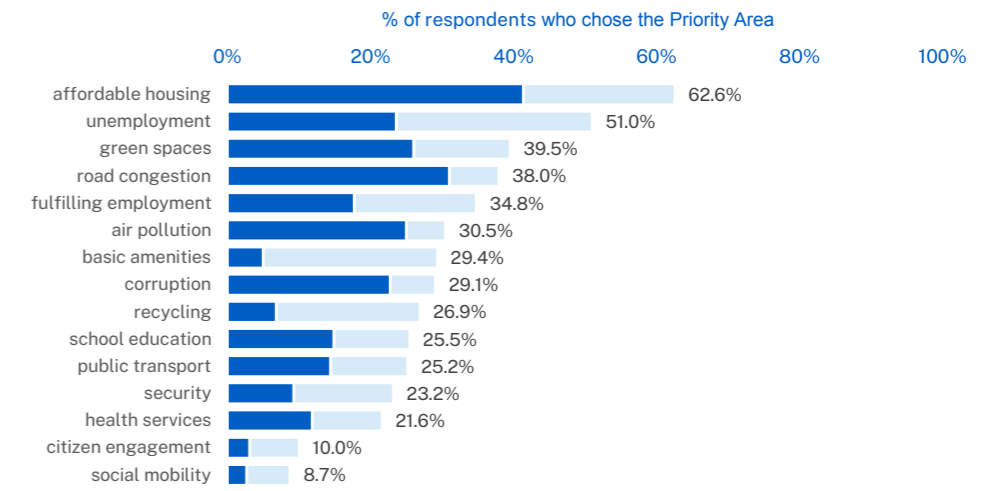


Country	2018	2019	2020	2021	1 yr change
HDI	0.807	0.820	0.833	0.838	+0.005
Life expectancy at birth	77.4	77.7	75.9	76.0	+0.2
Expected years of schooling	16.4	16.6	18.0	18.0	+0.0
Mean years of schooling	7.7	8.1	8.6	8.6	+0.0
GNI per capita (PPP \$)	24,905	27,701	28,317	31,033	+2,715

## PRIORITY AREAS

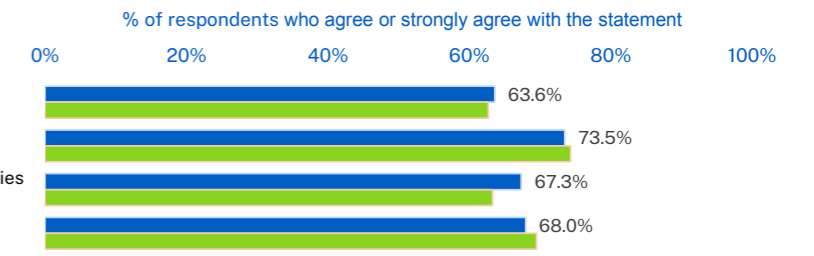
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Athens

## SMART CITY RANKING

113

Out of 141



108 out of 118 in 2021

## SMART CITY RATING

C

C in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,736,737  
HDI 0.909

(Eurostat)



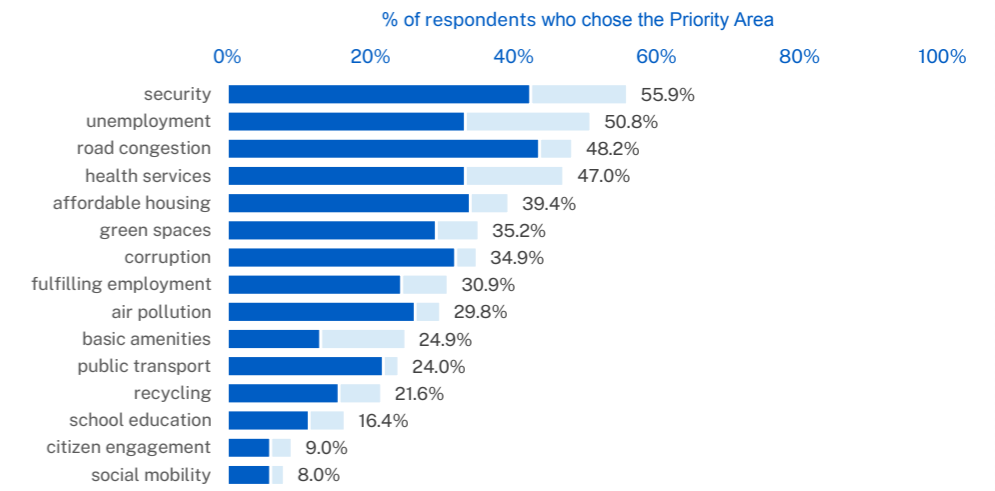
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.872	0.888	0.886	0.887	+0.001
Life expectancy at birth	82.1	82.2	80.9	80.1	-0.8
Expected years of schooling	17.3	17.9	18.0	18.0	+0.0
Mean years of schooling	10.5	10.6	11.4	11.4	+0.0
GNI per capita (PPP \$)	24,909	30,155	26,681	29,002	+2,322

## PRIORITY AREAS

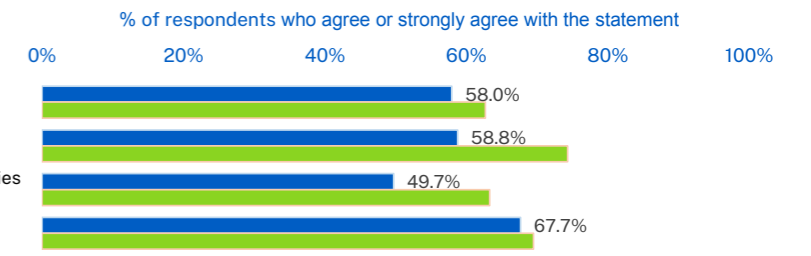
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

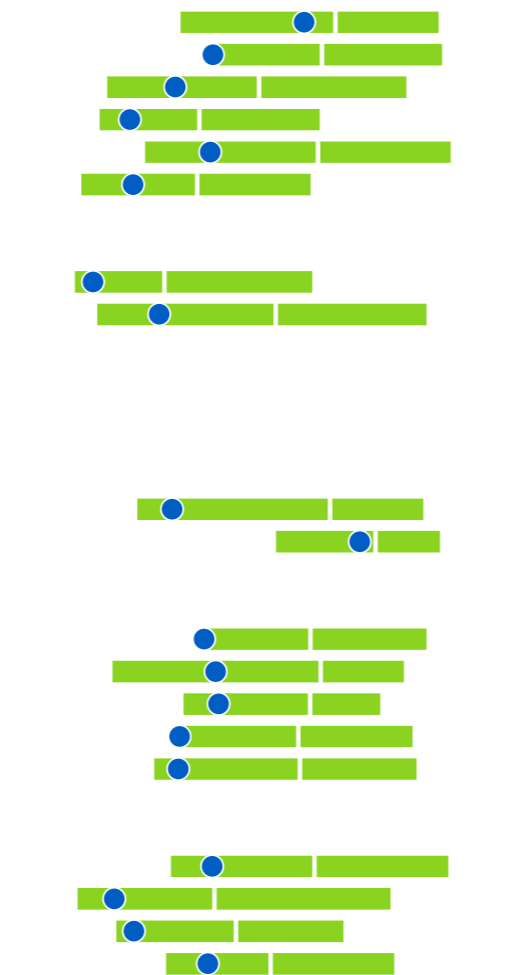
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

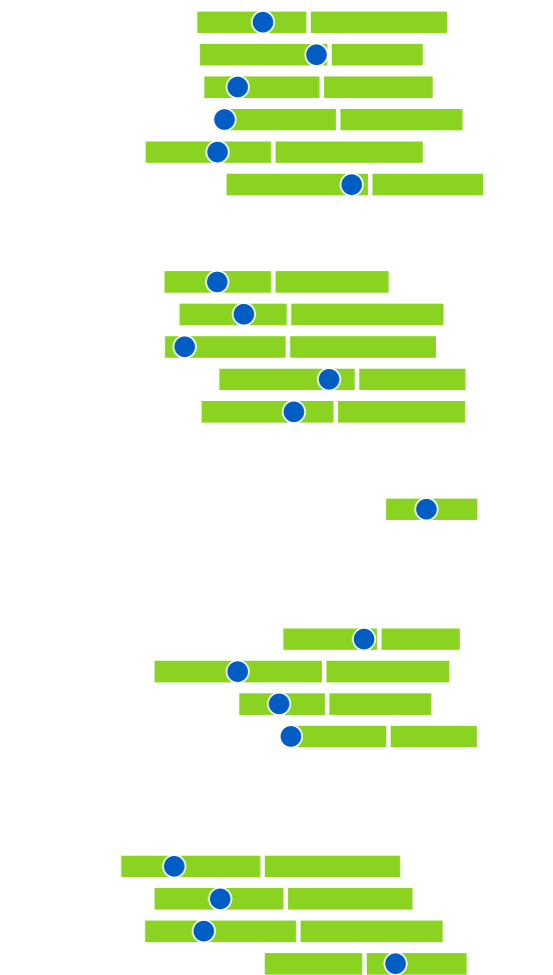
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Auckland

## SMART CITY RANKING

22

Out of 141



16 out of 118 in 2021

## SMART CITY RATING

A

AA in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,346,091  
HDI 0.951

(UN Data)



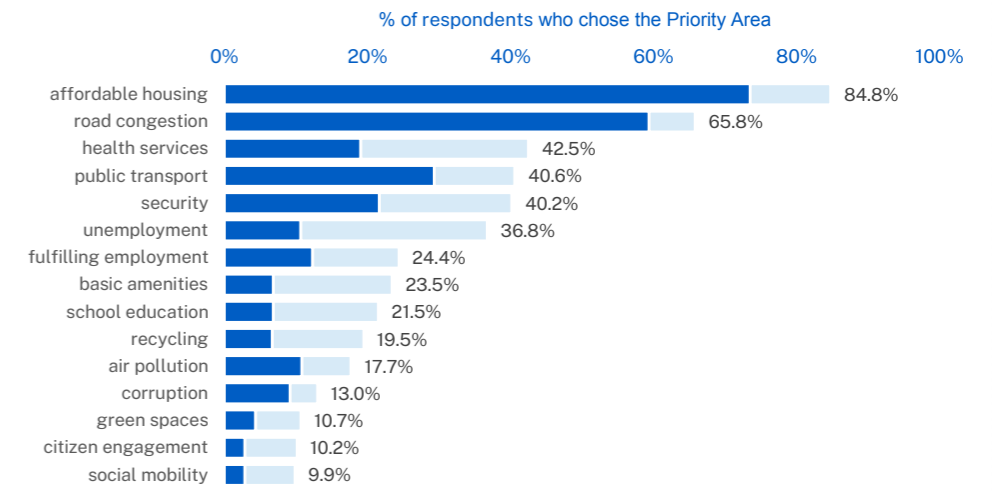
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.936	0.937	0.936	0.937	+0.001
Life expectancy at birth	82.4	82.6	82.7	82.5	-0.3
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	13.1	7.9	8.7	8.7	+0.0
GNI per capita (PPP \$)	16,129	17,781	16,804	17,030	+226

## PRIORITY AREAS

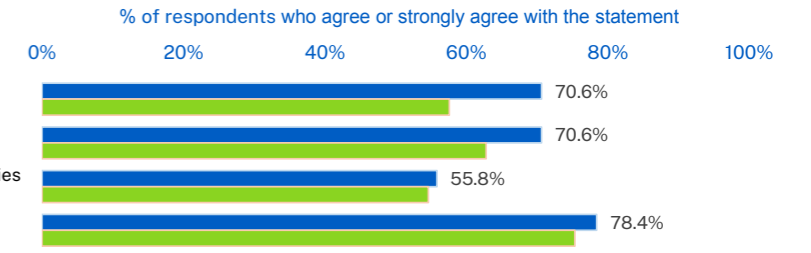
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

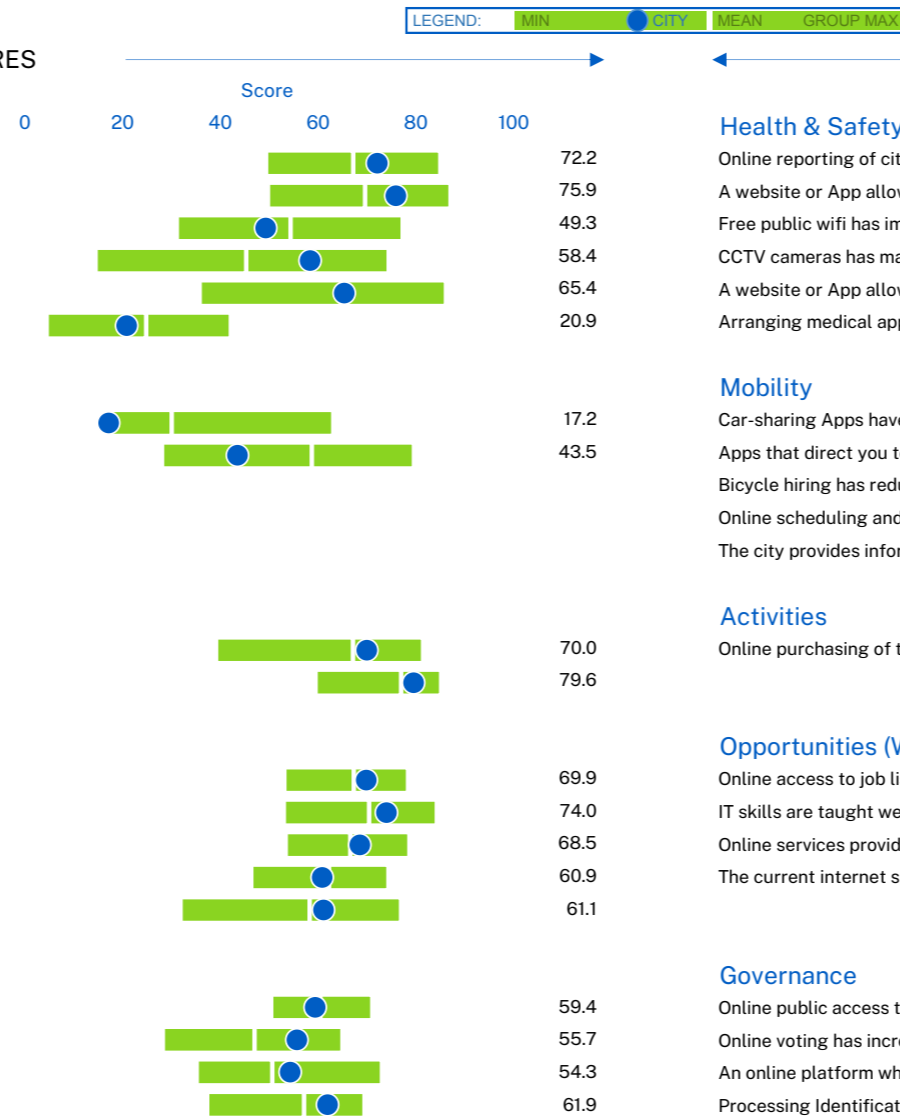
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

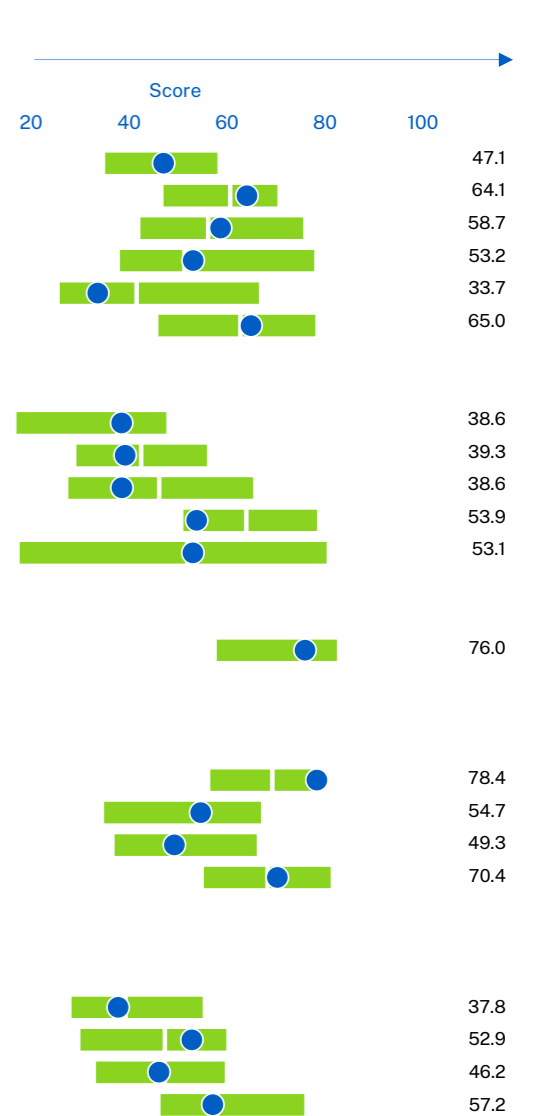
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Bangkok

## SMART CITY RANKING

88

Out of 141



86 out of 118 in 2021

## SMART CITY RATING

B

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

B

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 10,899,698  
HDI 0.839

(UN World Urbanisation Prospects 2022 estimate)



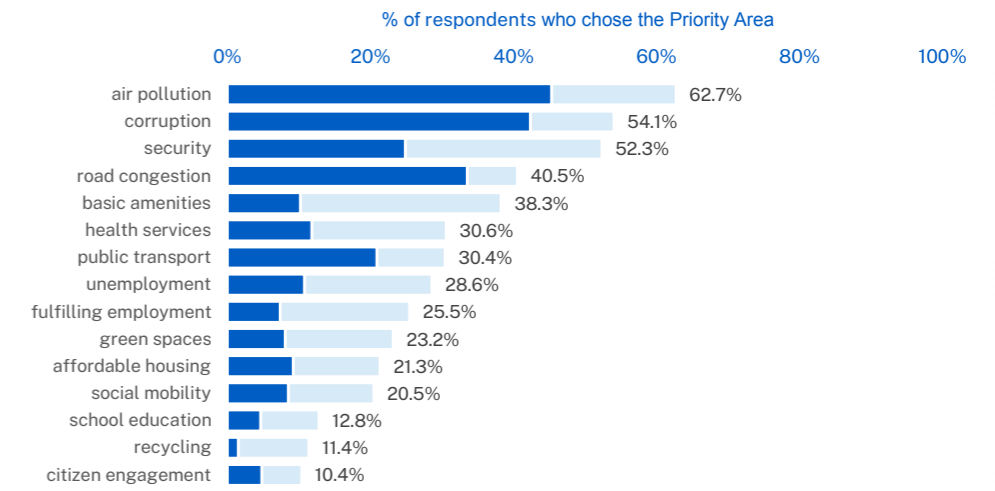
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.765	0.777	0.802	0.800	-0.002
Life expectancy at birth	76.9	77.2	79.3	78.7	-0.5
Expected years of schooling	14.7	15.0	15.9	15.9	+0.0
Mean years of schooling	7.7	13.3	13.4	13.4	+0.0
GNI per capita (PPP \$)	46,226	47,252	42,375	45,225	+2,850

## PRIORITY AREAS

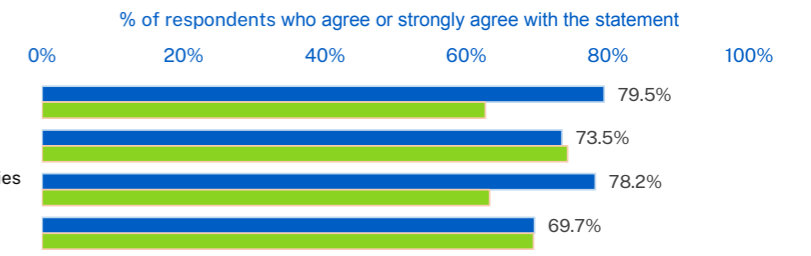
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]



# Barcelona

## SMART CITY RANKING

75

Out of 141



70 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 7,671,252  
HDI 0.916

(Eurostat)



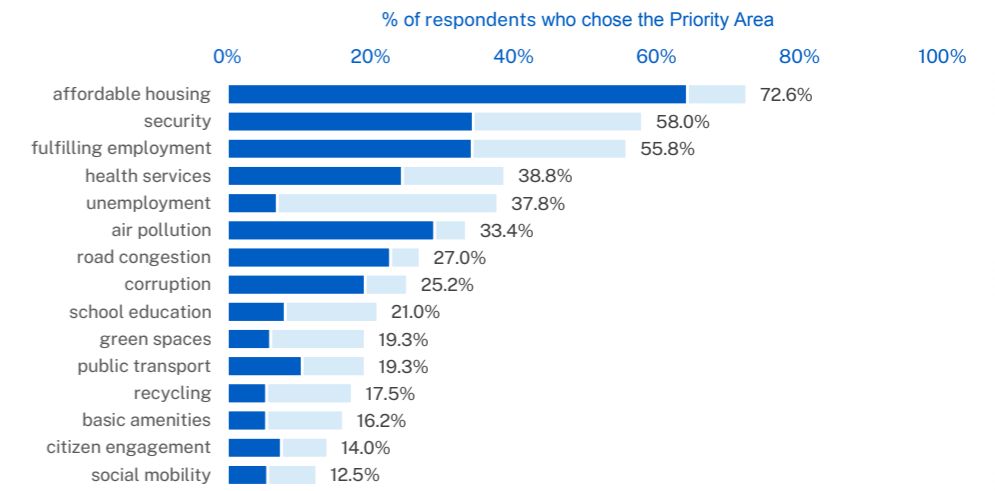
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.893	0.904	0.899	0.905	+0.006
Life expectancy at birth	83.4	83.6	82.3	83.0	+0.7
Expected years of schooling	17.9	17.6	17.9	17.9	+0.0
Mean years of schooling	9.8	10.3	10.6	10.6	+0.0
GNI per capita (PPP \$)	35,041	40,975	36,516	38,354	+1,838

## PRIORITY AREAS

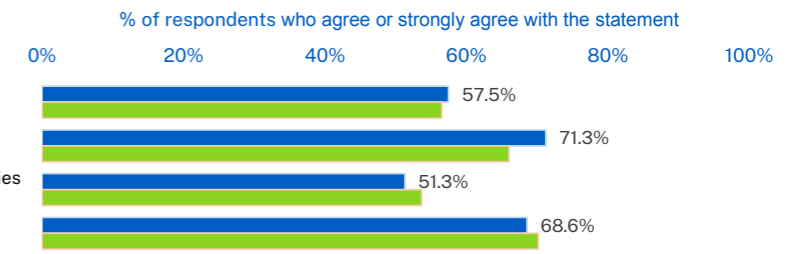
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## ATTITUDES

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 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

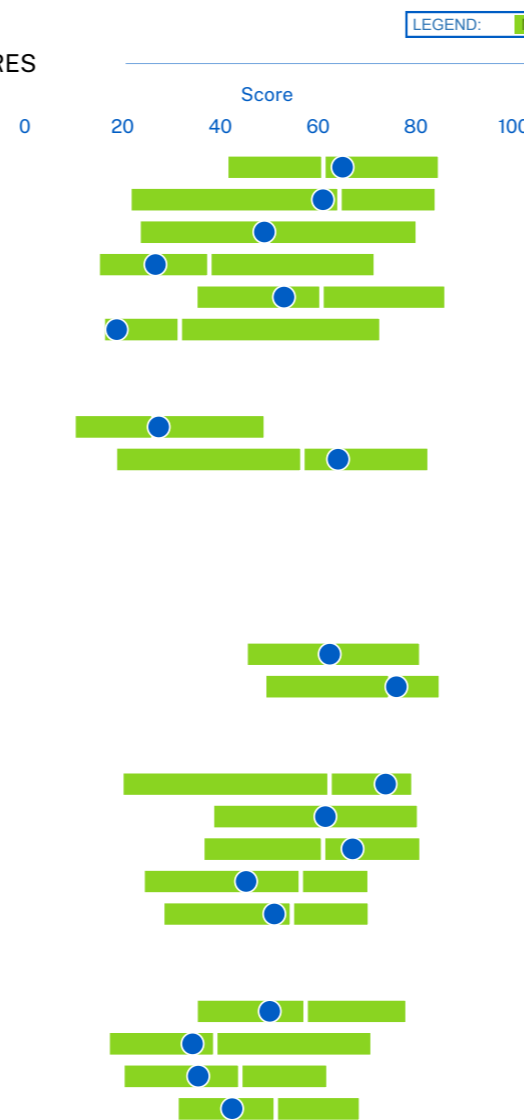
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

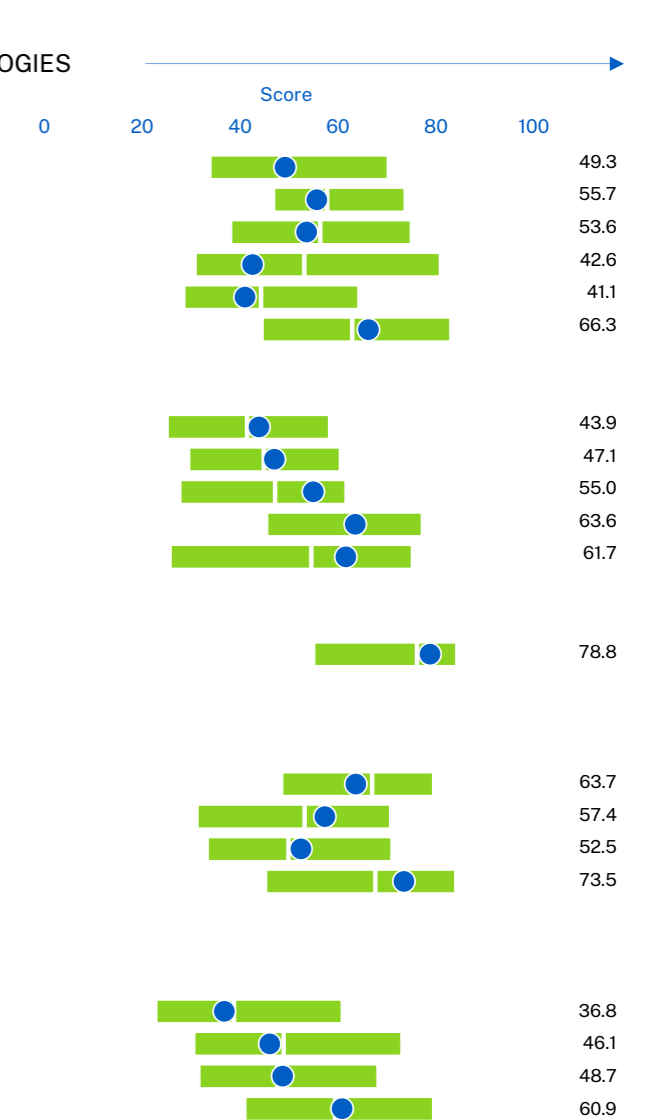
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Beijing

## SMART CITY RANKING

12

Out of 141



17 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 21,333,331  
HDI 0.907

(UN World Urbanisation Prospects 2022 estimate)



Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

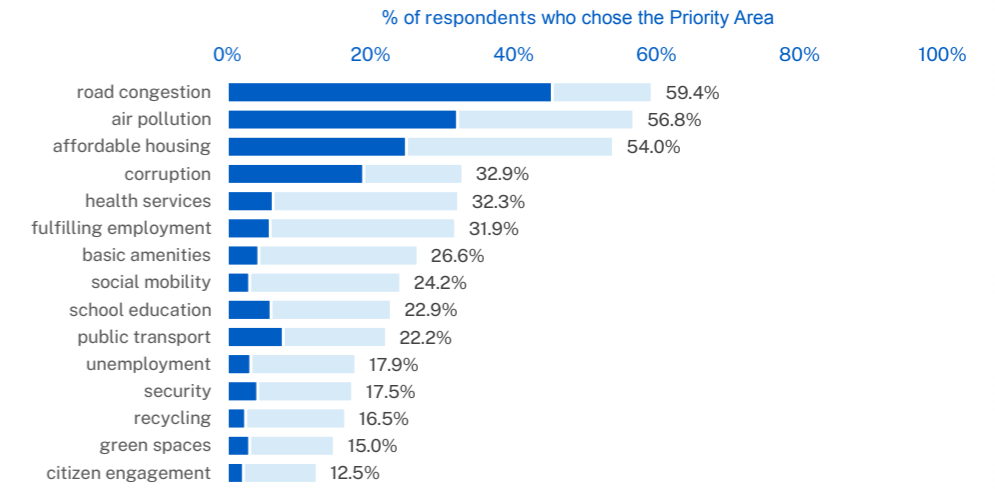
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	12.6	13.0	13.0	+0.0
GNI per capita (PPP \$)	48,836	58,662	58,144	60,365	+2,221

## PRIORITY AREAS

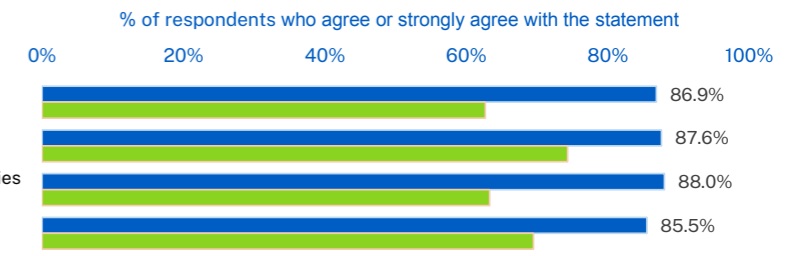
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

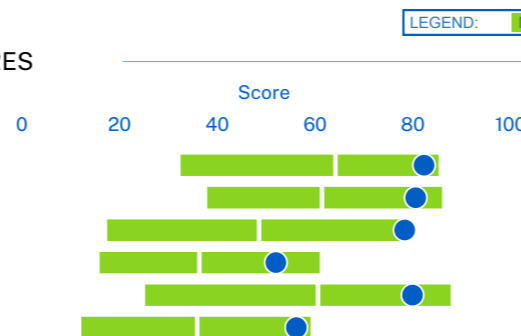
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

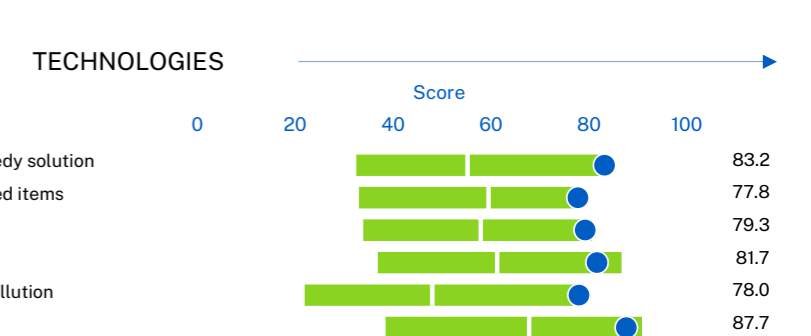
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Beirut

## SMART CITY RANKING

139

Out of 141

not out of 118 in 2021

## SMART CITY RATING

D

not in 2021

## FACTOR RATINGS

D

STRUCTURES

D

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,433,155  
HDI 0.677

(UN World Urbanisation Prospects 2022 estimate)

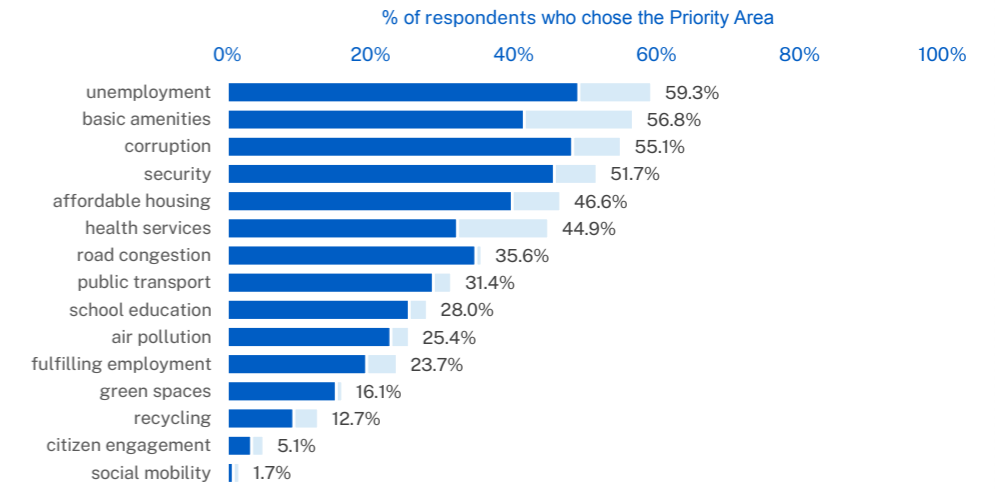


Country	2018	2019	2020	2021	1 yr change
HDI	0.750	0.745	0.726	0.706	-0.020
Life expectancy at birth	79.7	79.2	77.8	75.1	-2.8
Expected years of schooling	11.3	11.3	11.3	11.3	+0.0
Mean years of schooling	8.7	8.7	8.7	8.7	+0.0
GNI per capita (PPP \$)	15,586	14,378	11,201	9,526	-1,676

## PRIORITY AREAS

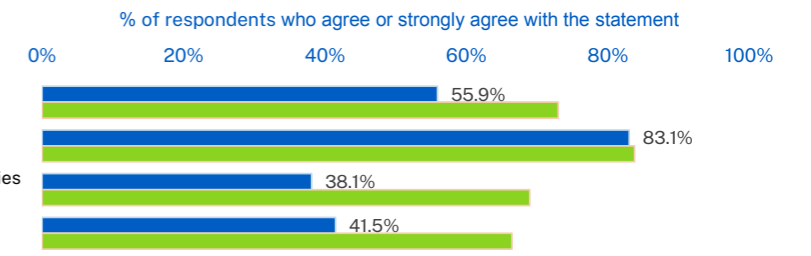
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

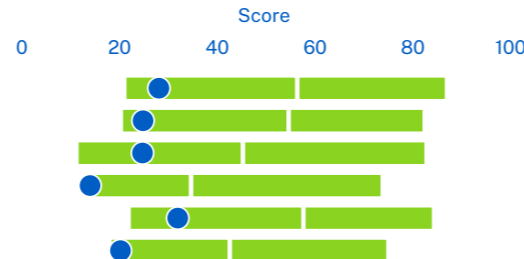
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
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 Online scheduling and ticket sales has made public transport easier to use  
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### Activities

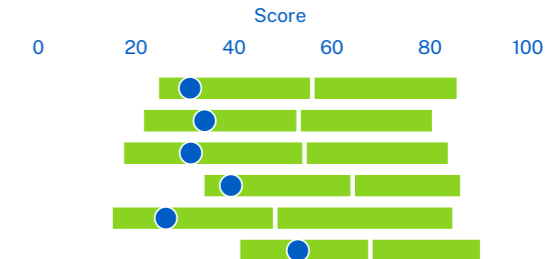
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 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

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 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times





# Belfast

## SMART CITY RANKING

95

Out of 141

not out of 118 in 2021

## SMART CITY RATING

CC

not in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CC

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 341,506  
HDI 0.896

(Eurostat)

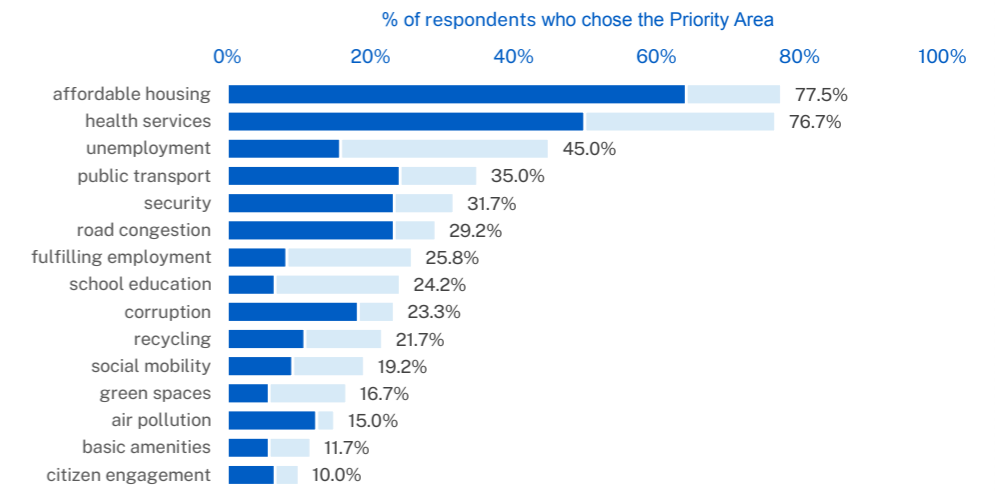


Country	2018	2019	2020	2021	1 yr change
HDI	0.929	0.935	0.924	0.929	+0.005
Life expectancy at birth	81.1	81.7	80.4	80.7	+0.3
Expected years of schooling	17.3	17.3	17.3	17.3	+0.0
Mean years of schooling	13.2	13.3	13.4	13.4	+0.0
GNI per capita (PPP \$)	46,226	47,252	42,375	45,225	+2,850

## PRIORITY AREAS

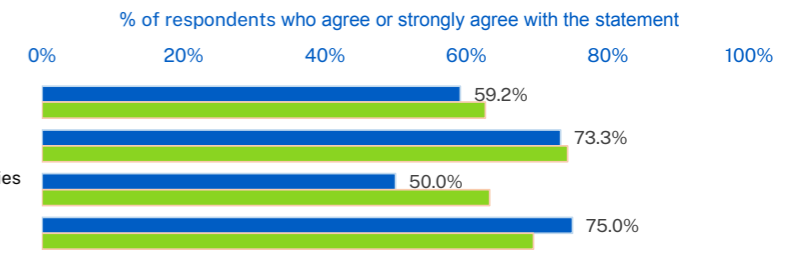
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

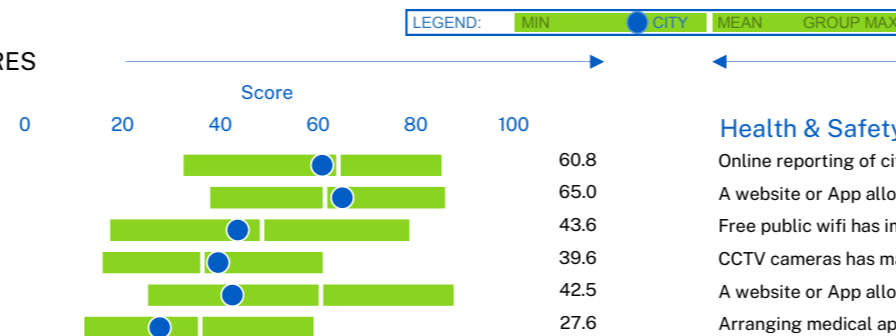
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
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- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Bengaluru

## SMART CITY RANKING

110

Out of 141



97 out of 118 in 2021

## SMART CITY RATING

CC

CC in 2021

## FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 13,193,035  
HDI 0.667

(UN World Urbanisation Prospects 2022 estimate)



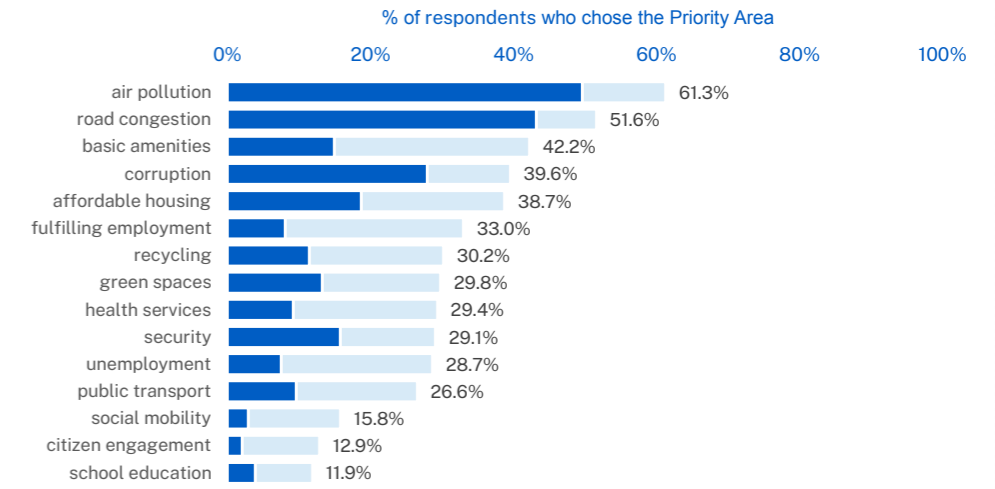
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.647	0.645	0.642	0.633	-0.009
Life expectancy at birth	69.4	69.7	70.2	67.2	-2.9
Expected years of schooling	12.3	12.2	11.9	11.9	+0.0
Mean years of schooling	6.5	6.5	6.7	6.7	+0.0
GNI per capita (PPP \$)	6,829	6,681	6,107	6,590	+482

## PRIORITY AREAS

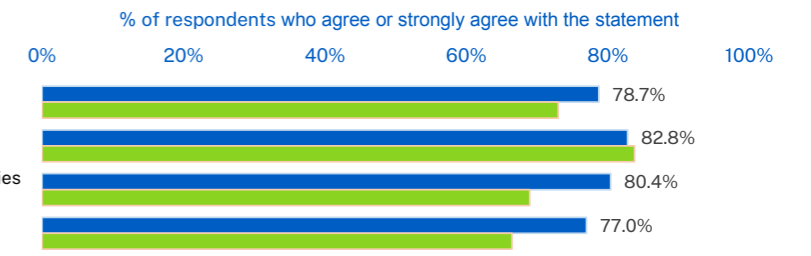
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Berlin

## SMART CITY RANKING

33

Out of 141



21 out of 118 in 2021

## SMART CITY RATING

BBB

BBB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,664,088  
HDI 0.959

(Eurostat)

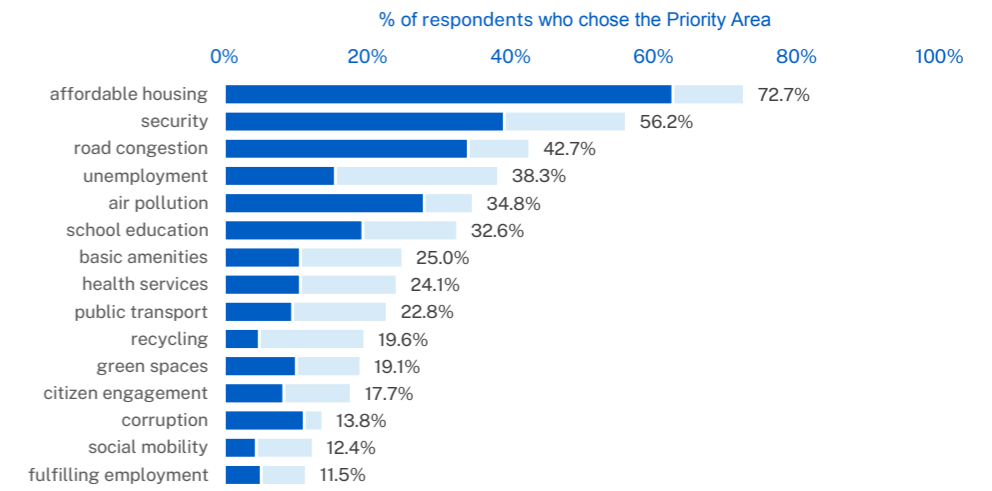


Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	14.2	14.1	14.1	+0.0
GNI per capita (PPP \$)	46,946	55,314	53,078	54,534	+1,457

## PRIORITY AREAS

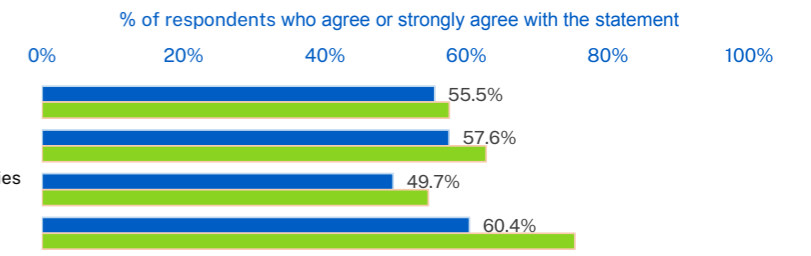
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## ATTITUDES

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 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

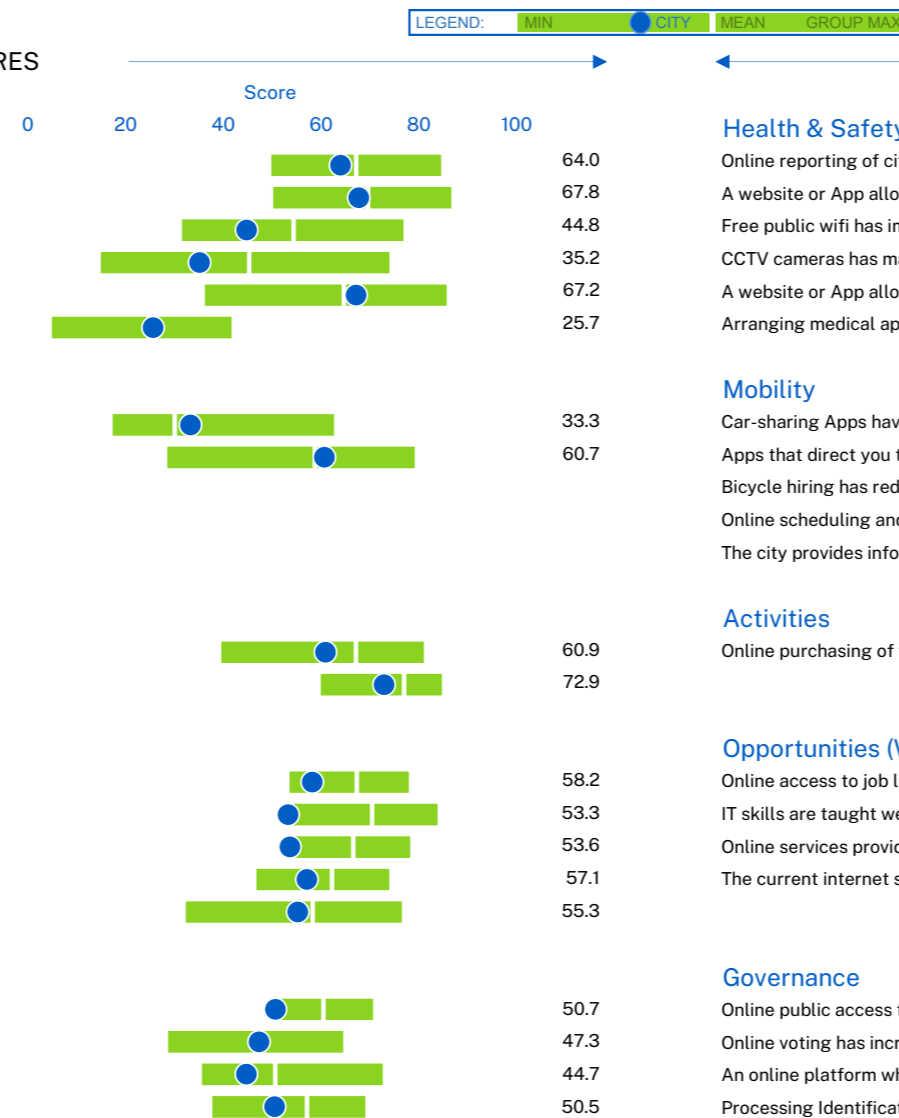
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

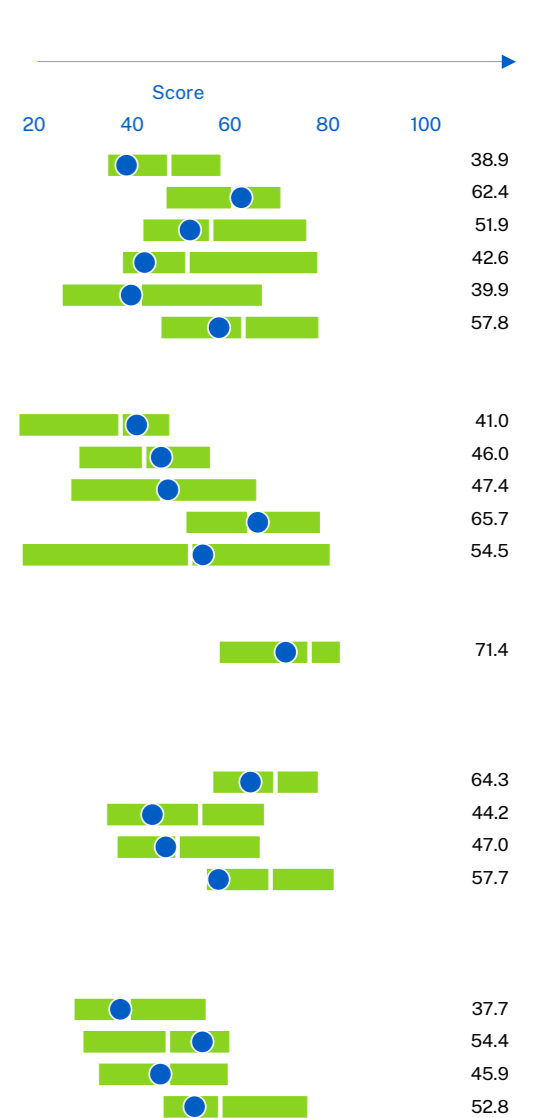
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 27

Out of 141



23 out of 118 in 2021

## SMART CITY RATING

# BBB

BBB in 2021

## FACTOR RATINGS

# BBB

STRUCTURES

# BBB

TECHNOLOGIES

## GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,185,908  
HDI 0.932

(Eurostat)

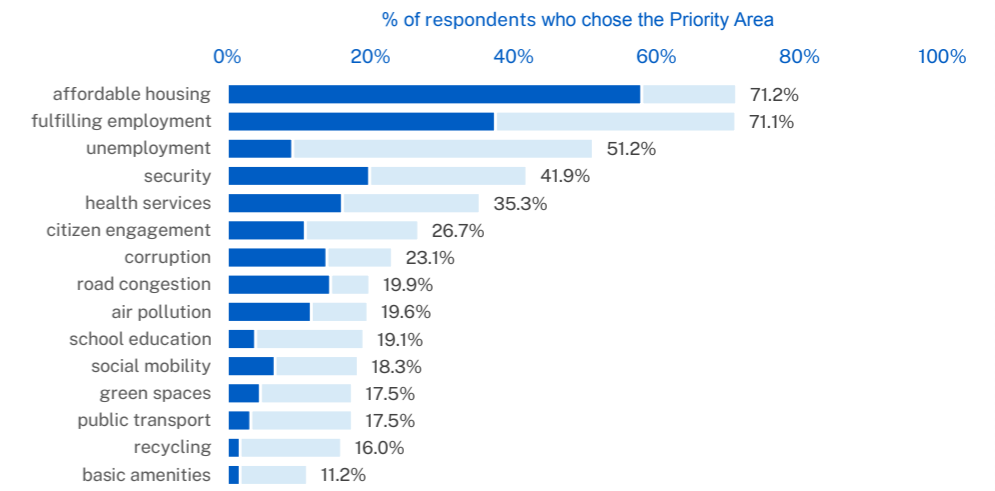


Country	2018	2019	2020	2021	1 yr change
HDI	0.893	0.904	0.899	0.905	+0.006
Life expectancy at birth	83.4	83.6	82.3	83.0	+0.7
Expected years of schooling	17.9	17.6	17.9	17.9	+0.0
Mean years of schooling	9.8	10.3	10.6	10.6	+0.0
GNI per capita (PPP \$)	35,041	40,975	36,516	38,354	+1,838

## PRIORITY AREAS

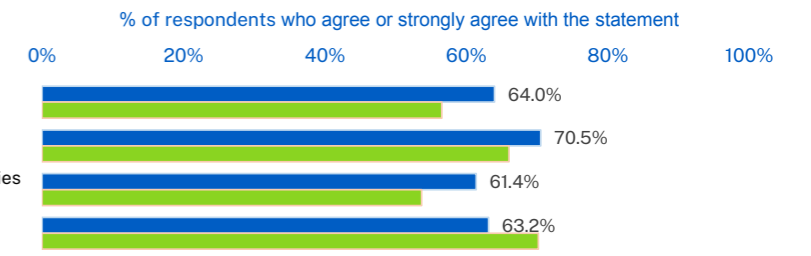
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

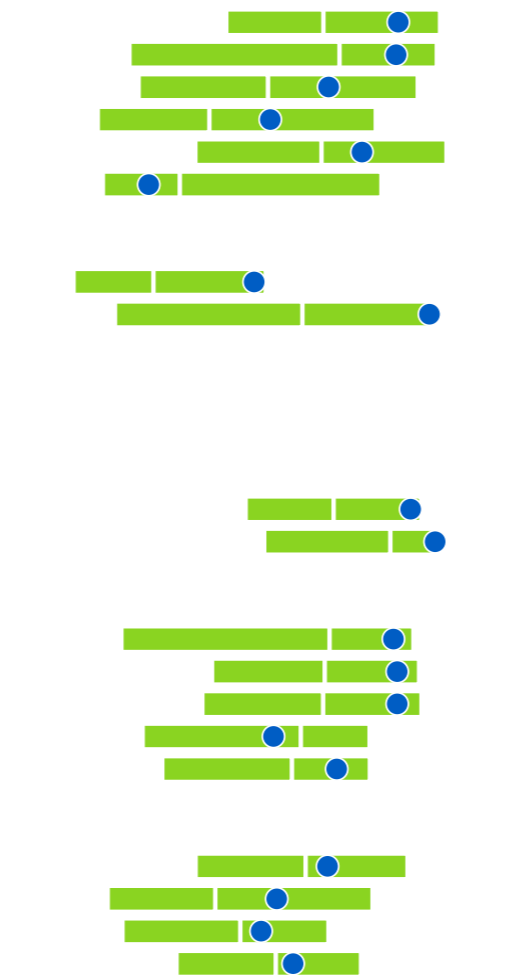
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

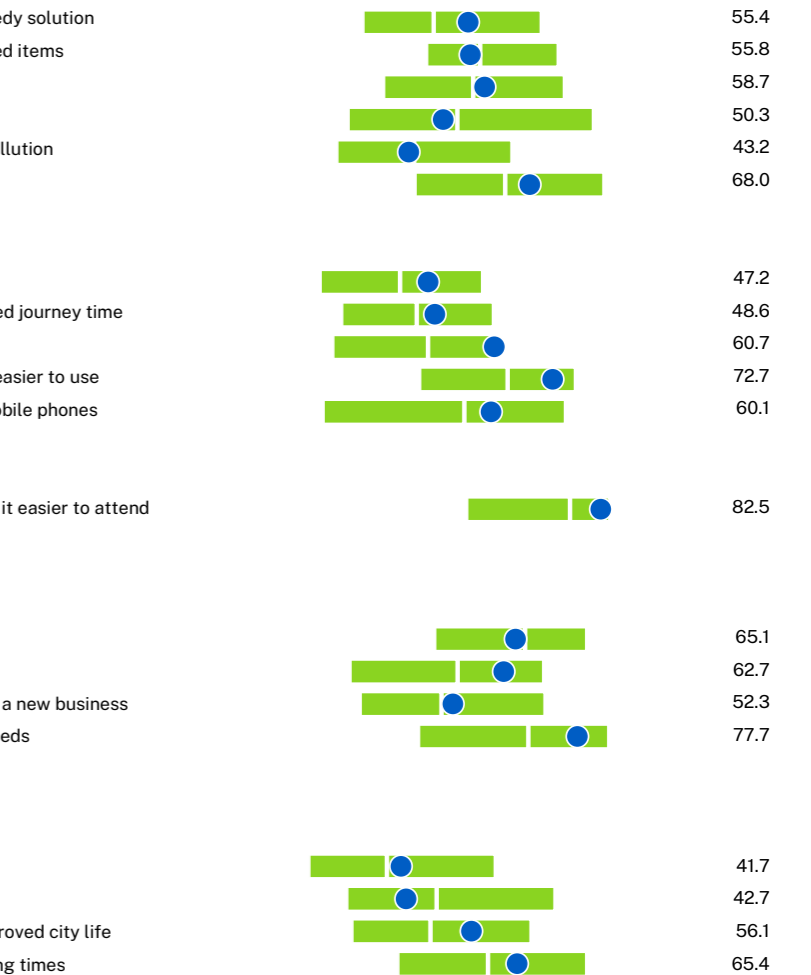
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Birmingham

## SMART CITY RANKING

74

Out of 141



73 out of 118 in 2021

## SMART CITY RATING

BB

B in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,148,862  
HDI 0.913

(Eurostat)

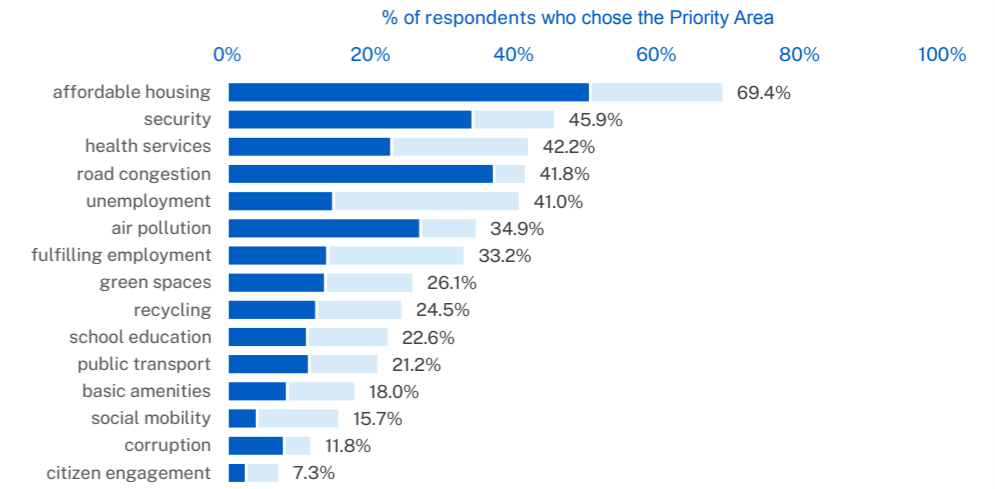


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

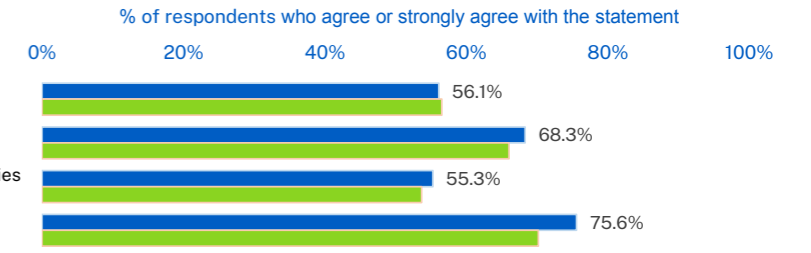
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

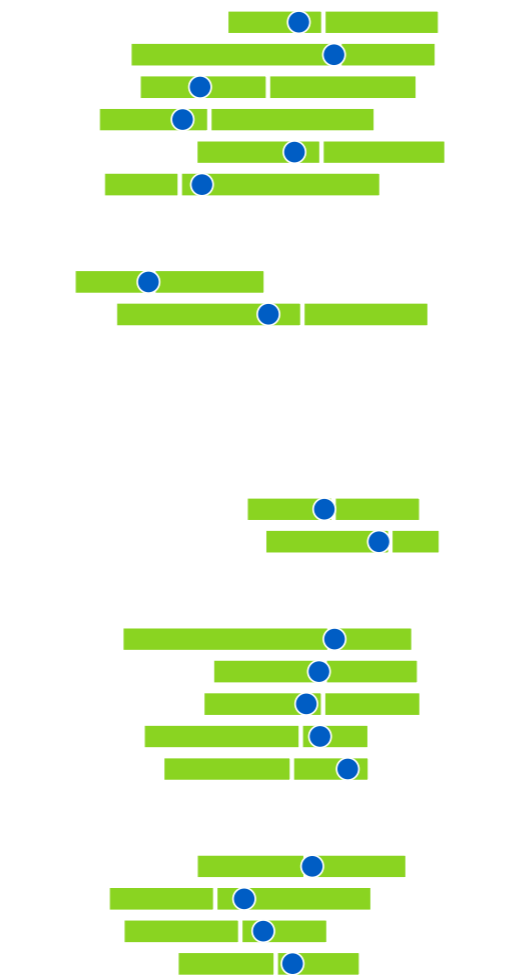
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

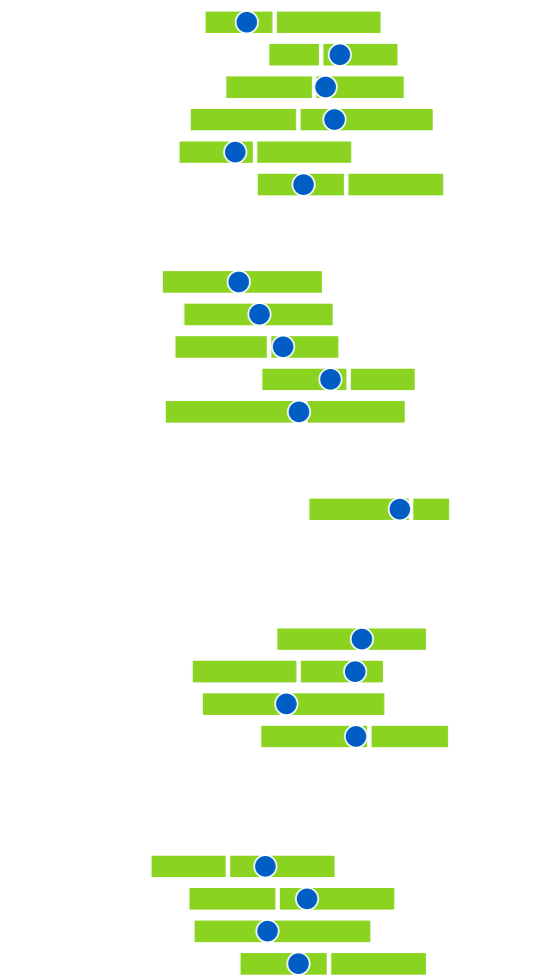
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Bogota

## SMART CITY RANKING

129

Out of 141



113 out of 118 in 2021

## SMART CITY RATING

D

D in 2021

## FACTOR RATINGS

D

STRUCTURES

C

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 7,181,469  
HDI 0.797

(UN Data)

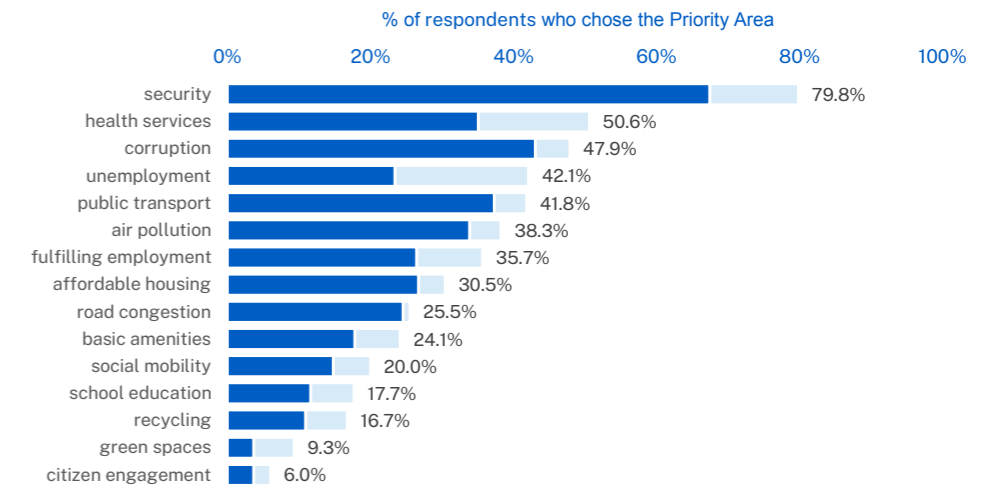


Country	2018	2019	2020	2021	1 yr change
HDI	0.761	0.767	0.756	0.752	-0.004
Life expectancy at birth	77.1	77.3	74.8	72.8	-1.9
Expected years of schooling	14.6	14.4	14.4	14.4	+0.0
Mean years of schooling	8.3	8.5	8.9	8.9	+0.0
GNI per capita (PPP \$)	12,896	14,257	13,185	14,384	+1,199

## PRIORITY AREAS

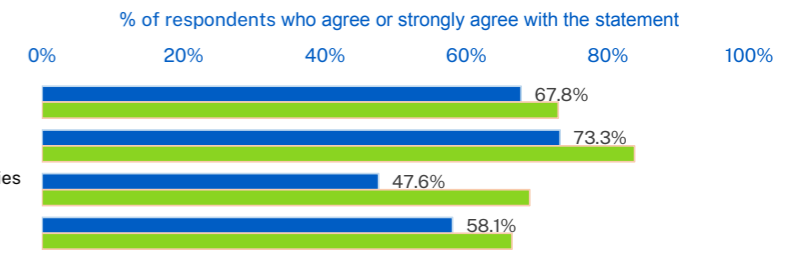
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

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### Mobility

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- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

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- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

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- Processing Identification Documents online has reduced waiting times



# Bologna

## SMART CITY RANKING

51

Out of 141



48 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,438,937  
HDI 0.924

(Eurostat)



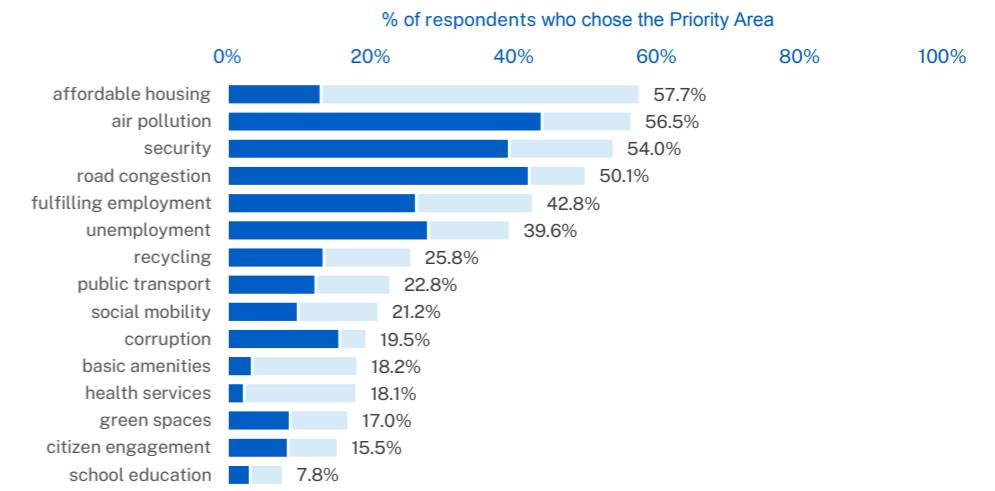
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.883	0.892	0.889	0.895	+0.006
Life expectancy at birth	83.4	83.5	82.4	82.9	+0.4
Expected years of schooling	16.2	16.1	16.2	16.2	+0.0
Mean years of schooling	10.2	10.4	10.7	10.7	+0.0
GNI per capita (PPP \$)	36,141	42,776	39,901	42,840	+2,939

## PRIORITY AREAS

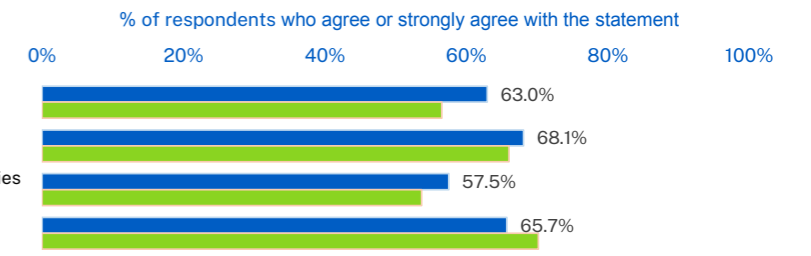
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Medical services provision is satisfactory
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### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
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### Opportunities (Work & School)

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## TECHNOLOGIES

### Health & Safety

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### Mobility

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- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

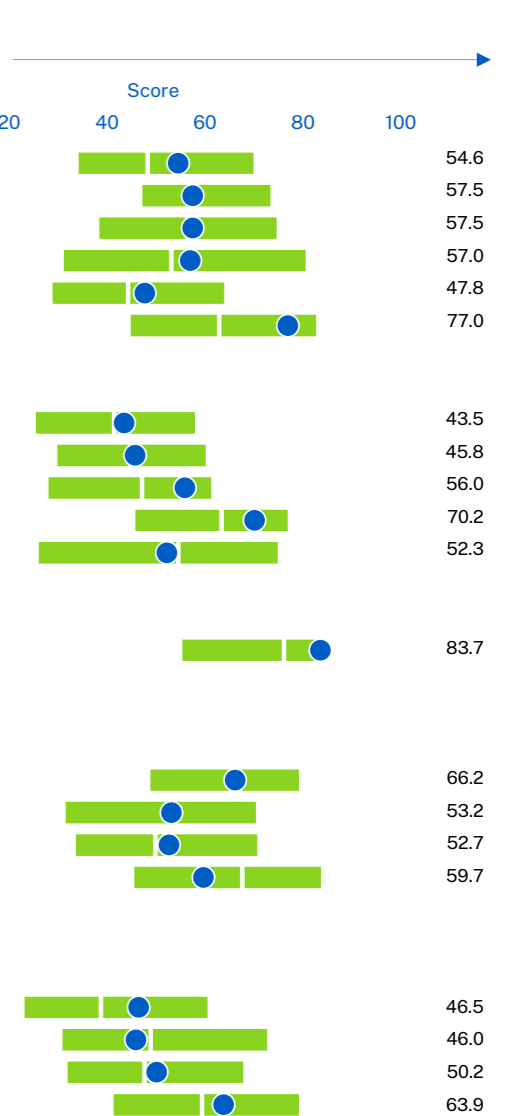
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Bordeaux

## SMART CITY RANKING

78

Out of 141



68 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CC

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,511,921  
HDI 0.900

(Eurostat)

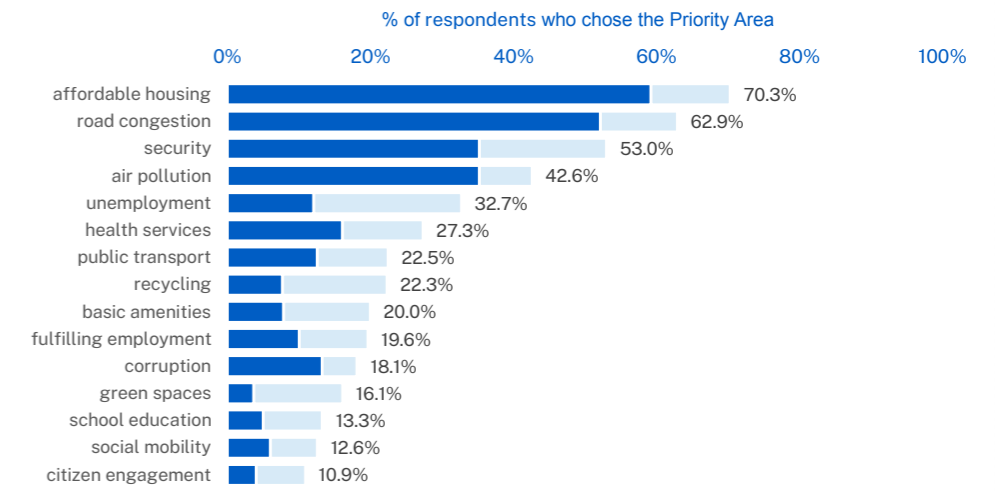


Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.901	0.898	0.903	+0.005
Life expectancy at birth	82.5	82.7	82.2	82.5	+0.3
Expected years of schooling	15.5	15.6	15.8	15.8	+0.0
Mean years of schooling	11.4	11.5	11.6	11.6	+0.0
GNI per capita (PPP \$)	40,511	47,173	43,048	45,937	+2,889

## PRIORITY AREAS

From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

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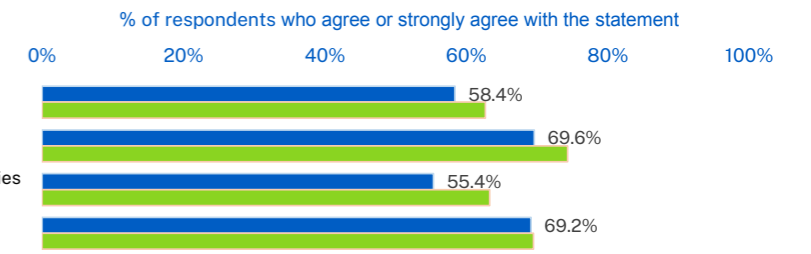
## ATTITUDES

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You are comfortable with face recognition technologies to lower crime

You feel the availability of online information has increased your trust in authorities

The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

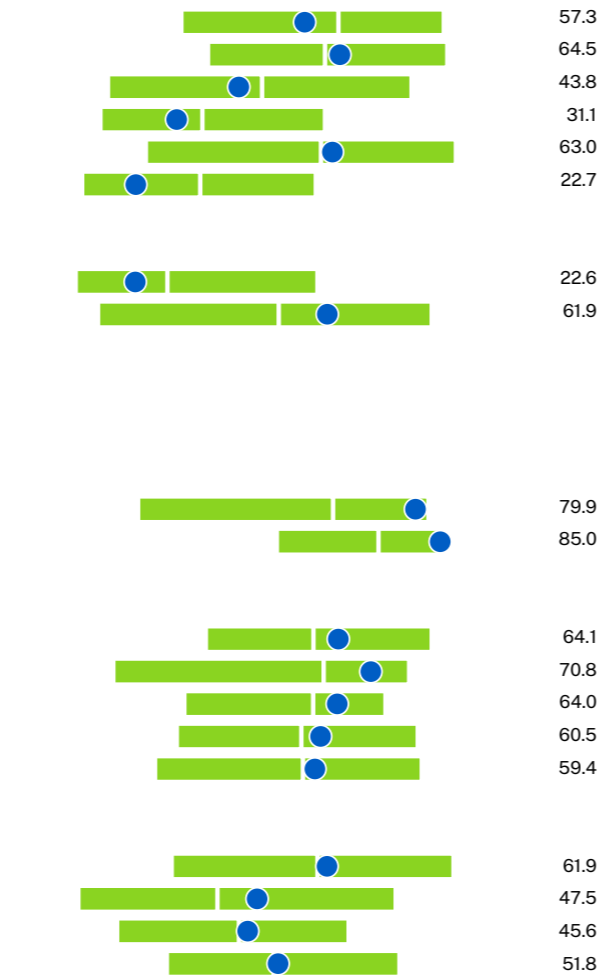
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
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- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

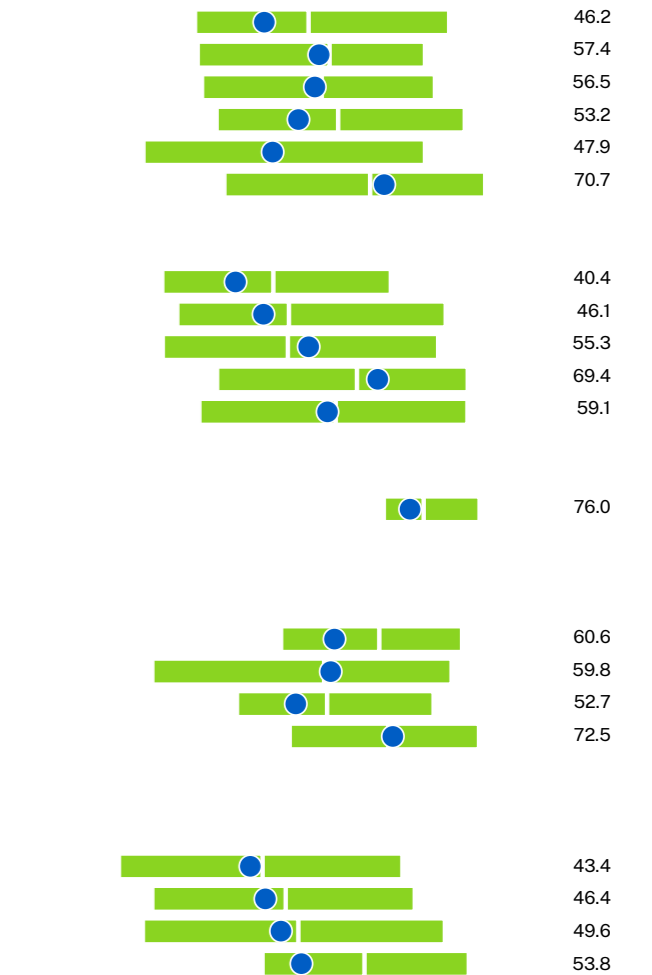
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





# Boston

## SMART CITY RANKING

34

Out of 141



22 out of 118 in 2021

## SMART CITY RATING

A

BBB in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 675,647  
HDI 0.949

(UN Data)



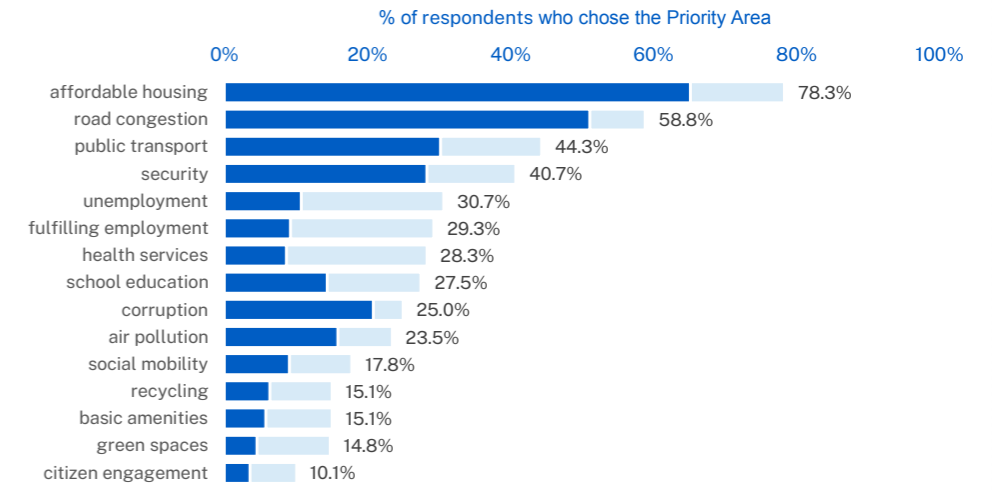
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

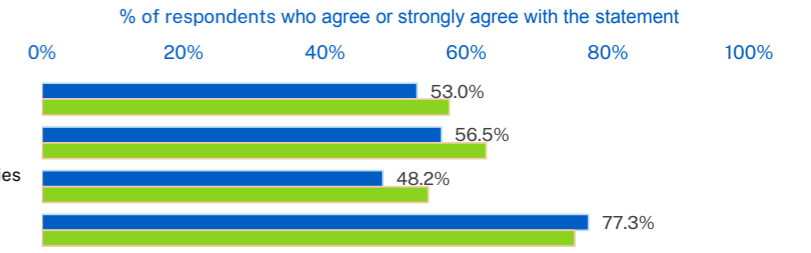
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

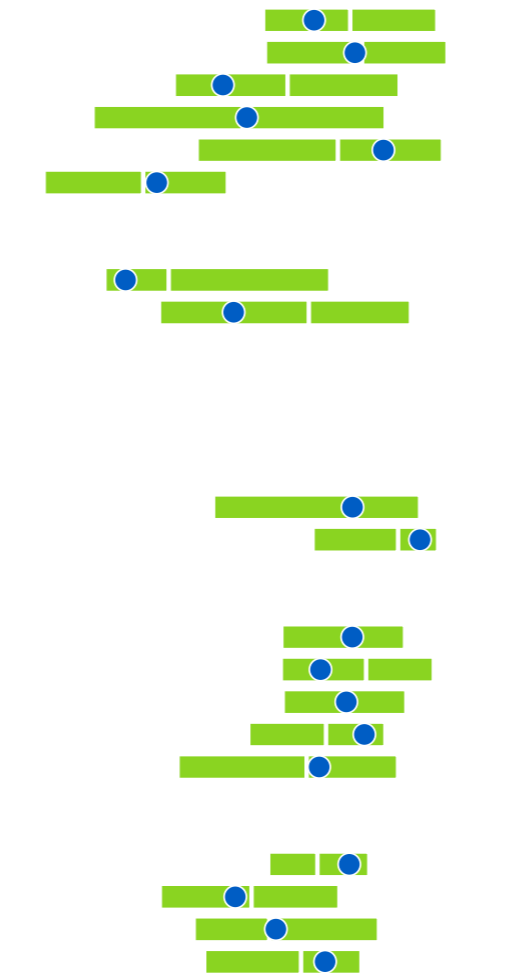
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

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- Free public wifi has improved access to city services
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### Mobility

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### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

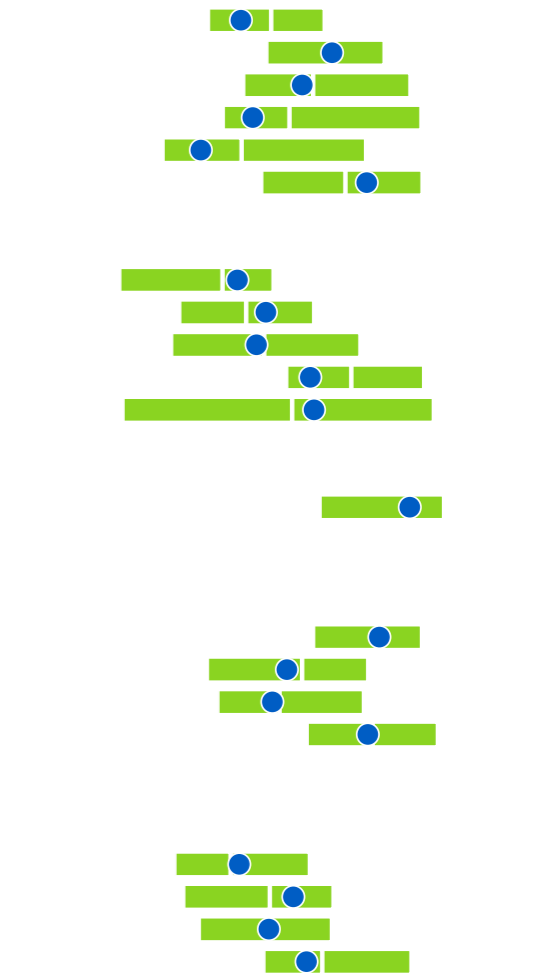
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
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### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Brasilia

## SMART CITY RANKING

128

Out of 141

not out of 118 in 2021

## SMART CITY RATING

C

not in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,803,877  
HDI 0.816

(UN World Urbanisation Prospects 2022 estimate)

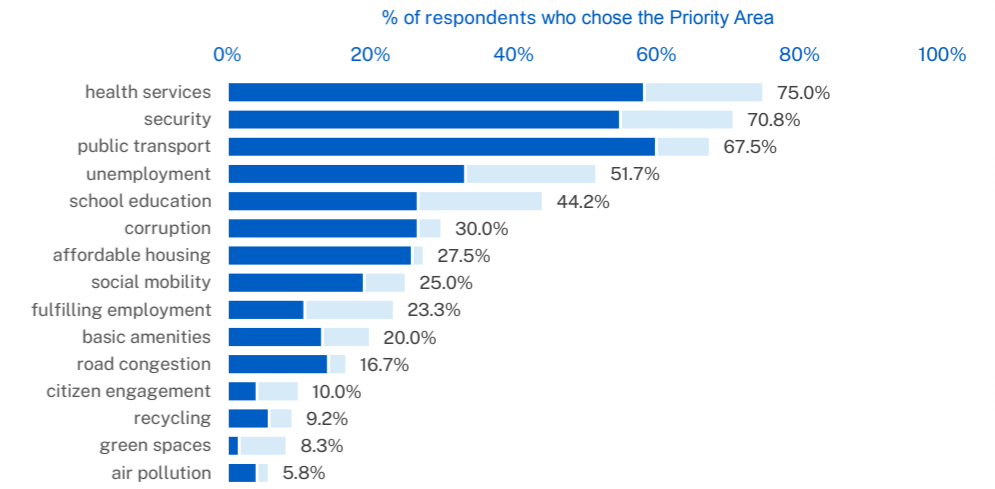


Country	2018	2019	2020	2021	1 yr change
HDI	0.764	0.766	0.758	0.754	-0.004
Life expectancy at birth	75.1	75.3	74.0	72.8	-1.3
Expected years of schooling	15.7	15.6	15.6	15.6	+0.0
Mean years of schooling	8.0	10.6	10.9	10.9	+0.0
GNI per capita (PPP \$)	21,972	23,261	22,286	24,563	+2,277

## PRIORITY AREAS

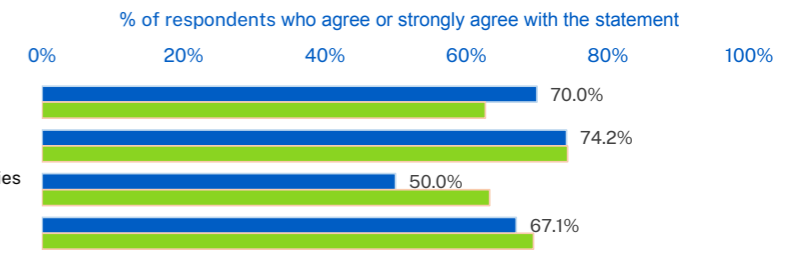
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

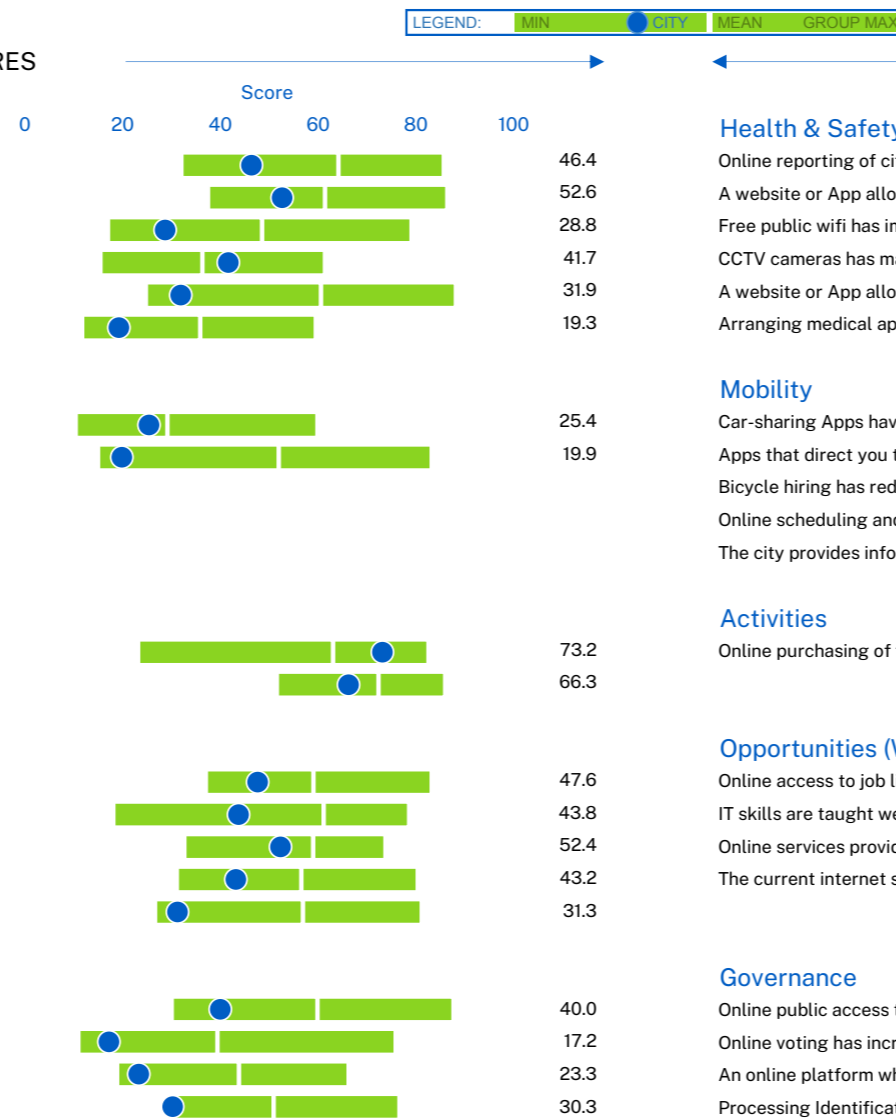
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

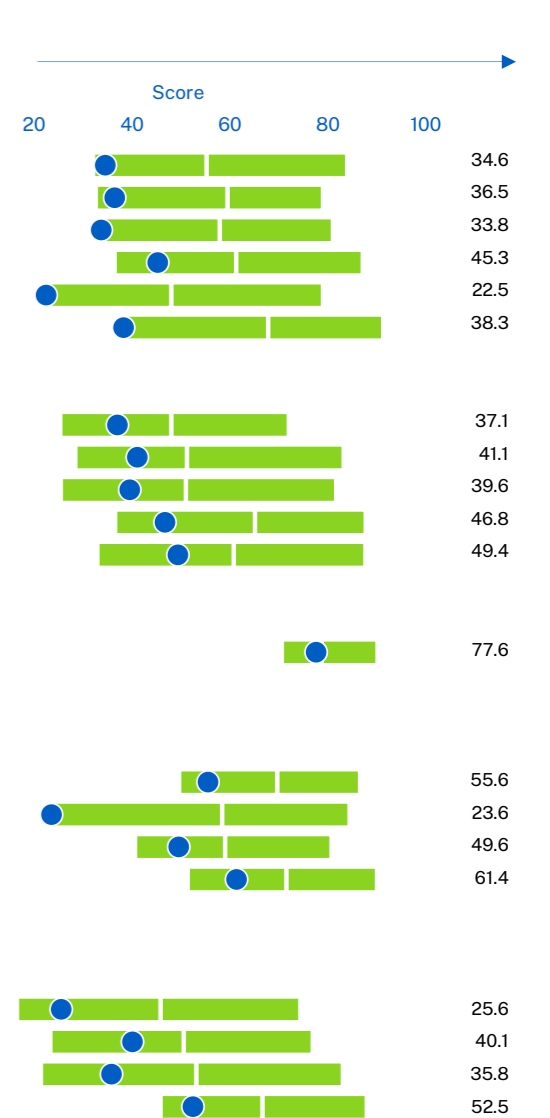
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Bratislava

## SMART CITY RANKING

62

Out of 141



42 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 677,024  
HDI 0.944

(Eurostat)

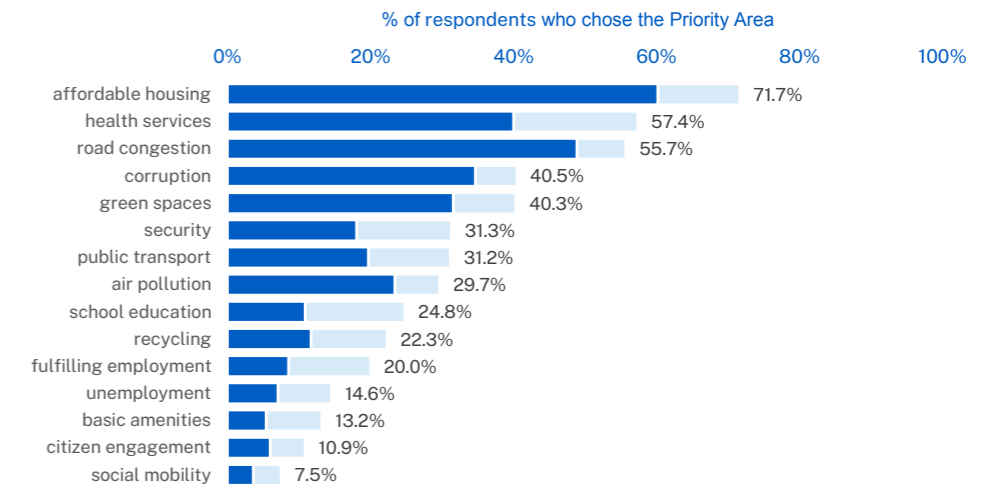


Country	2018	2019	2020	2021	1 yr change
HDI	0.857	0.860	0.857	0.848	-0.009
Life expectancy at birth	77.4	77.5	77.0	74.9	-2.1
Expected years of schooling	14.5	14.5	14.5	14.5	+0.0
Mean years of schooling	12.6	12.7	12.9	12.9	+0.0
GNI per capita (PPP \$)	30,672	32,113	29,801	30,690	+889

## PRIORITY AREAS

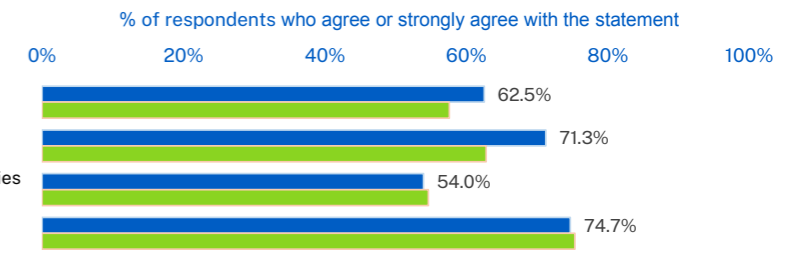
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## ATTITUDES

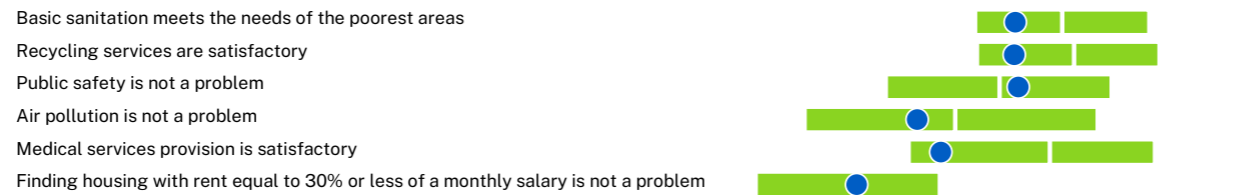
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



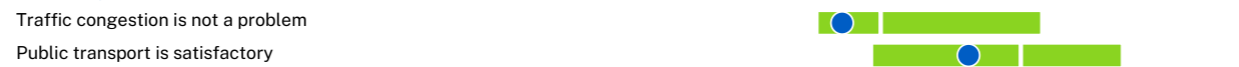
LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety



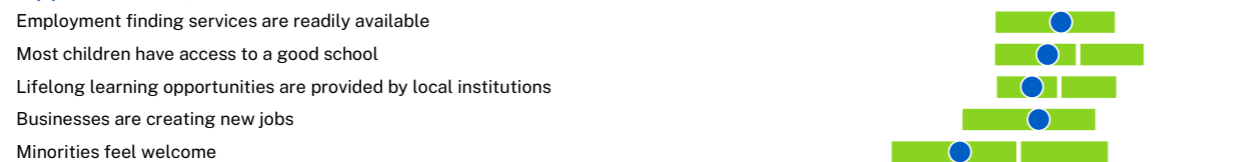
### Mobility



### Activities



### Opportunities (Work & School)

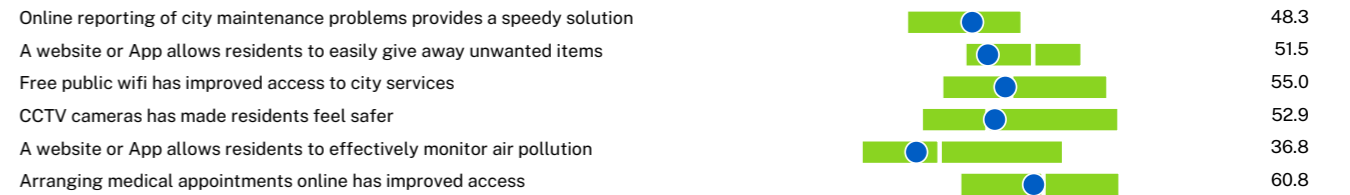


### Governance

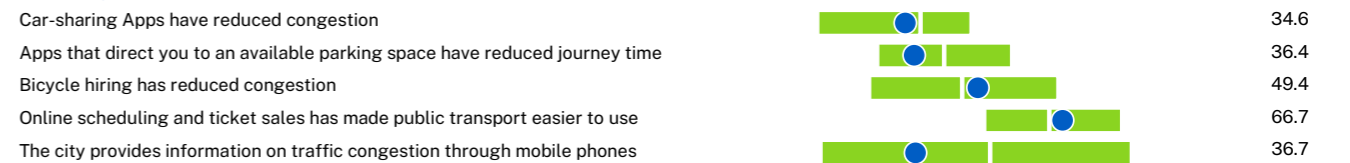


## TECHNOLOGIES

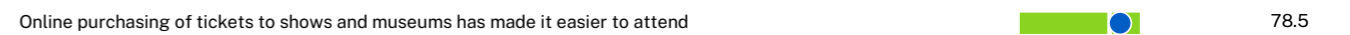
### Health & Safety



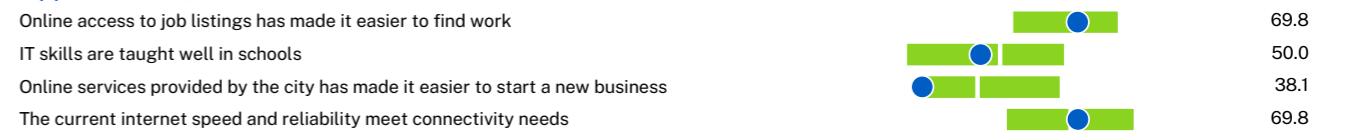
### Mobility



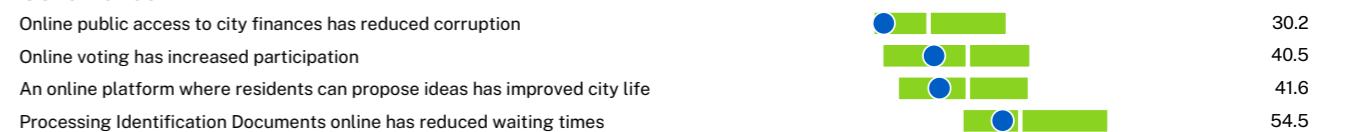
### Activities



### Opportunities (Work & School)



### Governance



# Brisbane

## SMART CITY RANKING

24

Out of 141



40 out of 118 in 2021

## SMART CITY RATING

AA

BB in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,054,614  
HDI 0.944

(UN Data)



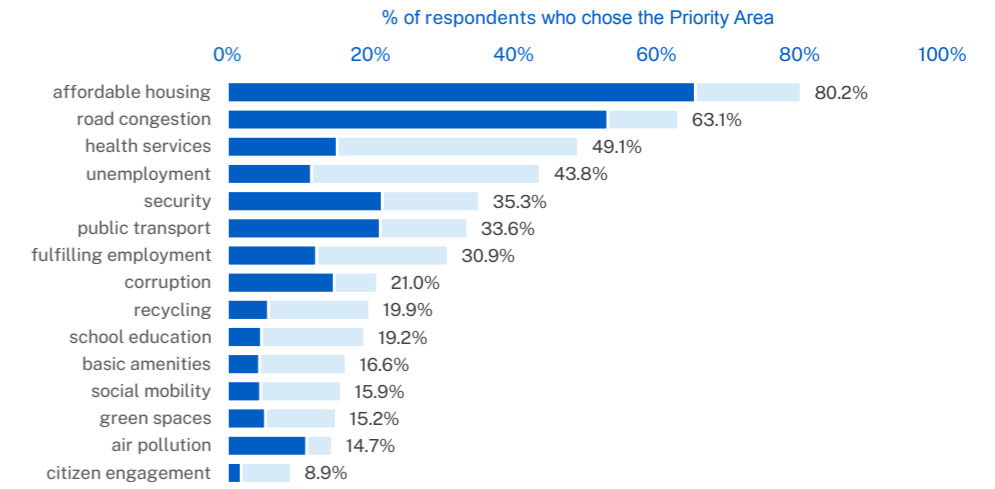
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.941	0.941	0.947	0.951	+0.004
Life expectancy at birth	83.4	83.1	84.3	84.5	+0.2
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	12.6	12.1	12.4	12.4	+0.0
GNI per capita (PPP \$)	43,821	52,085	49,392	52,293	+2,901

## PRIORITY AREAS

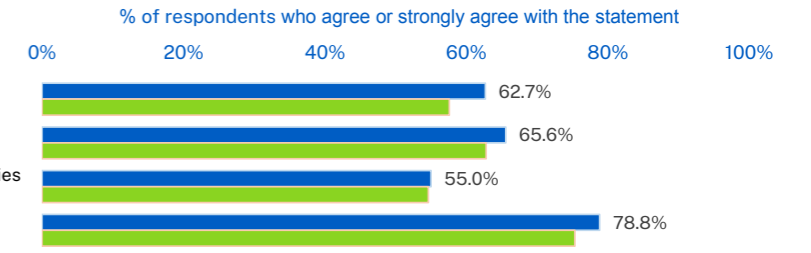
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
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 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

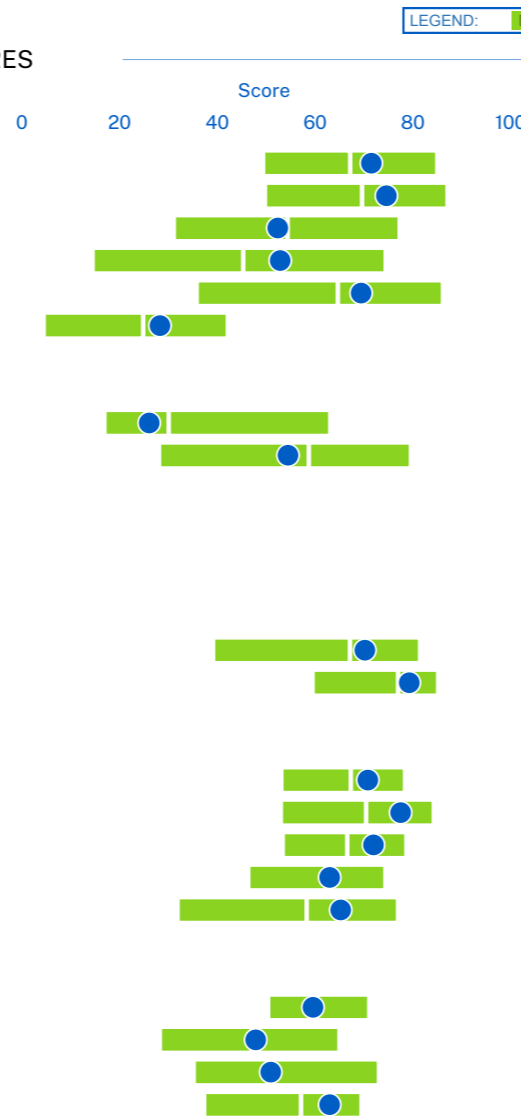
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
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### Activities

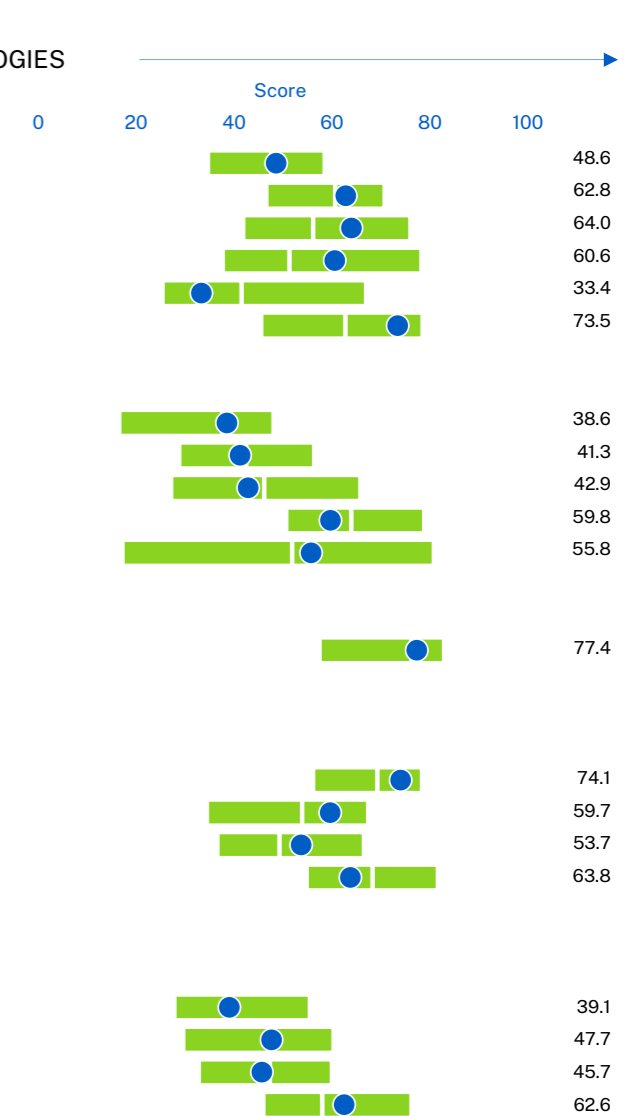
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

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- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Brussels

## SMART CITY RANKING

35

Out of 141



45 out of 118 in 2021

## SMART CITY RATING

BBB

BBB in 2021

## FACTOR RATINGS

BB

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,226,329  
HDI 0.953

(Eurostat)



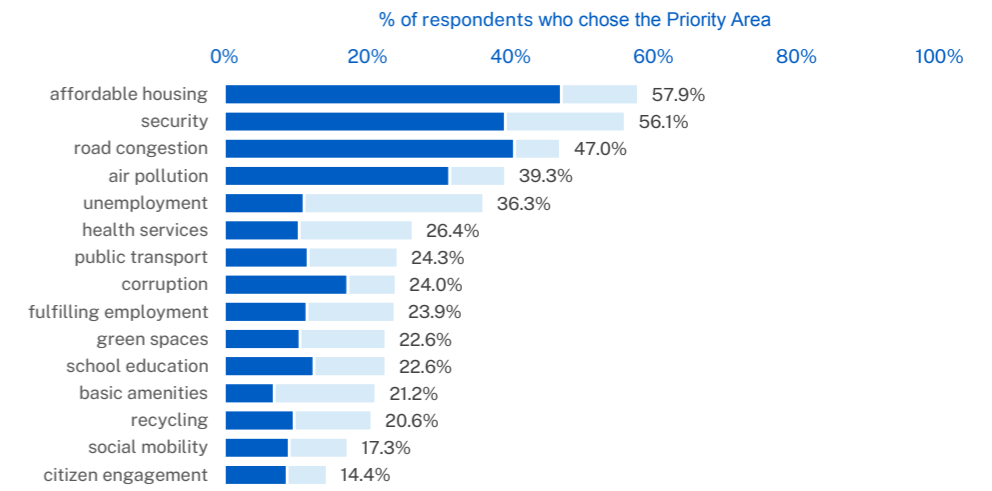
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.919	0.931	0.928	0.937	+0.009
Life expectancy at birth	81.5	81.6	80.8	81.9	+1.1
Expected years of schooling	19.7	19.8	18.0	18.0	+0.0
Mean years of schooling	11.8	12.1	12.4	12.4	+0.0
GNI per capita (PPP \$)	43,821	52,085	49,392	52,293	+2,901

## PRIORITY AREAS

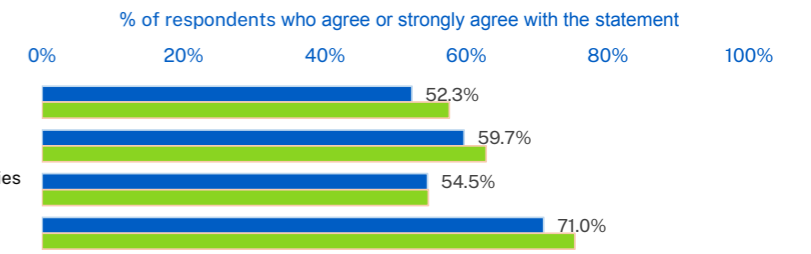
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Bucharest

SMART CITY RANKING

104

Out of 141



87 out of 118 in 2021

SMART CITY RATING

CCC

CCC in 2021

FACTOR RATINGS

CCC

STRUCTURES

B

TECHNOLOGIES

GROUP

2

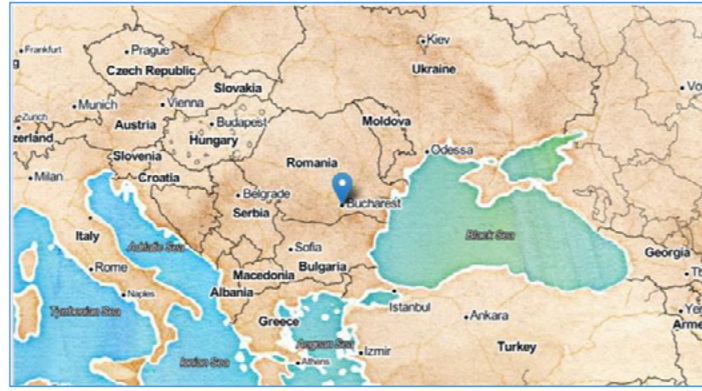
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,823,526  
HDI 0.926

(Eurostat)



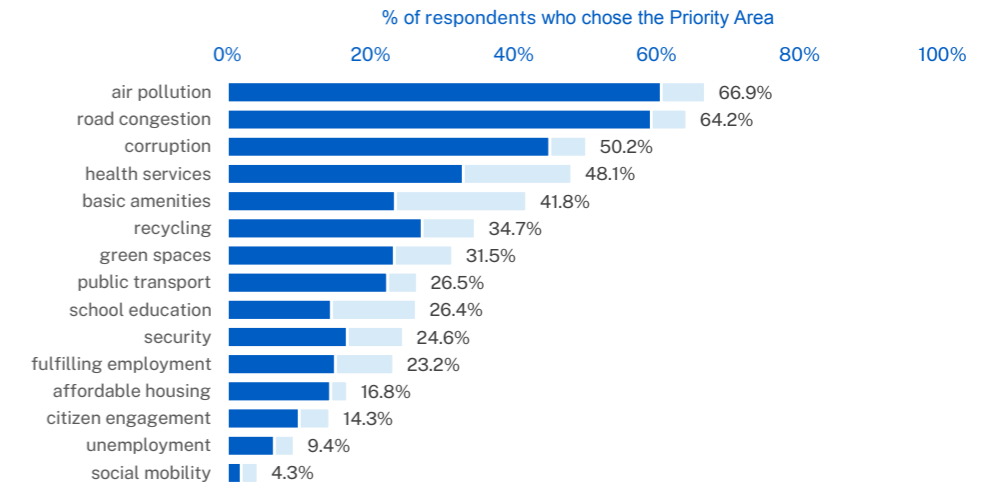
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.816	0.828	0.824	0.821	-0.003
Life expectancy at birth	75.9	76.1	75.4	74.2	-1.2
Expected years of schooling	14.3	14.3	14.2	14.2	+0.0
Mean years of schooling	11.0	11.1	11.3	11.3	+0.0
GNI per capita (PPP \$)	23,906	29,497	28,359	30,027	+1,669

## PRIORITY AREAS

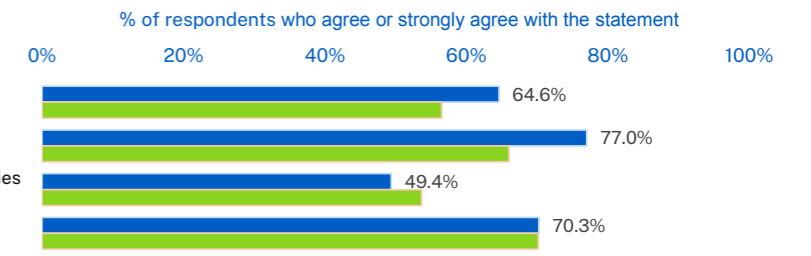
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## ATTITUDES

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 You feel the availability of online information has increased your trust in authorities  
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

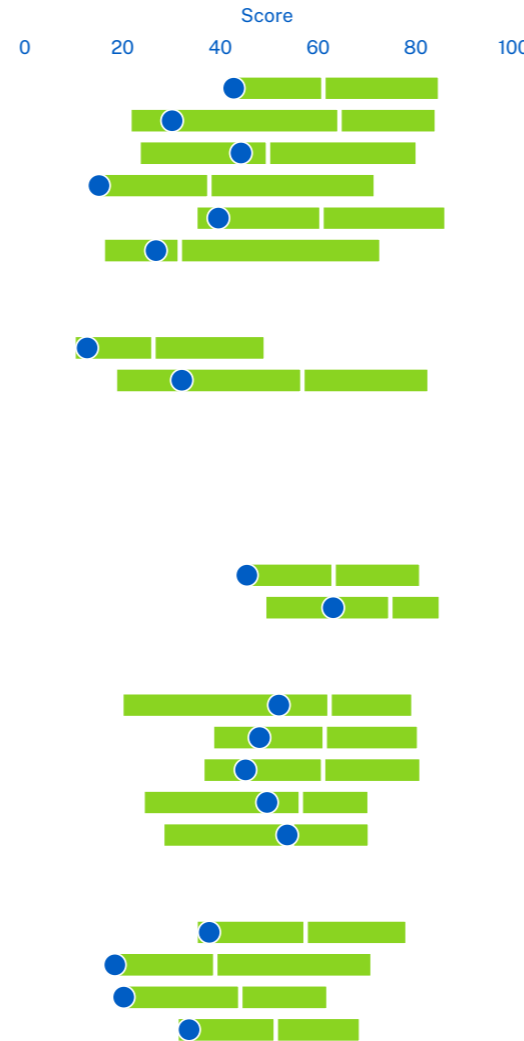
### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

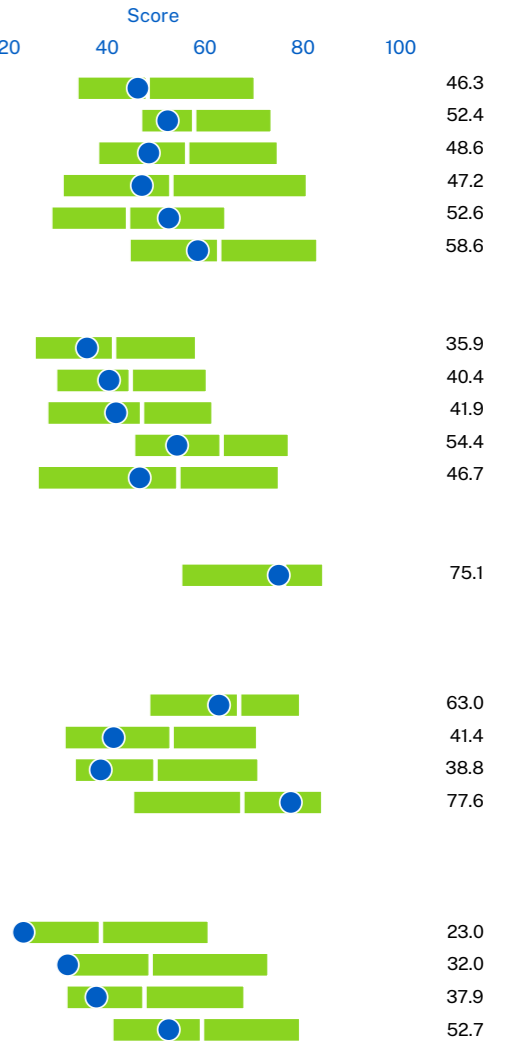
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Budapest

SMART CITY RANKING

87

Out of 141



78 out of 118 in 2021

SMART CITY RATING

B

B in 2021

FACTOR RATINGS

B

STRUCTURES

BB

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,752,286  
HDI 0.922

(Eurostat)

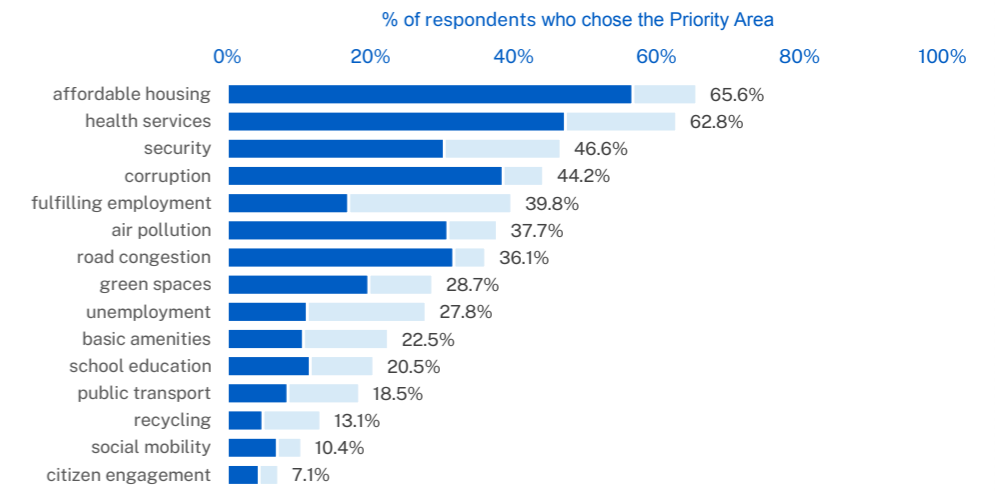


Country	2018	2019	2020	2021	1 yr change
HDI	0.845	0.854	0.849	0.846	-0.003
Life expectancy at birth	76.7	76.9	75.7	74.5	-1.2
Expected years of schooling	15.1	15.2	15.0	15.0	+0.0
Mean years of schooling	11.9	12.0	12.3	12.3	+0.0
GNI per capita (PPP \$)	27,144	31,329	30,487	32,789	+2,302

## PRIORITY AREAS

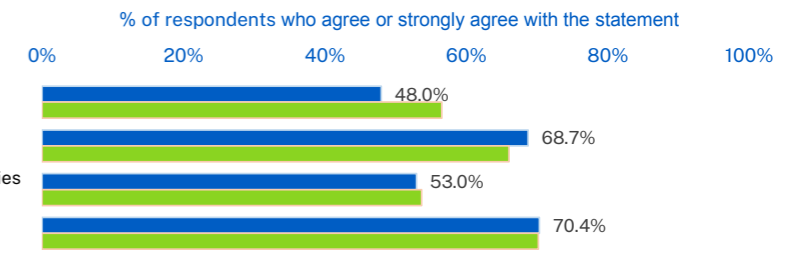
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

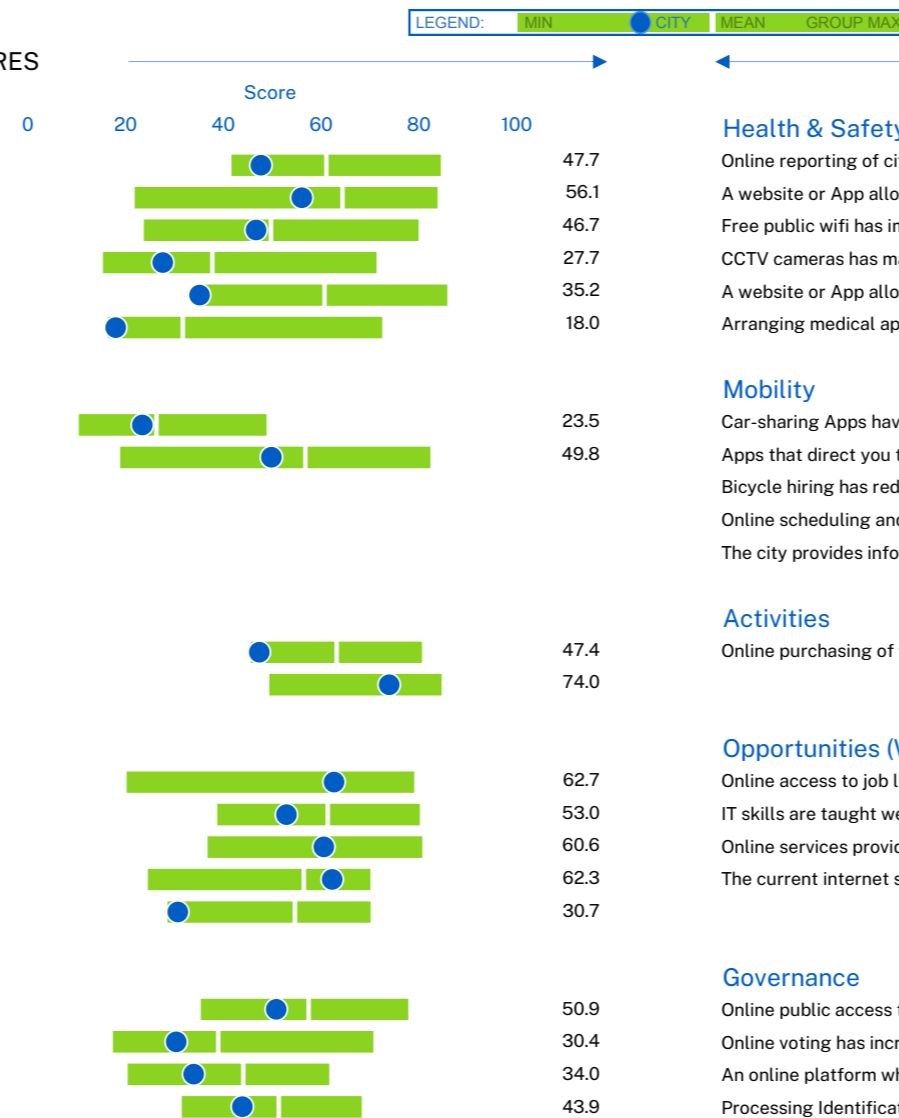
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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## TECHNOLOGIES

### Health & Safety

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### Mobility

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### Activities

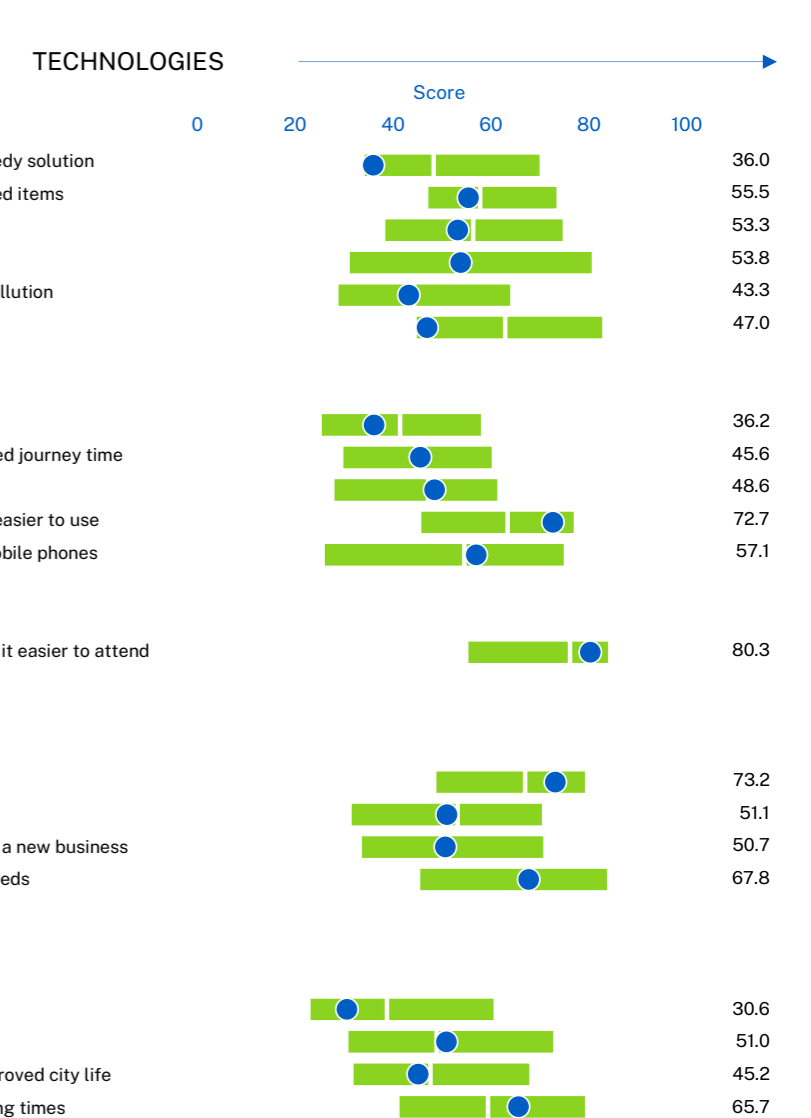
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- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Buenos Aires

SMART CITY RANKING

124

Out of 141



104 out of 118 in 2021

SMART CITY RATING

C

D in 2021

FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 15,567,820  
HDI 0.812

(UN Data)



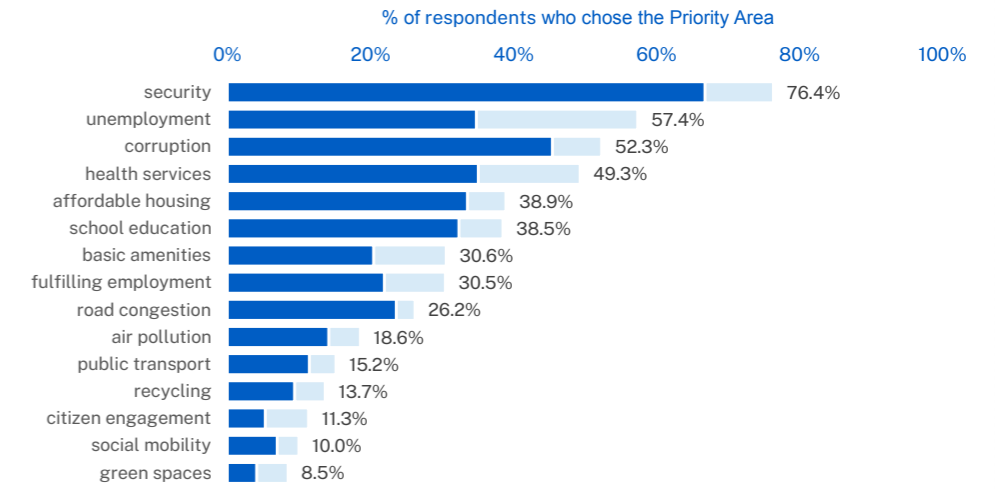
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.830	0.845	0.840	0.842	+0.002
Life expectancy at birth	76.5	76.7	75.9	75.4	-0.5
Expected years of schooling	17.6	17.7	17.9	17.9	+0.0
Mean years of schooling	10.6	10.9	11.2	11.2	+0.0
GNI per capita (PPP \$)	17,611	21,190	19,178	20,925	+1,747

## PRIORITY AREAS

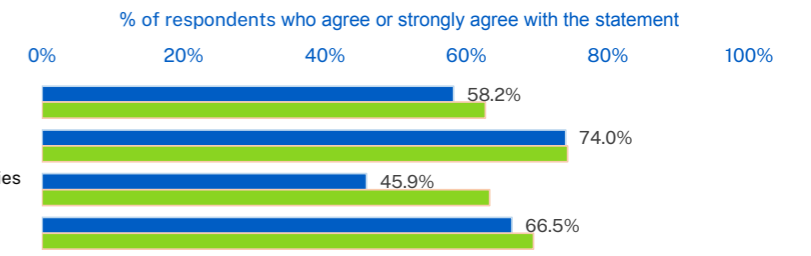
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

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- Air pollution is not a problem
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### Mobility

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### Activities

- Green spaces are satisfactory
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### Governance

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- Residents provide feedback on local government projects

LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





# Busan

## SMART CITY RANKING

49

Out of 141



47 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,343,528  
HDI 0.936

(UN Data)



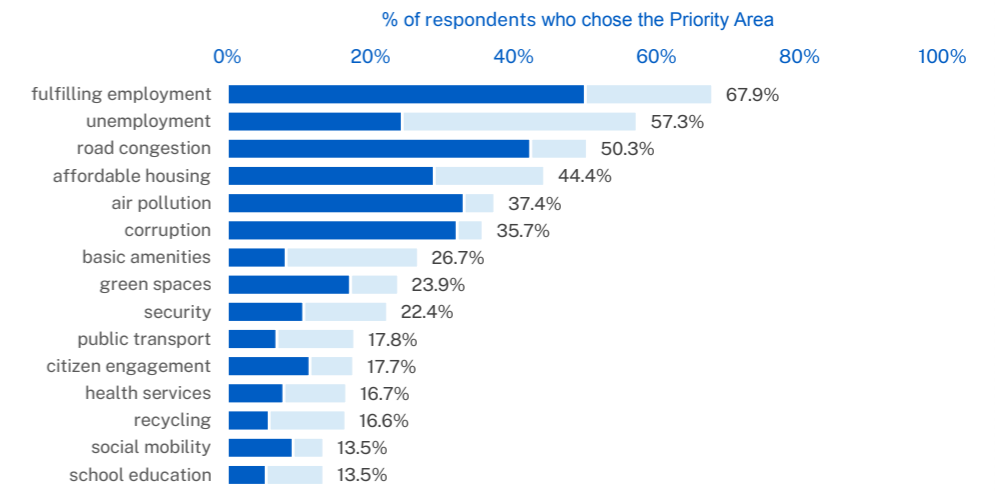
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.906	0.916	0.922	0.925	+0.003
Life expectancy at birth	82.8	83.0	83.6	83.7	+0.1
Expected years of schooling	16.4	16.5	16.5	16.5	+0.0
Mean years of schooling	12.2	12.2	12.5	12.5	+0.0
GNI per capita (PPP \$)	36,757	43,044	42,698	44,501	+1,803

## PRIORITY AREAS

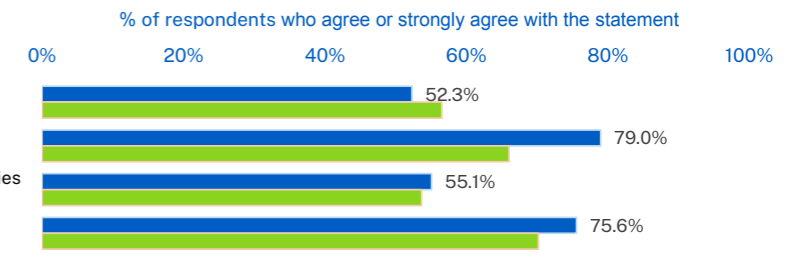
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

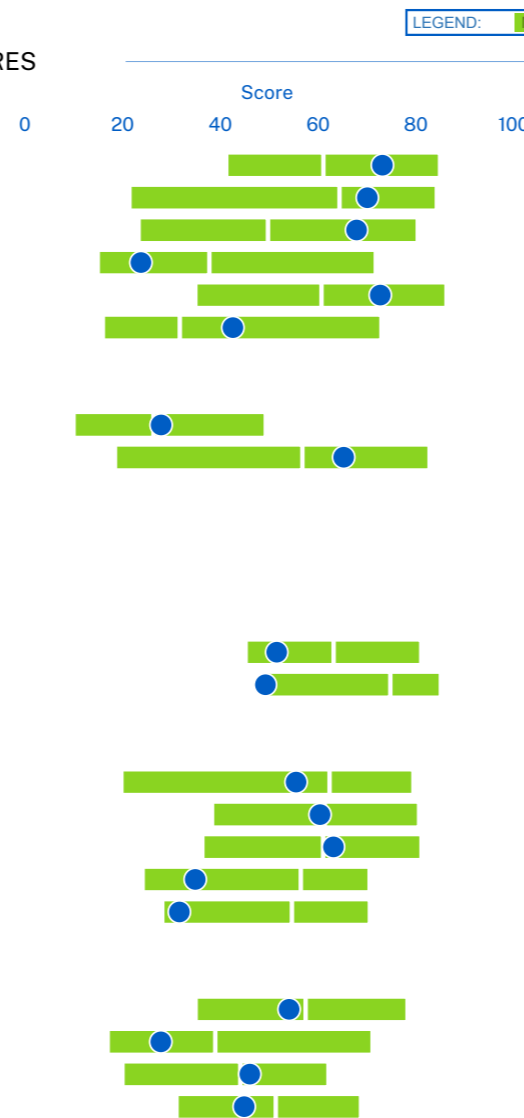
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

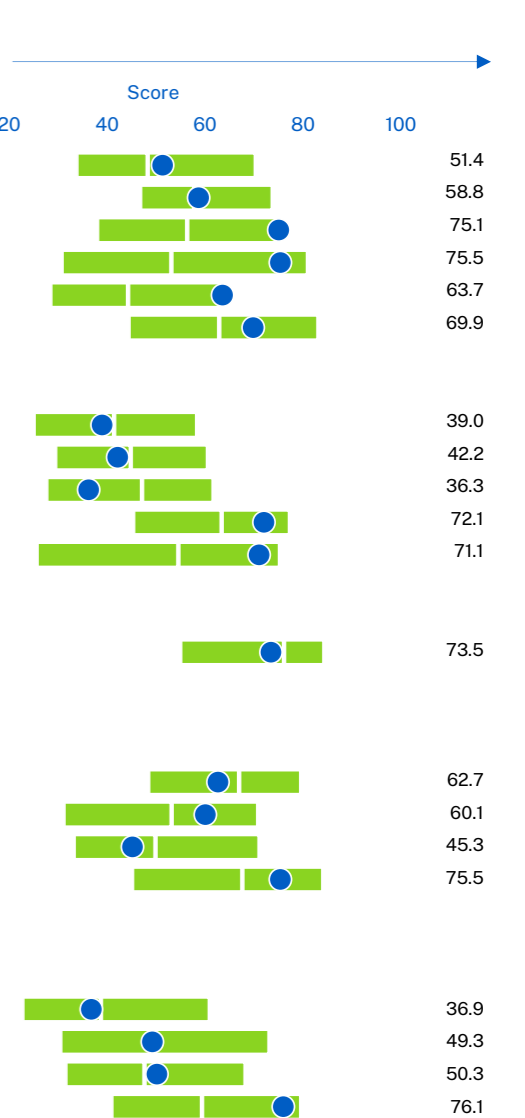
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Cairo

## SMART CITY RANKING

108

Out of 141



105 out of 118 in 2021

## SMART CITY RATING

CC

C in 2021

## FACTOR RATINGS

C

STRUCTURES

CC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,539,673  
HDI 0.779

(UN Data)



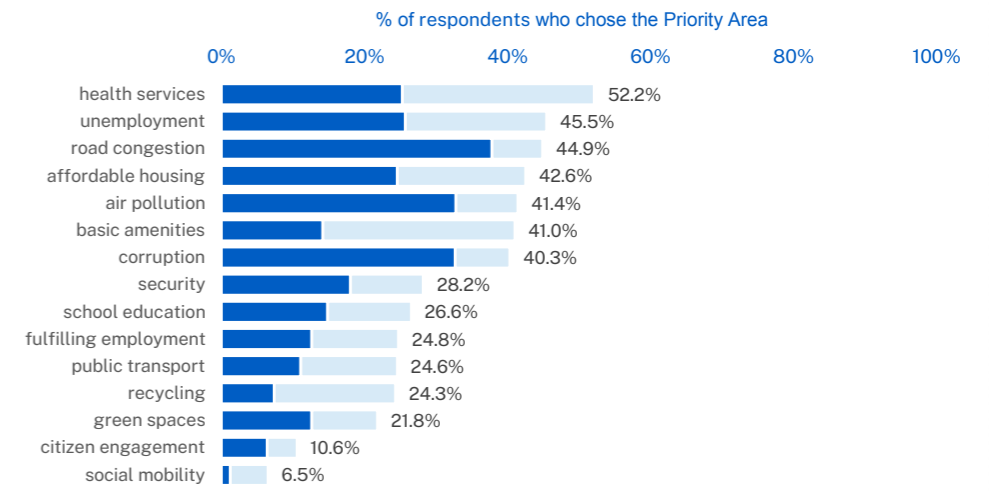
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.700	0.707	0.734	0.731	-0.003
Life expectancy at birth	71.8	72.0	71.0	70.2	-0.8
Expected years of schooling	13.1	13.3	13.8	13.8	+0.0
Mean years of schooling	7.3	7.4	9.6	9.6	+0.0
GNI per capita (PPP \$)	10,744	11,466	11,581	11,732	+151

## PRIORITY AREAS

From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

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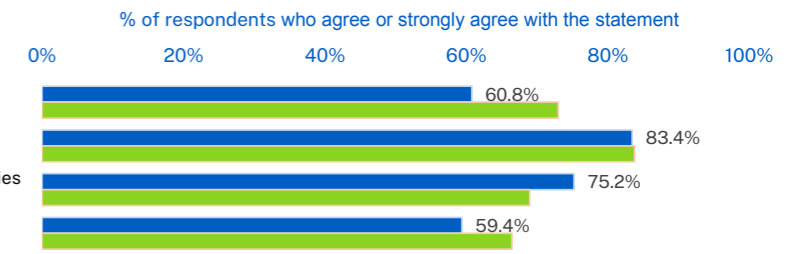
## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion

You are comfortable with face recognition technologies to lower crime

You feel the availability of online information has increased your trust in authorities

The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas

Recycling services are satisfactory

Public safety is not a problem

Air pollution is not a problem

Medical services provision is satisfactory

Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem

Public transport is satisfactory

### Activities

Green spaces are satisfactory

Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available

Most children have access to a good school

Lifelong learning opportunities are provided by local institutions

Businesses are creating new jobs

Minorities feel welcome

### Governance

Information on local government decisions are easily accessible

Corruption of city officials is not an issue of concern

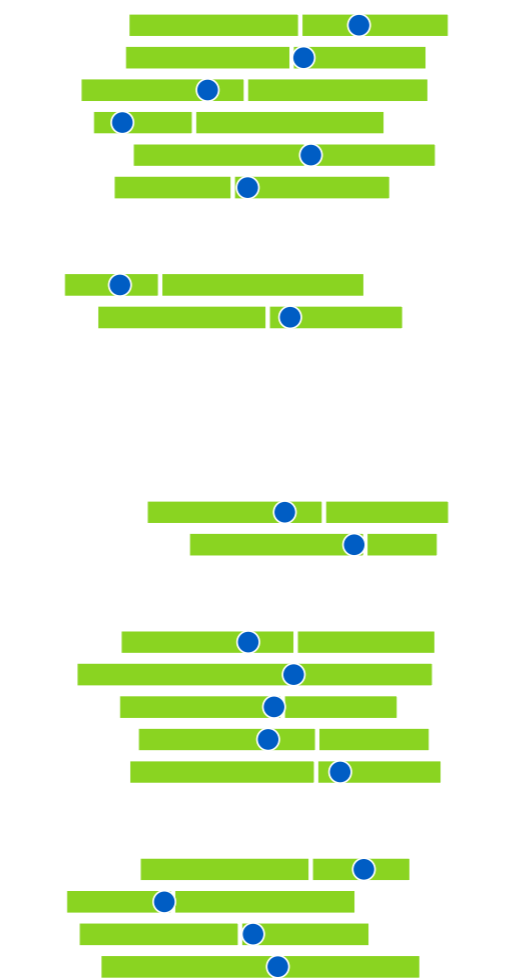
Residents contribute to decision making of local government

Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

## Score

0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution

A website or App allows residents to easily give away unwanted items

Free public wifi has improved access to city services

CCTV cameras has made residents feel safer

A website or App allows residents to effectively monitor air pollution

Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion

Apps that direct you to an available parking space have reduced journey time

Bicycle hiring has reduced congestion

Online scheduling and ticket sales has made public transport easier to use

The city provides information on traffic congestion through mobile phones

### Activities

Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work

IT skills are taught well in schools

Online services provided by the city has made it easier to start a new business

The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption

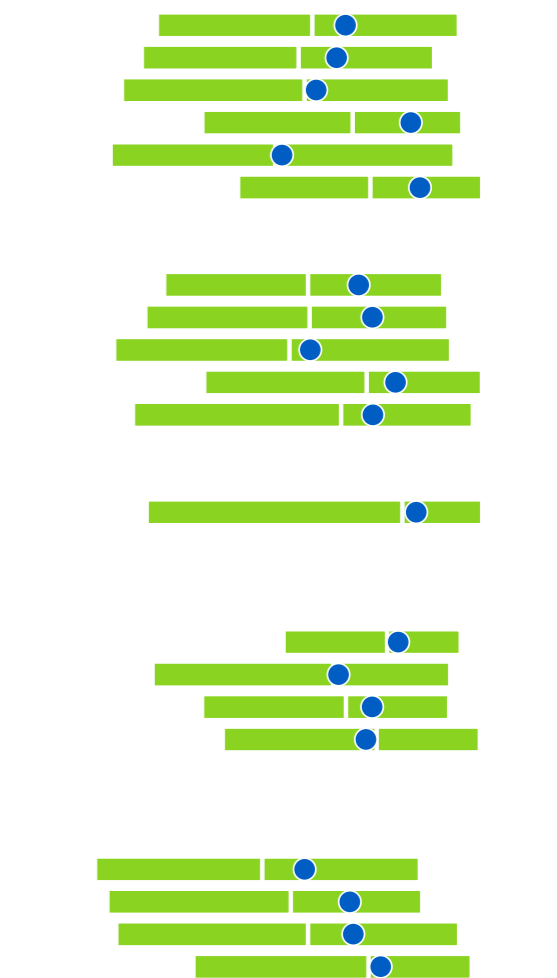
Online voting has increased participation

An online platform where residents can propose ideas has improved city life

Processing Identification Documents online has reduced waiting times

## Score

0 20 40 60 80 100



# Canberra

## SMART CITY RANKING

3

Out of 141

not out of 118 in 2021

## SMART CITY RATING

AA

not in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

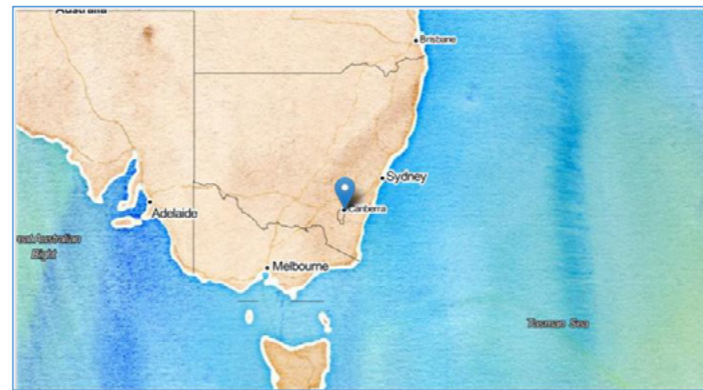
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 395,790  
HDI 0.980

(UN Data)



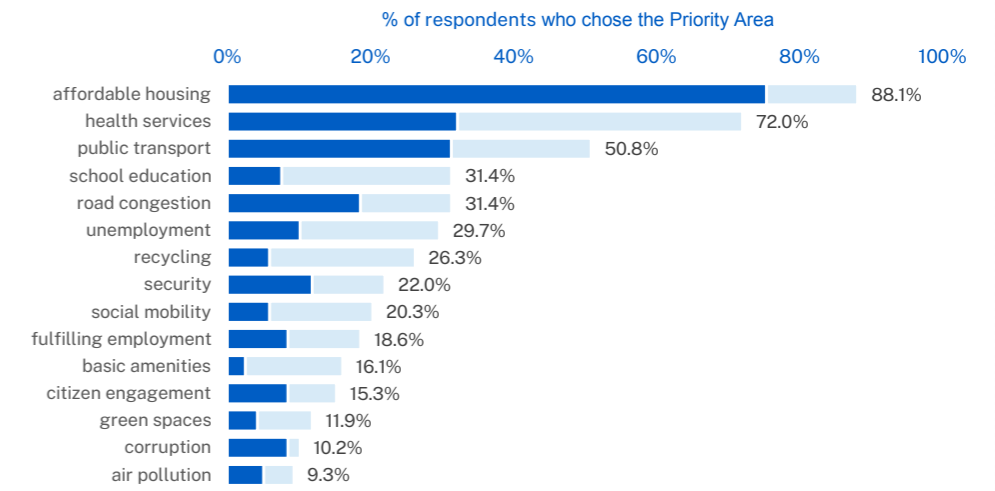
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.941	0.941	0.947	0.951	+0.004
Life expectancy at birth	83.4	83.1	84.3	84.5	+0.2
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	12.6	12.1	12.4	12.4	+0.0
GNI per capita (PPP \$)	43,821	52,085	49,392	52,293	+2,901

## PRIORITY AREAS

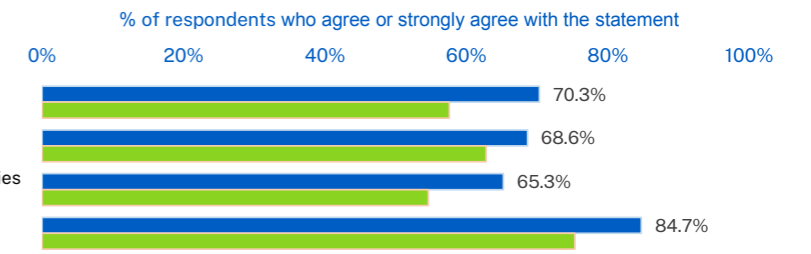
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

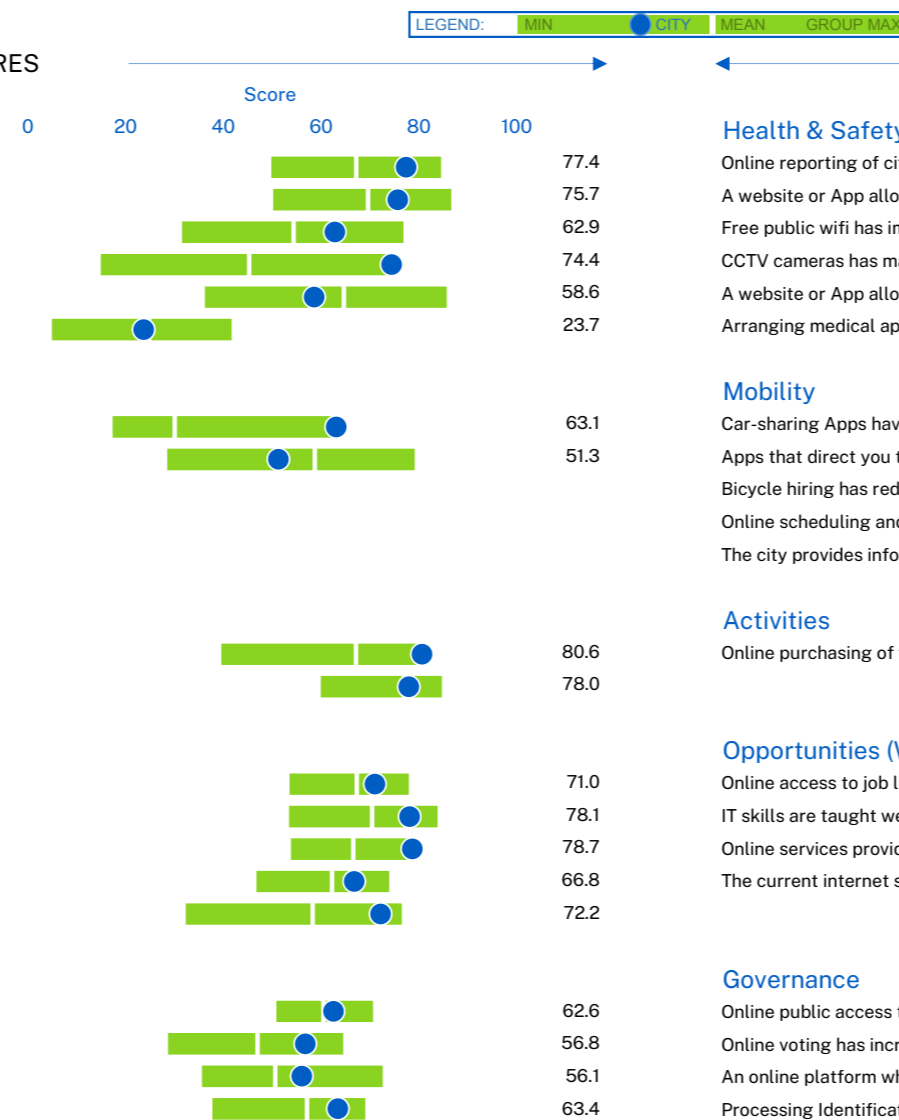
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

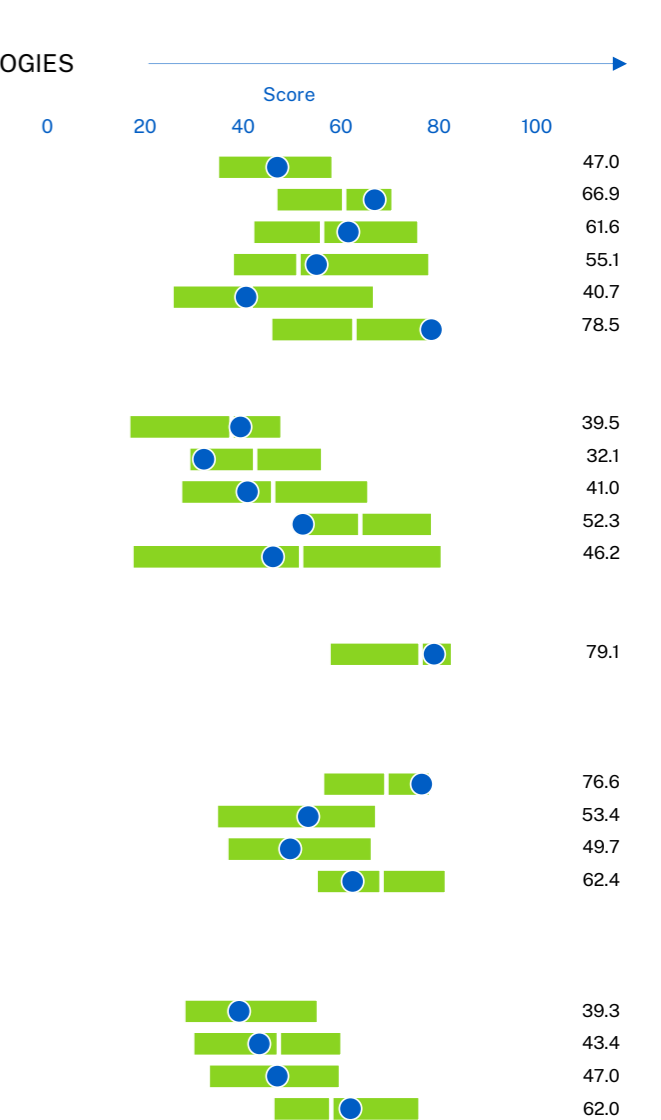
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Cape Town

SMART CITY RANKING

125

Out of 141



106 out of 118 in 2021

SMART CITY RATING

C

C in 2021

FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,800,954  
HDI 0.751

(UN World Urbanisation Prospects 2022 estimate)



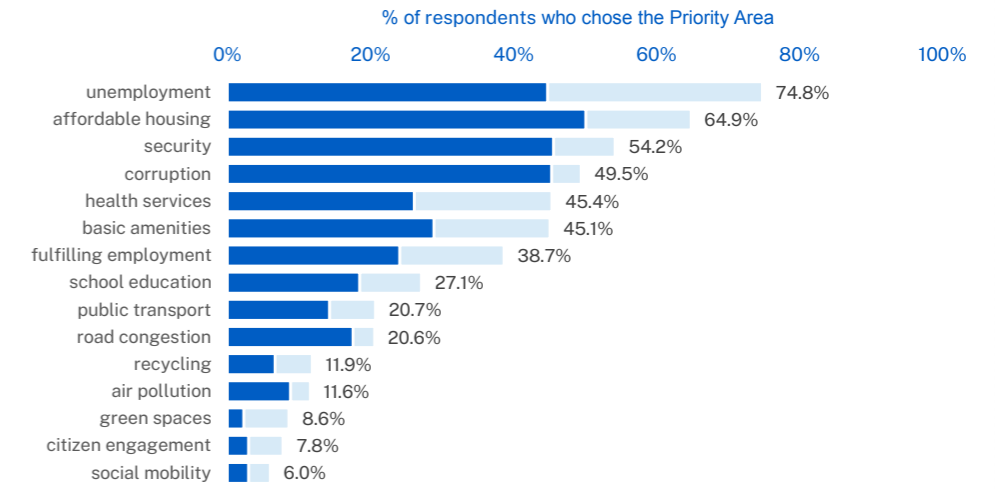
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.705	0.709	0.727	0.713	-0.014
Life expectancy at birth	63.9	64.1	65.3	62.3	-2.9
Expected years of schooling	13.7	13.8	13.6	13.6	+0.0
Mean years of schooling	10.2	10.2	11.4	11.4	+0.0
GNI per capita (PPP \$)	11,756	12,129	12,450	12,948	+499

## PRIORITY AREAS

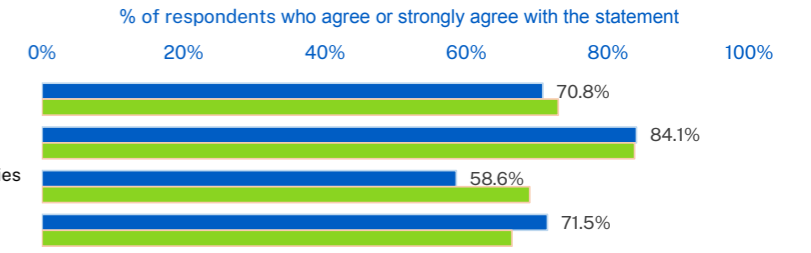
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

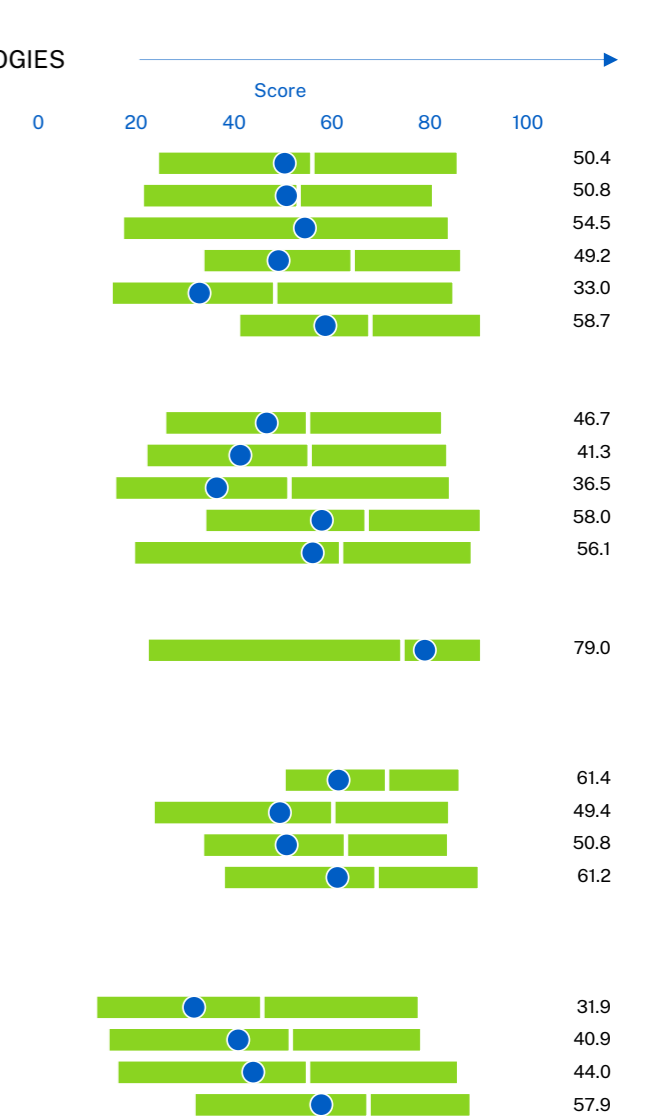
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 94

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# CC

not in 2021

## FACTOR RATINGS

# CCC

STRUCTURES

# CC

TECHNOLOGIES

## GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 497,646  
HDI 0.898

(Eurostat)

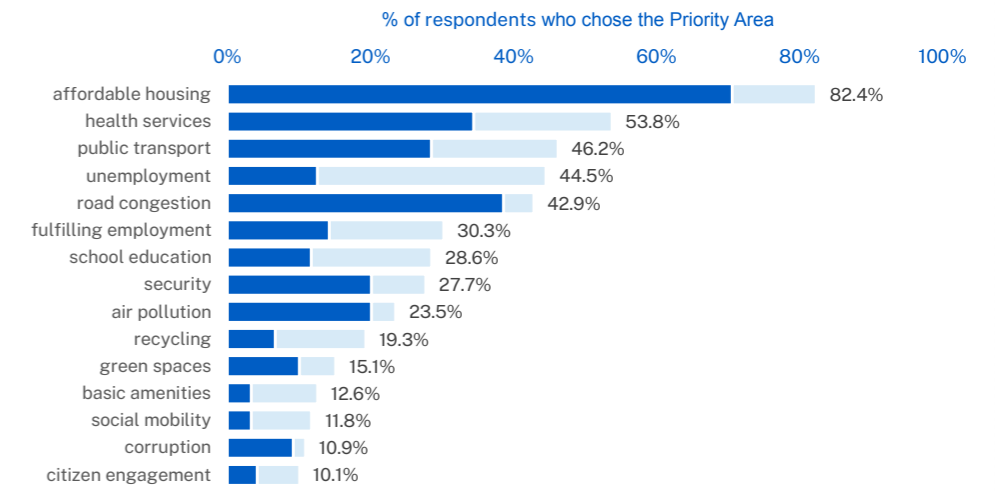


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

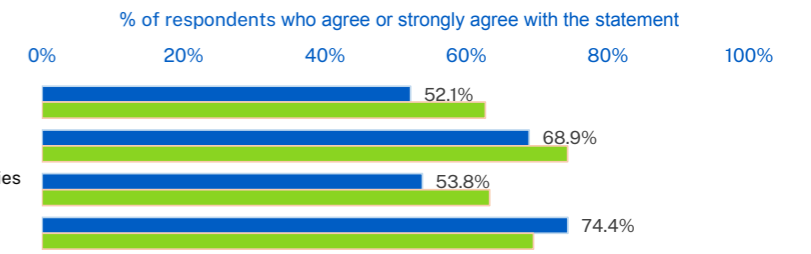
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## ATTITUDES

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LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

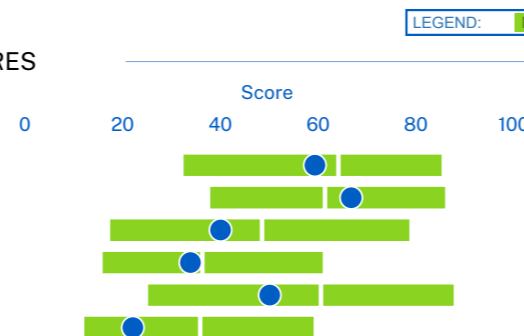
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
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## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

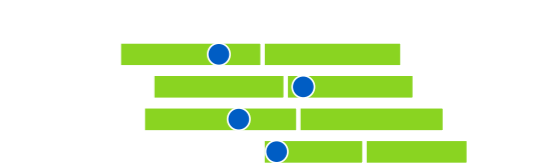
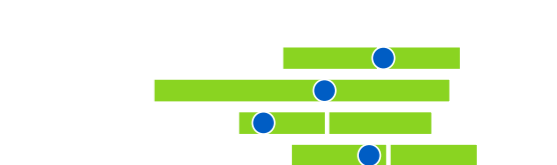
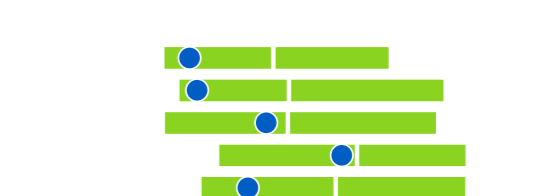
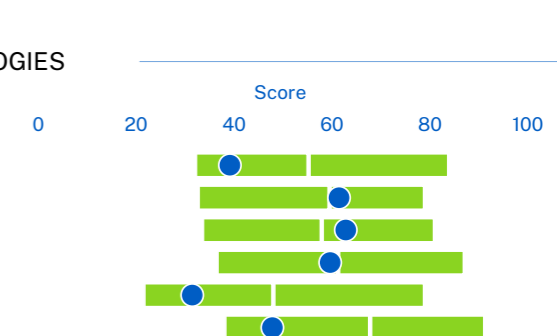
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Chengdu

## SMART CITY RANKING

97

Out of 141



84 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,478,521  
HDI 0.740

(UN World Urbanisation Prospects 2022 estimate)



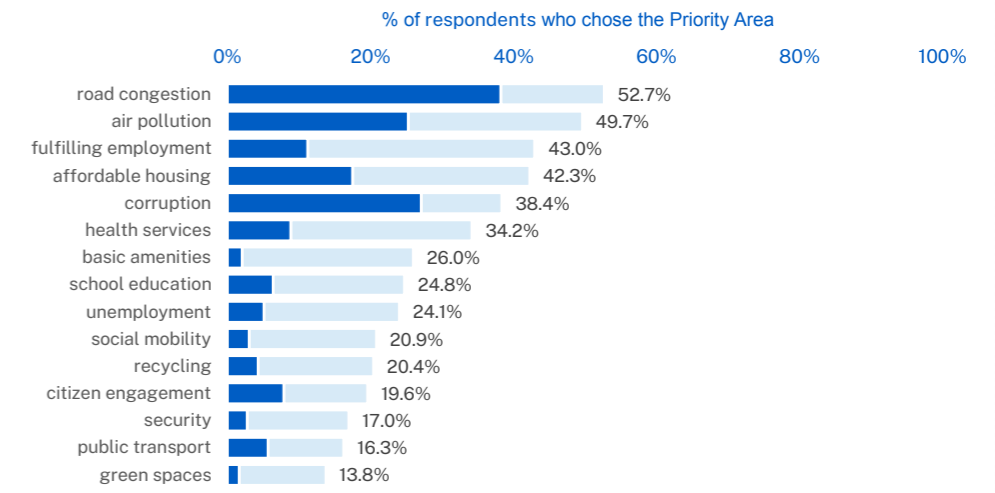
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

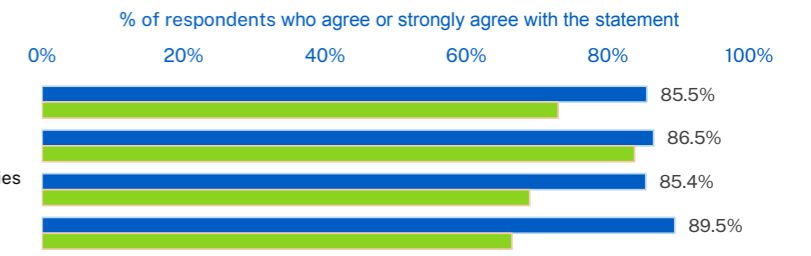
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

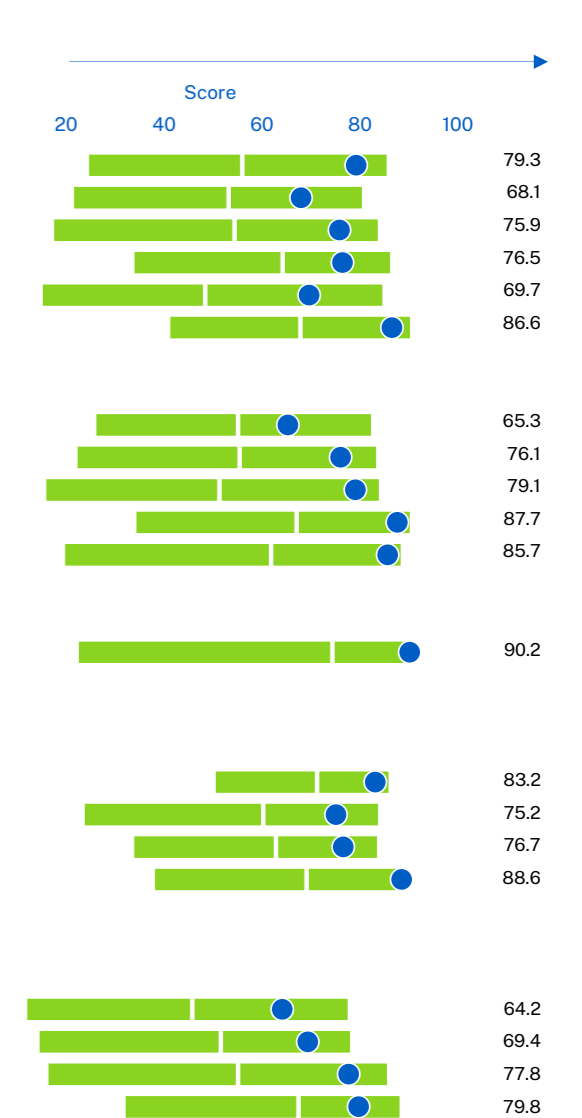
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Chicago

## SMART CITY RANKING

61

Out of 141



56 out of 118 in 2021

## SMART CITY RATING

BB

B in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,746,388  
HDI 0.929

(UN Data)

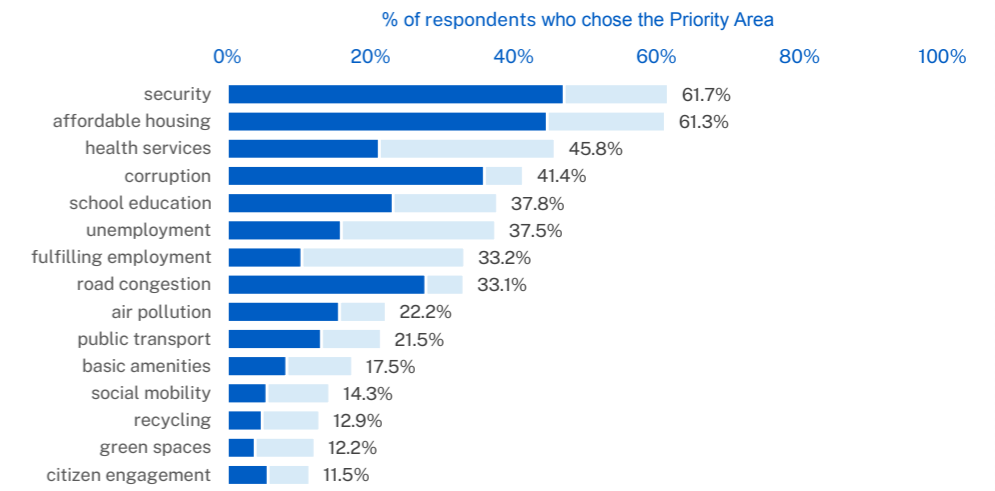


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

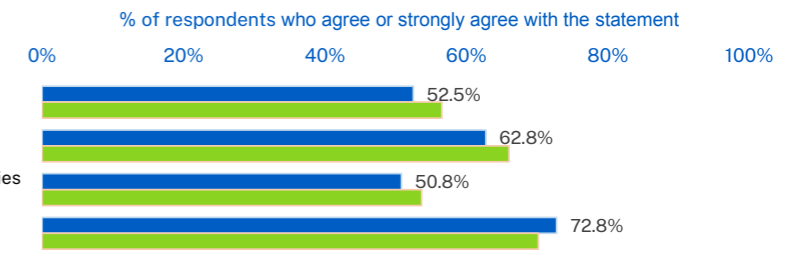
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

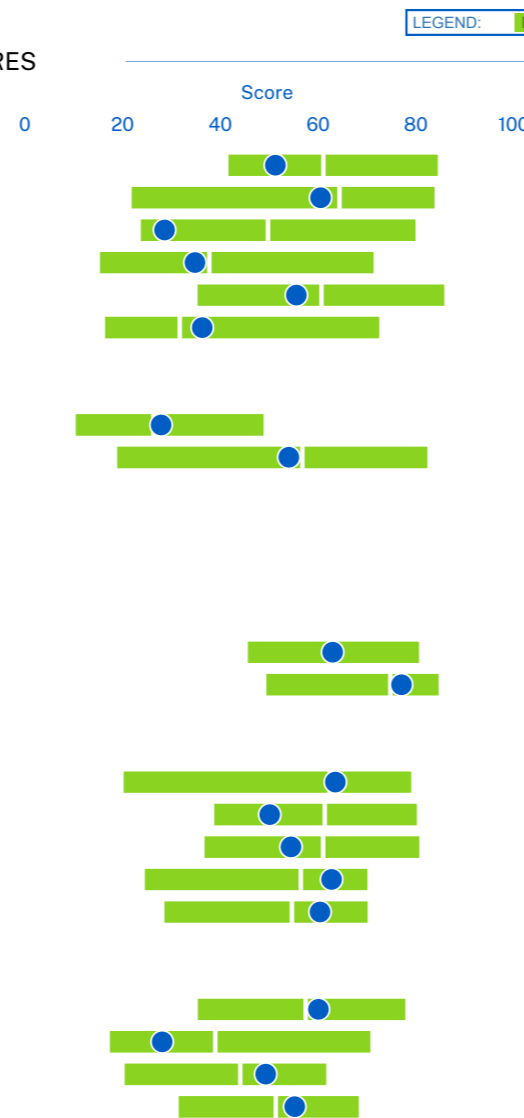
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

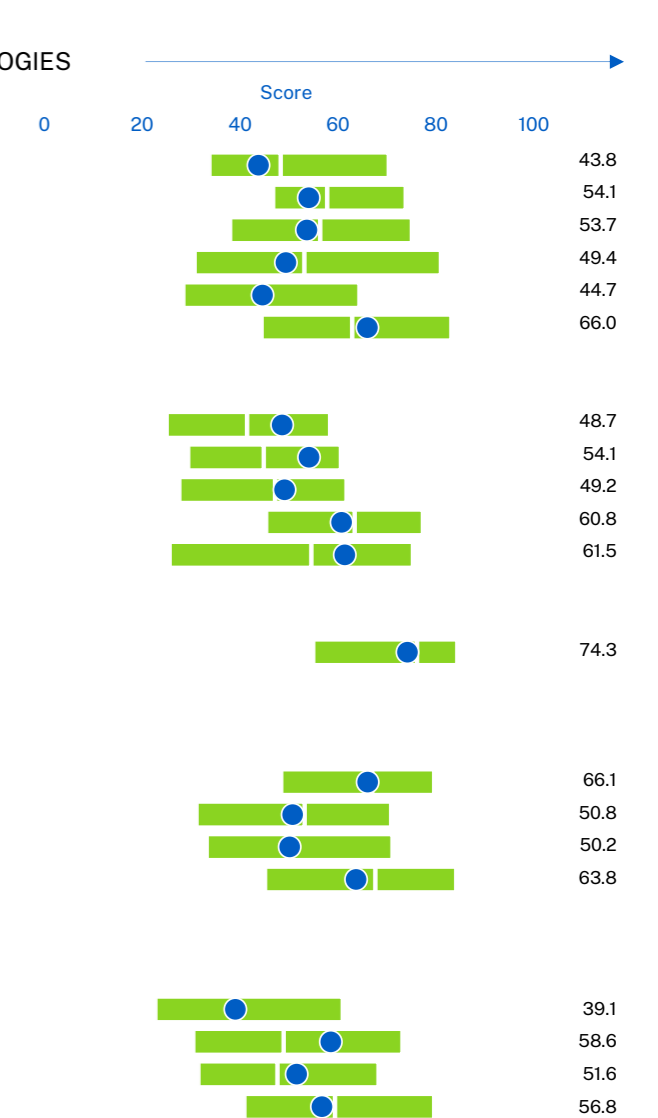
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Chongqing

## SMART CITY RANKING

86

Out of 141



74 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

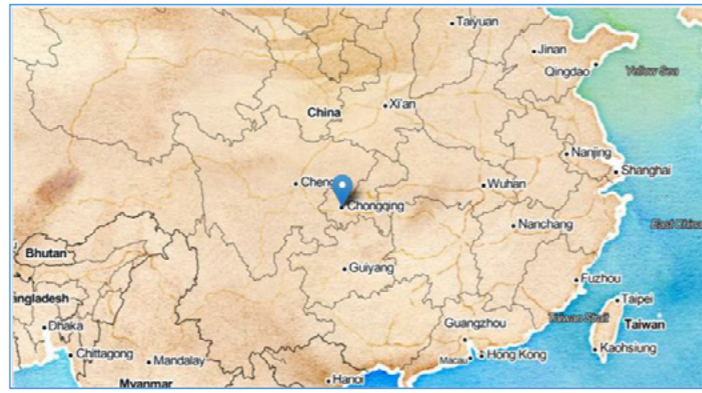
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 16,874,741  
HDI 0.774

(UN World Urbanisation Prospects 2022 estimate)



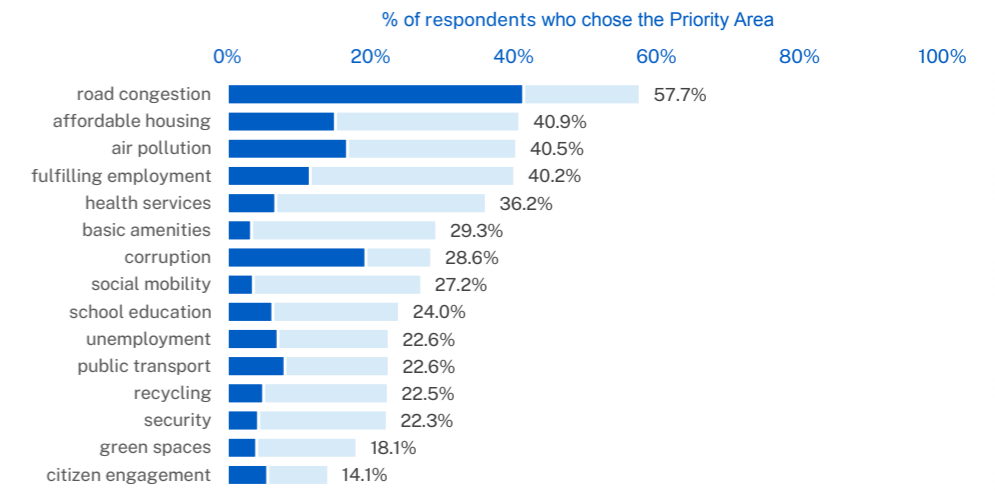
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

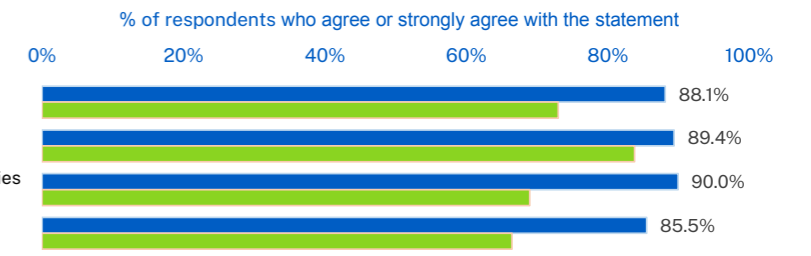
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

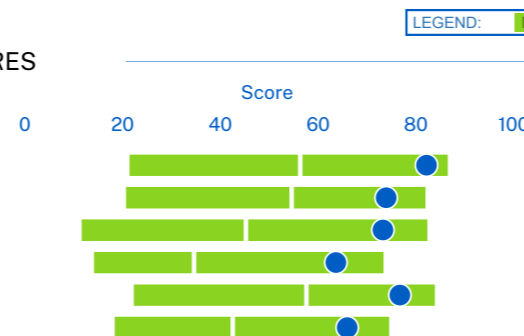
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

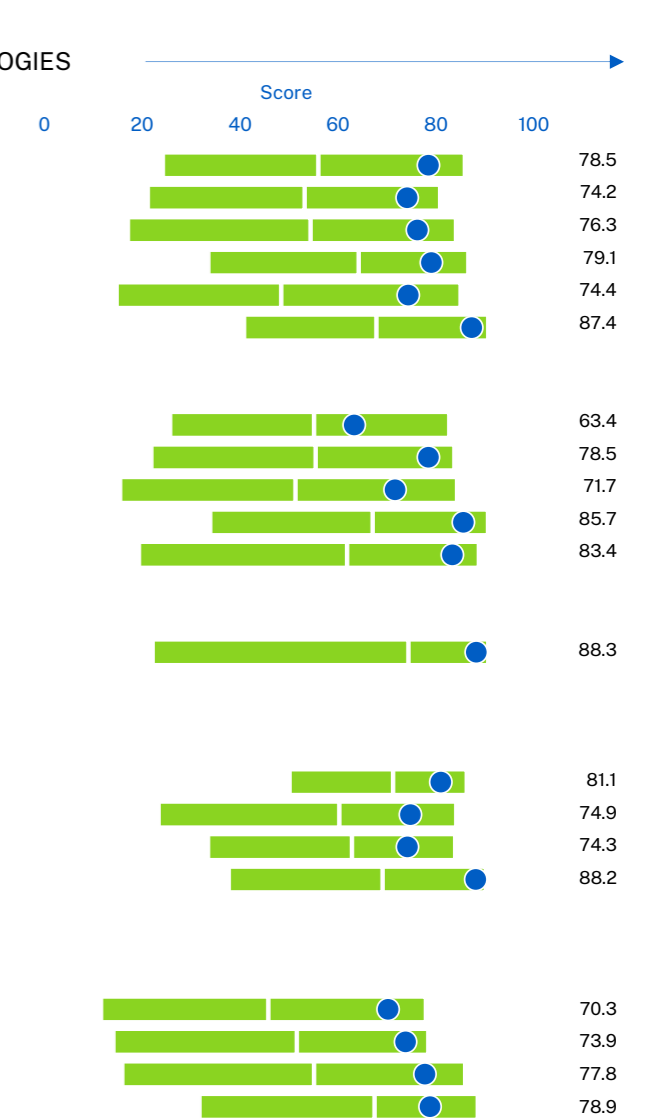
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- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
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- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





# Copenhagen

## SMART CITY RANKING

4

Out of 141



5 out of 118 in 2021

## SMART CITY RATING

AA

AAA in 2021

## FACTOR RATINGS

AAA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,855,084  
HDI 0.967

(Eurostat)



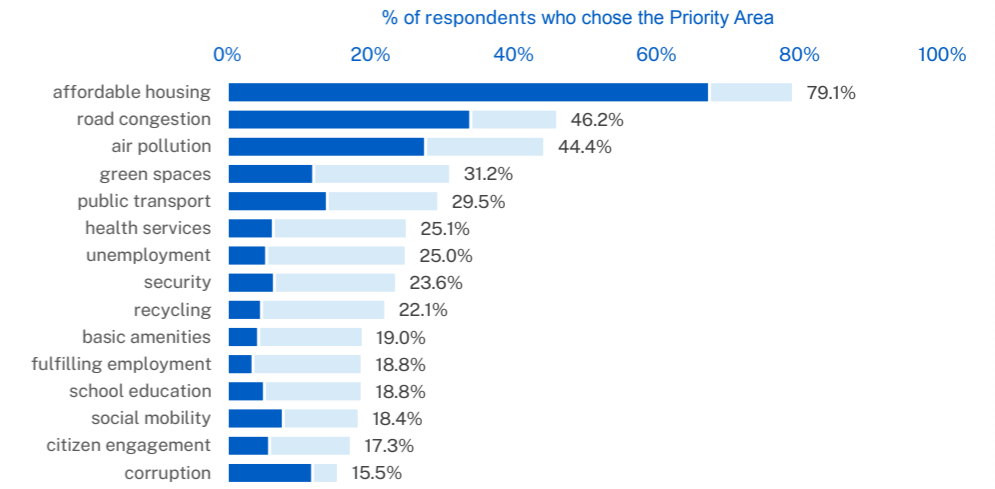
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.930	0.940	0.947	0.948	+0.001
Life expectancy at birth	80.8	80.9	81.6	81.4	-0.2
Expected years of schooling	19.1	18.9	18.0	18.0	+0.0
Mean years of schooling	12.6	12.6	13.0	13.0	+0.0
GNI per capita (PPP \$)	48,836	58,662	58,144	60,365	+2,221

## PRIORITY AREAS

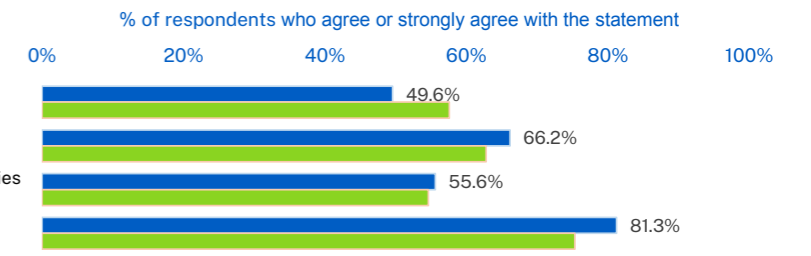
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

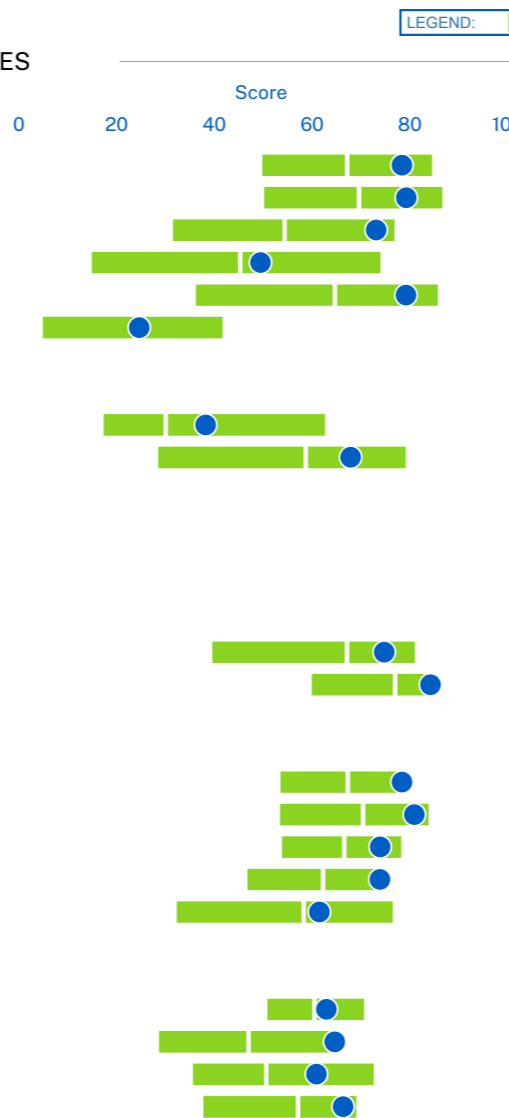
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
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- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

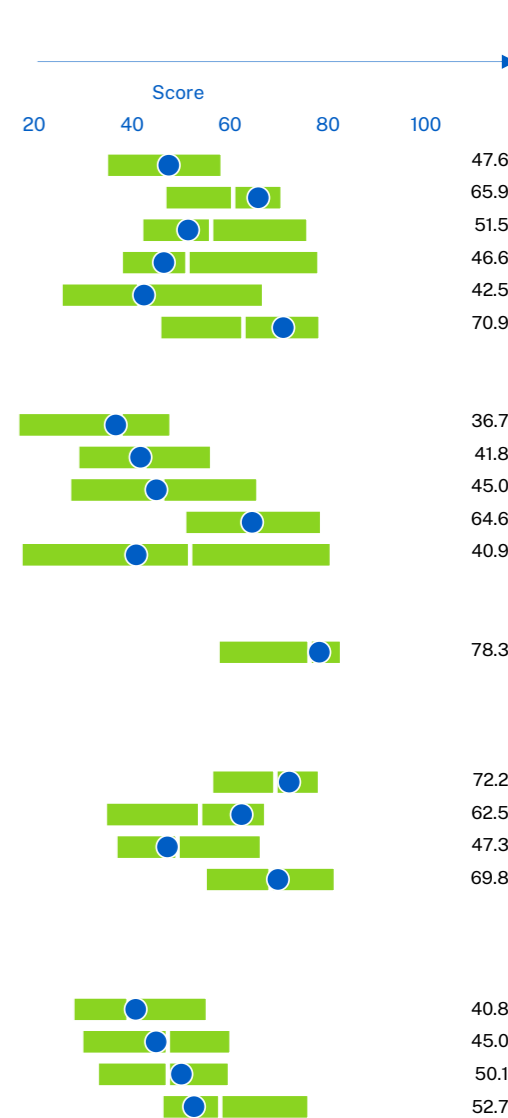
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 105

Out of 141



94 out of 118 in 2021

## SMART CITY RATING

# CC

CC in 2021

## FACTOR RATINGS

# CC

STRUCTURES

# CC

TECHNOLOGIES

## GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 32,065,760  
HDI 0.730

(UN World Urbanisation Prospects 2022 estimate)



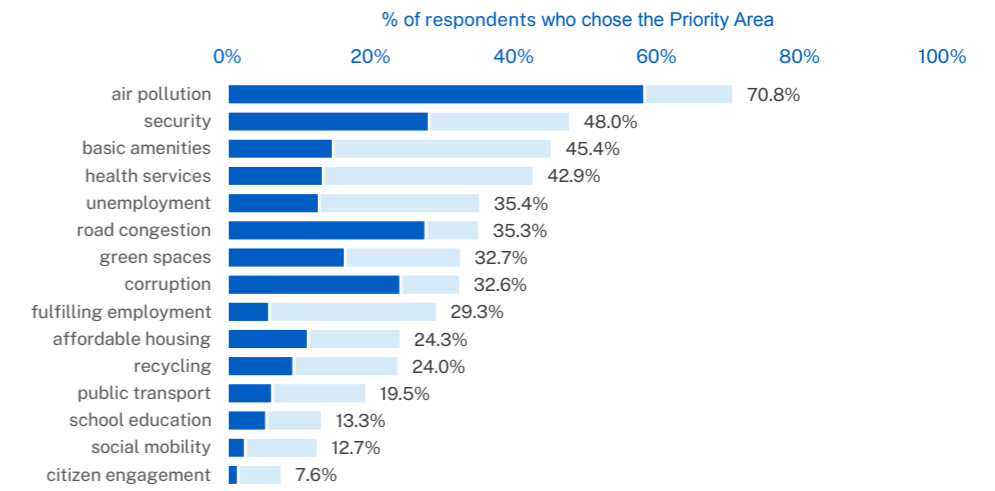
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.647	0.645	0.642	0.633	-0.009
Life expectancy at birth	69.4	69.7	70.2	67.2	-2.9
Expected years of schooling	12.3	12.2	11.9	11.9	+0.0
Mean years of schooling	6.5	5.6	5.9	5.9	+0.0
GNI per capita (PPP \$)	7,480	7,368	6,882	7,303	+421

## PRIORITY AREAS

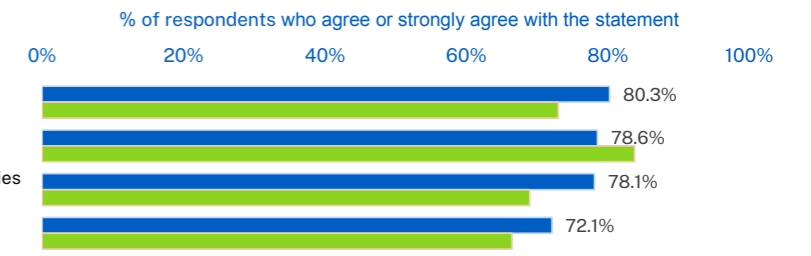
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Denver

## SMART CITY RANKING

53

Out of 141



34 out of 118 in 2021

## SMART CITY RATING

BBB

BBB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 715,522  
HDI 0.942

(UN Data)

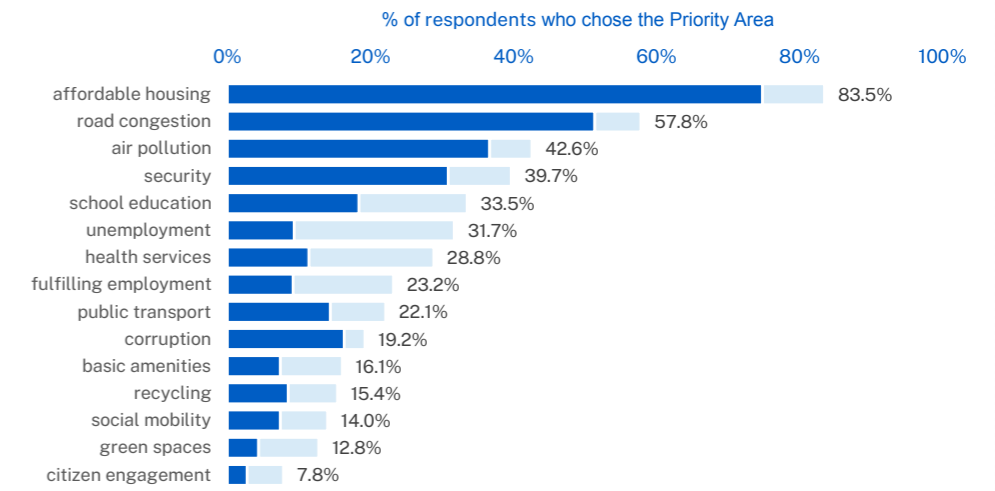


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

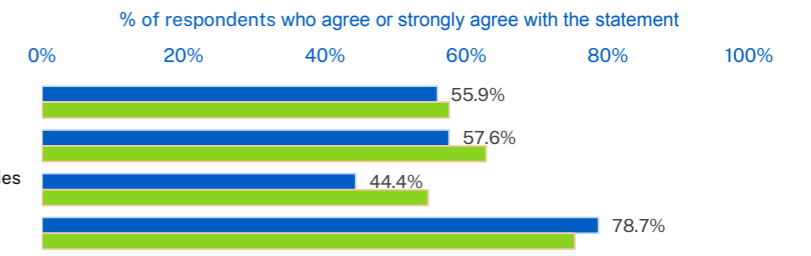
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

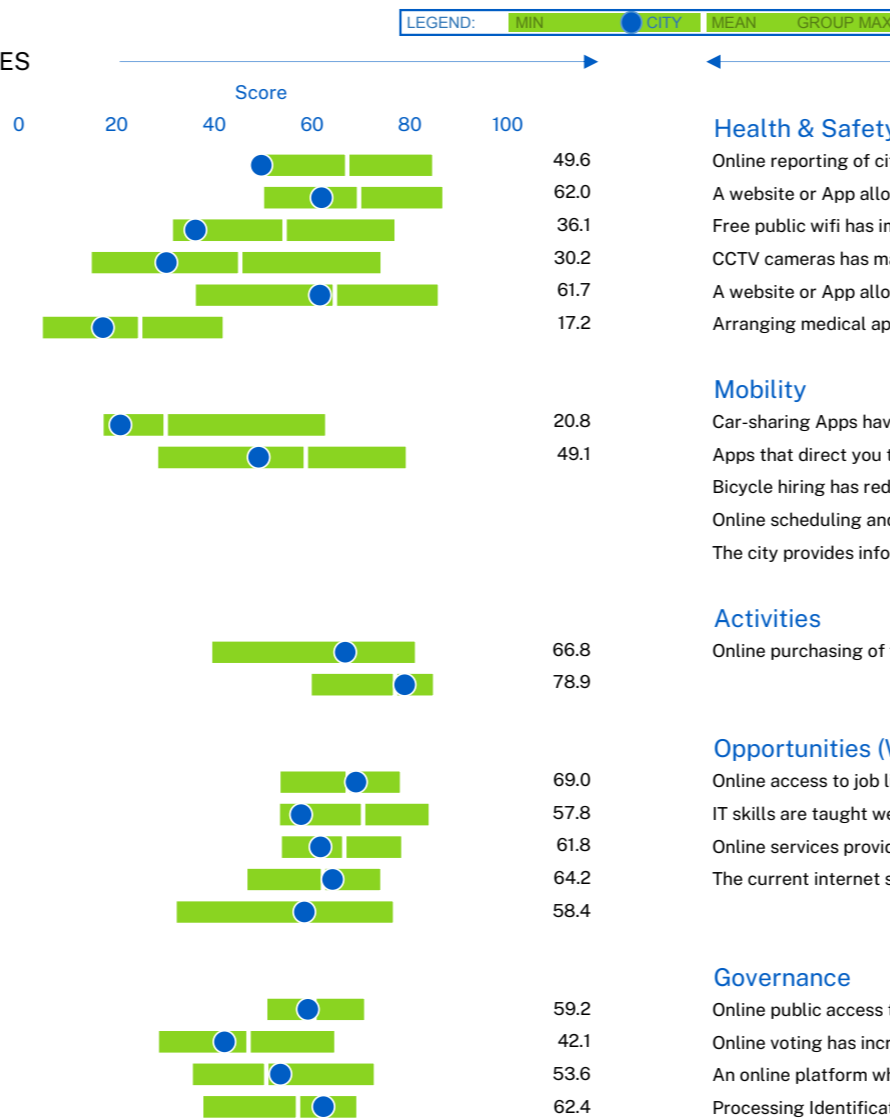
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

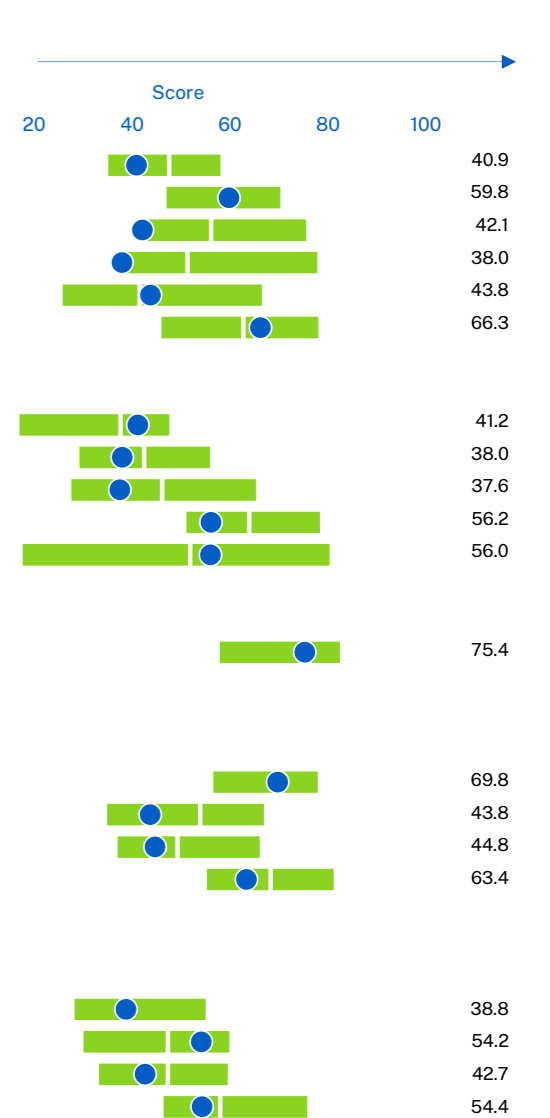
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Doha

## SMART CITY RANKING

59

Out of 141

not out of 118 in 2021

## SMART CITY RATING

BB

not in 2021

## FACTOR RATINGS

BB

STRUCTURES

B

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,186,023  
HDI 0.855

(UN Data)

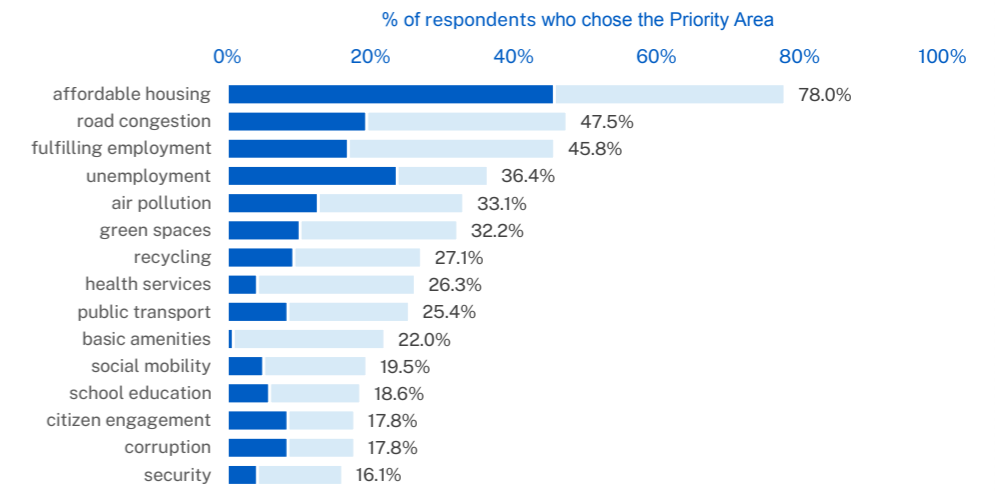


Country	2018	2019	2020	2021	1 yr change
HDI	0.853	0.859	0.854	0.855	+0.001
Life expectancy at birth	80.9	81.0	79.1	79.3	+0.2
Expected years of schooling	12.0	12.3	12.6	12.6	+0.0
Mean years of schooling	9.9	10.0	10.0	10.0	+0.0
GNI per capita (PPP \$)	89,089	87,792	83,721	87,134	+3,413

## PRIORITY AREAS

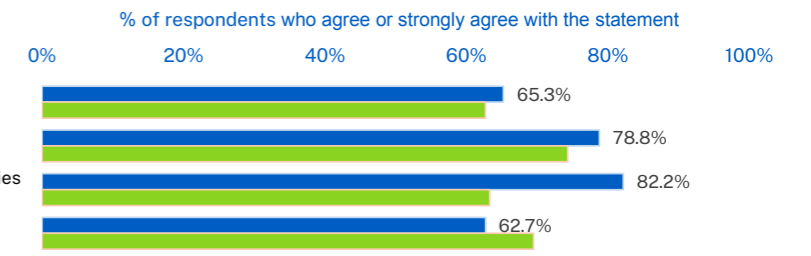
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 17

Out of 141



14 out of 118 in 2021

## SMART CITY RATING

# BB

A in 2021

## FACTOR RATINGS

# BB

STRUCTURES

# B

TECHNOLOGIES

## GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,964,382  
HDI 0.911

(UN World Urbanisation Prospects 2022 estimate)

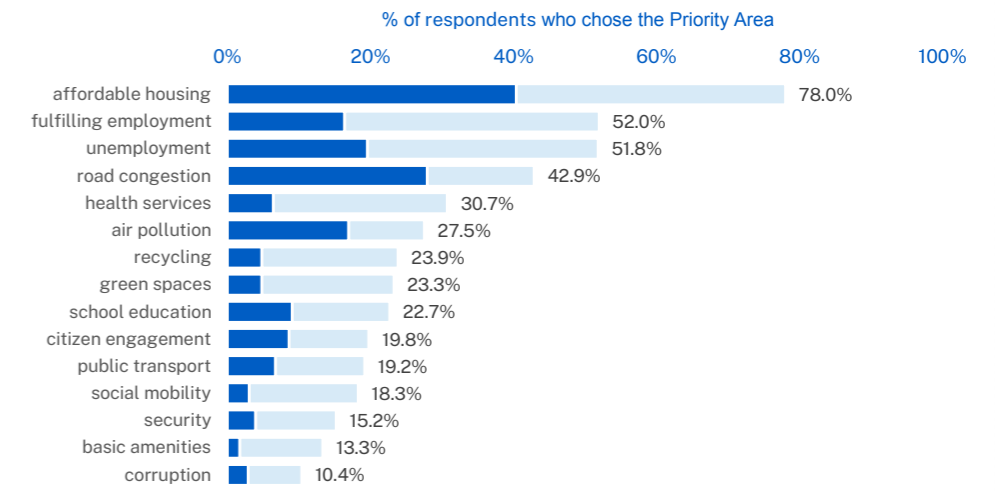


Country	2018	2019	2020	2021	1 yr change
HDI	0.866	0.890	0.912	0.911	-0.001
Life expectancy at birth	77.8	78.0	79.0	78.7	-0.2
Expected years of schooling	13.6	14.3	15.7	15.7	+0.0
Mean years of schooling	11.0	12.1	12.7	12.7	+0.0
GNI per capita (PPP \$)	66,912	67,462	63,016	62,574	-443

## PRIORITY AREAS

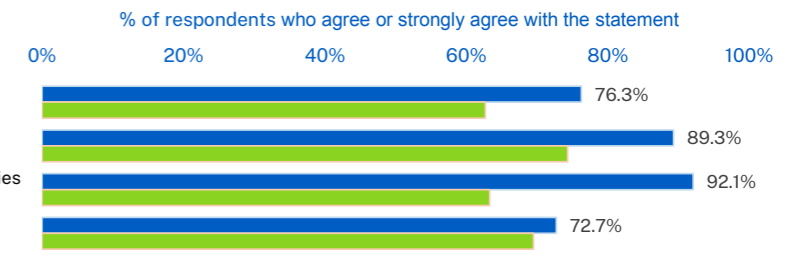
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

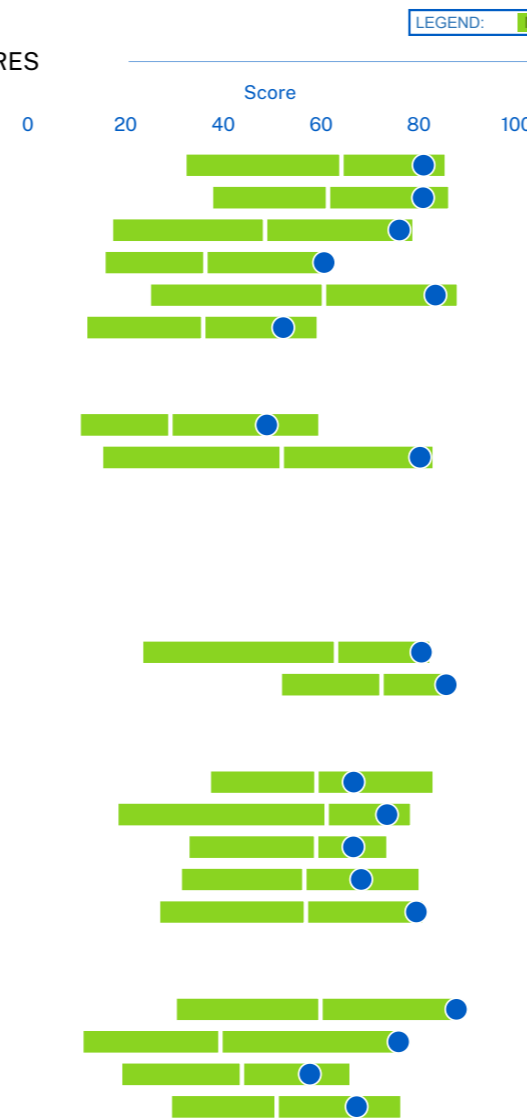
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

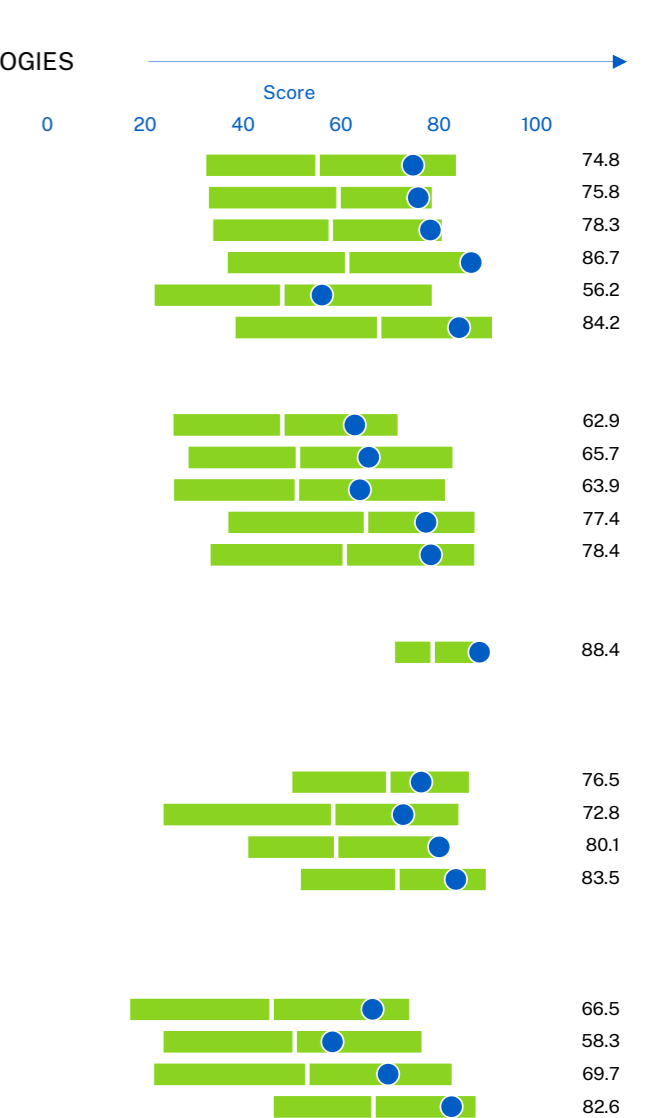
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Dublin

## SMART CITY RANKING

63

Out of 141



44 out of 118 in 2021

## SMART CITY RATING

BB

BBB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,423,957  
HDI 0.950

(Eurostat)

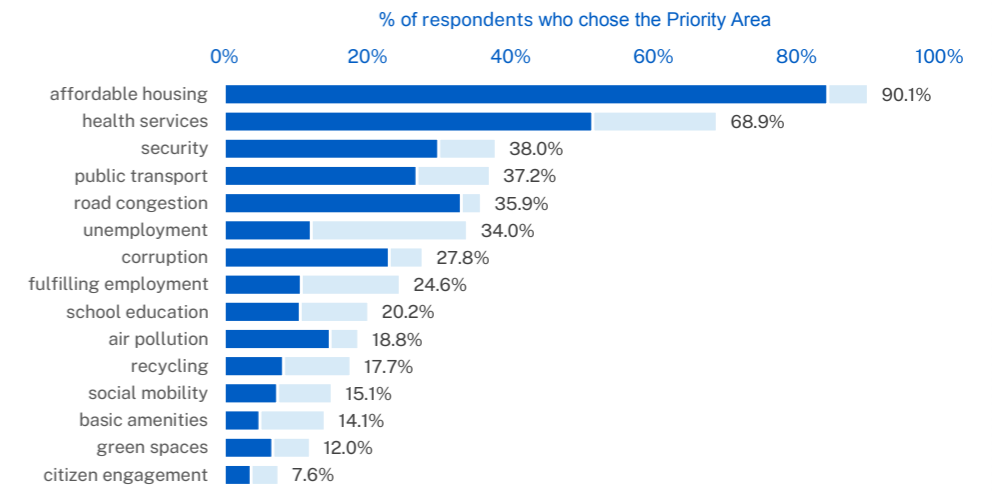


Country	2018	2019	2020	2021	1 yr change
HDI	0.942	0.955	0.943	0.945	+0.002
Life expectancy at birth	82.1	82.3	82.5	82.0	-0.5
Expected years of schooling	18.8	18.7	18.0	18.0	+0.0
Mean years of schooling	12.5	12.7	11.6	11.6	+0.0
GNI per capita (PPP \$)	55,660	68,371	67,736	76,169	+8,433

## PRIORITY AREAS

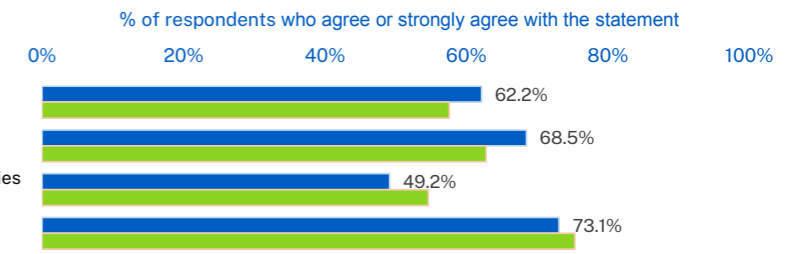
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

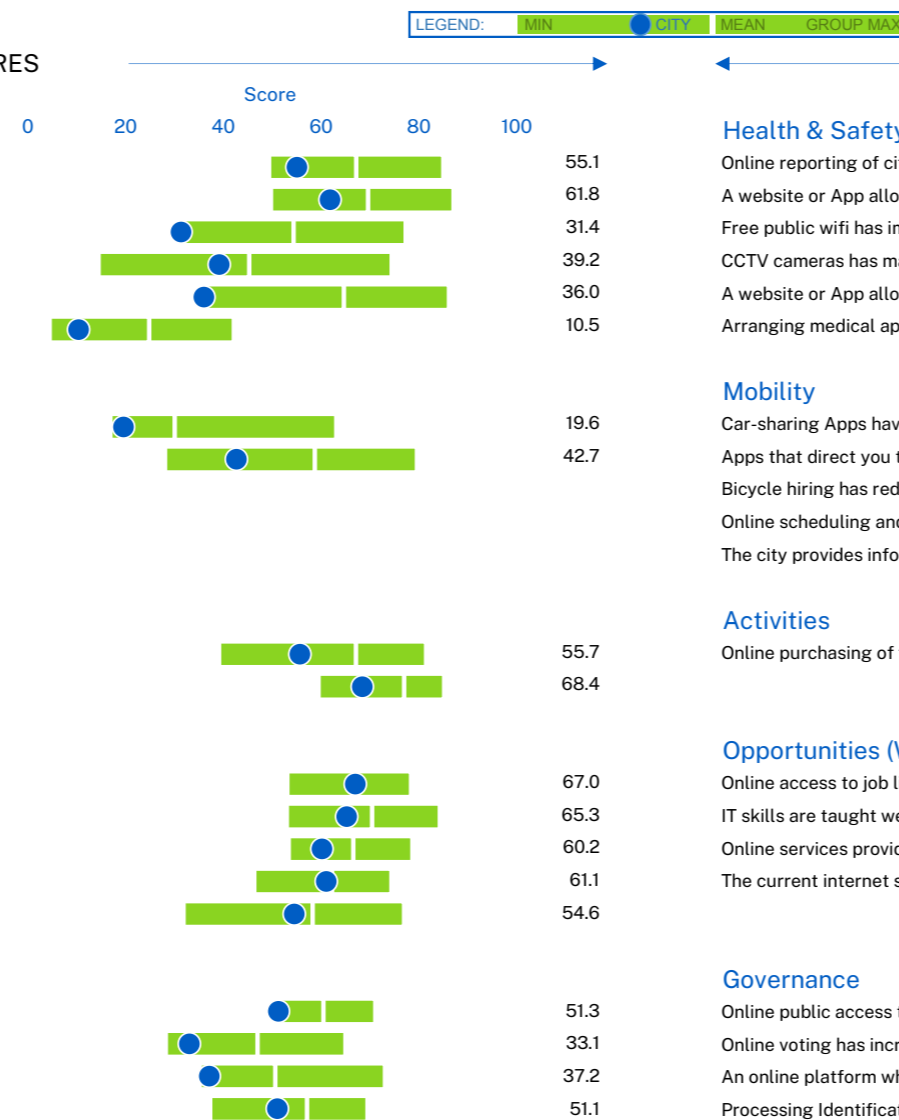
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

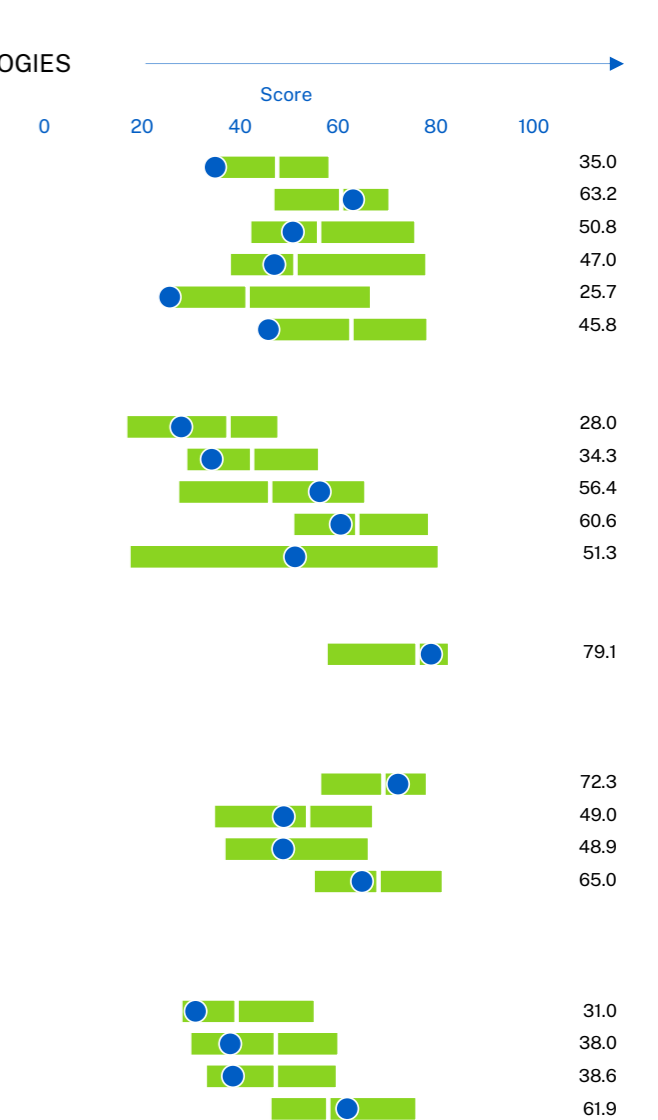
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Dusseldorf

## SMART CITY RANKING

38

Out of 141



27 out of 118 in 2021

## SMART CITY RATING

BB

A in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 620,523  
HDI 0.939

(Eurostat)



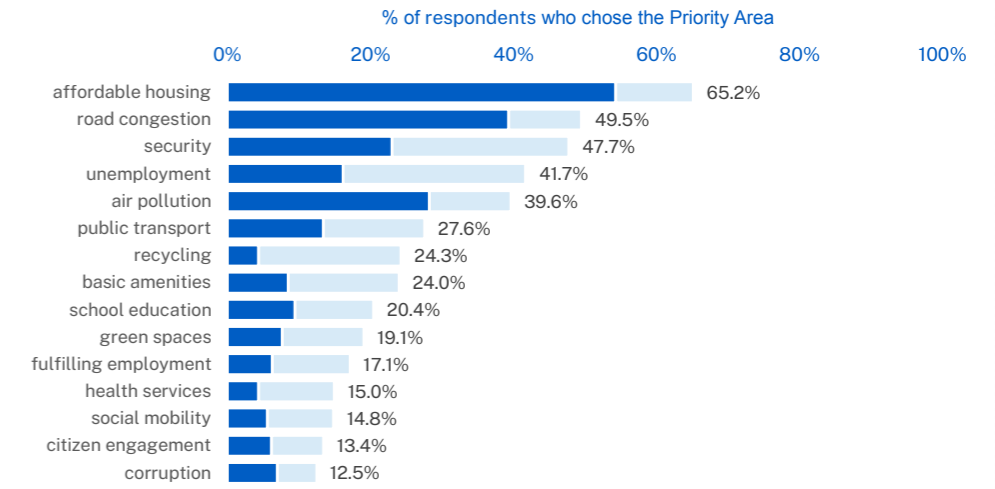
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	13.0	13.4	13.4	+0.0
GNI per capita (PPP \$)	33,650	40,187	39,015	41,524	+2,509

## PRIORITY AREAS

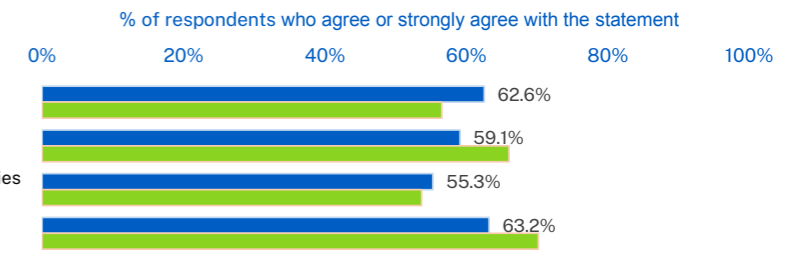
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

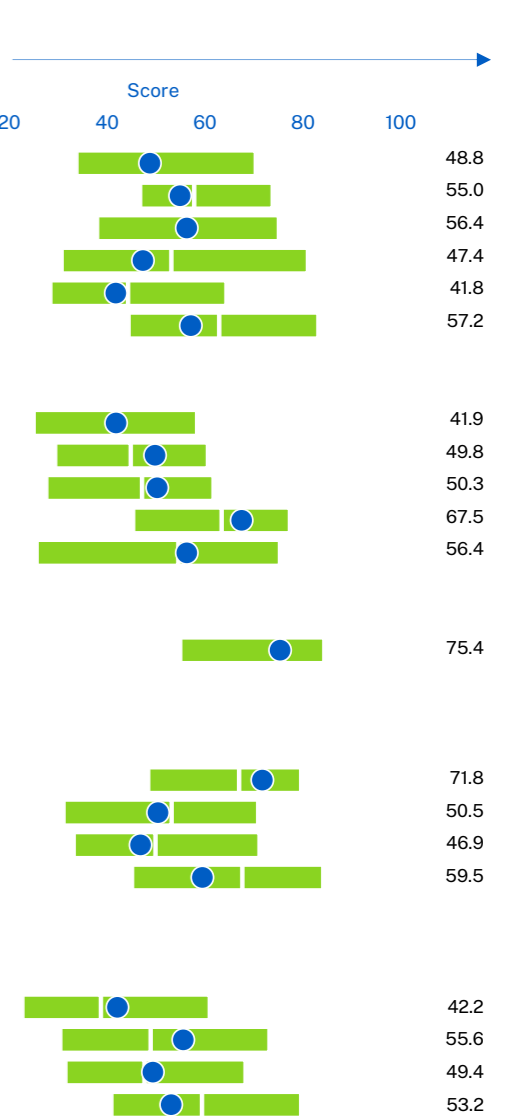
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Geneva

## SMART CITY RANKING

9

Out of 141



6 out of 118 in 2021

## SMART CITY RATING

AA

AA in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 506,343  
HDI 0.966

(Eurostat)

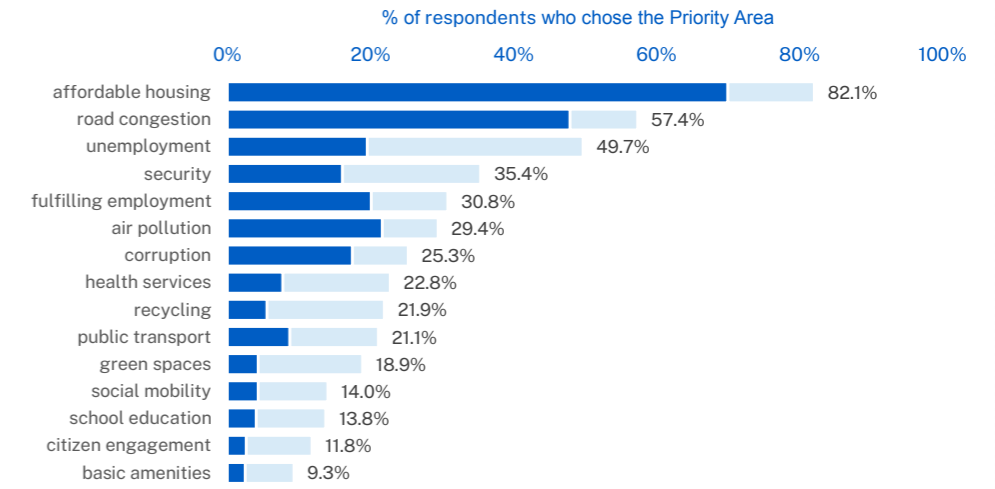


Country	2018	2019	2020	2021	1 yr change
HDI	0.946	0.955	0.956	0.962	+0.006
Life expectancy at birth	83.6	83.8	83.1	84.0	+0.9
Expected years of schooling	16.2	16.3	16.5	16.5	+0.0
Mean years of schooling	13.4	13.4	13.9	13.9	+0.0
GNI per capita (PPP \$)	59,375	69,394	65,011	66,933	+1,922

## PRIORITY AREAS

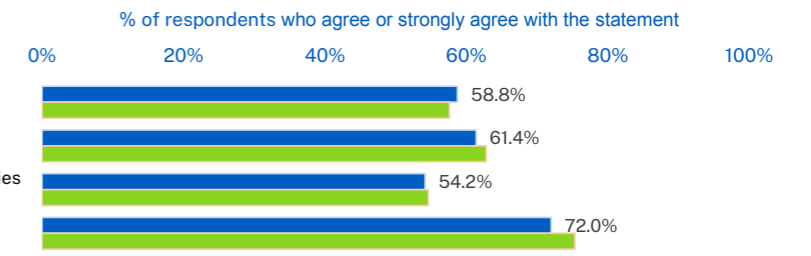
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## ATTITUDES

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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

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- Businesses are creating new jobs
- Minorities feel welcome

### Governance

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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100

71.8

73.6

67.9

51.4

77.6

21.8

29.2

69.6

81.5

78.3

63.0

81.2

71.2

46.6

60.3

67.2

51.3

64.5

65.6

## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

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- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
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### Governance

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- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100

48.8

64.1

57.5

46.0

46.8

61.6

35.0

36.6

41.6

71.4

50.9

77.8

56.5

55.7

46.4

75.9

40.7

49.2

42.6

61.6



# Glasgow

## SMART CITY RANKING

80

Out of 141



65 out of 118 in 2021

## SMART CITY RATING

BB

B in 2021

## FACTOR RATINGS

BB

STRUCTURES

B

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 627,479  
HDI 0.921

(Eurostat)

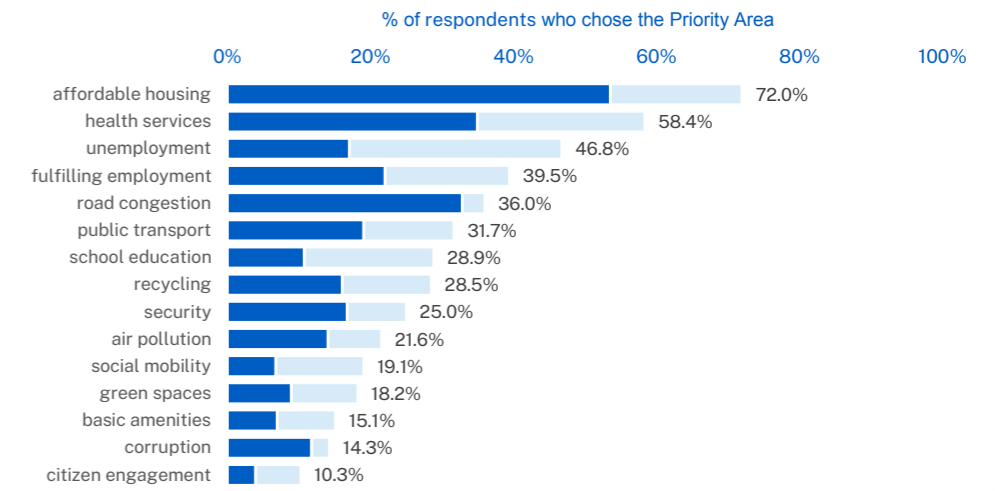


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

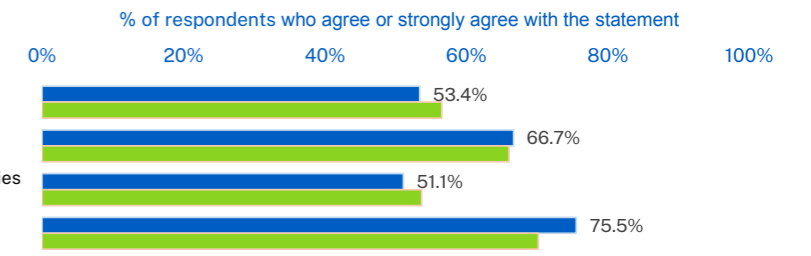
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

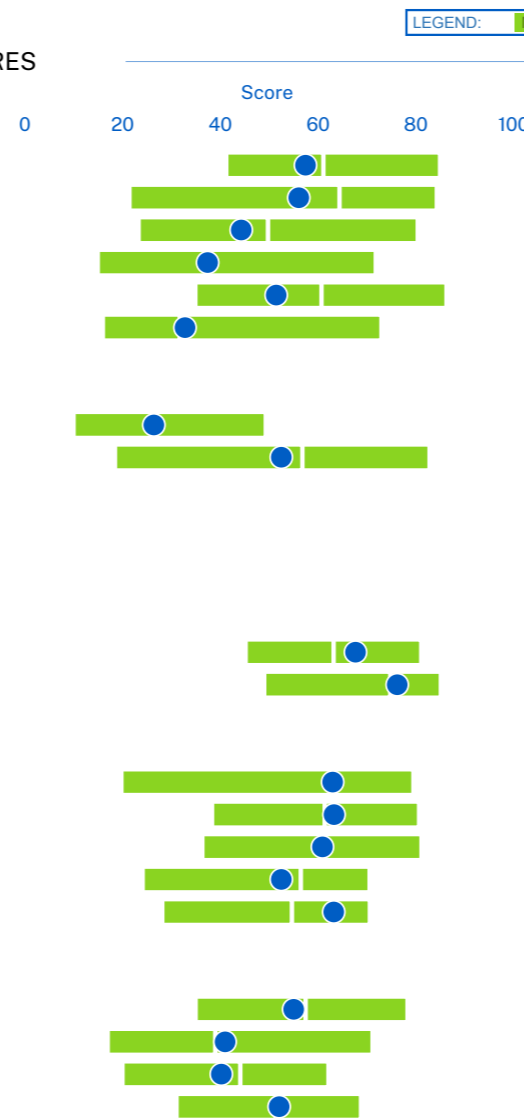
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

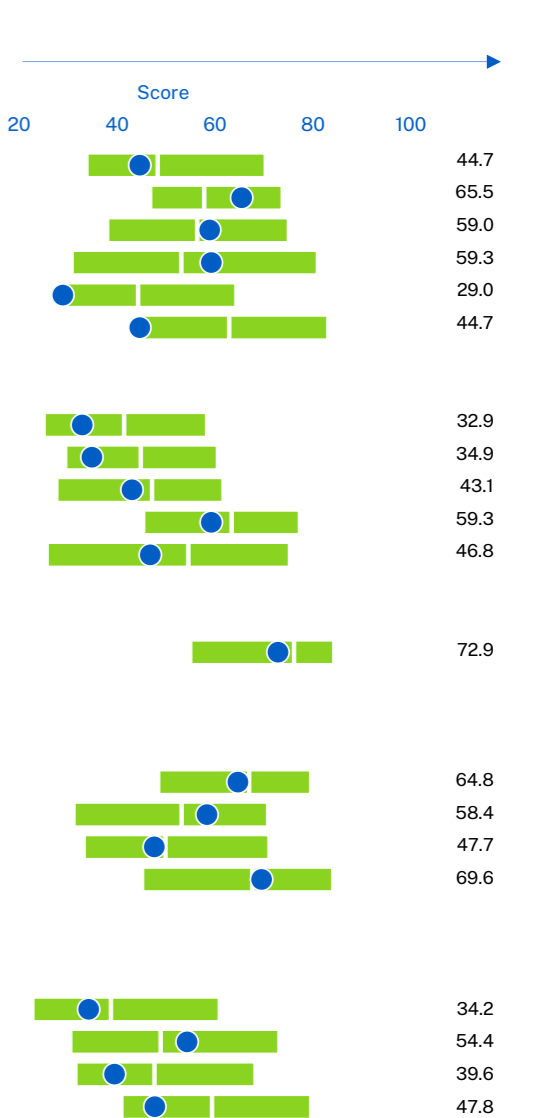
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Gothenburg

## SMART CITY RANKING

36

Out of 141



46 out of 118 in 2021

## SMART CITY RATING

A

BBB in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,071,191  
HDI 0.944

(Eurostat)

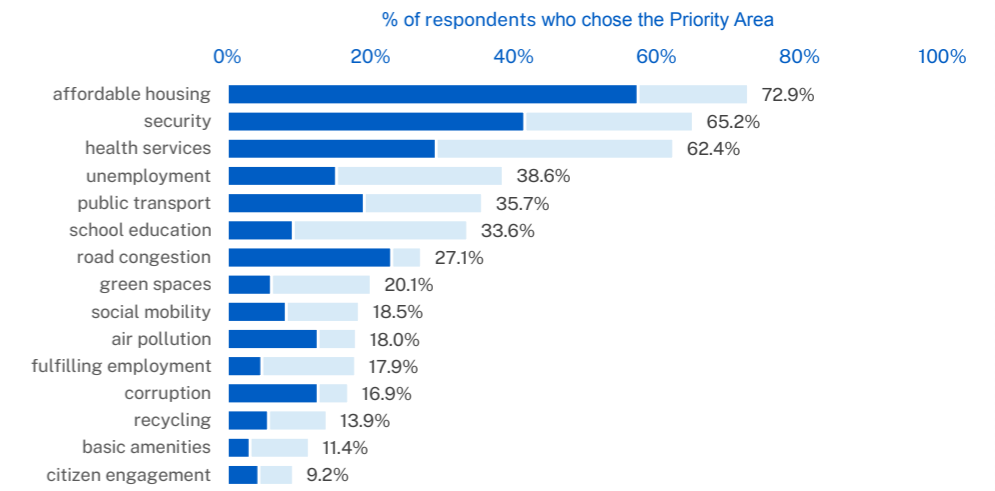


Country	2018	2019	2020	2021	1 yr change
HDI	0.937	0.945	0.942	0.947	+0.005
Life expectancy at birth	82.7	82.8	82.4	83.0	+0.5
Expected years of schooling	18.8	19.5	18.0	18.0	+0.0
Mean years of schooling	12.4	12.5	12.6	12.6	+0.0
GNI per capita (PPP \$)	47,955	54,508	52,359	54,489	+2,130

## PRIORITY AREAS

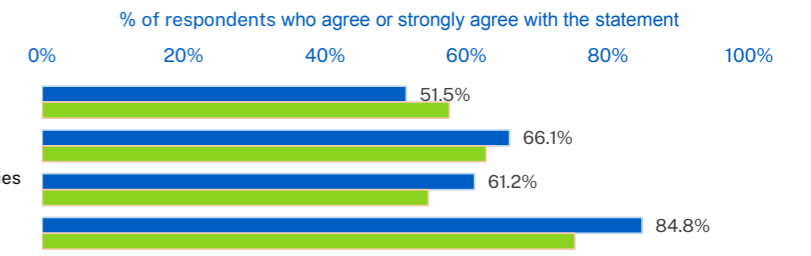
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Air pollution is not a problem
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### Mobility

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### Activities

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## TECHNOLOGIES

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### Mobility

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### Activities

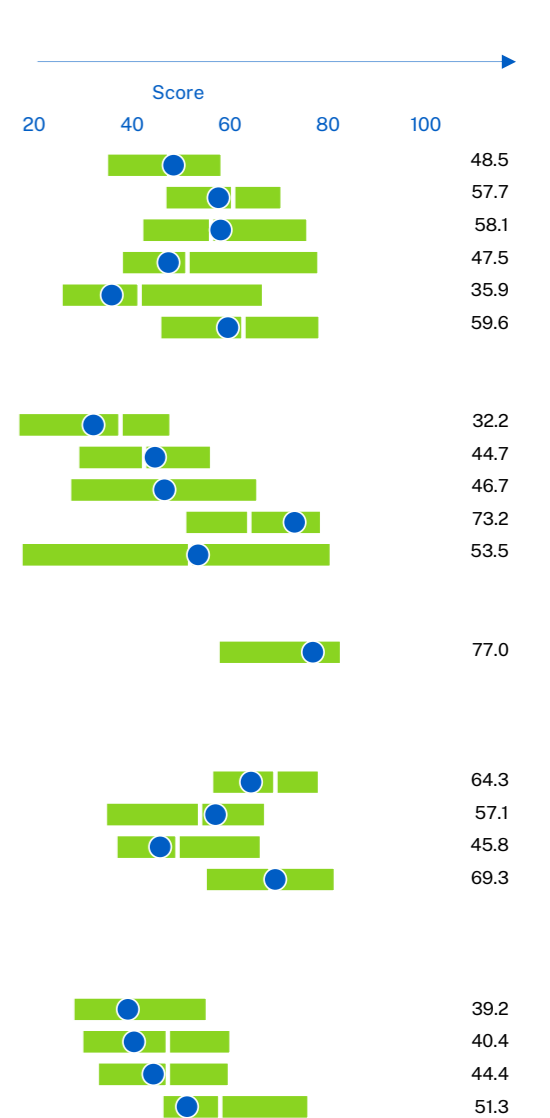
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- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

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- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Guangzhou

## SMART CITY RANKING

71

Out of 141



66 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 13,964,637  
HDI 0.799

(UN World Urbanisation Prospects 2022 estimate)

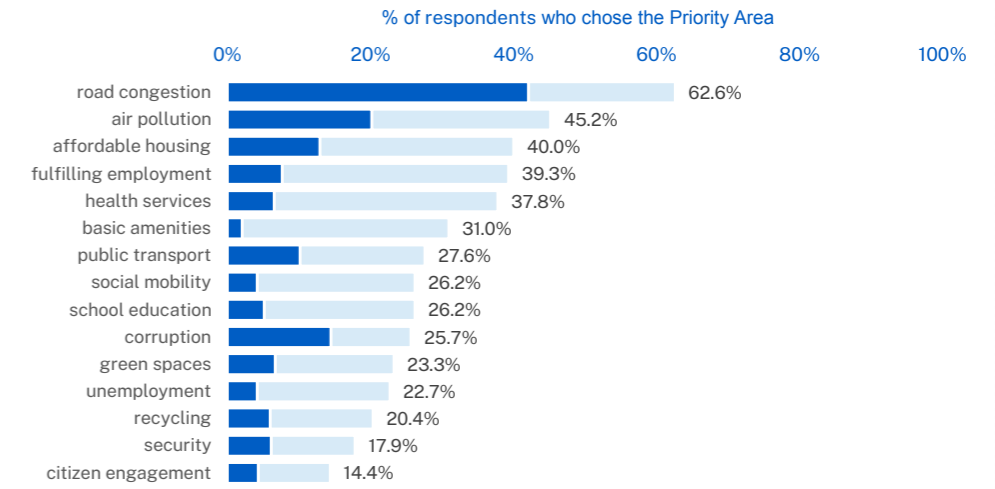


Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

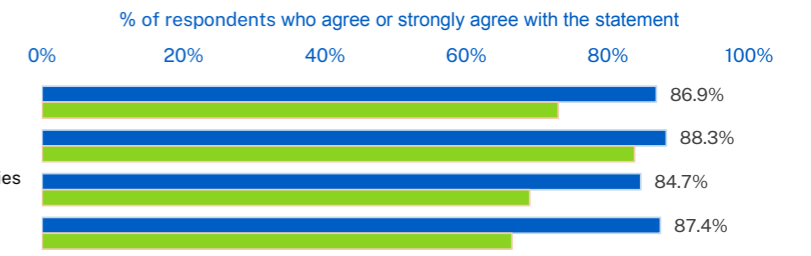
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

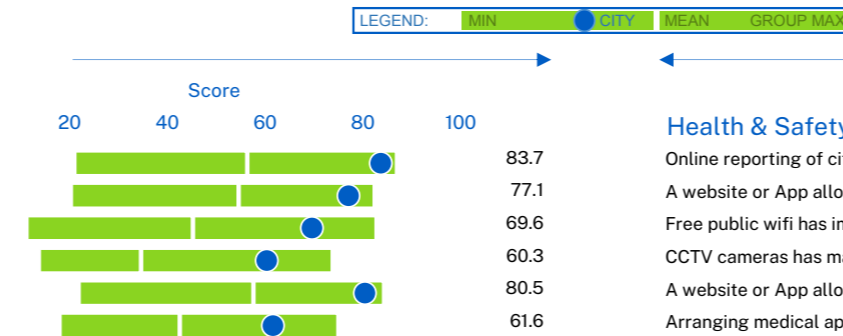
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

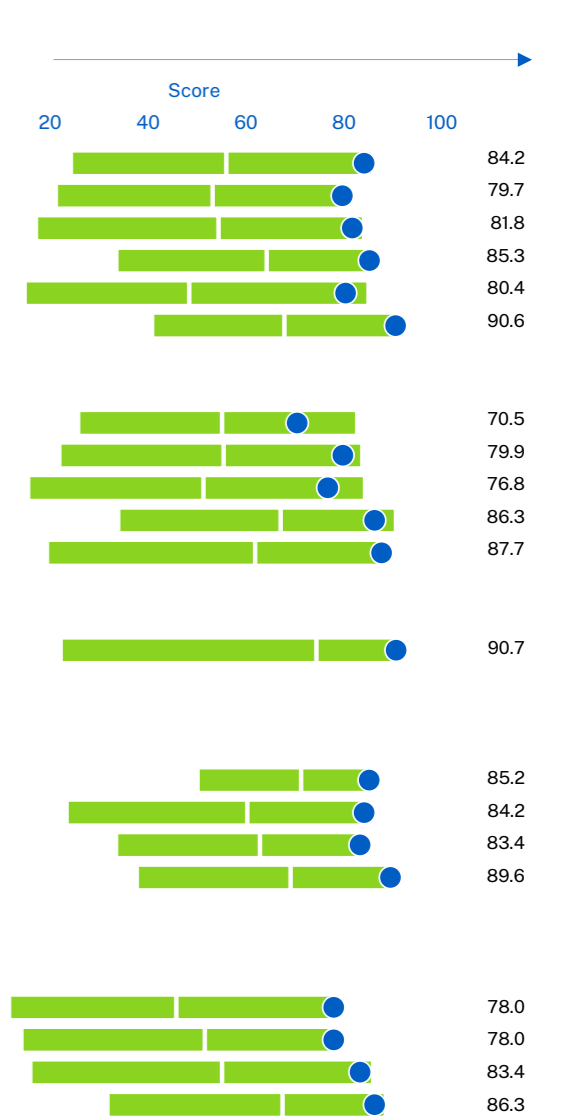
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Guatemala City

SMART CITY RANKING

141

Out of 141

not out of 118 in 2021

SMART CITY RATING

D

not in 2021

FACTOR RATINGS

D

STRUCTURES

D

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,036,405  
HDI 0.722

(UN World Urbanisation Prospects 2022 estimate)



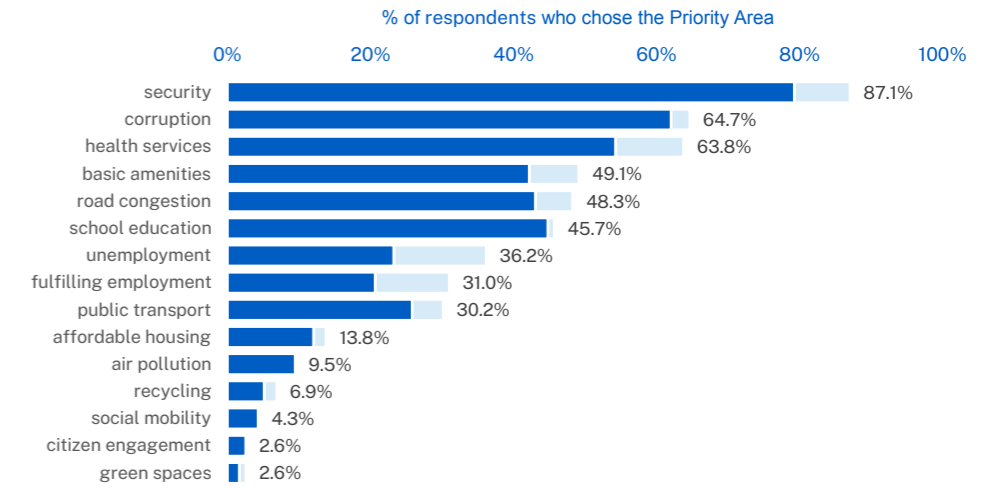
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.640	0.642	0.635	0.627	-0.008
Life expectancy at birth	72.7	73.1	71.8	69.2	-2.6
Expected years of schooling	10.6	10.6	10.6	10.6	+0.0
Mean years of schooling	5.7	5.7	5.7	5.7	+0.0
GNI per capita (PPP \$)	8,289	8,494	8,241	8,723	+482

## PRIORITY AREAS

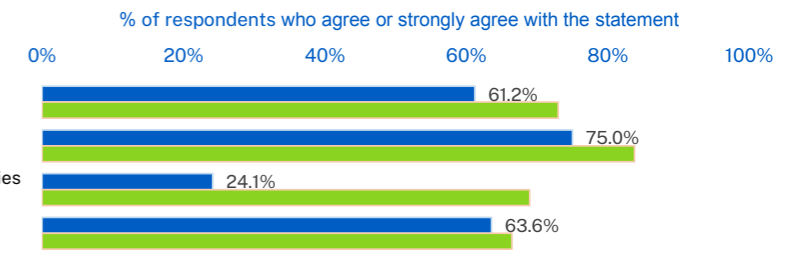
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

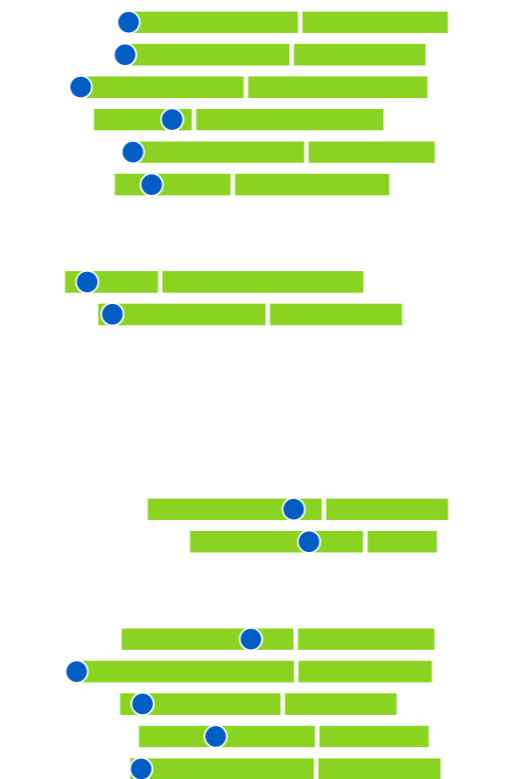
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

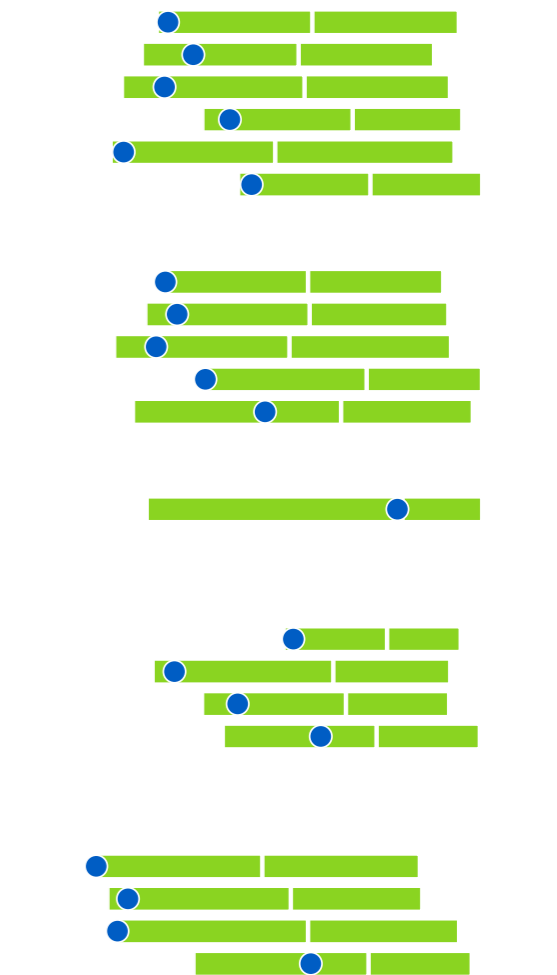
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Hamburg

## SMART CITY RANKING

11

Out of 141



8 out of 118 in 2021

## SMART CITY RATING

A

A in 2021

## FACTOR RATINGS

A

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,852,478  
HDI 0.972

(Eurostat)

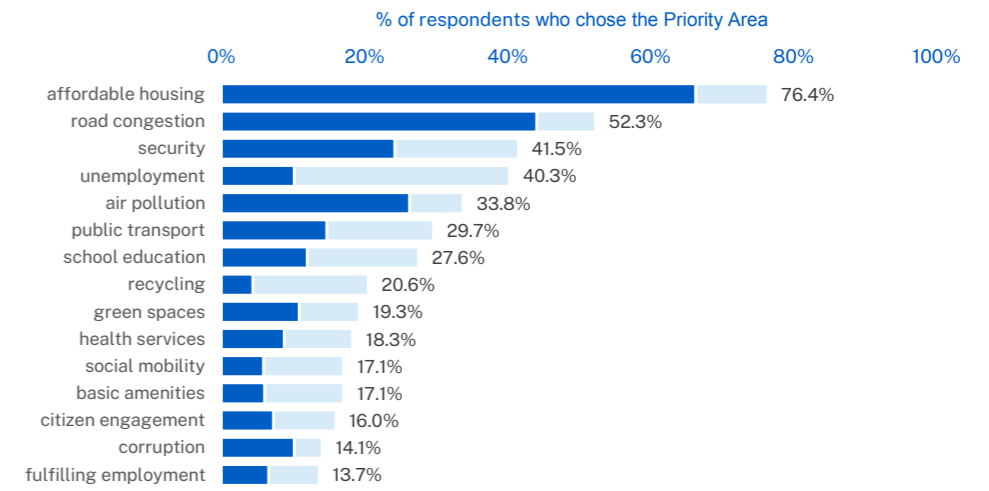


Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	14.2	14.1	14.1	+0.0
GNI per capita (PPP \$)	46,946	55,314	53,078	54,534	+1,457

## PRIORITY AREAS

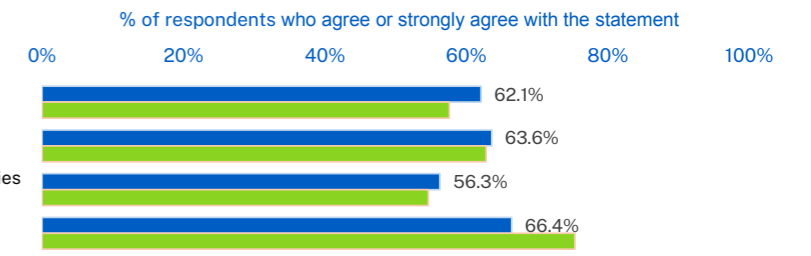
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

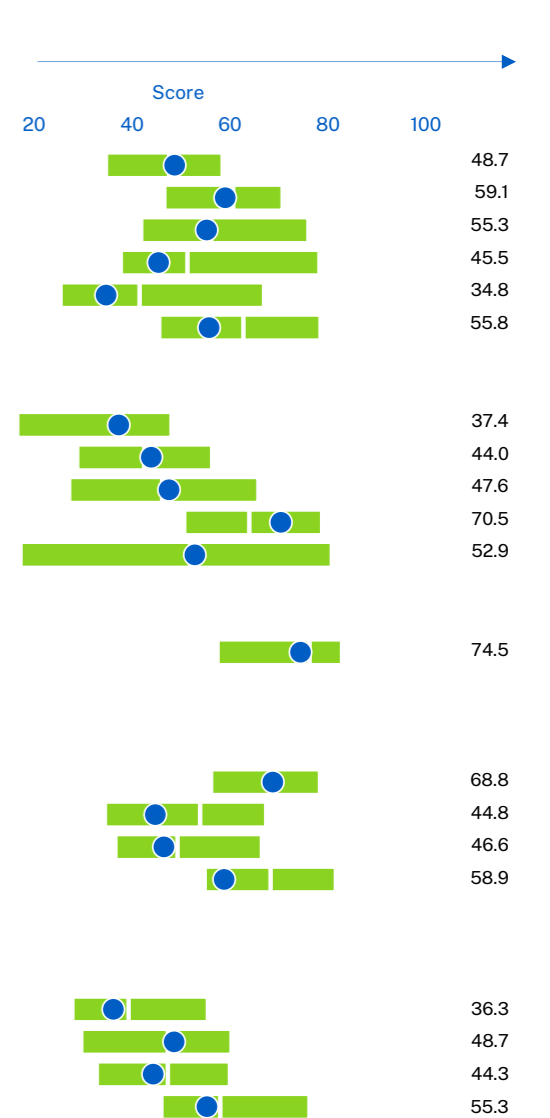
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Hangzhou

SMART CITY RANKING

70

Out of 141



63 out of 118 in 2021

SMART CITY RATING

CCC

CCC in 2021

FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 8,044,878  
HDI 0.801

(UN World Urbanisation Prospects 2022 estimate)



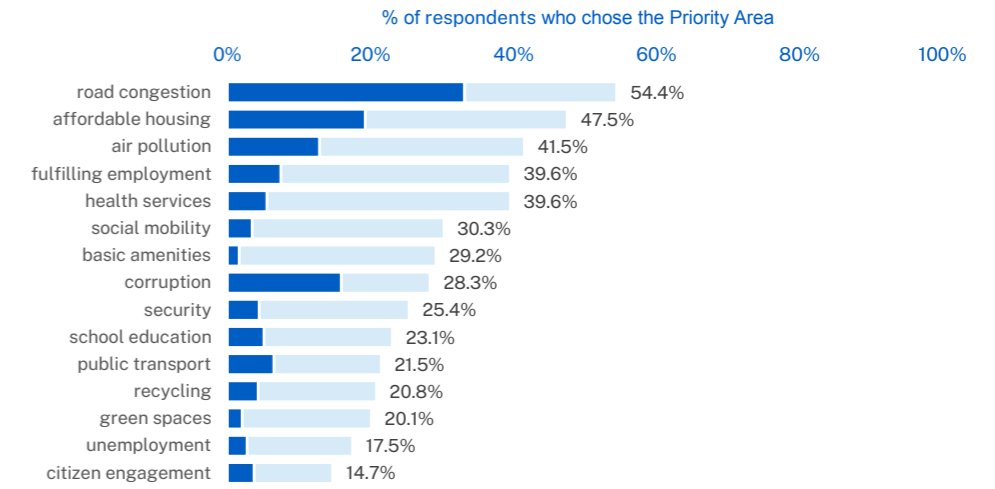
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

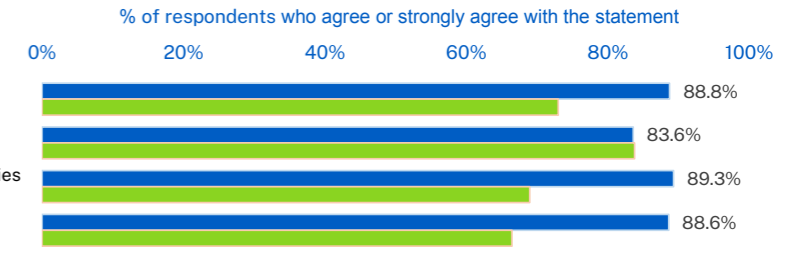
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

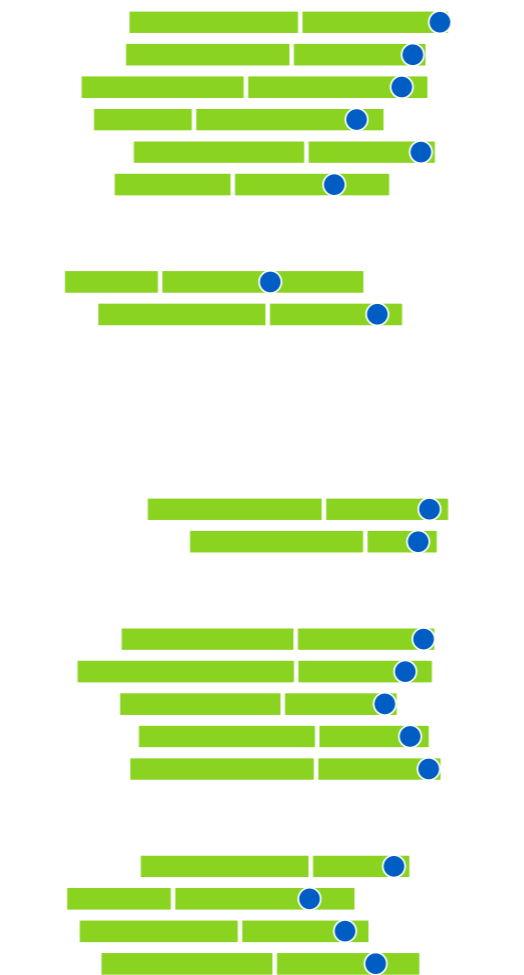
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Hanoi

## SMART CITY RANKING

100

Out of 141



89 out of 118 in 2021

## SMART CITY RATING

CCC

CC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,067,352  
HDI 0.744

(UN World Urbanisation Prospects 2022 estimate)

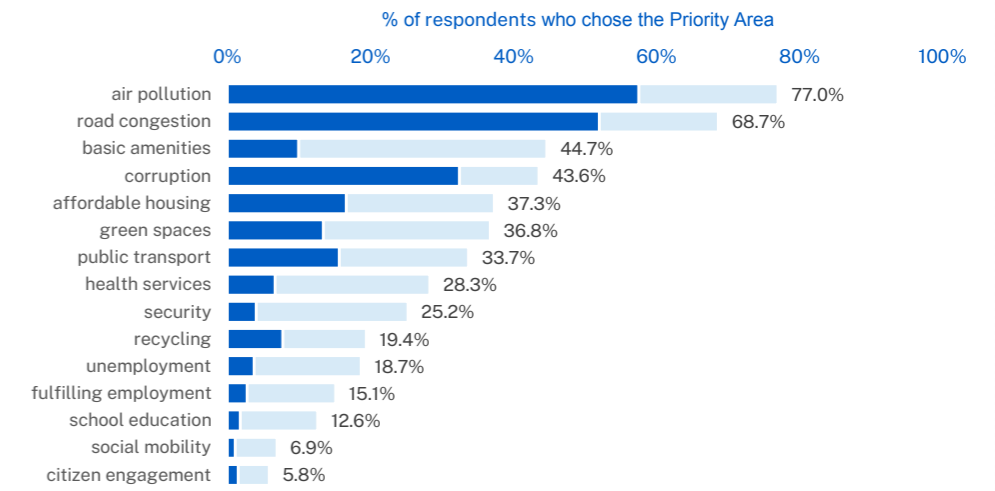


Country	2018	2019	2020	2021	1 yr change
HDI	0.693	0.704	0.710	0.703	-0.007
Life expectancy at birth	75.3	75.4	75.4	73.6	-1.8
Expected years of schooling	12.7	12.7	13.0	13.0	+0.0
Mean years of schooling	8.2	8.3	8.4	8.4	+0.0
GNI per capita (PPP \$)	6,220	7,433	7,742	7,867	+125

## PRIORITY AREAS

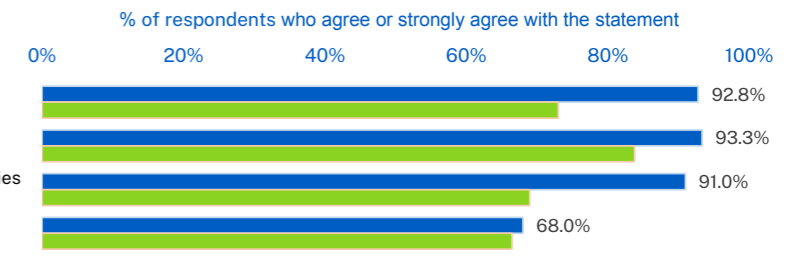
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

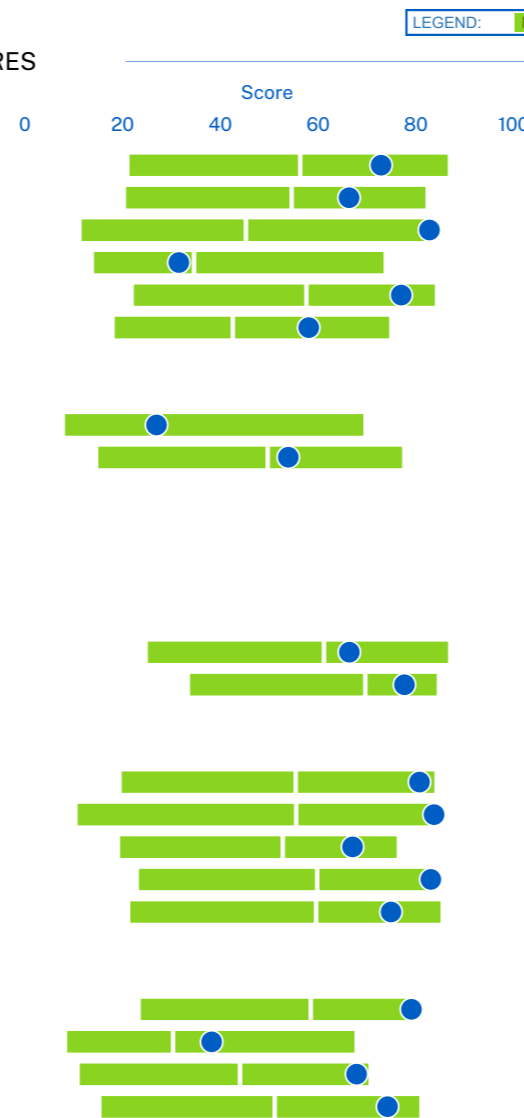
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
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 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

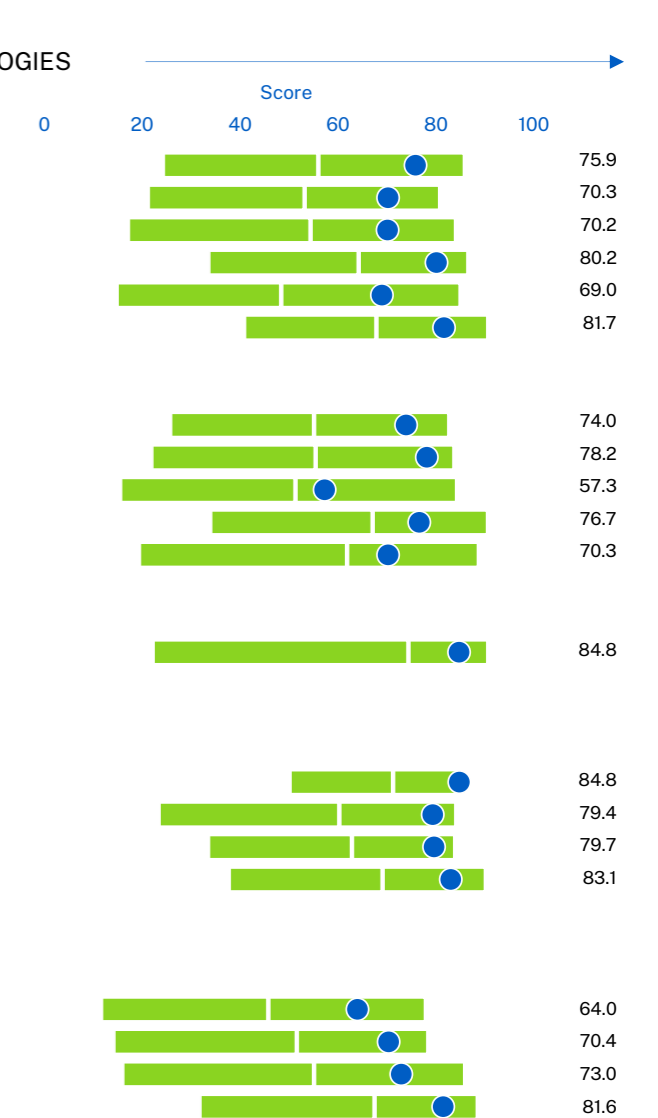
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Hanover

## SMART CITY RANKING

57

Out of 141



53 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

B

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 8,003,421  
HDI 0.930

(Eurostat)

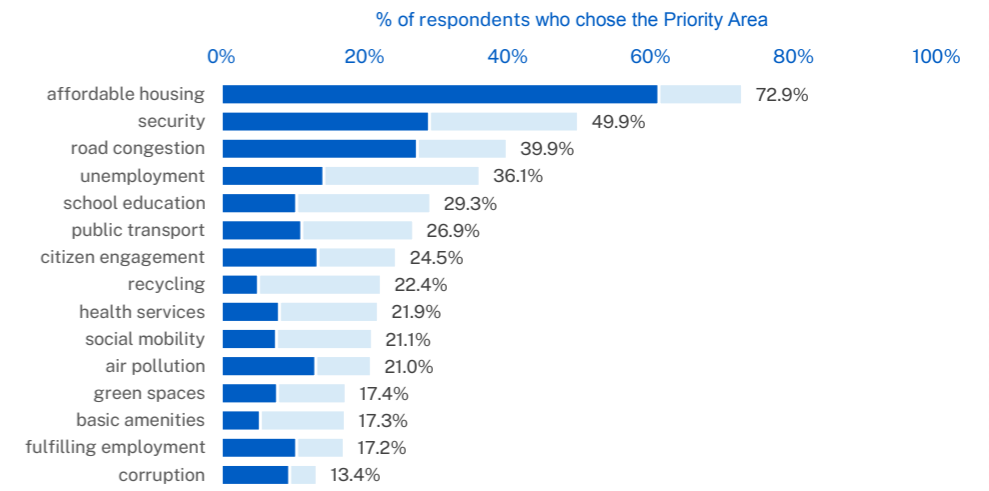


Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	14.2	14.1	14.1	+0.0
GNI per capita (PPP \$)	46,946	55,314	53,078	54,534	+1,457

## PRIORITY AREAS

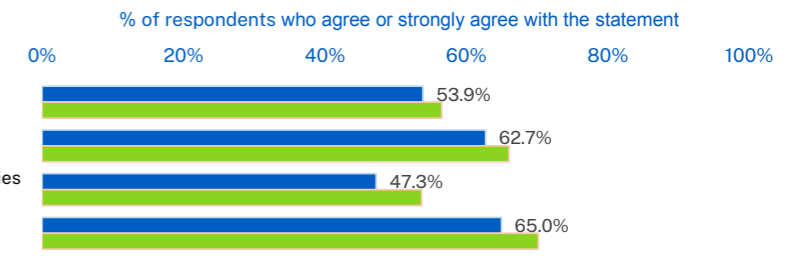
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

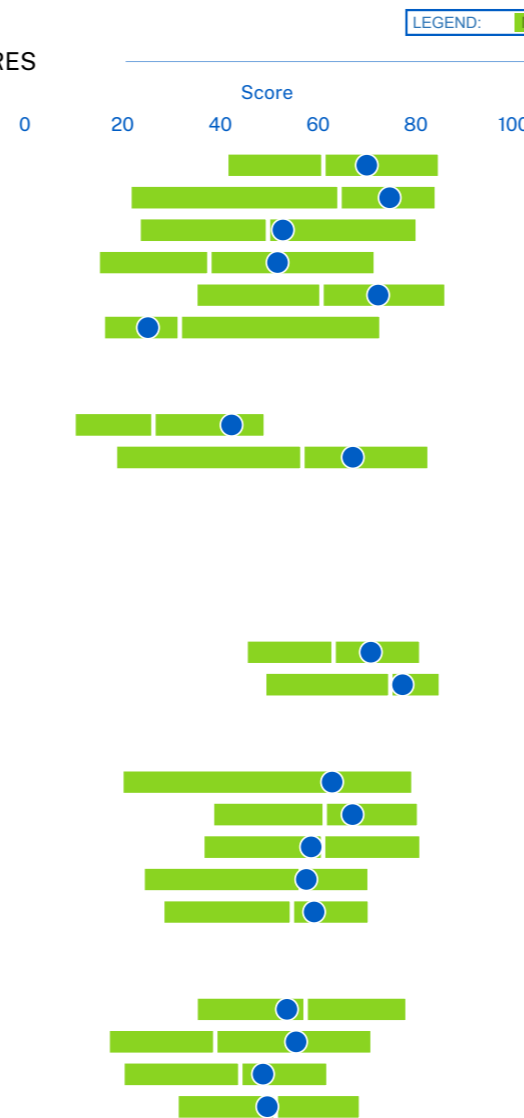
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
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- The city provides information on traffic congestion through mobile phones

### Activities

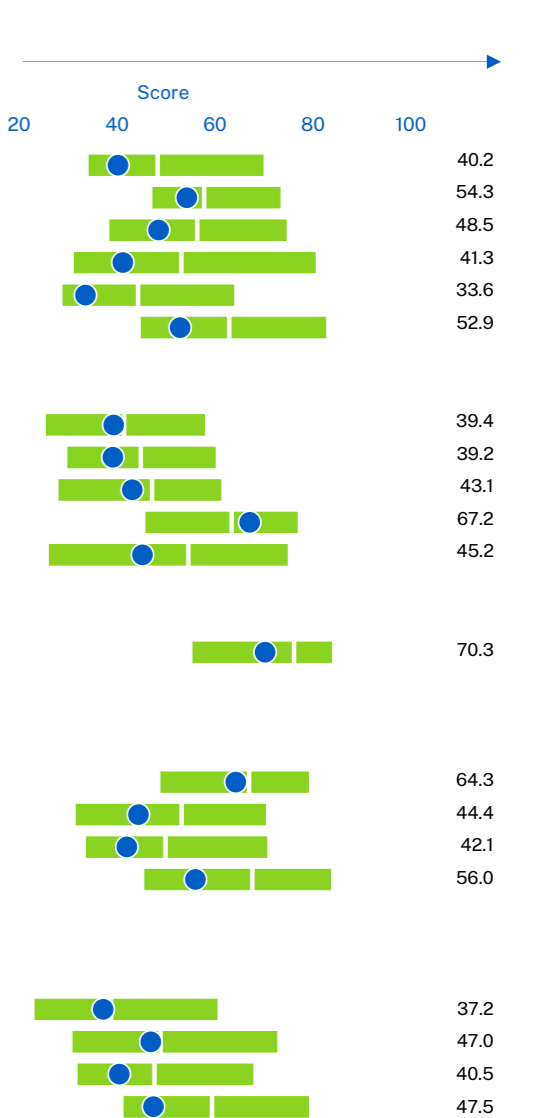
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





## SMART CITY RANKING

8

Out of 141



9 out of 118 in 2021

## SMART CITY RATING

AAA

AAA in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,702,678  
HDI 0.960

(Eurostat)

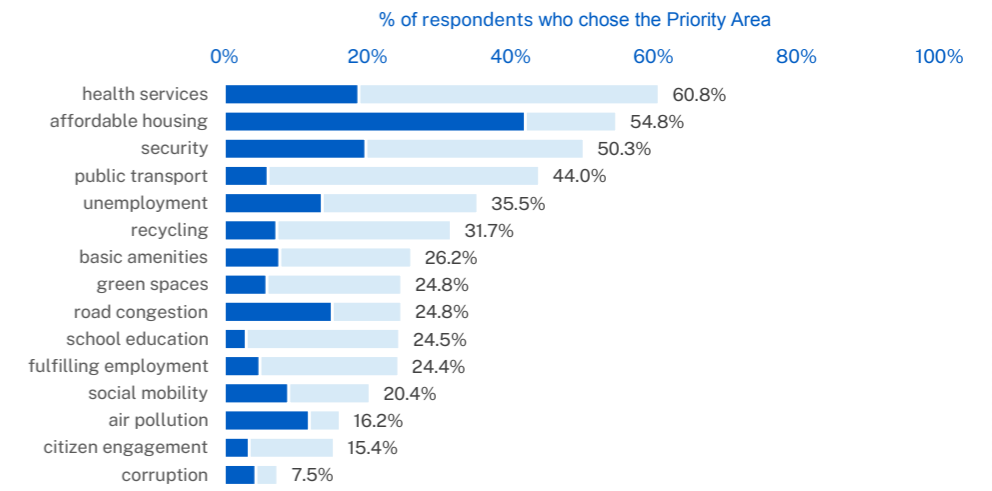


Country	2018	2019	2020	2021	1 yr change
HDI	0.925	0.938	0.938	0.940	+0.002
Life expectancy at birth	81.7	81.9	81.9	82.0	+0.2
Expected years of schooling	19.3	19.4	18.0	18.0	+0.0
Mean years of schooling	12.4	12.8	12.9	12.9	+0.0
GNI per capita (PPP \$)	41,779	48,511	47,946	49,452	+1,506

## PRIORITY AREAS

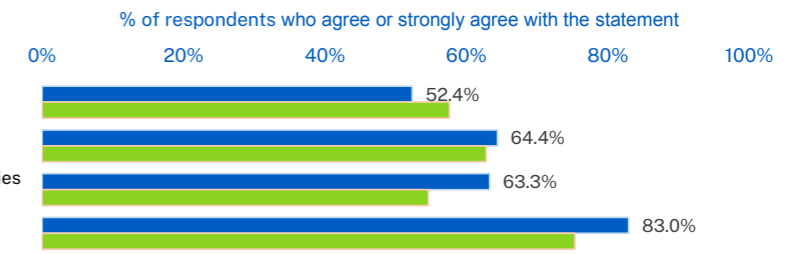
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Ho Chi Minh City

SMART CITY RANKING

103

Out of 141



93 out of 118 in 2021

SMART CITY RATING

CCC

CC in 2021

FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,077,158  
HDI 0.714

(UN World Urbanisation Prospects 2022 estimate)



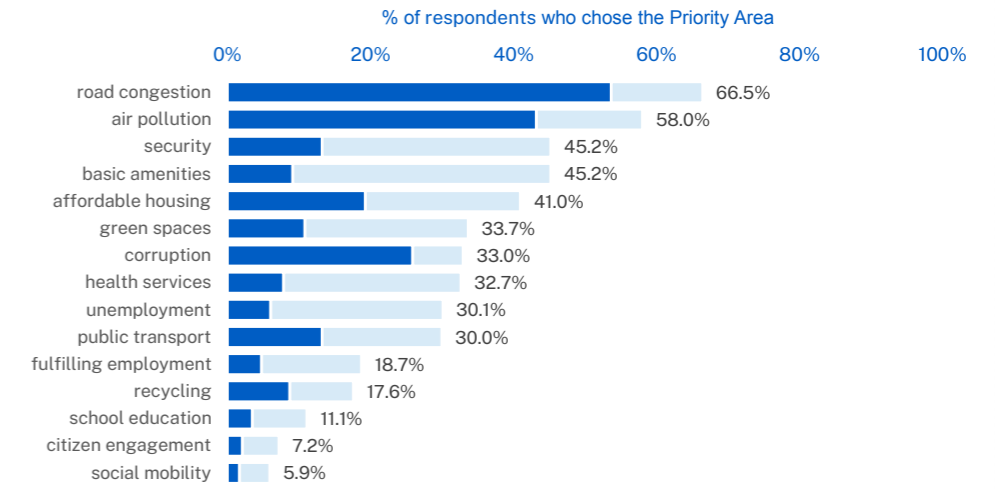
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.693	0.704	0.710	0.703	-0.007
Life expectancy at birth	75.3	75.4	75.4	73.6	-1.8
Expected years of schooling	12.7	12.7	13.0	13.0	+0.0
Mean years of schooling	8.2	8.3	8.4	8.4	+0.0
GNI per capita (PPP \$)	6,220	7,433	7,742	7,867	+125

## PRIORITY AREAS

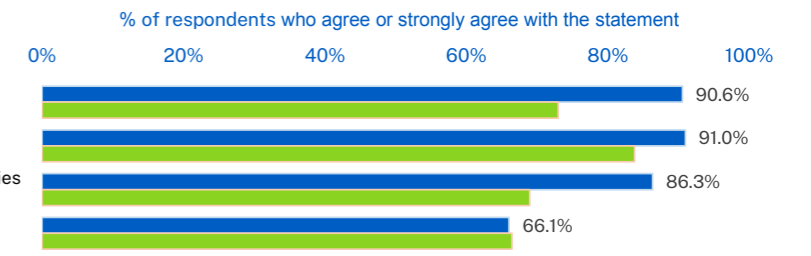
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

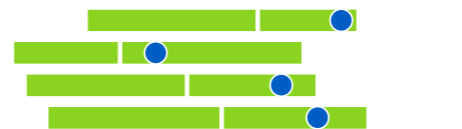
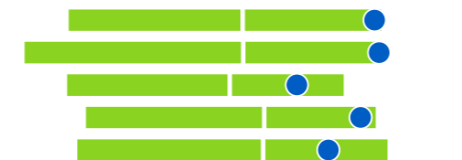
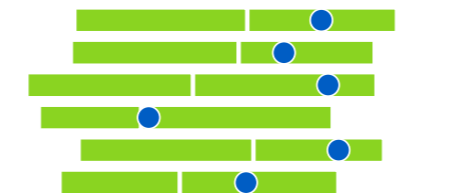
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Hong Kong

## SMART CITY RANKING

19

Out of 141



33 out of 118 in 2021

## SMART CITY RATING

AA

A in 2021

## FACTOR RATINGS

BBB

STRUCTURES

AAA

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 7,413,070  
HDI (2019) 0.949

(UN Data)

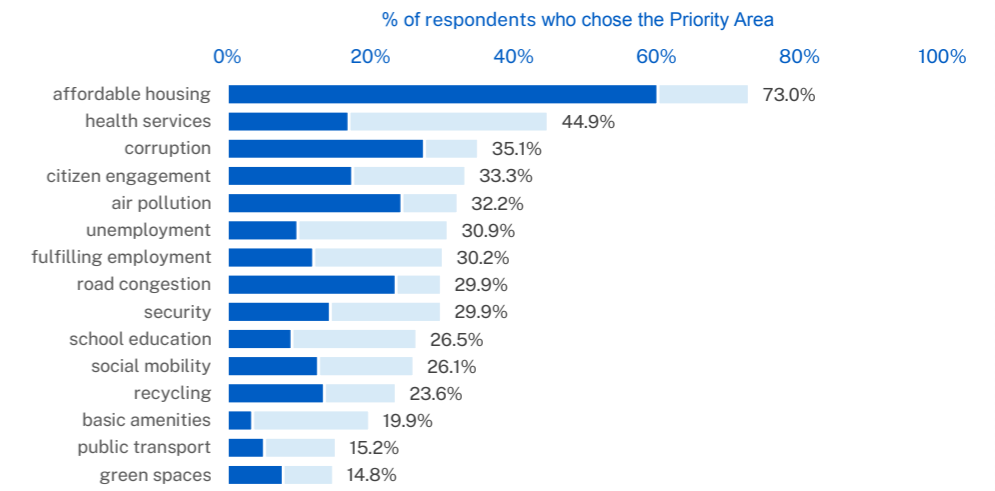


Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.949	NA	NA	NA
Life expectancy at birth	84.7	84.9	NA	NA	NA
Expected years of schooling	16.5	16.9	NA	NA	NA
Mean years of schooling	12.0	12.3	NA	NA	NA
GNI per capita (PPP \$)	60,221	62,985	58,644	62,607	+3,963

## PRIORITY AREAS

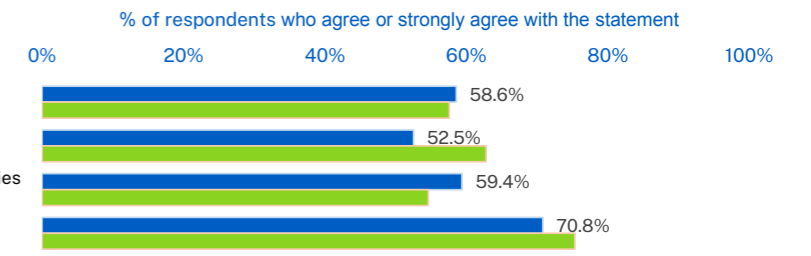
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Hyderabad

SMART CITY RANKING

116

Out of 141



101 out of 118 in 2021

SMART CITY RATING

CC

CC in 2021

FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 10,534,418  
HDI 0.647

(UN World Urbanisation Prospects 2022 estimate)

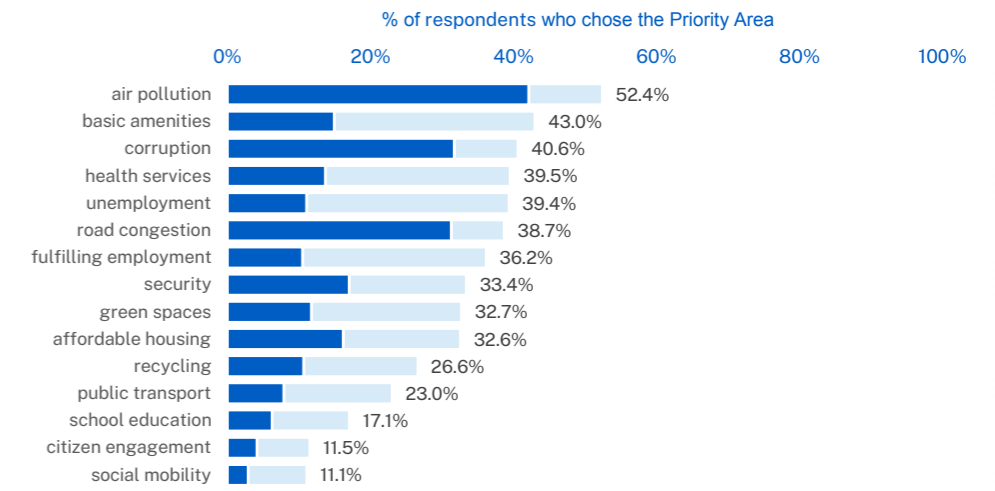


Country	2018	2019	2020	2021	1 yr change
HDI	0.647	0.645	0.642	0.633	-0.009
Life expectancy at birth	69.4	69.7	70.2	67.2	-2.9
Expected years of schooling	12.3	12.2	11.9	11.9	+0.0
Mean years of schooling	6.5	6.5	6.7	6.7	+0.0
GNI per capita (PPP \$)	6,829	6,681	6,107	6,590	+482

## PRIORITY AREAS

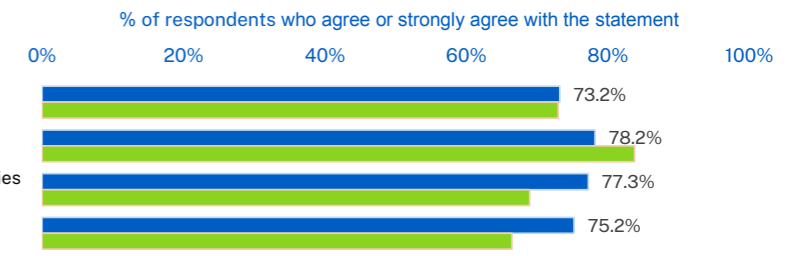
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## ATTITUDES

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 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

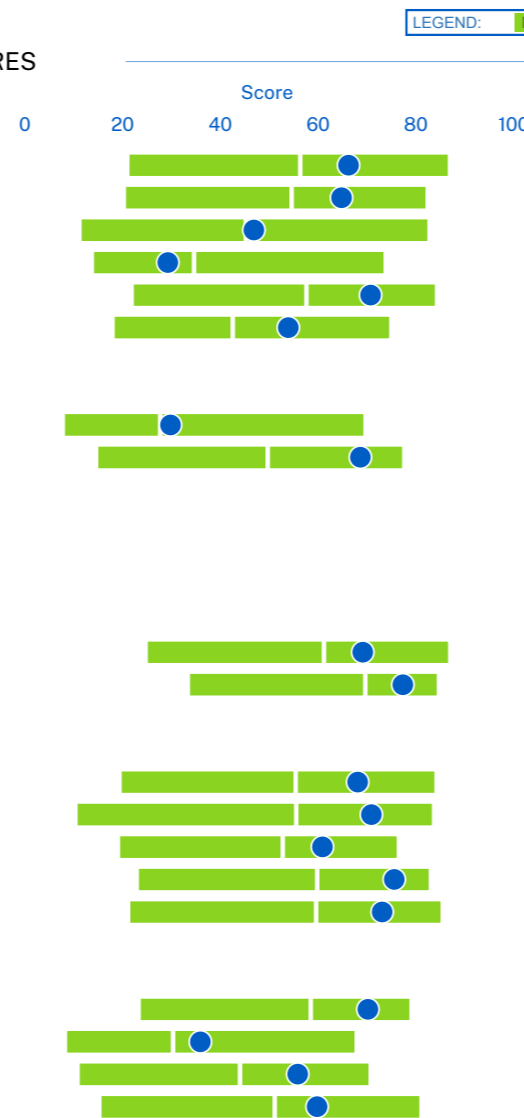
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

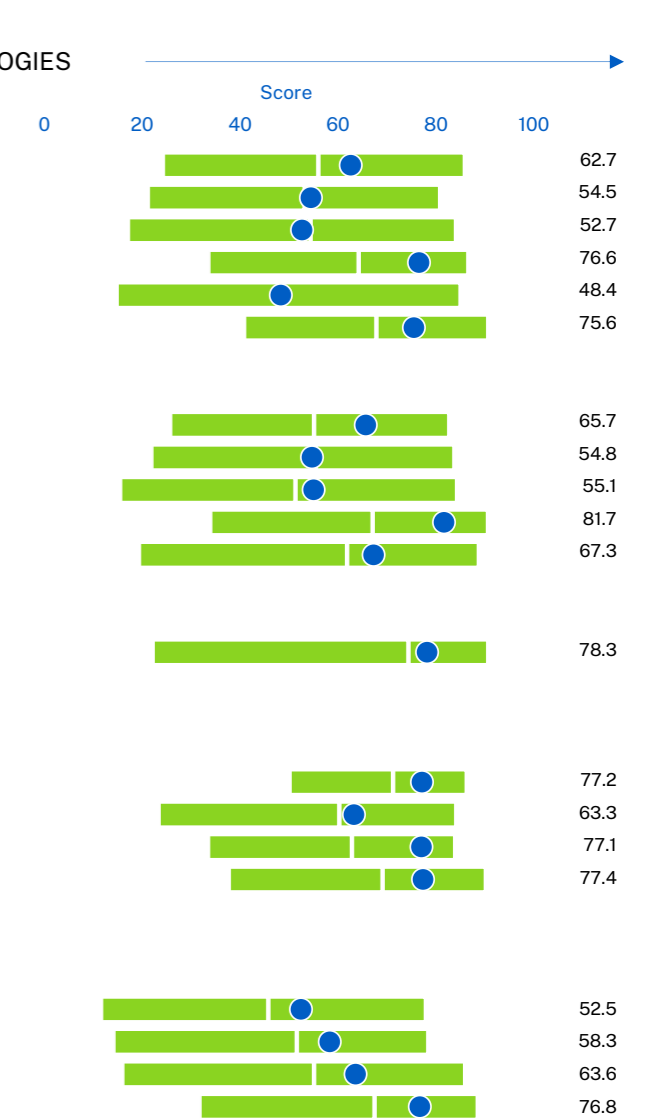
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Islamabad

SMART CITY RANKING

120

Out of 141

not out of 118 in 2021

SMART CITY RATING

CC

not in 2021

FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,009,003  
HDI 0.659

(UN Data)

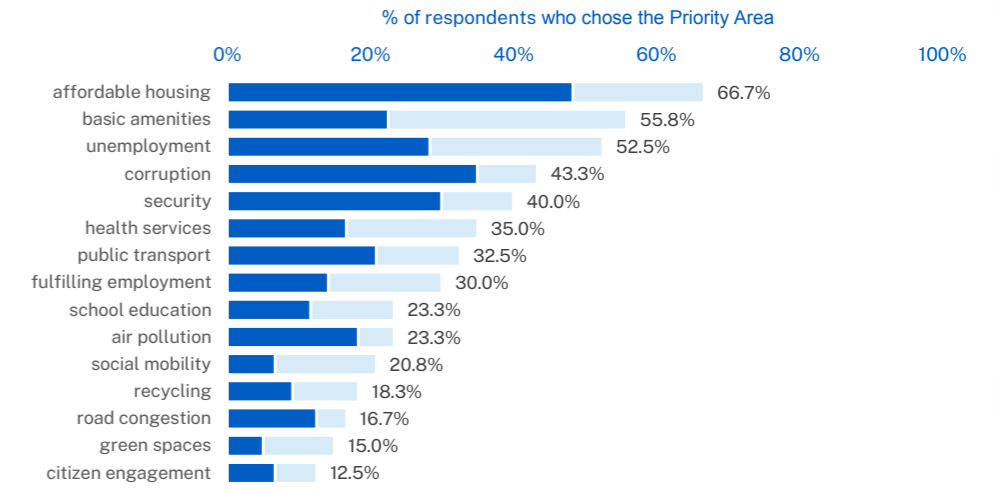


Country	2018	2019	2020	2021	1 yr change
HDI	0.545	0.546	0.543	0.544	+0.001
Life expectancy at birth	66.5	66.8	66.3	66.1	-0.2
Expected years of schooling	8.3	8.7	8.7	8.7	+0.0
Mean years of schooling	4.8	4.5	4.5	4.5	+0.0
GNI per capita (PPP \$)	4,658	4,604	4,467	4,624	+156

## PRIORITY AREAS

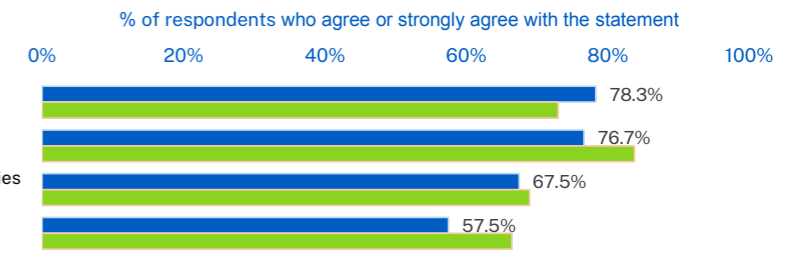
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
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### Governance

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## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

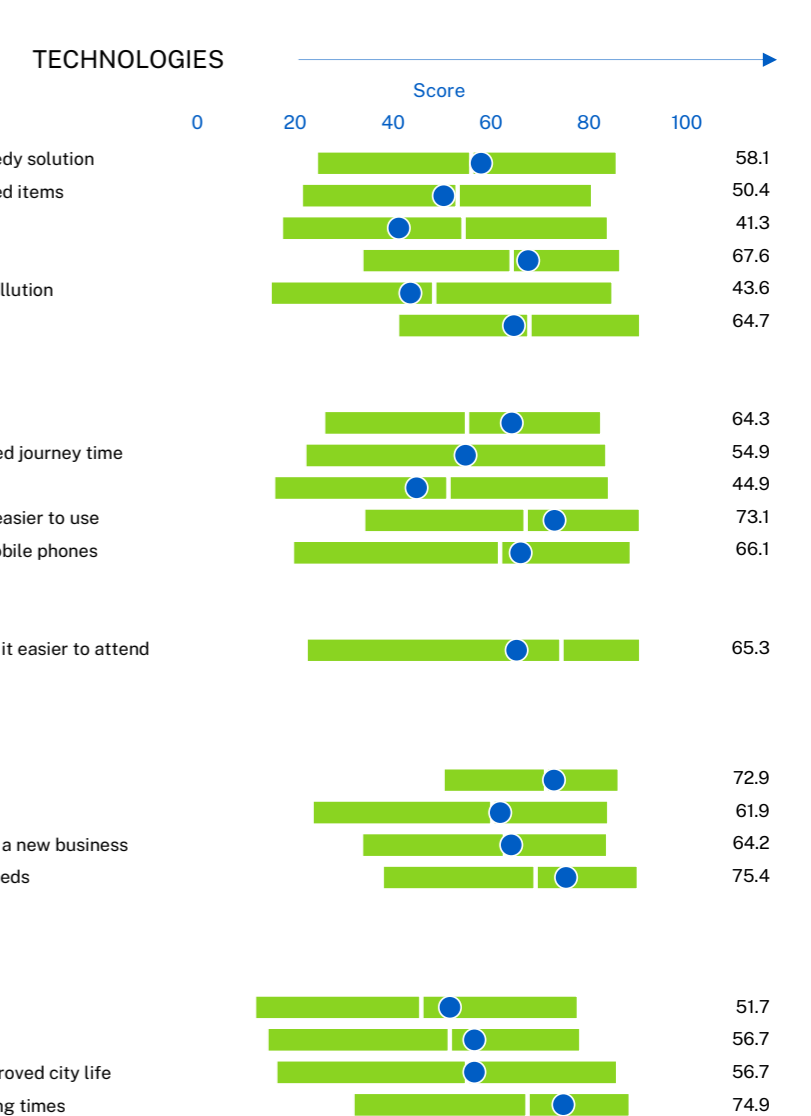
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
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### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Istanbul

## SMART CITY RANKING

107

Out of 141



88 out of 118 in 2021

## SMART CITY RATING

CC

CC in 2021

## FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 15,462,452  
HDI 0.867

(Eurostat)



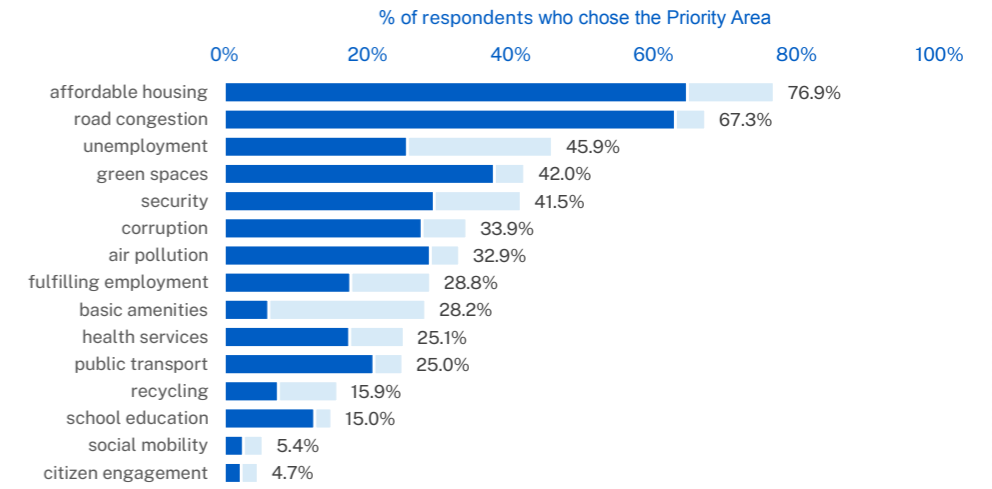
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.807	0.820	0.833	0.838	+0.005
Life expectancy at birth	77.4	77.7	75.9	76.0	+0.2
Expected years of schooling	16.4	16.6	18.0	18.0	+0.0
Mean years of schooling	7.7	8.1	8.6	8.6	+0.0
GNI per capita (PPP \$)	24,905	27,701	28,317	31,033	+2,715

## PRIORITY AREAS

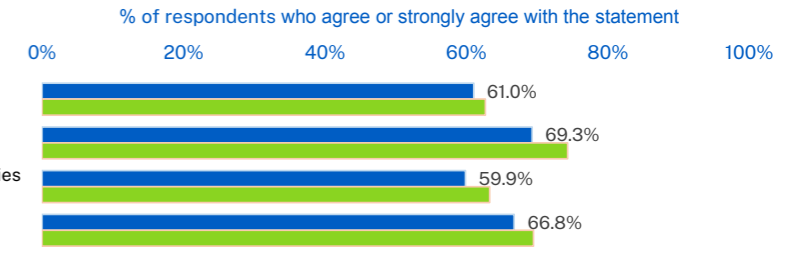
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LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

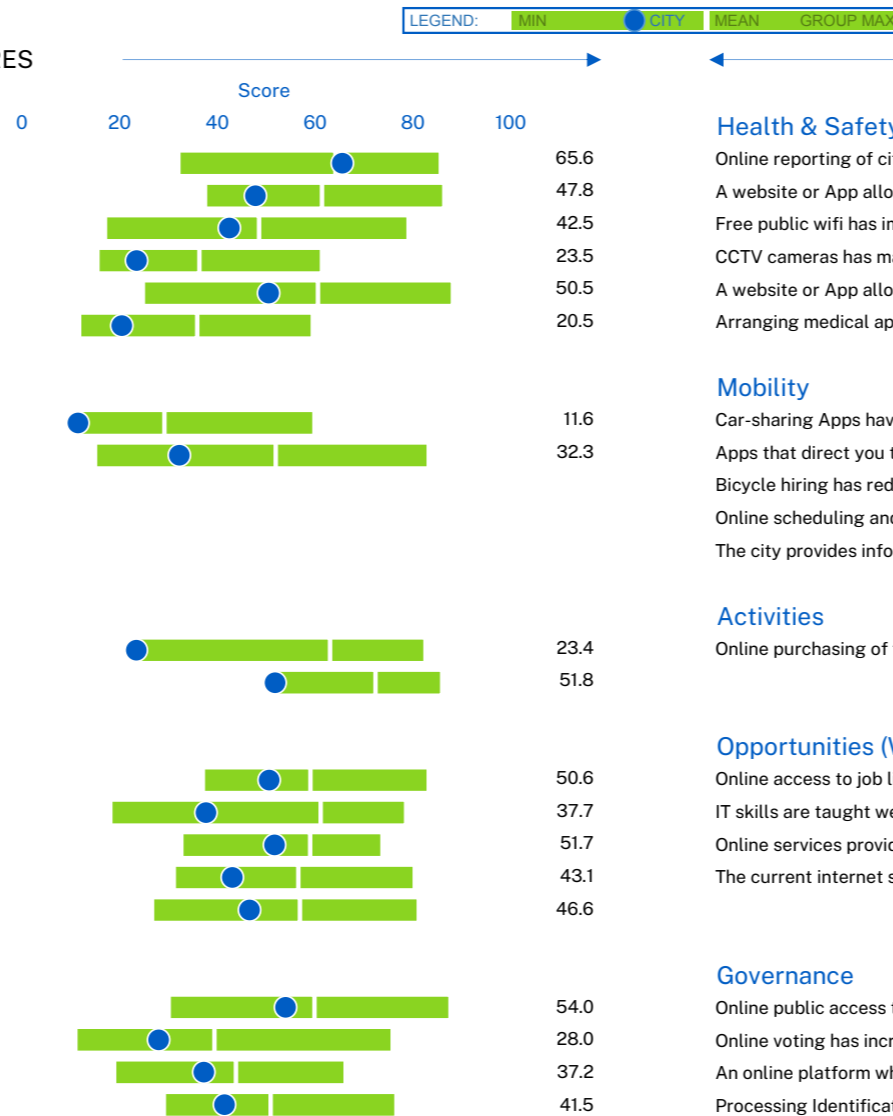
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

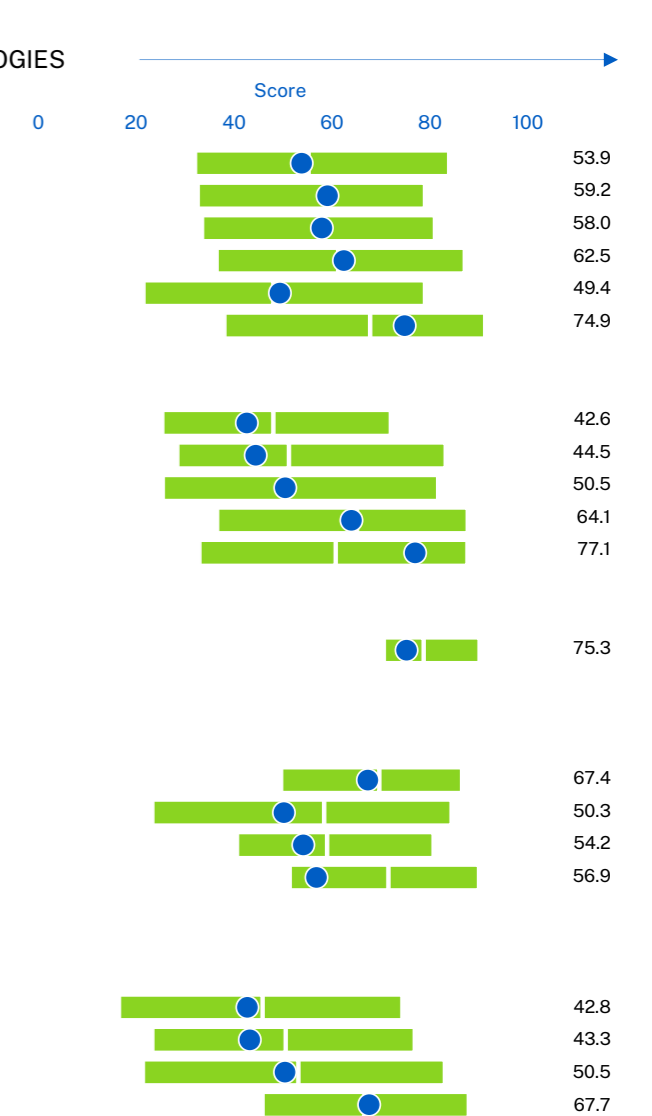
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Jakarta

SMART CITY RANKING

102

Out of 141



92 out of 118 in 2021

SMART CITY RATING

CC

CC in 2021

FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 10,562,088  
HDI 0.759

(UN Data)



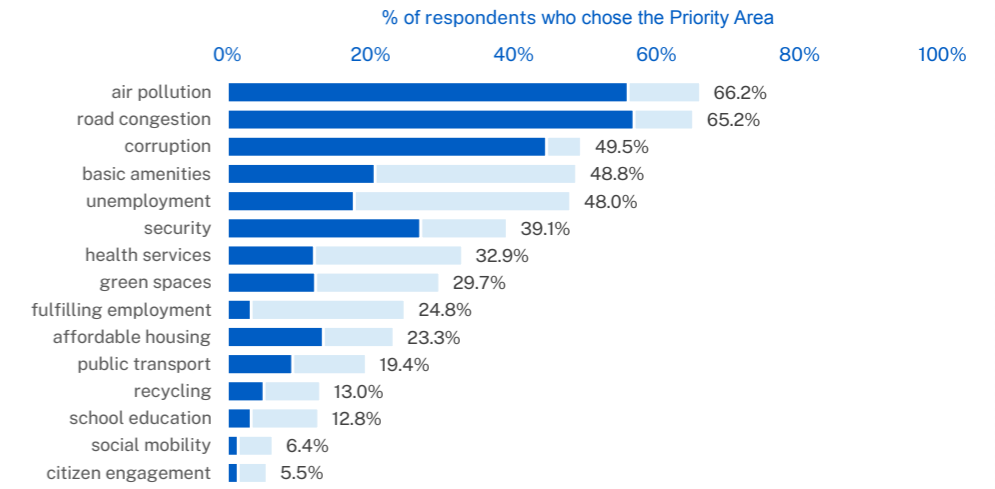
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.707	0.718	0.709	0.705	-0.004
Life expectancy at birth	71.5	71.7	68.8	67.6	-1.2
Expected years of schooling	12.9	13.6	13.8	13.8	+0.0
Mean years of schooling	8.0	8.2	8.6	8.6	+0.0
GNI per capita (PPP \$)	11,256	11,459	11,142	11,466	+325

## PRIORITY AREAS

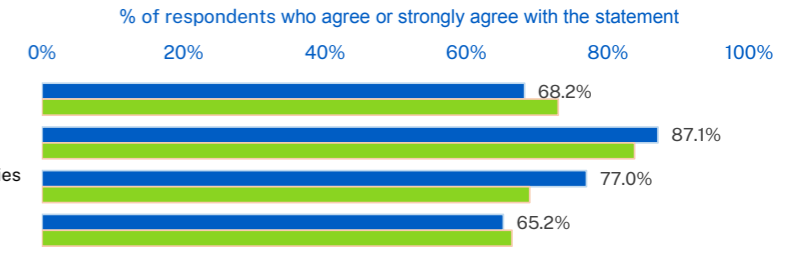
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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

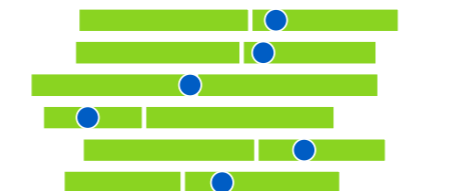
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

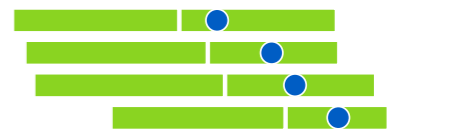
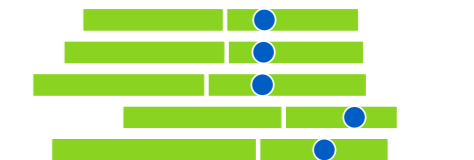
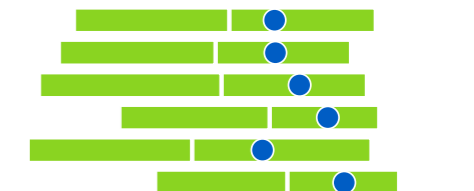
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Jeddah

SMART CITY RANKING

56

Out of 141

not out of 118 in 2021

SMART CITY RATING

B

not in 2021

FACTOR RATINGS

B

STRUCTURES

B

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,780,740  
HDI 0.871

(UN World Urbanisation Prospects 2022 estimate)



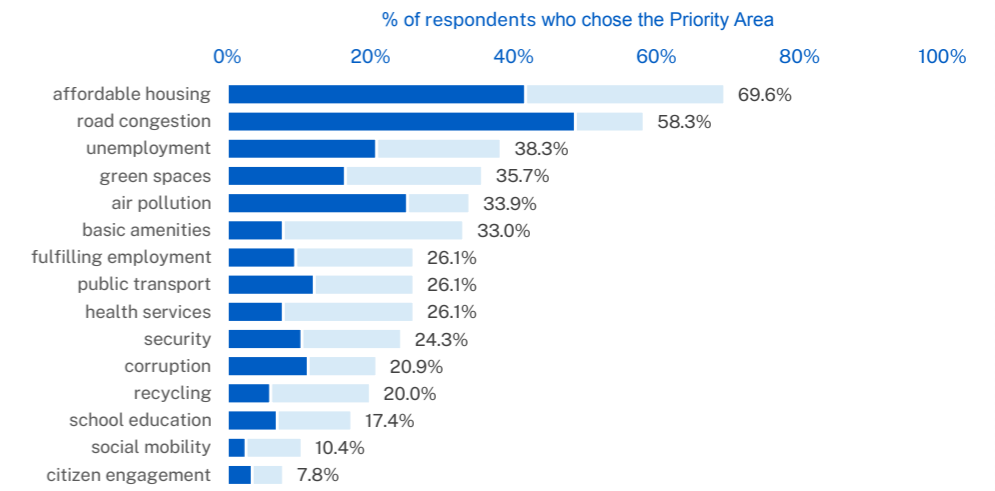
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.865	0.873	0.870	0.875	+0.005
Life expectancy at birth	77.2	77.3	76.2	76.9	+0.7
Expected years of schooling	15.7	16.0	16.1	16.1	+0.0
Mean years of schooling	10.6	8.3	8.3	8.3	+0.0
GNI per capita (PPP \$)	5,072	5,307	5,601	5,745	+143

## PRIORITY AREAS

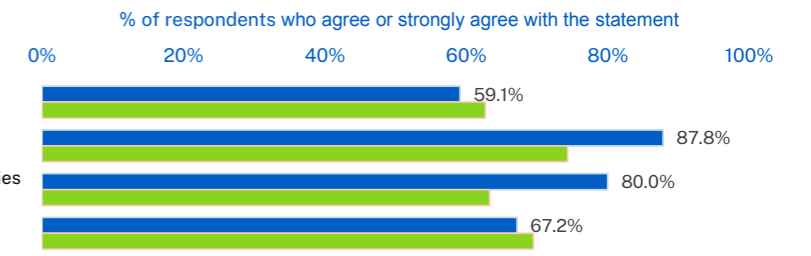
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

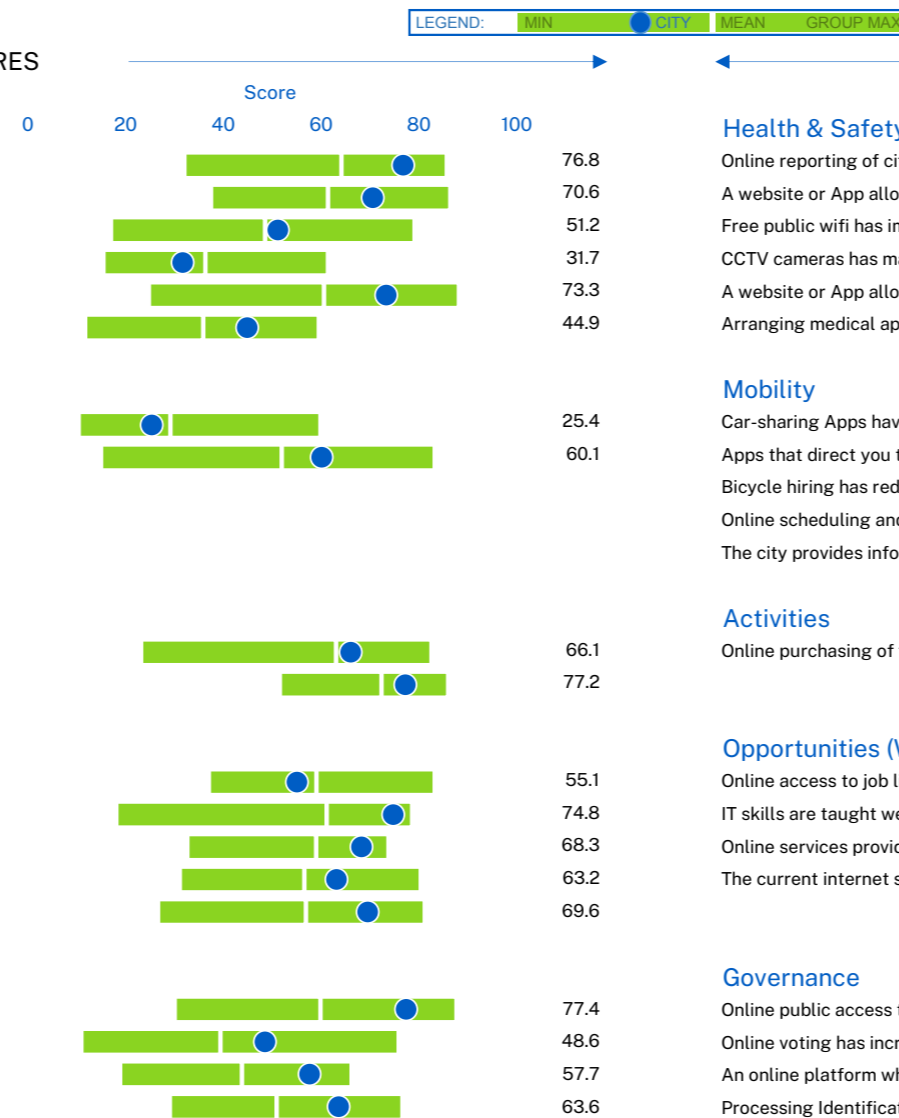
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

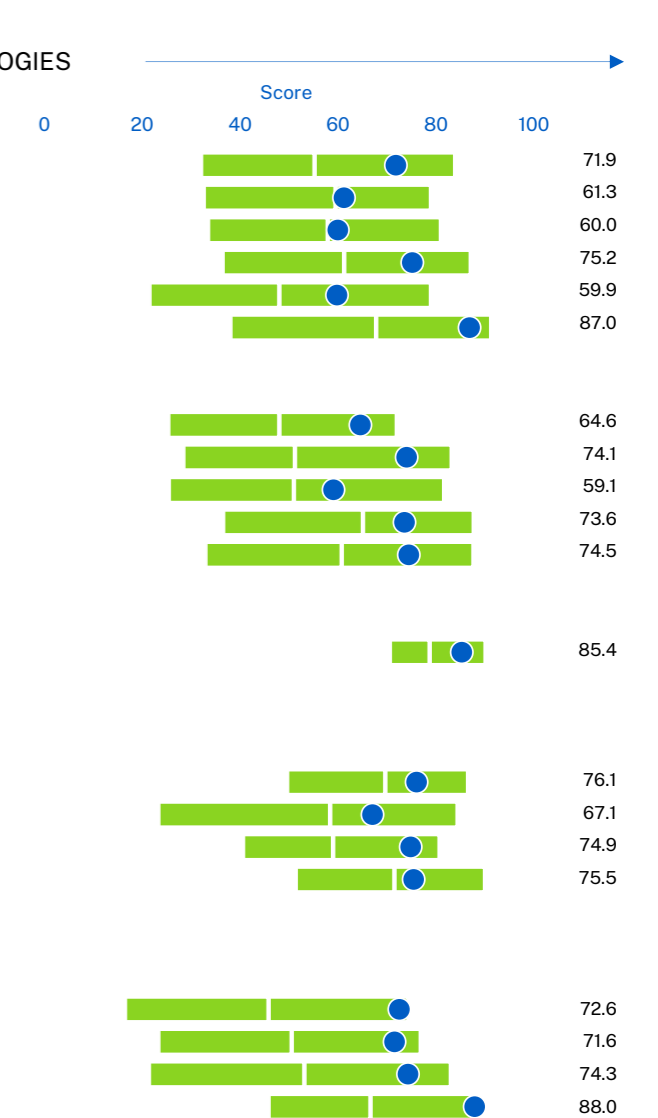
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





## SMART CITY RANKING

# 81

Out of 141



72 out of 118 in 2021

## SMART CITY RATING

# BB

B in 2021

## FACTOR RATINGS

# BBB

STRUCTURES

# CCC

TECHNOLOGIES

## GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,910,875  
HDI 0.921

(Eurostat)



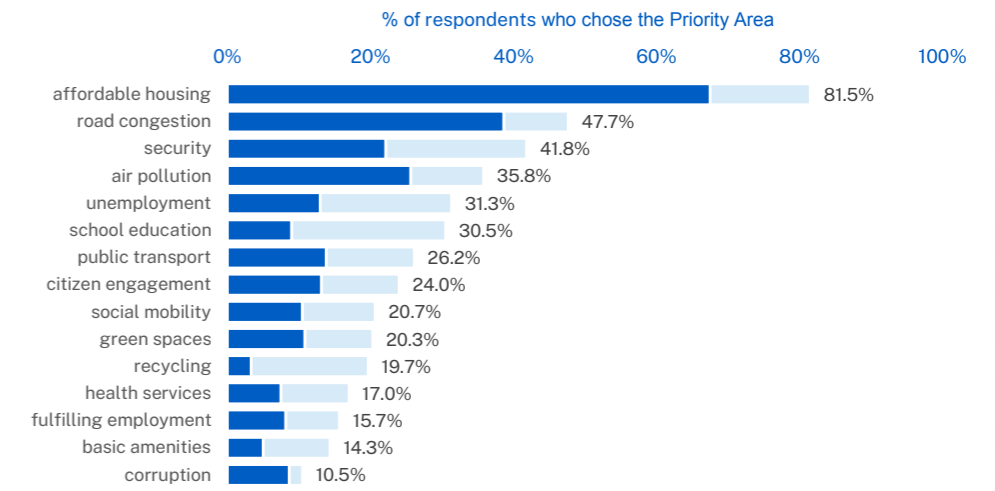
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	14.2	14.1	14.1	+0.0
GNI per capita (PPP \$)	46,946	55,314	53,078	54,534	+1,457

## PRIORITY AREAS

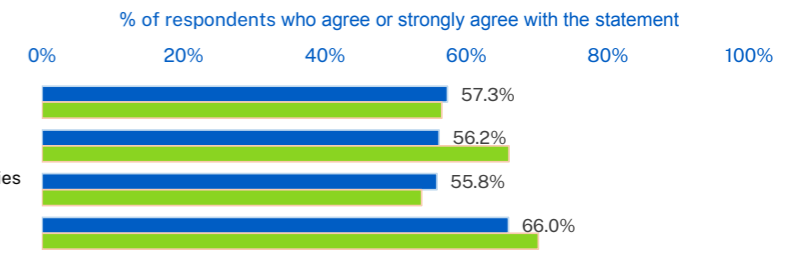
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

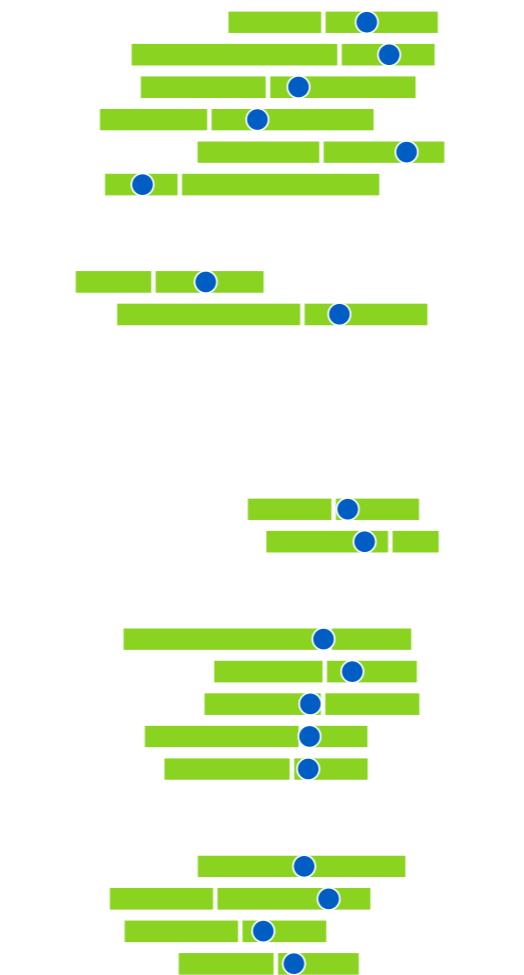
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

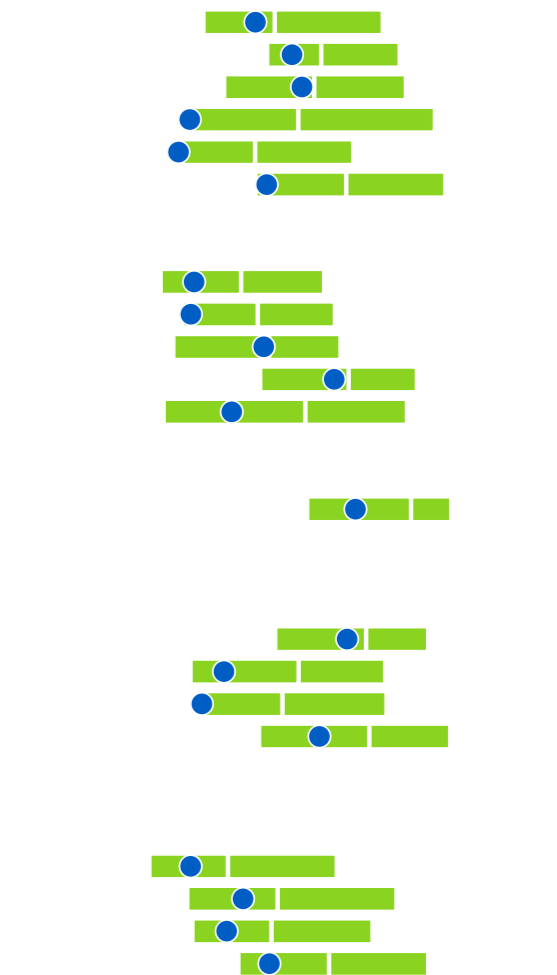
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Krakow

## SMART CITY RANKING

79

Out of 141



76 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

B

STRUCTURES

CCC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,372,763  
HDI 0.888

(Eurostat)



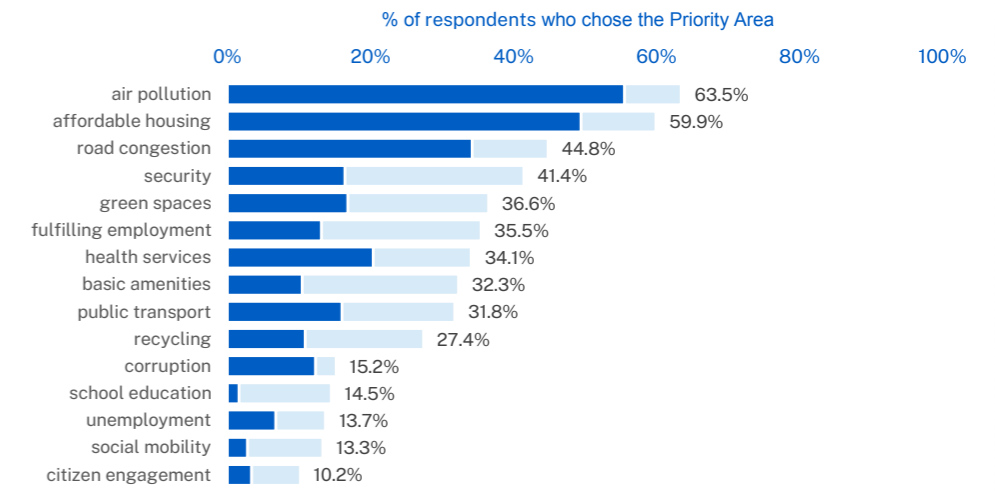
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.872	0.880	0.876	0.876	+0.000
Life expectancy at birth	78.5	78.7	76.9	76.5	-0.5
Expected years of schooling	16.4	16.3	16.0	16.0	+0.0
Mean years of schooling	12.3	12.5	13.2	13.2	+0.0
GNI per capita (PPP \$)	27,626	31,623	31,164	33,034	+1,869

## PRIORITY AREAS

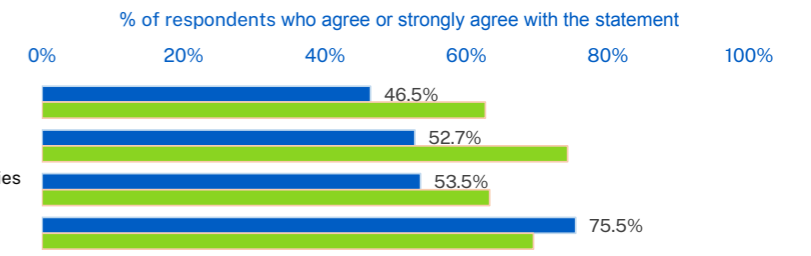
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

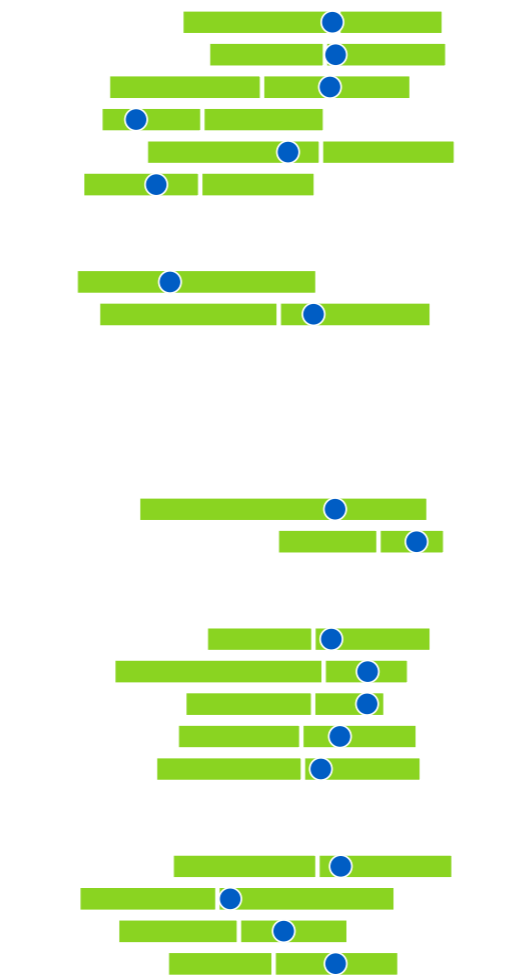
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
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### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
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- Online scheduling and ticket sales has made public transport easier to use
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### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

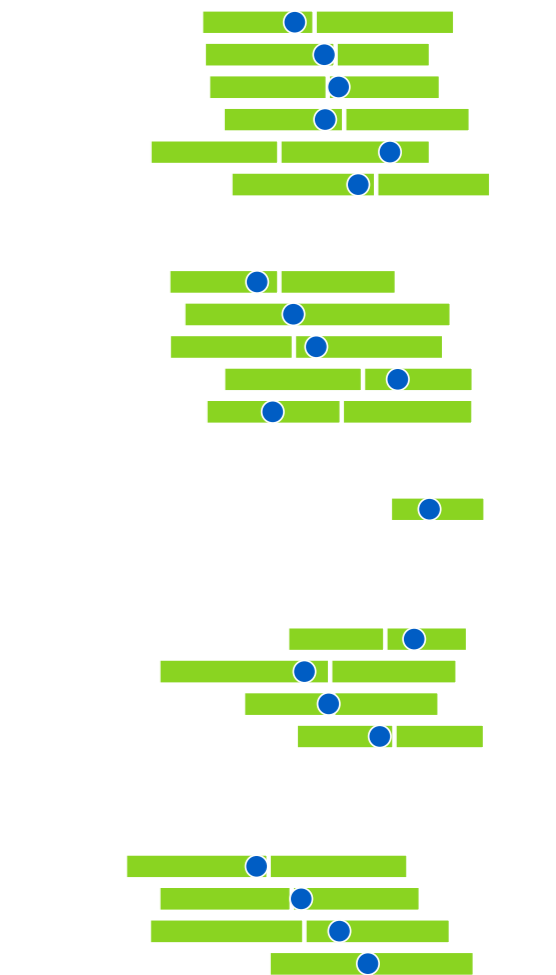
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
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### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Kuala Lumpur

## SMART CITY RANKING

89

Out of 141



80 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

B

STRUCTURES

CCC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,853,918  
HDI 0.858

(UN Data)

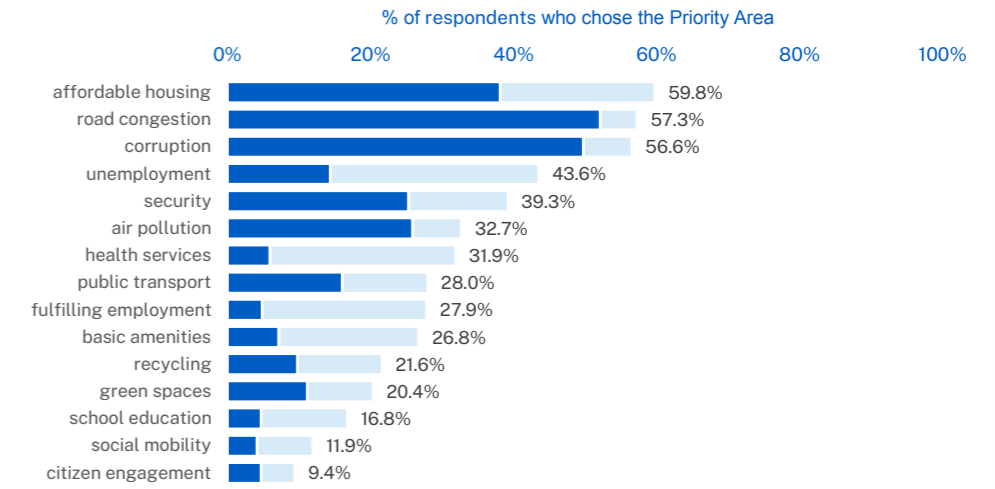


Country	2018	2019	2020	2021	1 yr change
HDI	0.804	0.810	0.806	0.803	-0.003
Life expectancy at birth	76.0	76.2	75.9	74.9	-1.1
Expected years of schooling	13.5	13.7	13.3	13.3	+0.0
Mean years of schooling	10.2	10.4	10.7	10.7	+0.0
GNI per capita (PPP \$)	27,227	27,534	25,940	26,658	+717

## PRIORITY AREAS

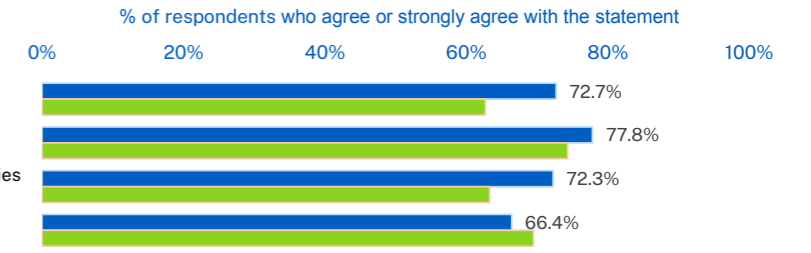
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 132

Out of 141



116 out of 118 in 2021

## SMART CITY RATING

# D

D in 2021

## FACTOR RATINGS

# D

STRUCTURES

# C

TECHNOLOGIES

GROUP

# 4

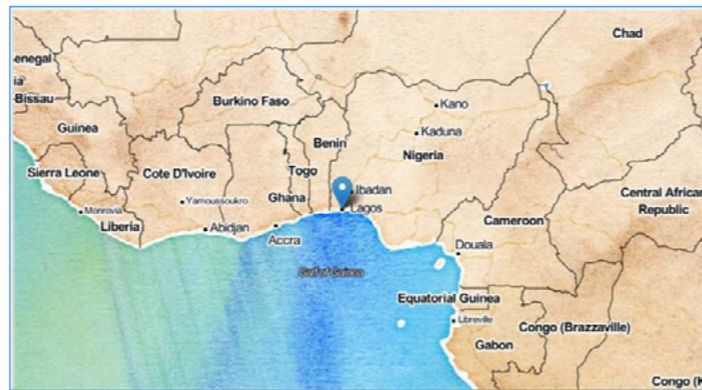
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 15,387,639  
HDI 0.681

(UN World Urbanisation Prospects 2022 estimate)

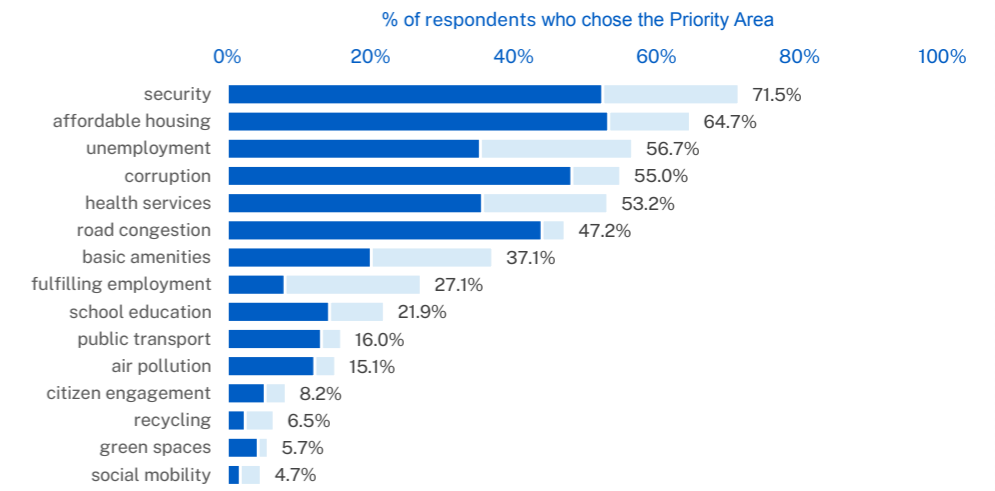


Country	2018	2019	2020	2021	1 yr change
HDI	0.534	0.539	0.535	0.535	+0.000
Life expectancy at birth	54.3	54.7	52.9	52.7	-0.2
Expected years of schooling	9.7	10.0	10.1	10.1	+0.0
Mean years of schooling	6.5	6.7	7.2	7.2	+0.0
GNI per capita (PPP \$)	5,086	4,910	4,740	4,790	+51

## PRIORITY AREAS

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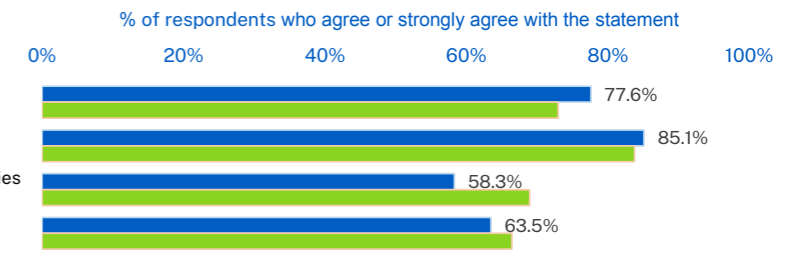
## ATTITUDES

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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

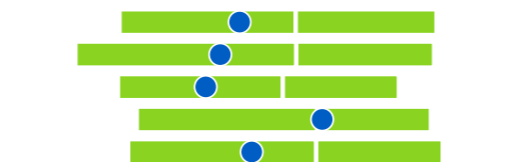
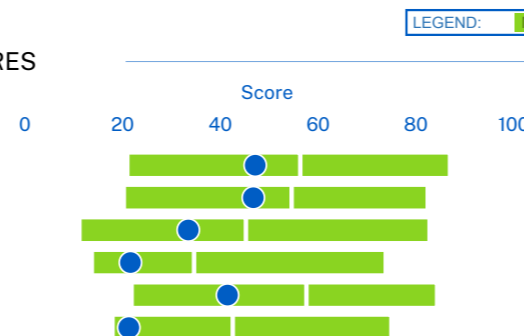
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

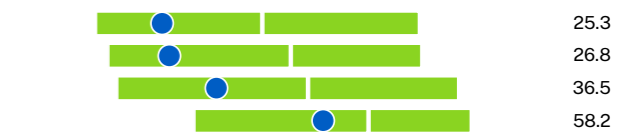
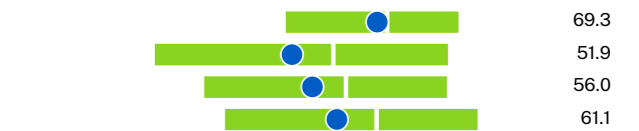
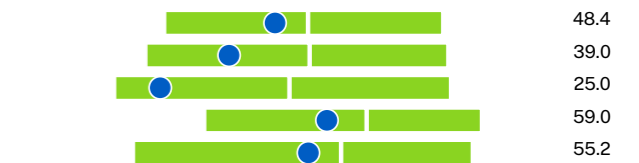
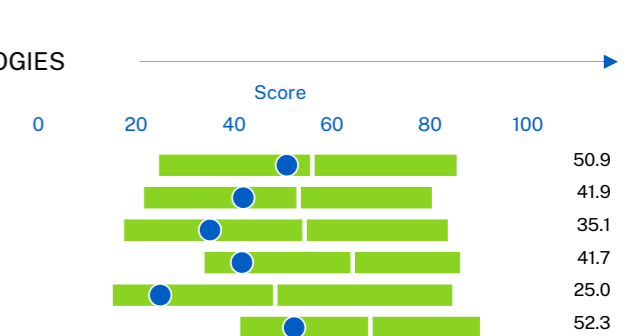
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Lausanne

## SMART CITY RANKING

5

Out of 141



4 out of 118 in 2021

## SMART CITY RATING

AA

AAA in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,669,608  
HDI 0.966

(Eurostat)

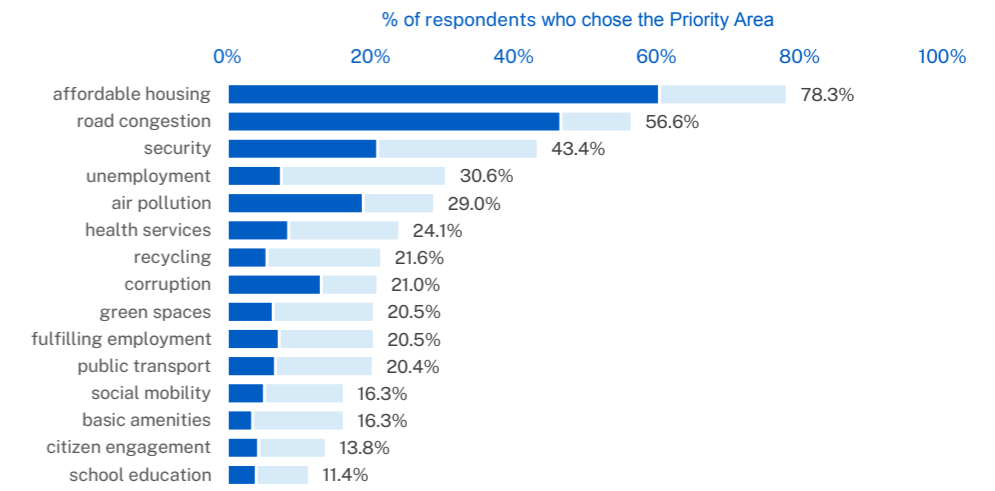


Country	2018	2019	2020	2021	1 yr change
HDI	0.946	0.955	0.956	0.962	+0.006
Life expectancy at birth	83.6	83.8	83.1	84.0	+0.9
Expected years of schooling	16.2	16.3	16.5	16.5	+0.0
Mean years of schooling	13.4	13.4	13.9	13.9	+0.0
GNI per capita (PPP \$)	59,375	69,394	65,011	66,933	+1,922

## PRIORITY AREAS

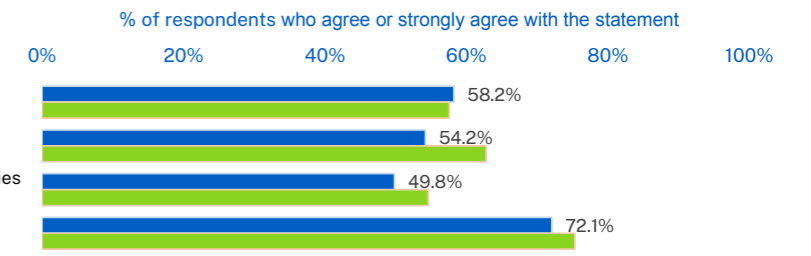
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [Green bar] GROUP MEAN [Blue bar] CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

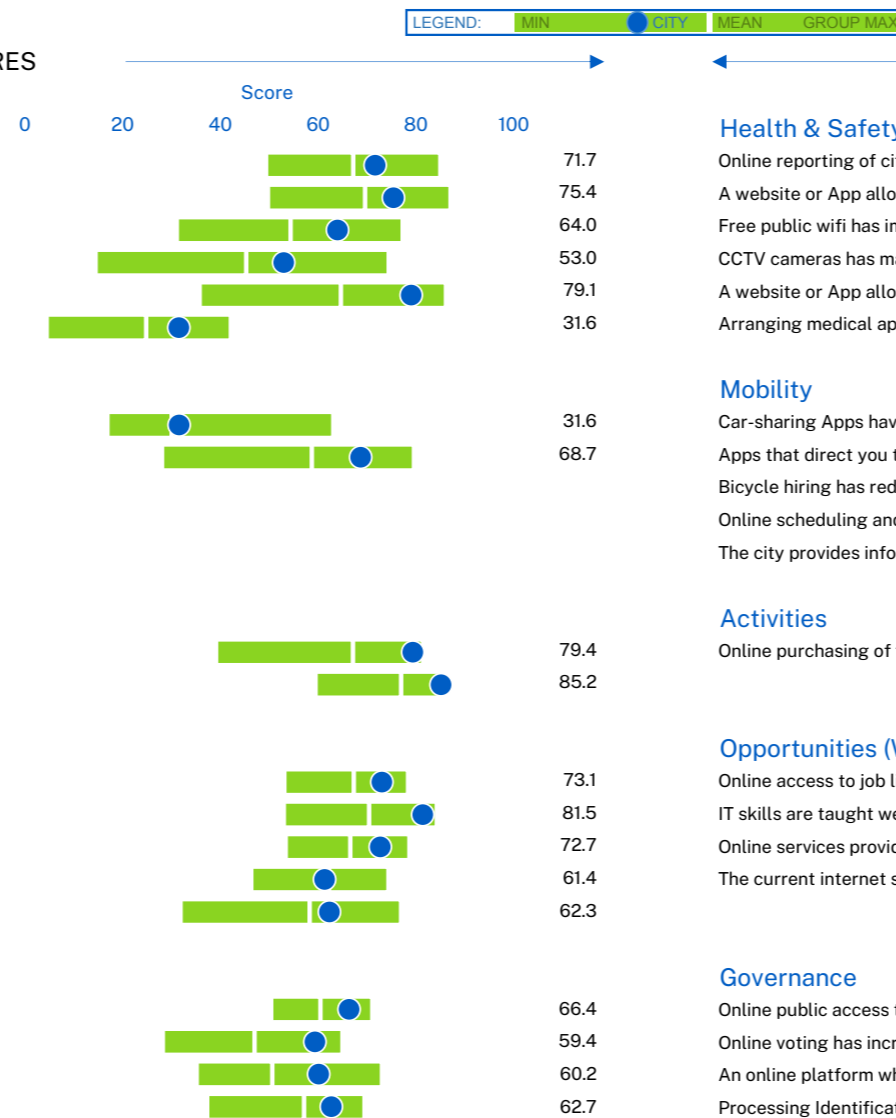
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
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## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
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### Mobility

- Car-sharing Apps have reduced congestion
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### Activities

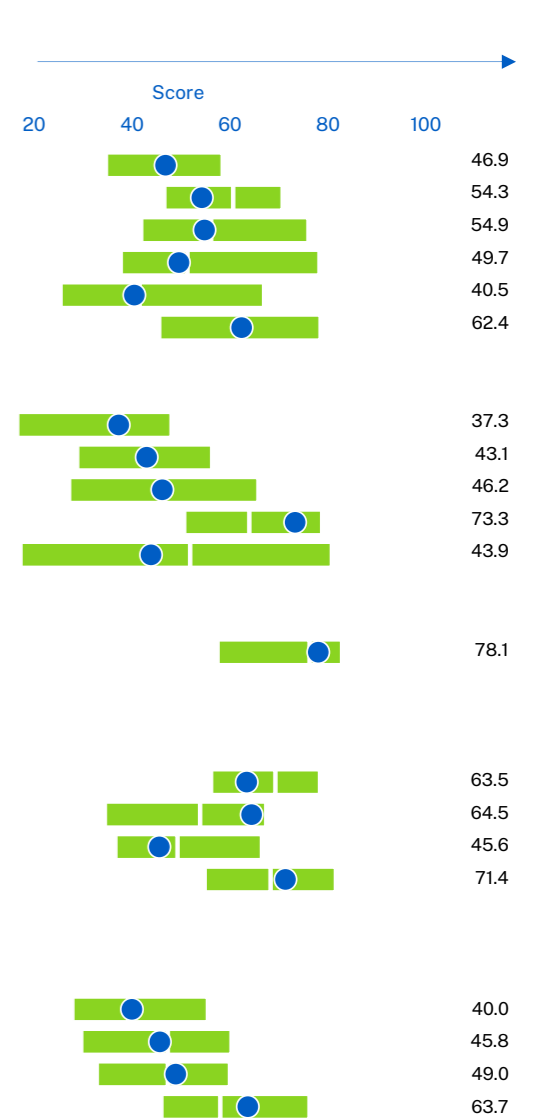
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- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 76

Out of 141



64 out of 118 in 2021

## SMART CITY RATING

# CCC

CCC in 2021

## FACTOR RATINGS

# CCC

STRUCTURES

# CC

TECHNOLOGIES

## GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,324,560  
HDI 0.908

(Eurostat)



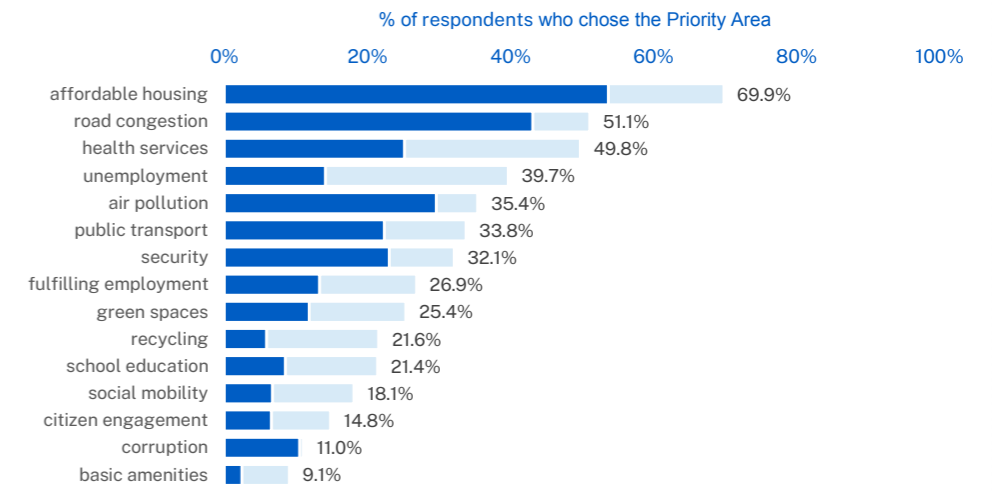
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

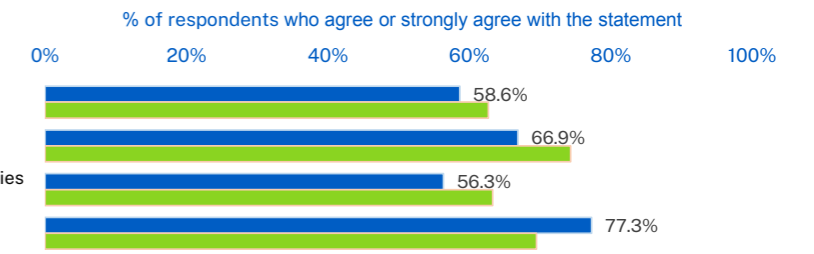
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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 84

Out of 141



82 out of 118 in 2021

## SMART CITY RATING

# CCC

CC in 2021

## FACTOR RATINGS

# CCC

STRUCTURES

# CCC

TECHNOLOGIES

## GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,607,879  
HDI 0.880

(Eurostat)

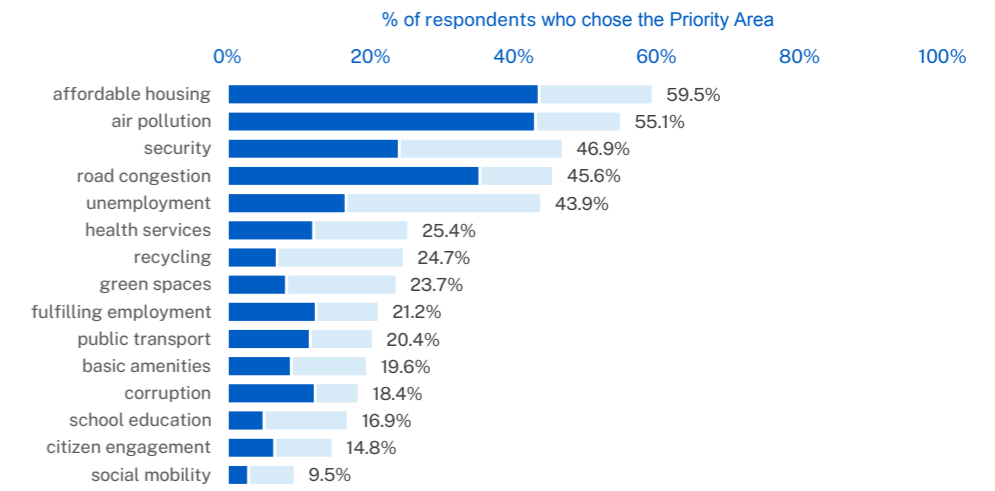


Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.901	0.898	0.903	+0.005
Life expectancy at birth	82.5	82.7	82.2	82.5	+0.3
Expected years of schooling	15.5	15.6	15.8	15.8	+0.0
Mean years of schooling	11.4	11.5	11.6	11.6	+0.0
GNI per capita (PPP \$)	40,511	47,173	43,048	45,937	+2,889

## PRIORITY AREAS

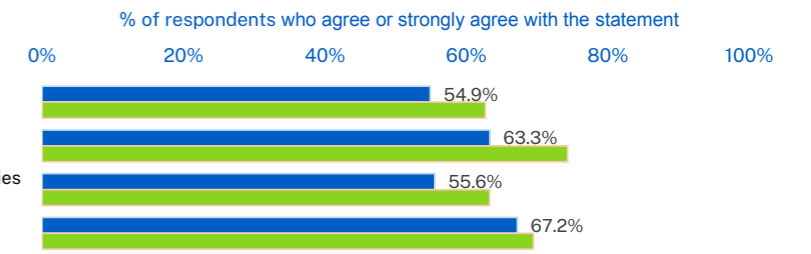
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 134

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# C

not in 2021

## FACTOR RATINGS

# C

STRUCTURES

# C

TECHNOLOGIES

GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,562,280  
HDI 0.820

(UN Data)



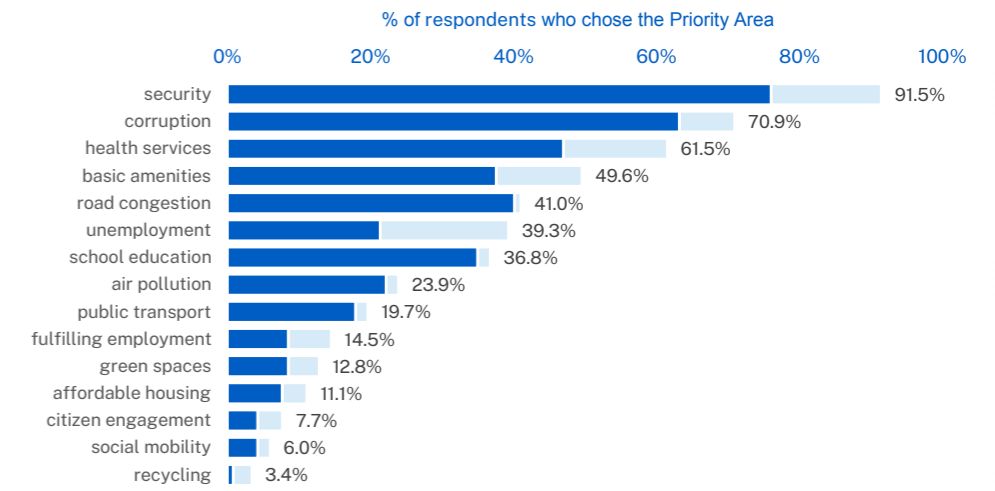
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.776	0.780	0.762	0.762	+0.000
Life expectancy at birth	76.0	76.2	73.7	72.4	-1.3
Expected years of schooling	15.2	15.4	15.4	15.4	+0.0
Mean years of schooling	9.8	9.9	9.9	9.9	+0.0
GNI per capita (PPP \$)	12,143	12,304	10,917	12,246	+1,329

## PRIORITY AREAS

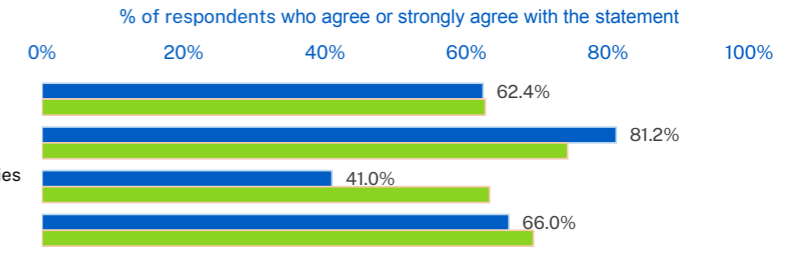
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

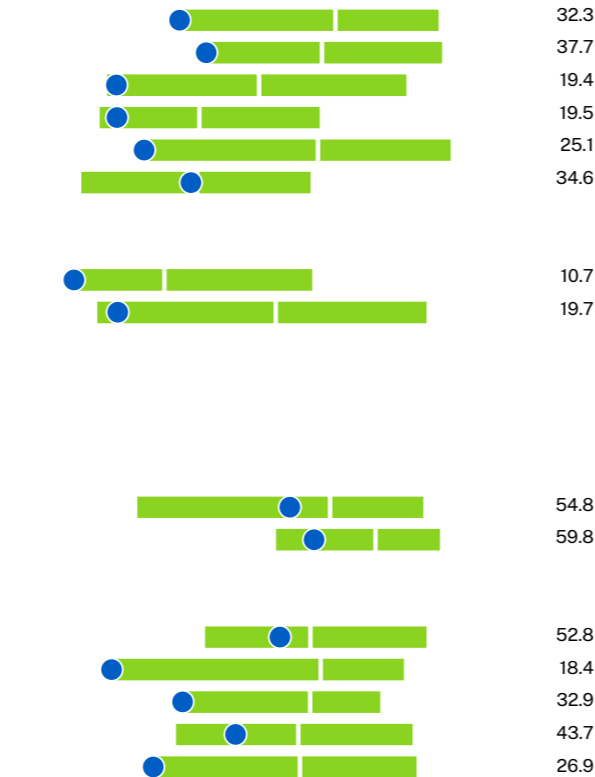
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

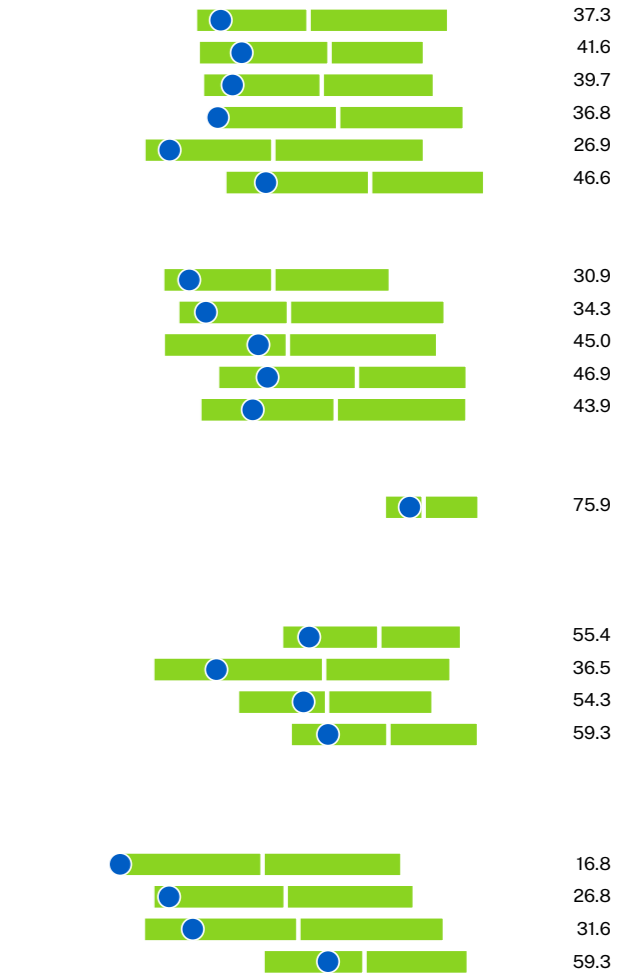
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





# Lisbon

## SMART CITY RANKING

99

Out of 141



81 out of 118 in 2021

## SMART CITY RATING

CC

CC in 2021

## FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,869,033  
HDI 0.900

(Eurostat)



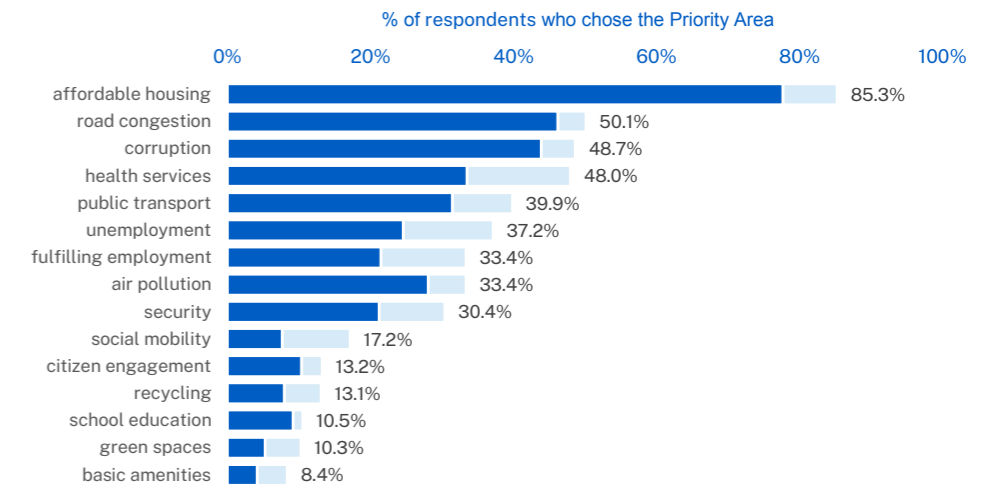
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.850	0.864	0.863	0.866	+0.003
Life expectancy at birth	81.9	82.1	81.1	81.0	-0.0
Expected years of schooling	16.3	16.5	16.9	16.9	+0.0
Mean years of schooling	9.2	9.3	9.6	9.6	+0.0
GNI per capita (PPP \$)	27,935	33,967	31,637	33,155	+1,518

## PRIORITY AREAS

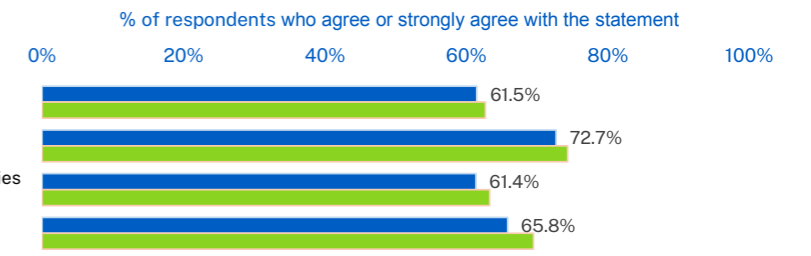
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

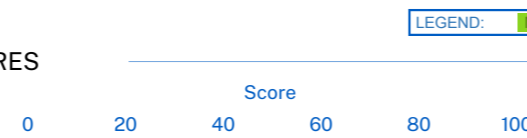
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



62.3  
61.9  
51.6  
32.8  
50.1  
12.0  
17.7  
37.8  
65.1  
78.5  
42.2  
52.9  
49.0  
41.1  
51.7  
49.0  
19.3  
31.7  
33.9

## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

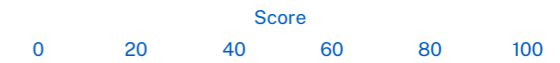
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



46.5  
56.6  
55.5  
54.6  
42.4  
60.3  
36.3  
40.6  
46.9  
57.9  
47.5  
83.3  
75.6  
57.7  
54.8  
71.1  
30.2  
43.0  
48.6  
70.7

# Ljubljana

SMART CITY RANKING

47

Out of 141

not out of 118 in 2021

SMART CITY RATING

BBB

not in 2021

FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 555,948  
HDI 0.953

(Eurostat)

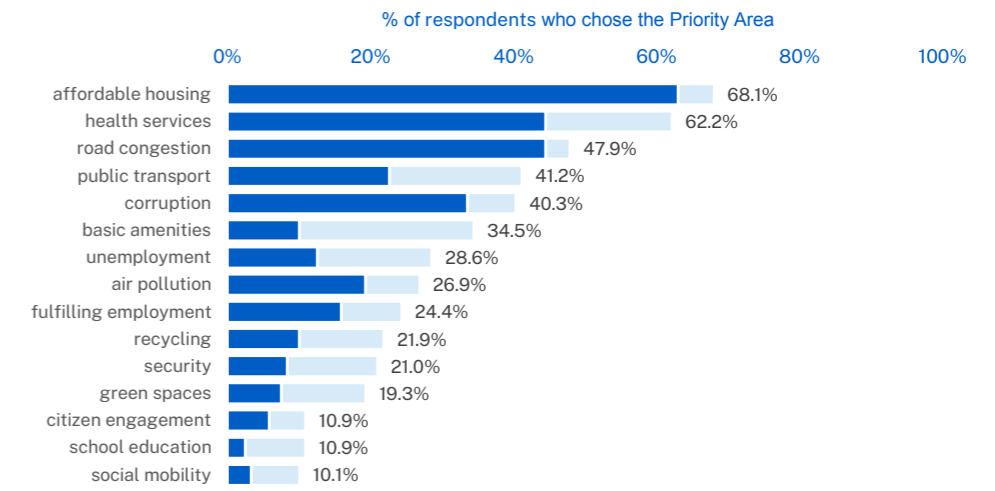


Country	2018	2019	2020	2021	1 yr change
HDI	0.917	0.921	0.913	0.918	+0.005
Life expectancy at birth	81.4	81.6	80.4	80.7	+0.3
Expected years of schooling	17.6	17.7	17.7	17.7	+0.0
Mean years of schooling	12.8	12.8	12.8	12.8	+0.0
GNI per capita (PPP \$)	37,411	38,440	36,993	39,746	+2,753

## PRIORITY AREAS

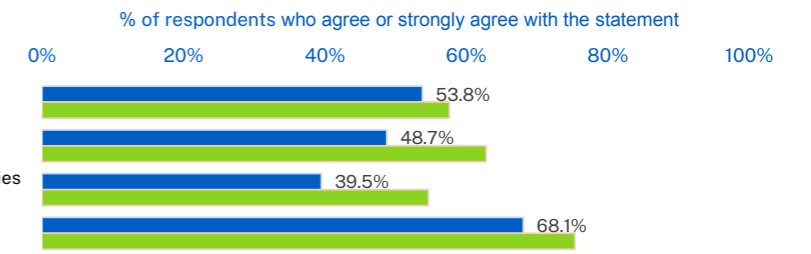
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

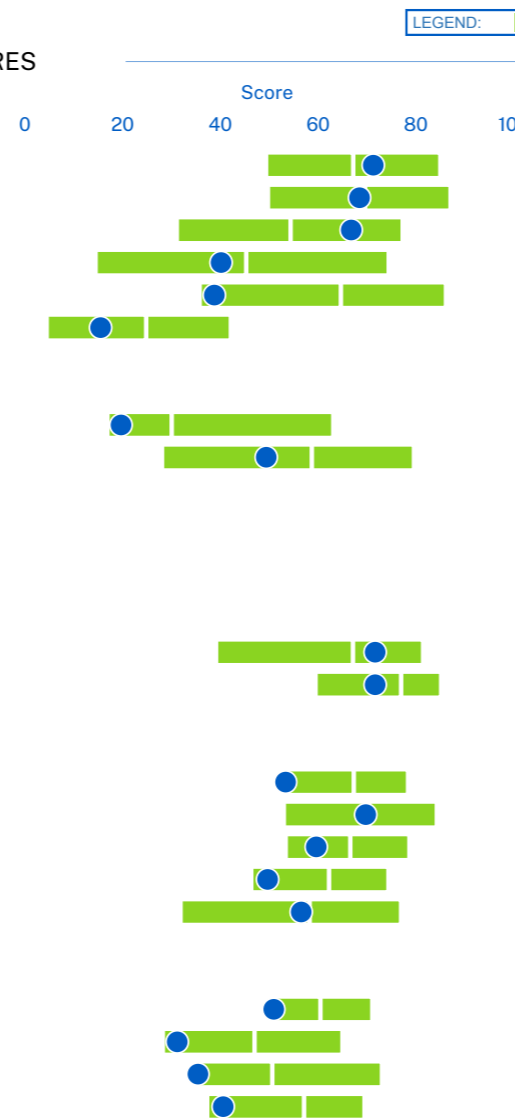
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

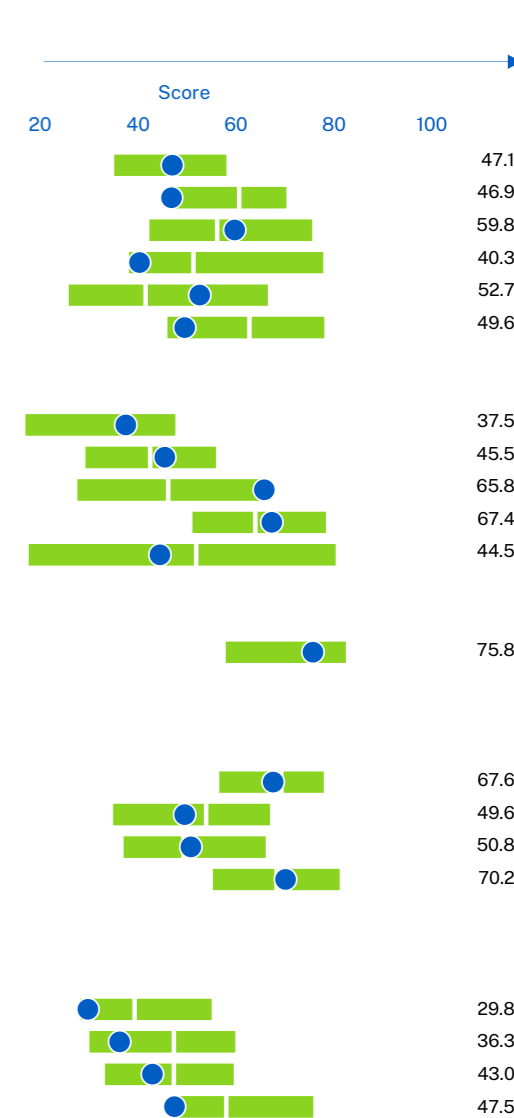
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# London

SMART CITY RANKING

6

Out of 141



3 out of 118 in 2021

SMART CITY RATING

A

A in 2021

FACTOR RATINGS

BBB

STRUCTURES

AA

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 8,982,256  
HDI 0.973

(Eurostat)



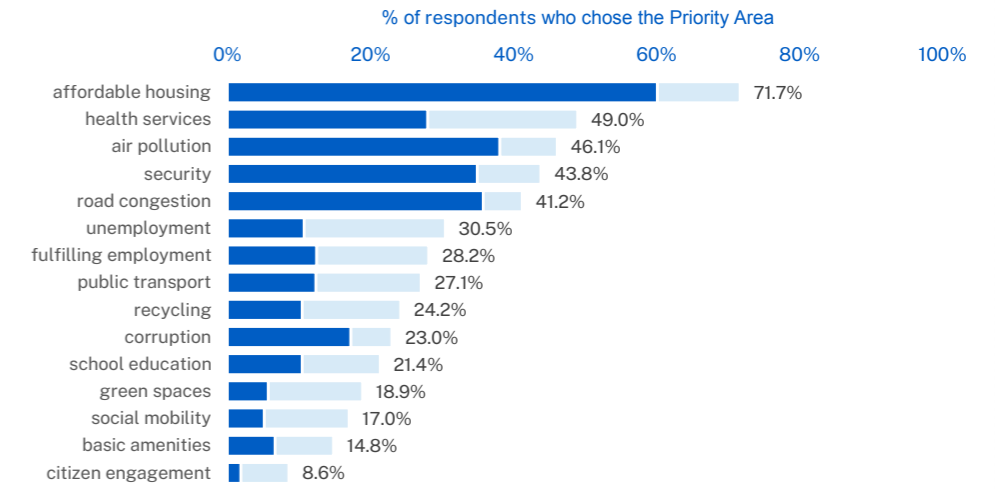
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

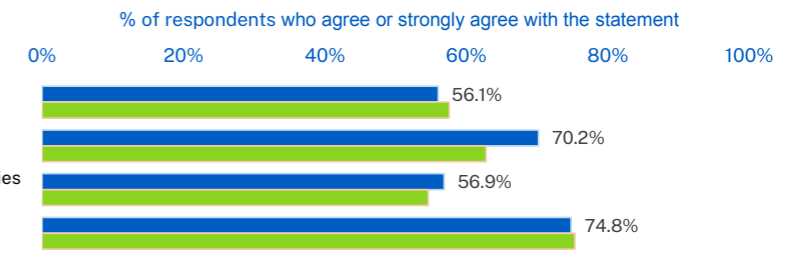
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
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 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

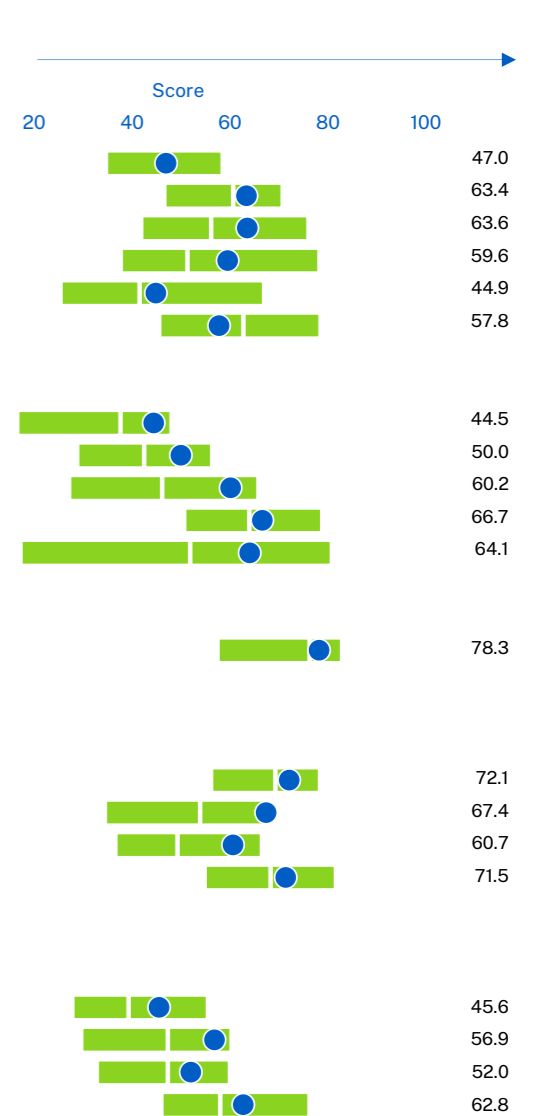
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Los Angeles

SMART CITY RANKING

50

Out of 141



30 out of 118 in 2021

SMART CITY RATING

BB

BB in 2021

FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

GROUP

2

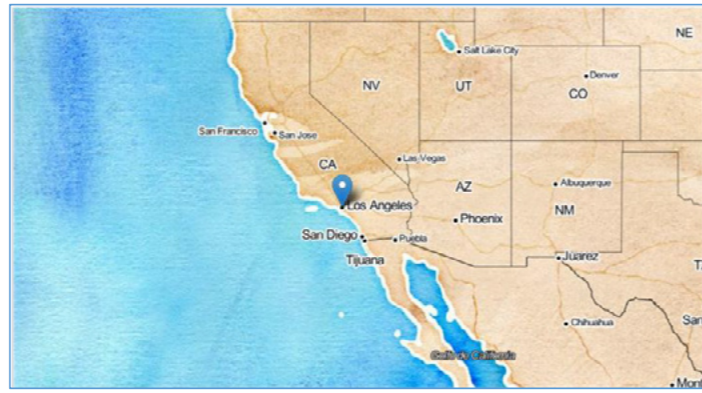
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,898,747  
HDI 0.931

(UN Data)

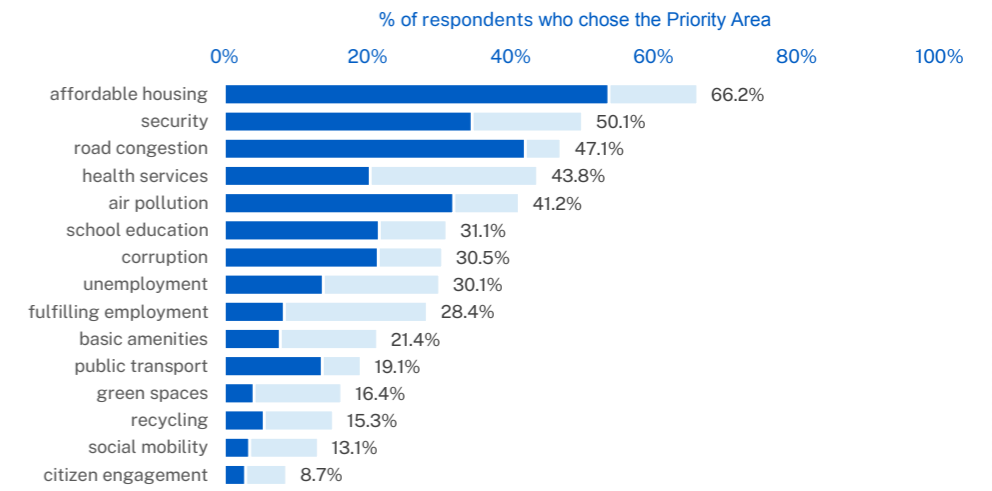


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

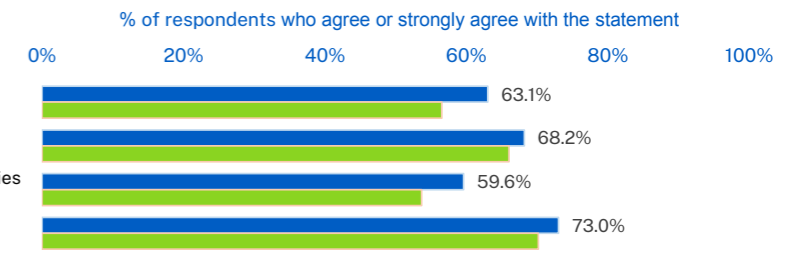
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

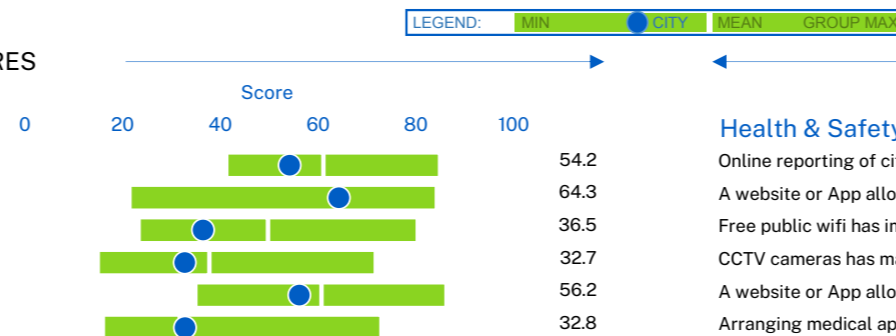
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

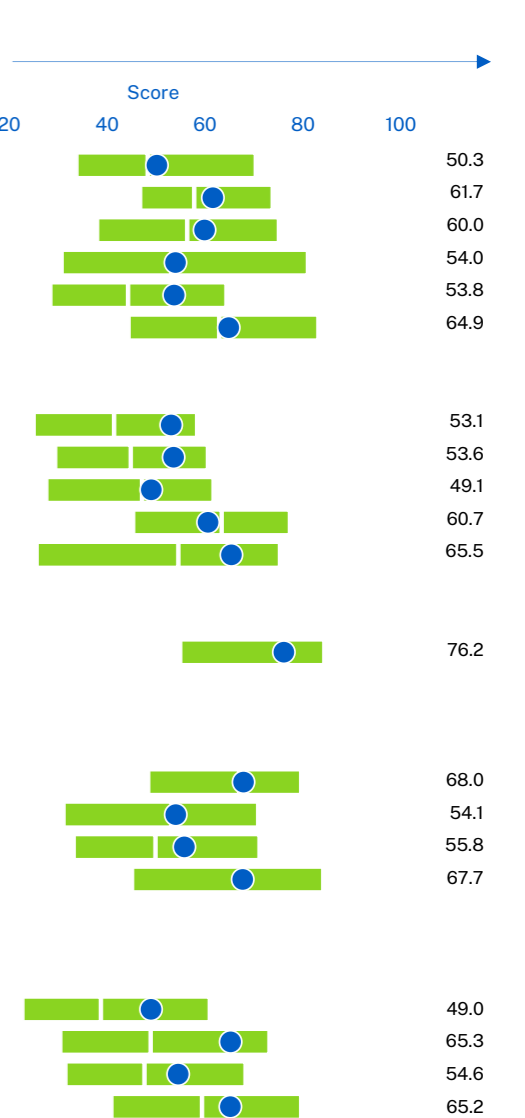
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Luxembourg

## SMART CITY RANKING

45

Out of 141

not out of 118 in 2021

## SMART CITY RATING

BB

not in 2021

## FACTOR RATINGS

BBB

STRUCTURES

B

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 634,730  
HDI 0.930

(Eurostat)



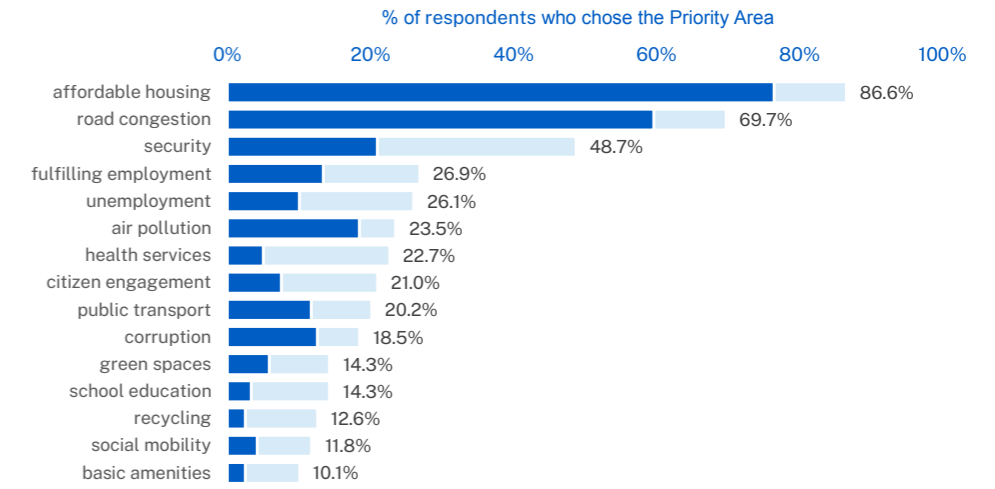
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.922	0.927	0.924	0.930	+0.006
Life expectancy at birth	81.8	82.1	81.4	82.6	+1.2
Expected years of schooling	14.3	14.4	14.4	14.4	+0.0
Mean years of schooling	12.8	13.0	13.0	13.0	+0.0
GNI per capita (PPP \$)	81,399	76,019	80,286	84,649	+4,364

## PRIORITY AREAS

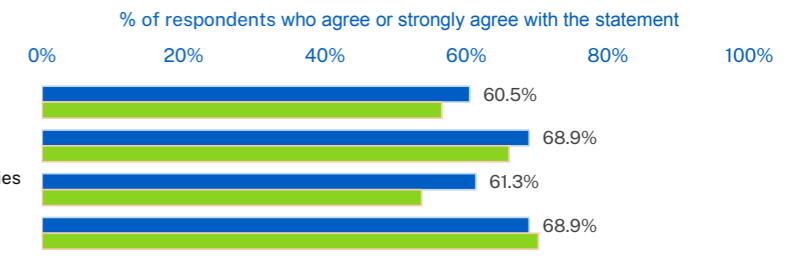
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

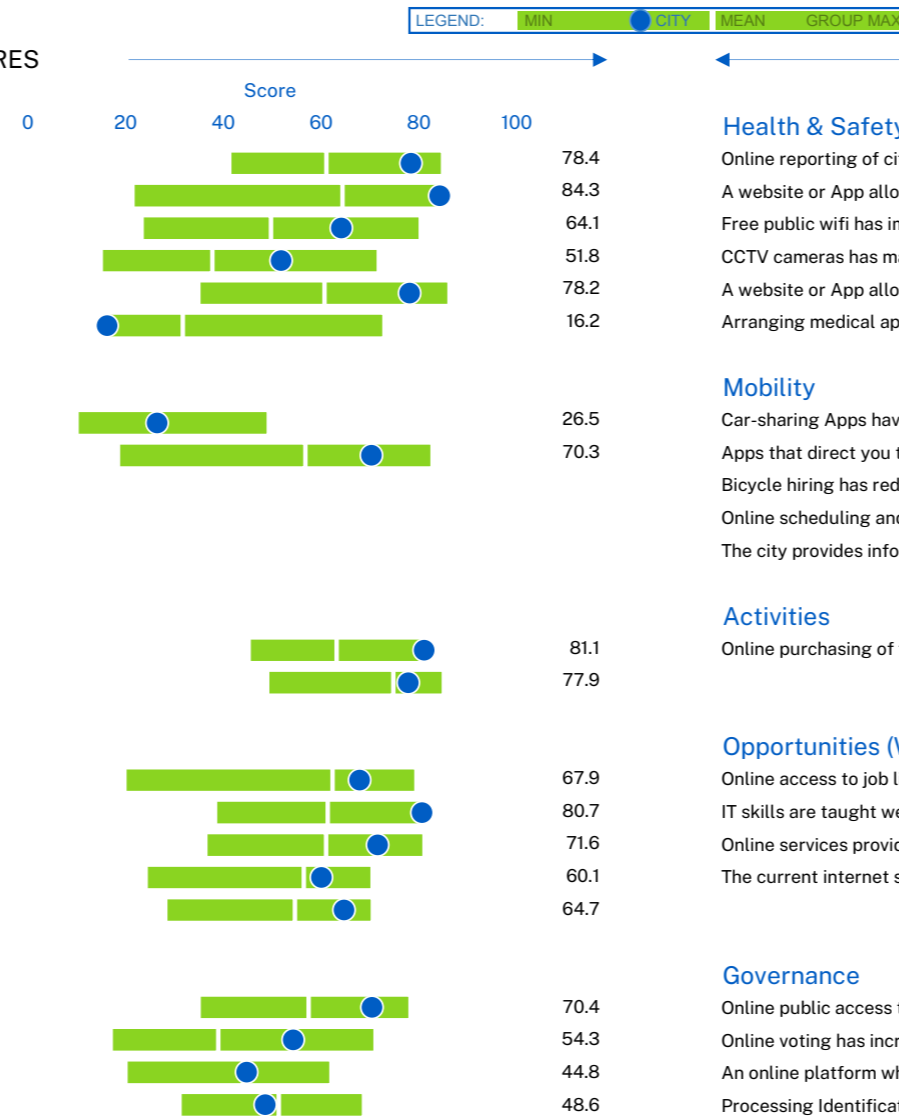
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

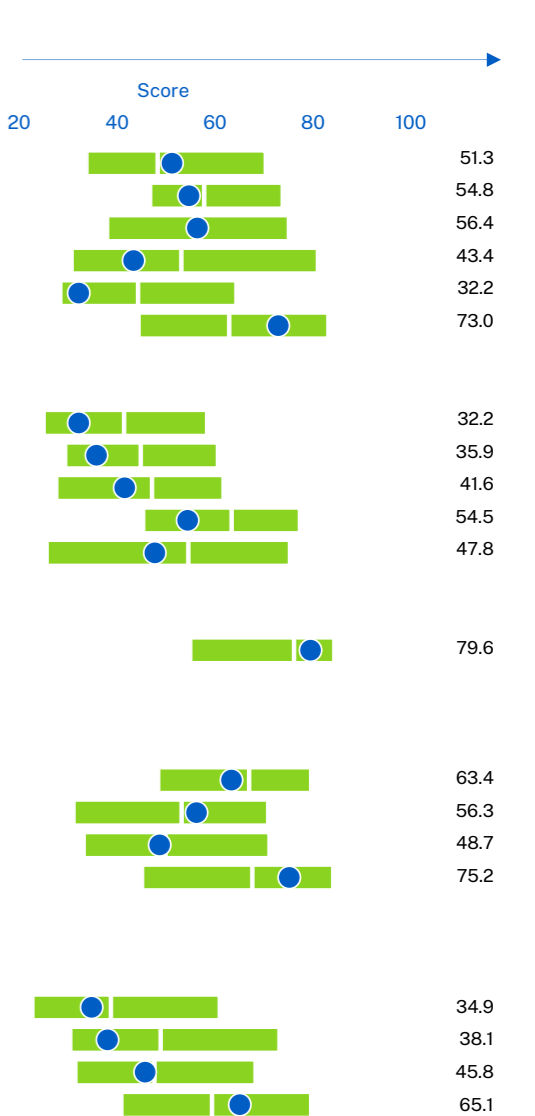
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 64

Out of 141



62 out of 118 in 2021

## SMART CITY RATING

# BB

CCC in 2021

## FACTOR RATINGS

# BB

STRUCTURES

# BB

TECHNOLOGIES

## GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 6,740,730  
HDI 0.914

(Eurostat)

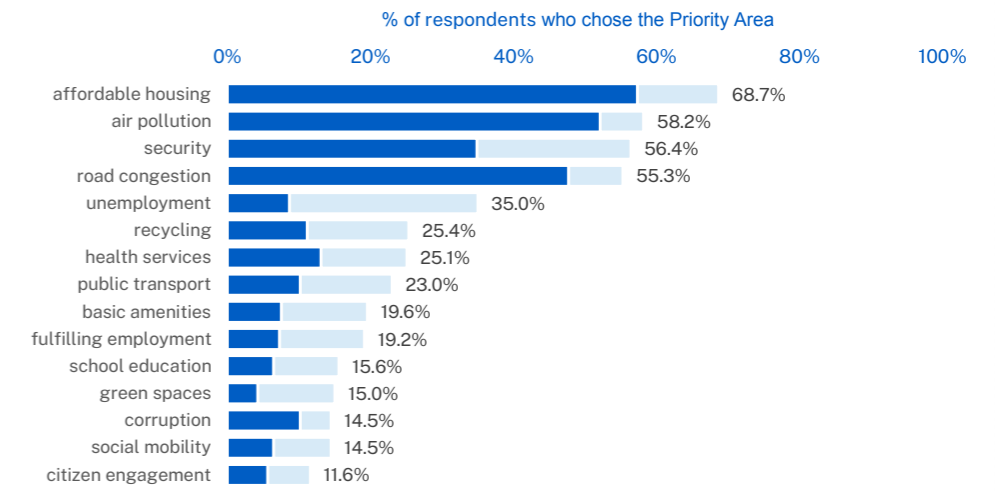


Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.901	0.898	0.903	+0.005
Life expectancy at birth	82.5	82.7	82.2	82.5	+0.3
Expected years of schooling	15.5	15.6	15.8	15.8	+0.0
Mean years of schooling	11.4	11.5	11.6	11.6	+0.0
GNI per capita (PPP \$)	40,511	47,173	43,048	45,937	+2,889

## PRIORITY AREAS

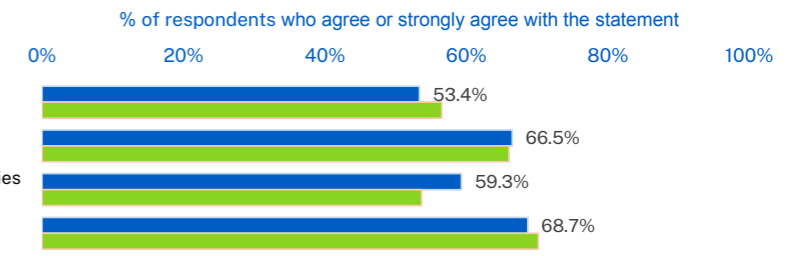
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
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## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

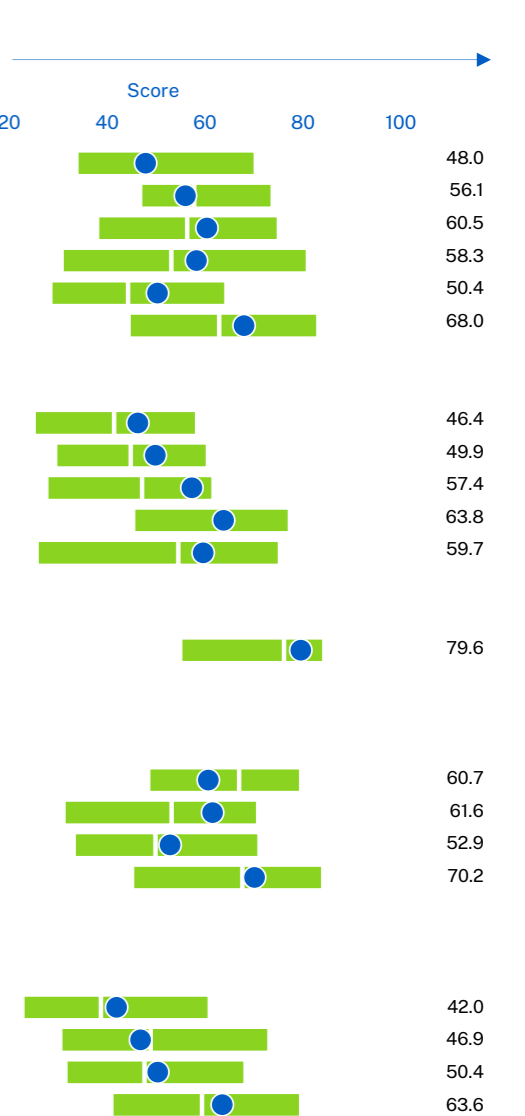
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Madrid

## SMART CITY RANKING

37

Out of 141

37 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 6,755,828  
HDI 0.940

(Eurostat)



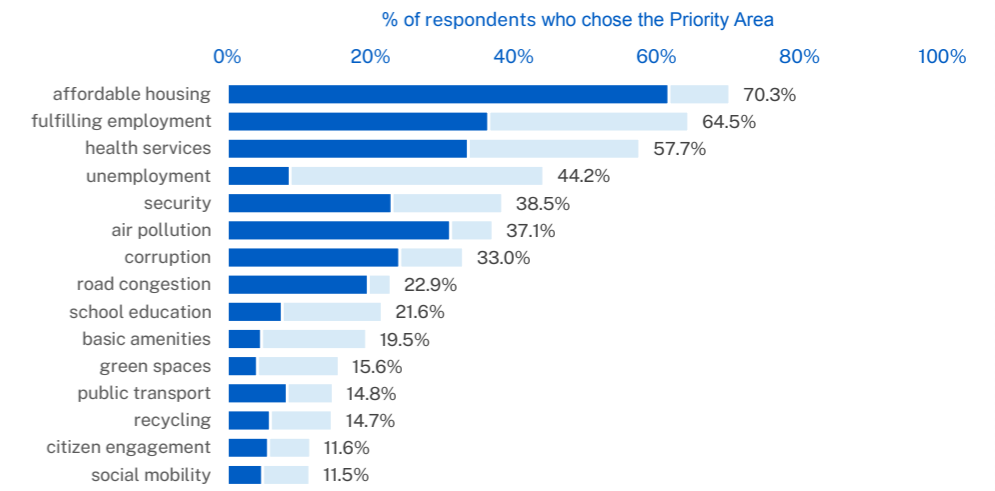
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.893	0.904	0.899	0.905	+0.006
Life expectancy at birth	83.4	83.6	82.3	83.0	+0.7
Expected years of schooling	17.9	17.6	17.9	17.9	+0.0
Mean years of schooling	9.8	10.3	10.6	10.6	+0.0
GNI per capita (PPP \$)	35,041	40,975	36,516	38,354	+1,838

## PRIORITY AREAS

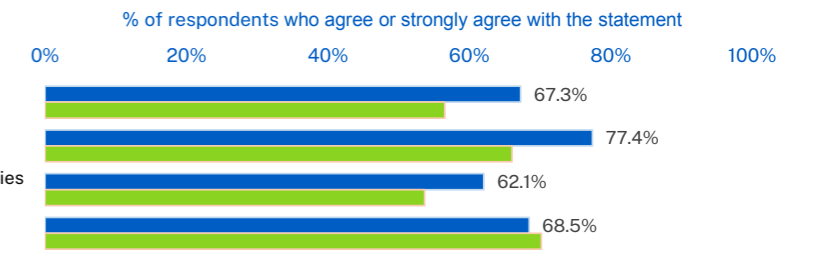
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
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- Bicycle hiring has reduced congestion
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### Activities

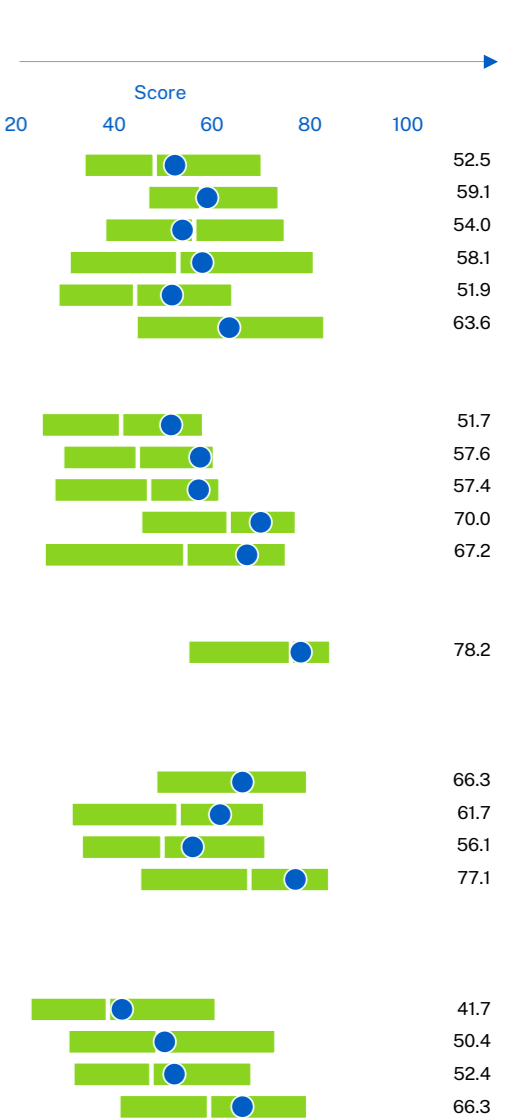
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Makassar

SMART CITY RANKING

114

Out of 141



102 out of 118 in 2021

SMART CITY RATING

CC

C in 2021

FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,642,129  
HDI 0.699

(UN World Urbanisation Prospects 2022 estimate)



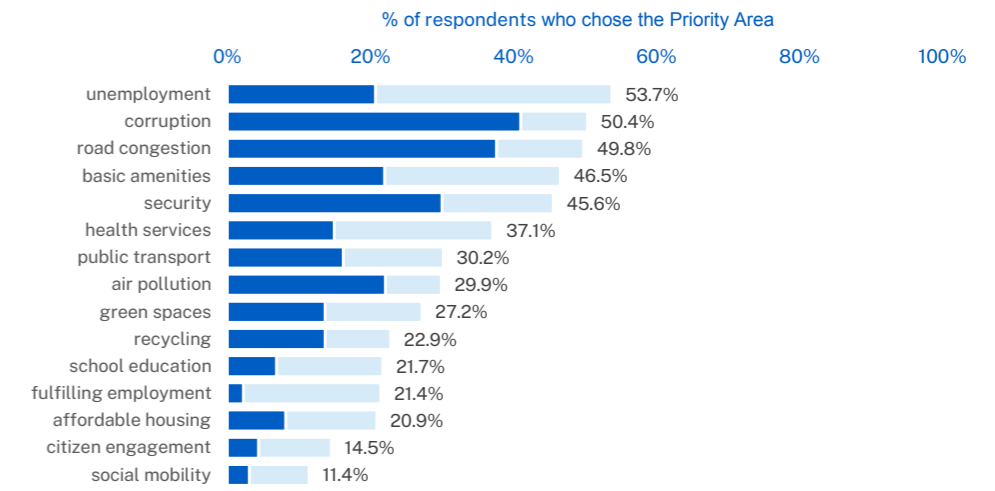
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.707	0.718	0.709	0.705	-0.004
Life expectancy at birth	71.5	71.7	68.8	67.6	-1.2
Expected years of schooling	12.9	13.6	13.8	13.8	+0.0
Mean years of schooling	8.0	8.2	8.6	8.6	+0.0
GNI per capita (PPP \$)	11,256	11,459	11,142	11,466	+325

## PRIORITY AREAS

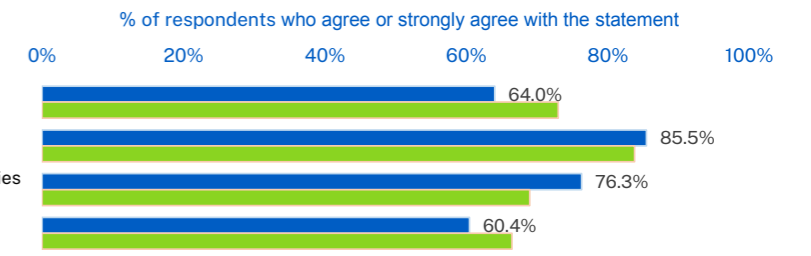
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

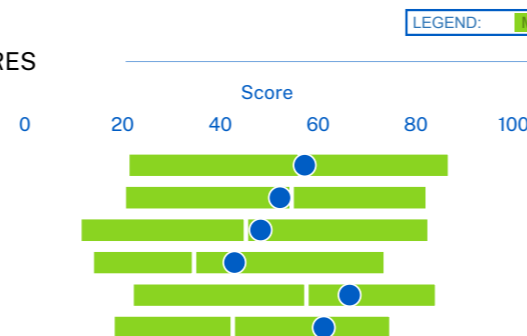
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

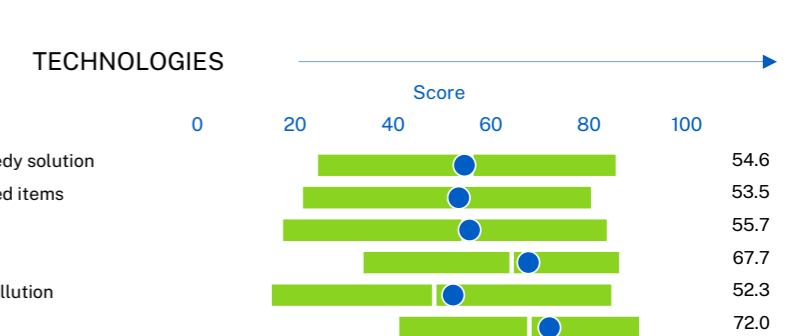
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





# Manchester

## SMART CITY RANKING

73

Out of 141



58 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 553,230  
HDI 0.915

(Eurostat)

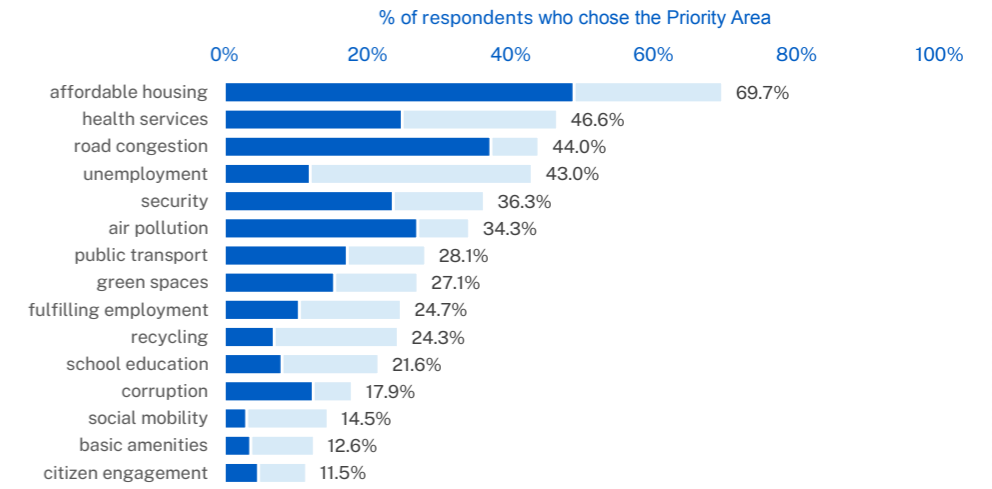


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

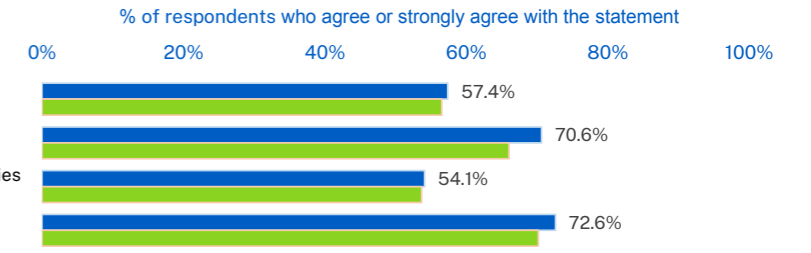
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

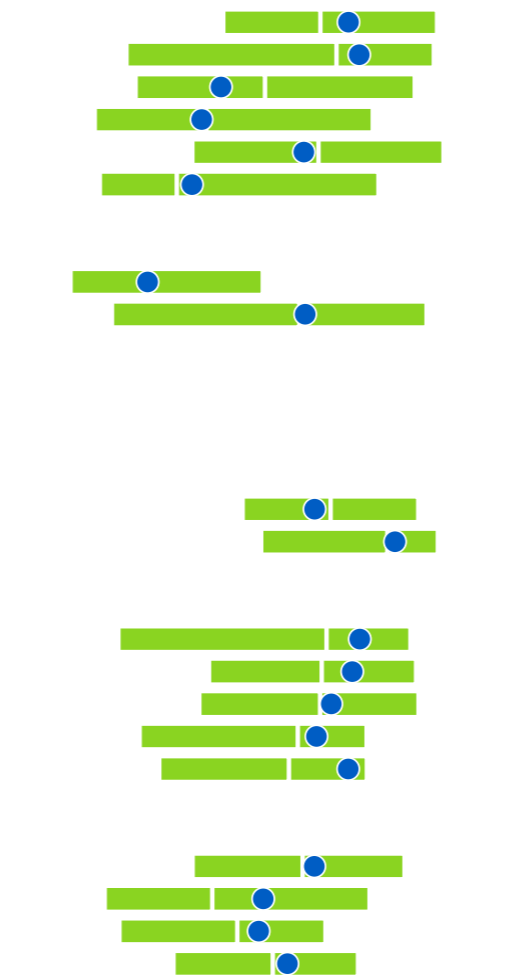
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
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- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

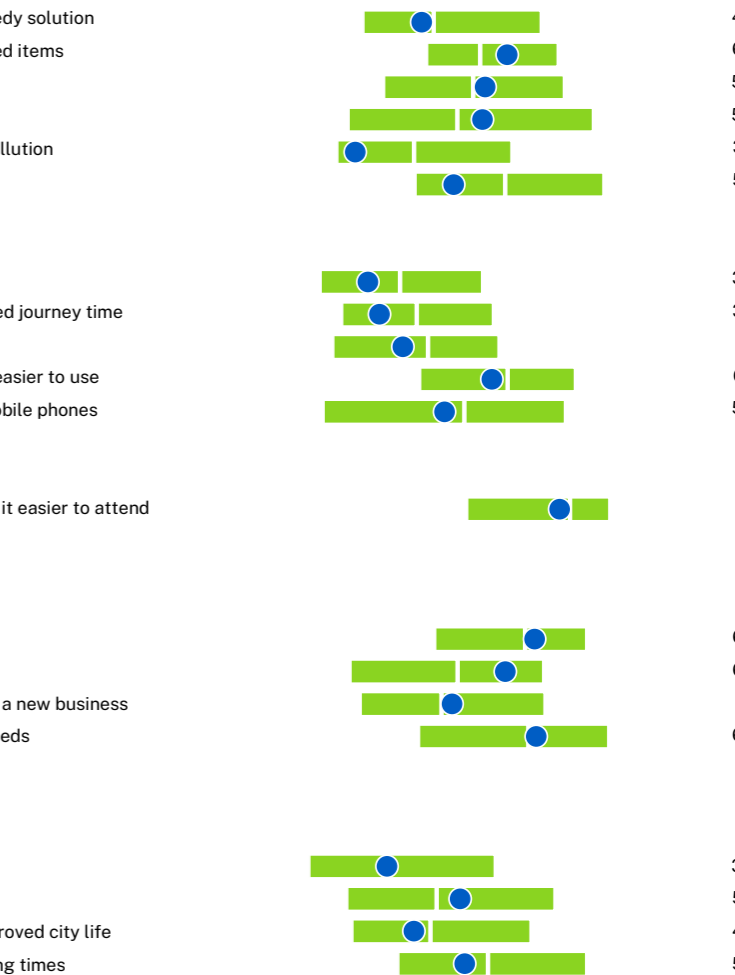
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



## SMART CITY RANKING

# 115

Out of 141



100 out of 118 in 2021

## SMART CITY RATING

# C

C in 2021

## FACTOR RATINGS

# C

STRUCTURES

# CC

TECHNOLOGIES

GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,846,513  
HDI 0.760

(UN Data)

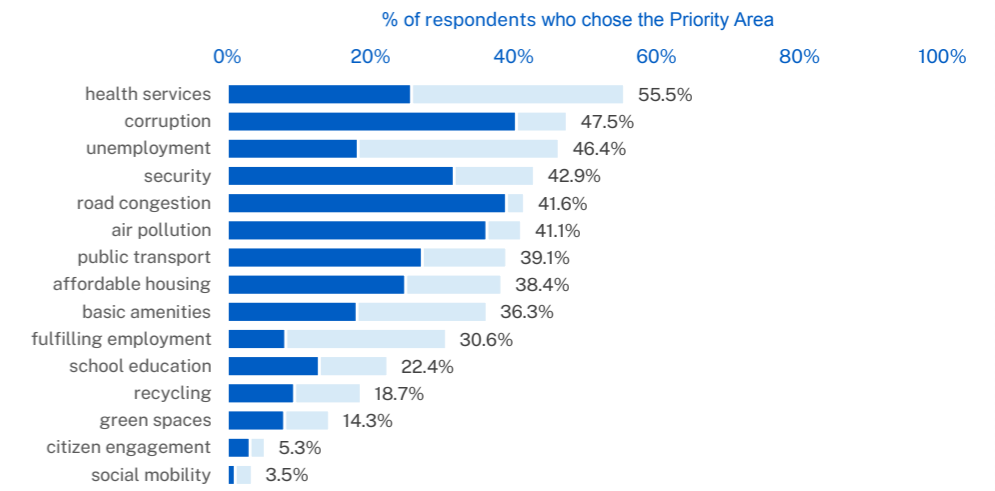


Country	2018	2019	2020	2021	1 yr change
HDI	0.712	0.718	0.710	0.699	-0.011
Life expectancy at birth	71.1	71.2	72.1	69.3	-2.9
Expected years of schooling	12.7	13.1	13.1	13.1	+0.0
Mean years of schooling	9.4	9.4	9.0	9.0	+0.0
GNI per capita (PPP \$)	9,540	9,778	8,559	8,920	+362

## PRIORITY AREAS

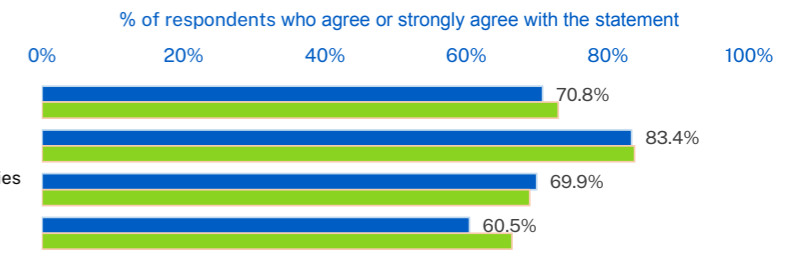
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

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- The city provides information on traffic congestion through mobile phones

### Activities

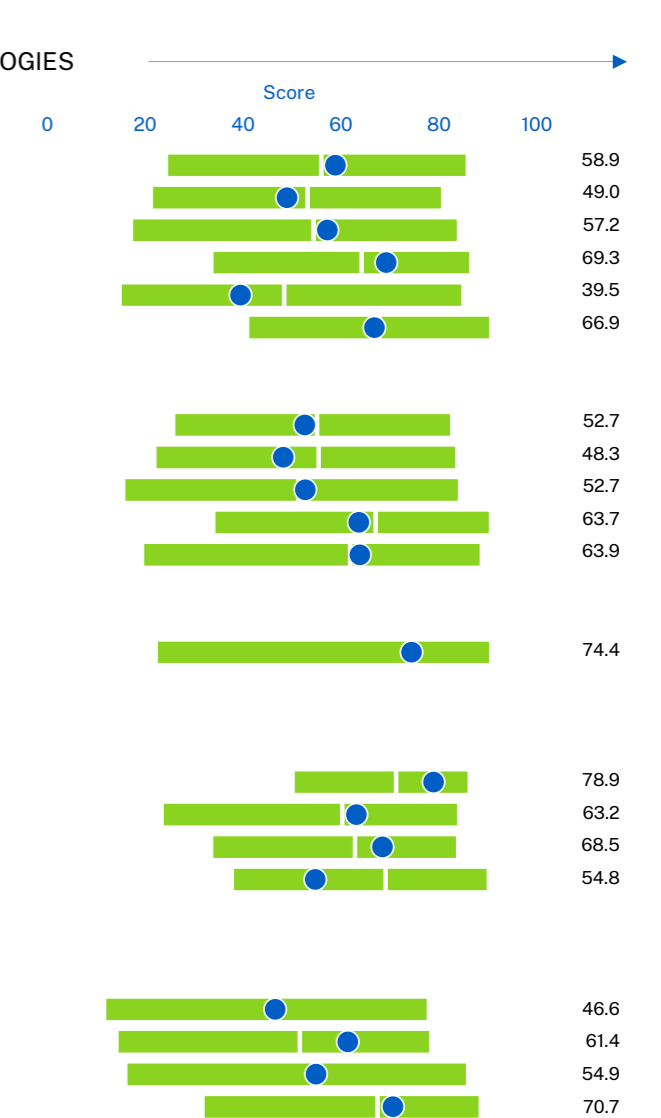
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Marseille

SMART CITY RANKING

101

Out of 141



91 out of 118 in 2021

SMART CITY RATING

CC

CC in 2021

FACTOR RATINGS

CC

STRUCTURES

CC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,116,360  
HDI 0.899

(Eurostat)

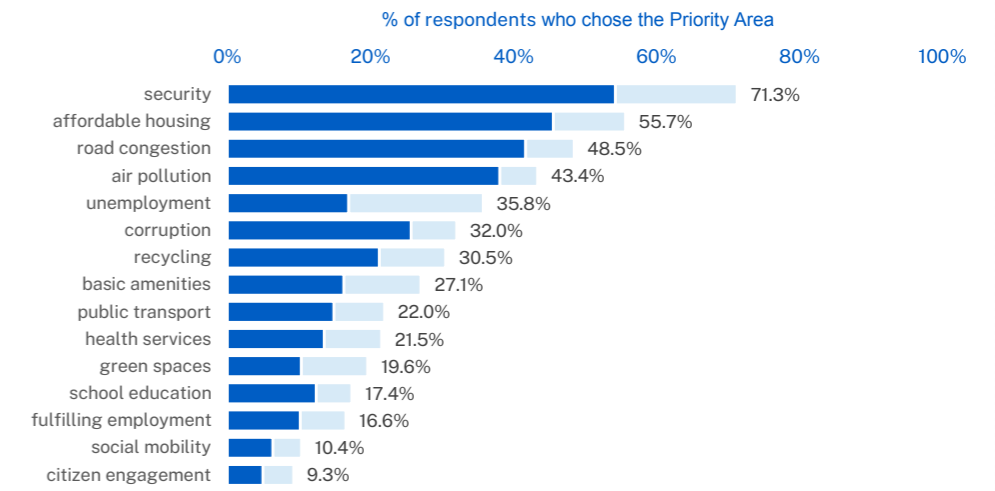


Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.901	0.898	0.903	+0.005
Life expectancy at birth	82.5	82.7	82.2	82.5	+0.3
Expected years of schooling	15.5	15.6	15.8	15.8	+0.0
Mean years of schooling	11.4	11.5	11.6	11.6	+0.0
GNI per capita (PPP \$)	40,511	47,173	43,048	45,937	+2,889

## PRIORITY AREAS

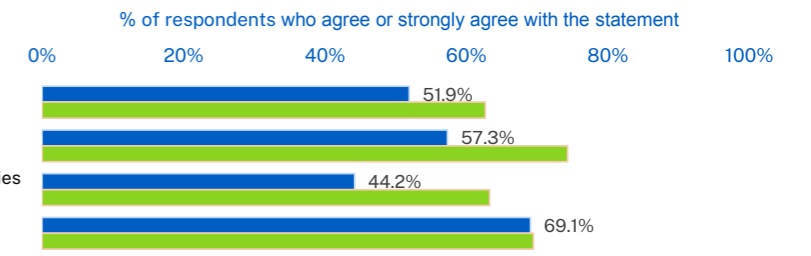
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 52

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# B

not in 2021

## FACTOR RATINGS

# B

STRUCTURES

# B

TECHNOLOGIES

## GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,114,675  
HDI 0.871

(UN World Urbanisation Prospects 2022 estimate)



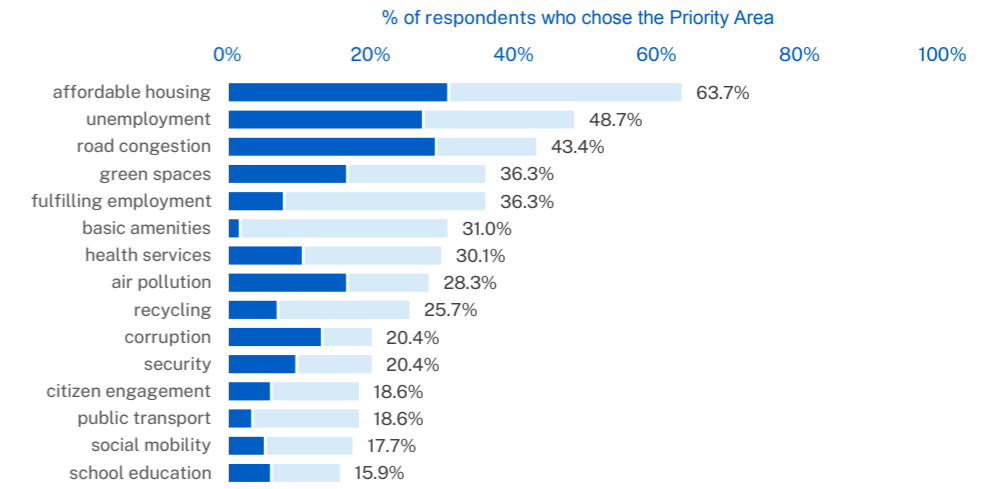
### Country

	2018	2019	2020	2021	1 yr change
HDI	0.865	0.873	0.870	0.875	+0.005
Life expectancy at birth	77.2	77.3	76.2	76.9	+0.7
Expected years of schooling	15.7	16.0	16.1	16.1	+0.0
Mean years of schooling	10.6	8.3	8.3	8.3	+0.0
GNI per capita (PPP \$)	5,072	5,307	5,601	5,745	+143

## PRIORITY AREAS

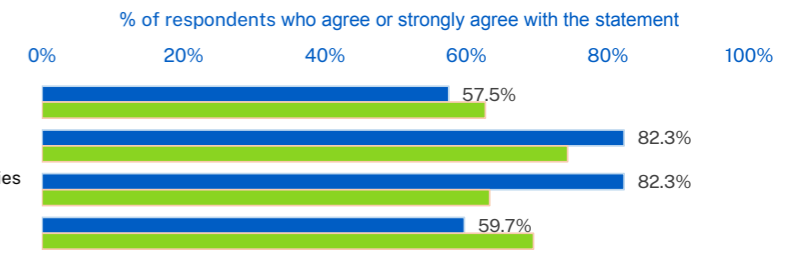
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

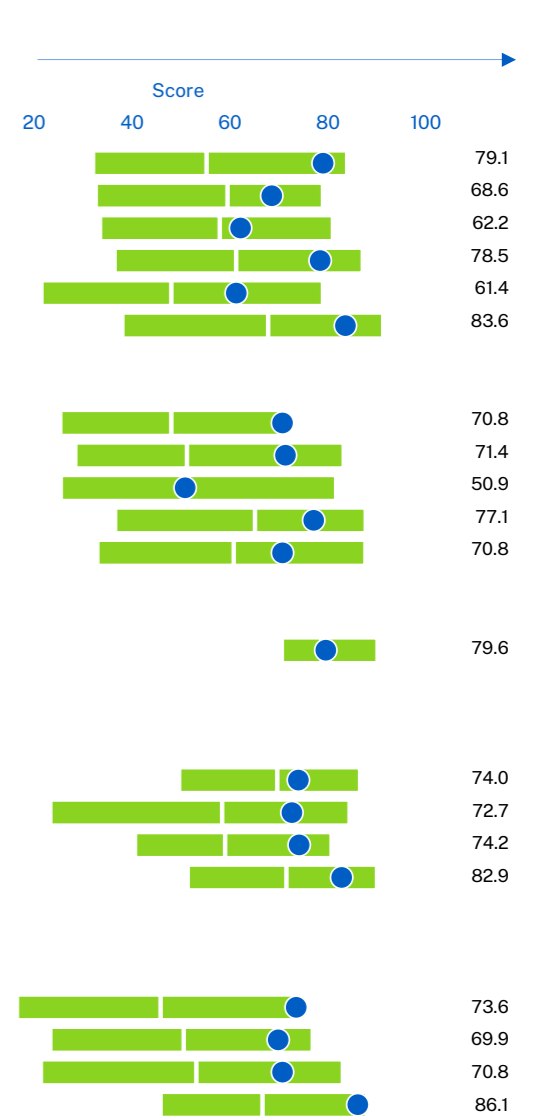
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 112

Out of 141



96 out of 118 in 2021

## SMART CITY RATING

# CC

C in 2021

## FACTOR RATINGS

# CC

STRUCTURES

# CC

TECHNOLOGIES

## GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,435,252  
HDI 0.711

(UN Data)



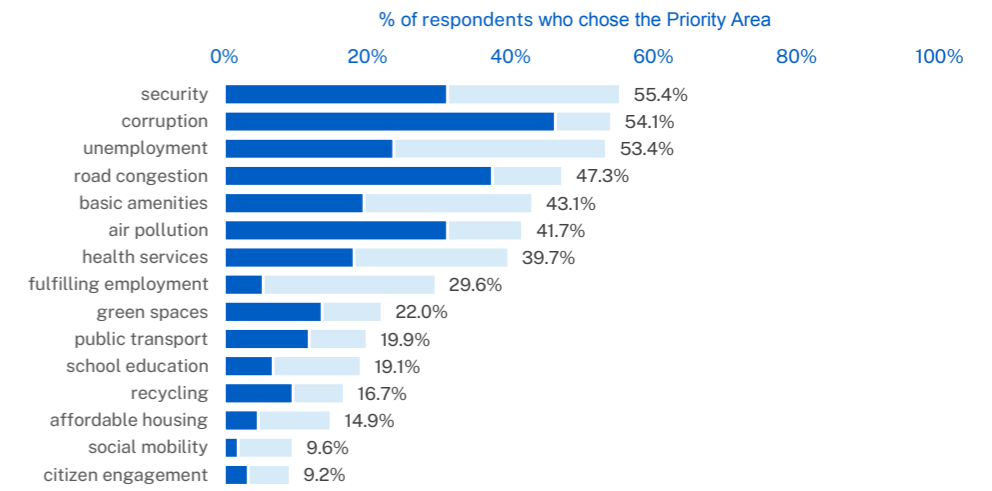
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.707	0.718	0.709	0.705	-0.004
Life expectancy at birth	71.5	71.7	68.8	67.6	-1.2
Expected years of schooling	12.9	13.6	13.8	13.8	+0.0
Mean years of schooling	8.0	8.2	8.6	8.6	+0.0
GNI per capita (PPP \$)	11,256	11,459	11,142	11,466	+325

## PRIORITY AREAS

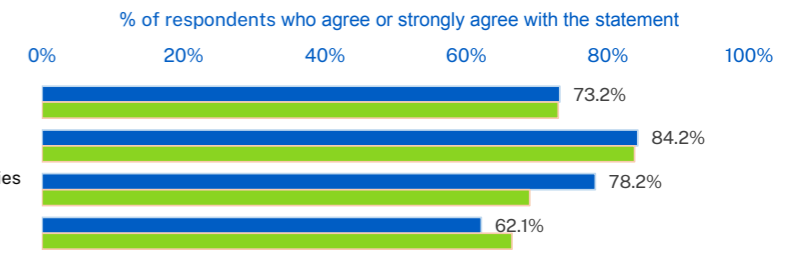
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

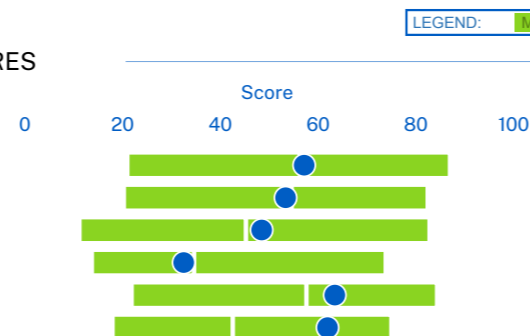
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

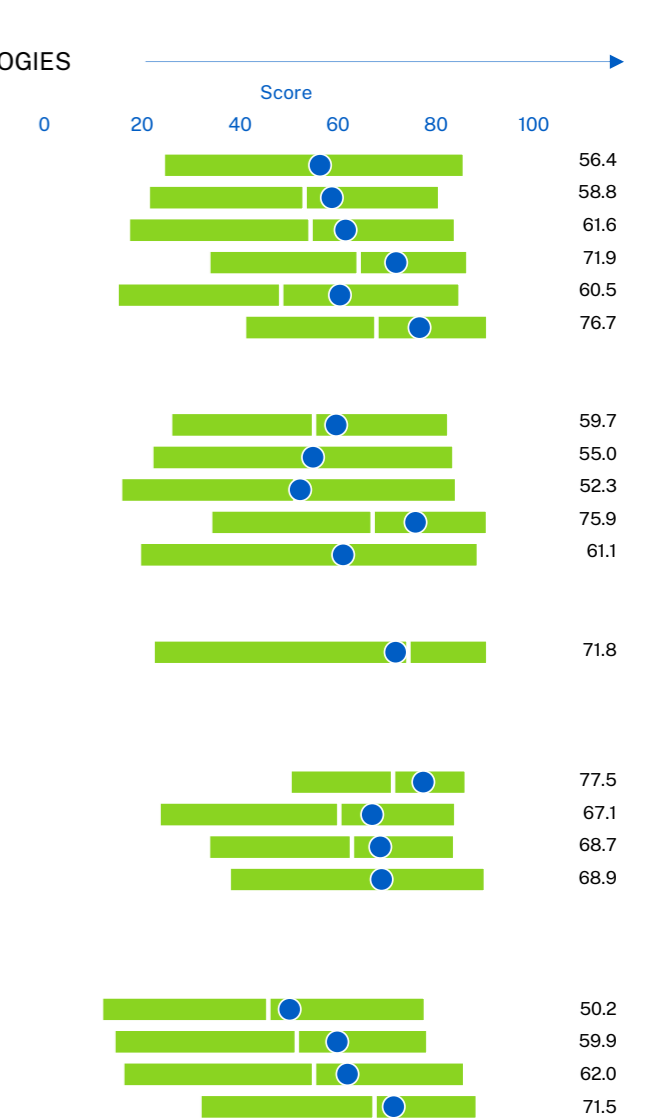
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Medellin

## SMART CITY RANKING

118

Out of 141



99 out of 118 in 2021

## SMART CITY RATING

C

C in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,372,330  
HDI 0.757

(UN Data)



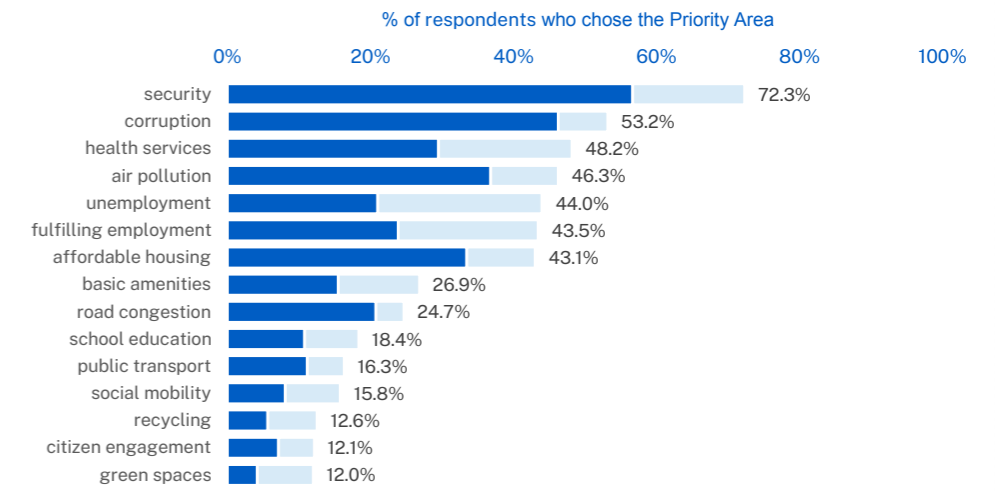
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.761	0.767	0.756	0.752	-0.004
Life expectancy at birth	77.1	77.3	74.8	72.8	-1.9
Expected years of schooling	14.6	14.4	14.4	14.4	+0.0
Mean years of schooling	8.3	8.5	8.9	8.9	+0.0
GNI per capita (PPP \$)	12,896	14,257	13,185	14,384	+1,199

## PRIORITY AREAS

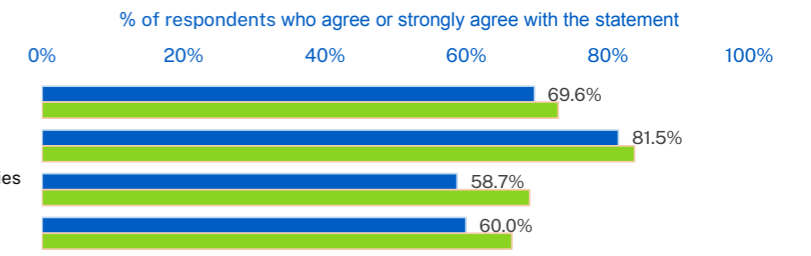
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

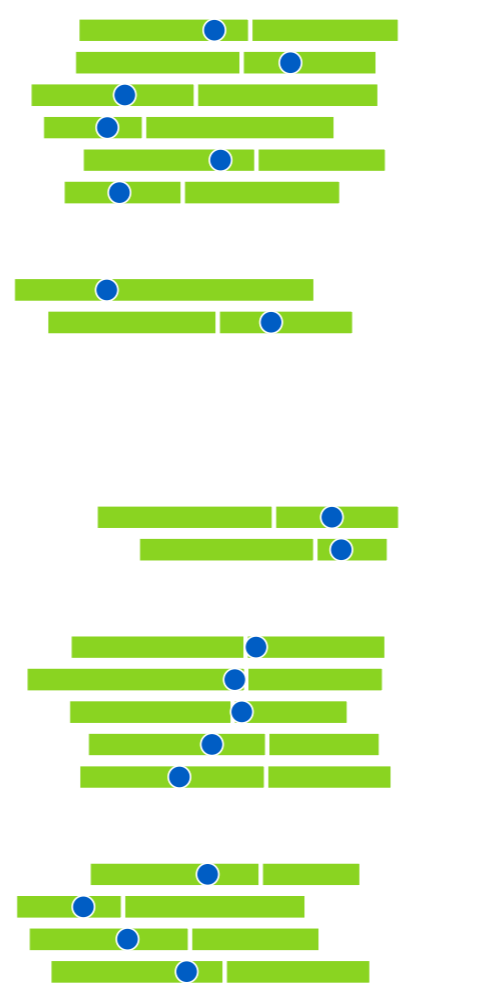
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

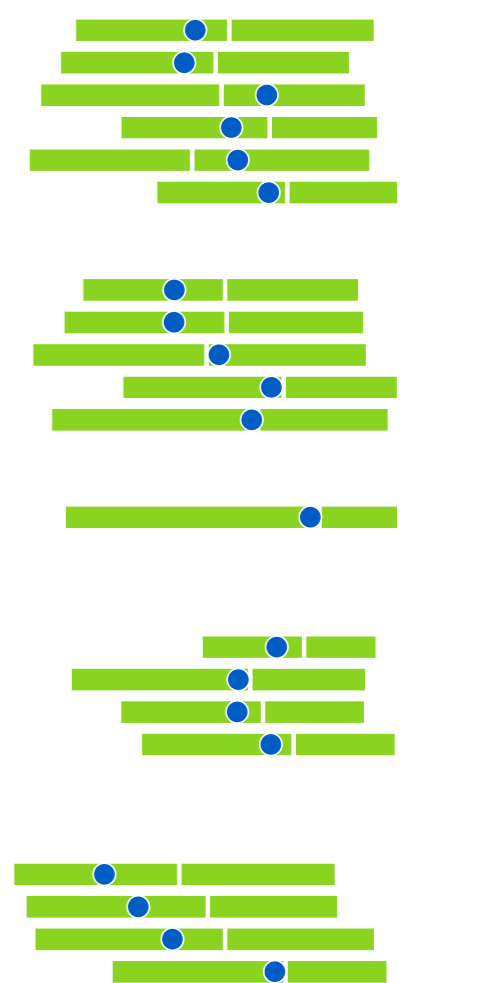
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Medina

## SMART CITY RANKING

85

Out of 141



79 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 154,542  
HDI 0.871

(UN World Urbanisation Prospects 2022 estimate)



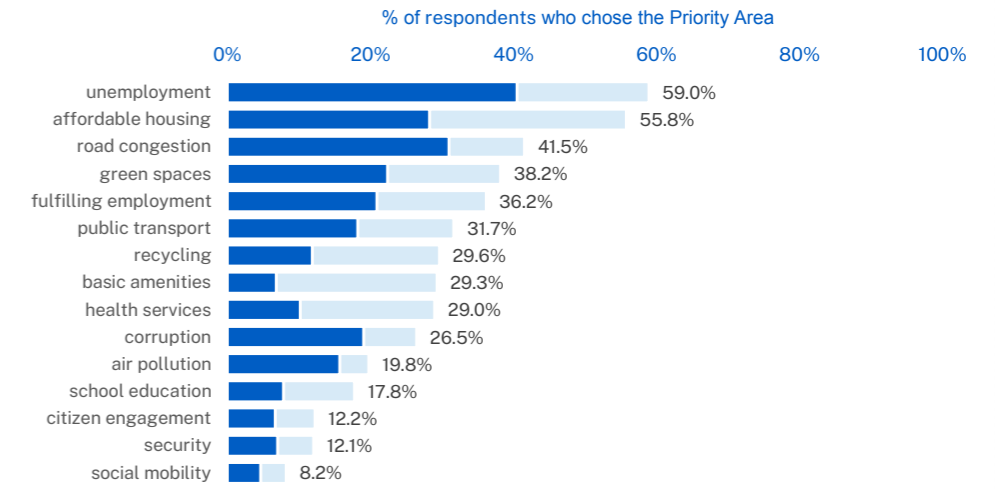
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.865	0.873	0.870	0.875	+0.005
Life expectancy at birth	77.2	77.3	76.2	76.9	+0.7
Expected years of schooling	15.7	16.0	16.1	16.1	+0.0
Mean years of schooling	10.6	8.3	8.3	8.3	+0.0
GNI per capita (PPP \$)	5,072	5,307	5,601	5,745	+143

## PRIORITY AREAS

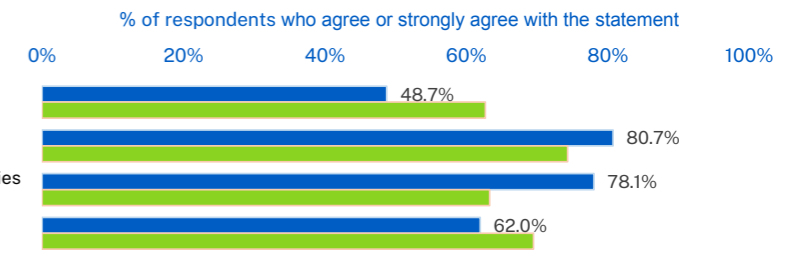
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

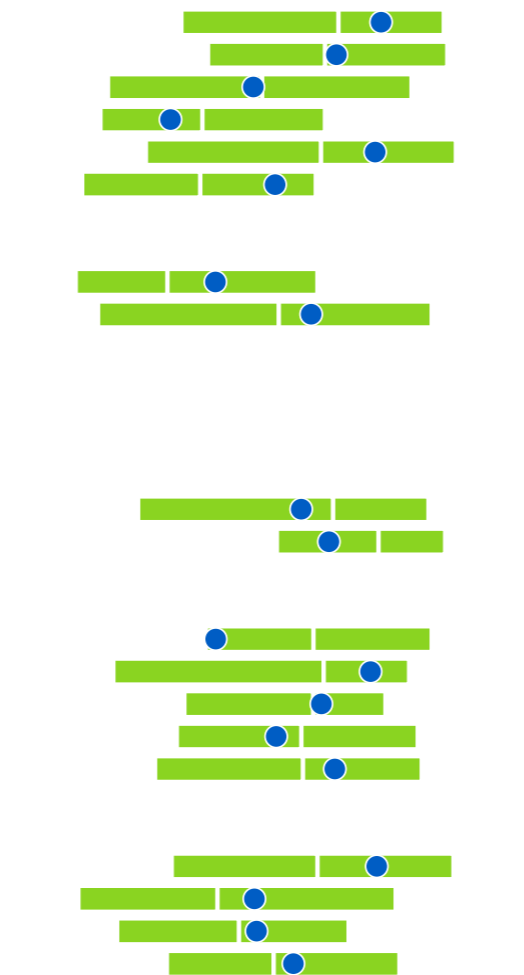
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

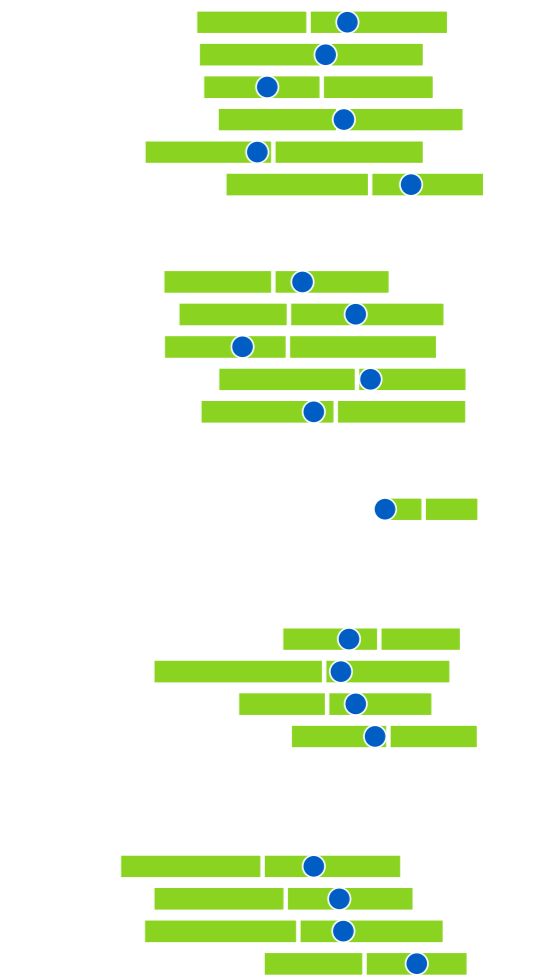
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Melbourne

## SMART CITY RANKING

31

Out of 141



36 out of 118 in 2021

## SMART CITY RATING

A

BB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

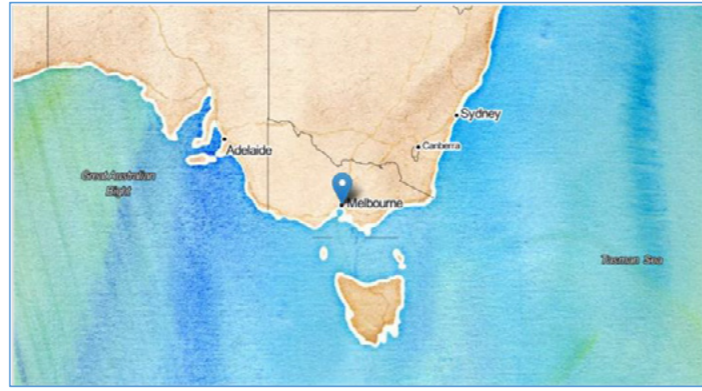
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,196,198  
HDI 0.948

(UN Data)



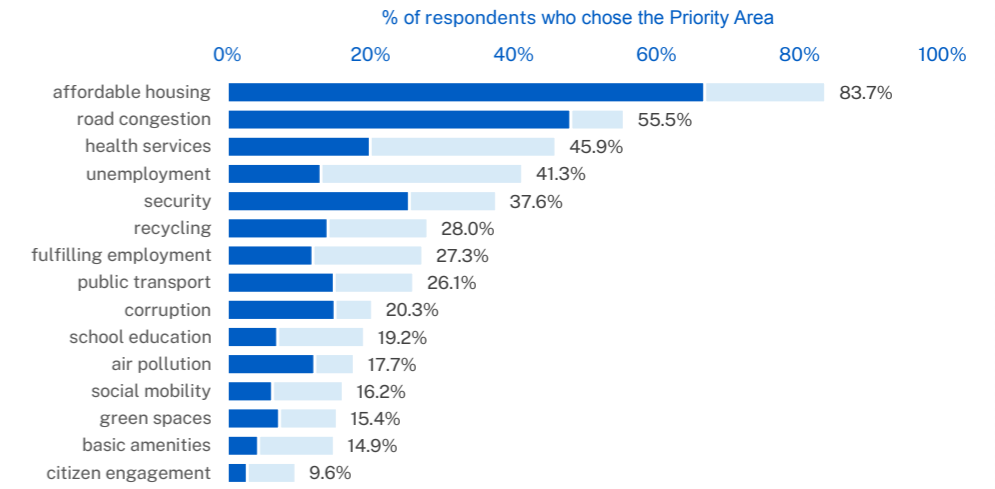
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.941	0.941	0.947	0.951	+0.004
Life expectancy at birth	83.4	83.1	84.3	84.5	+0.2
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	12.6	12.1	12.4	12.4	+0.0
GNI per capita (PPP \$)	43,821	52,085	49,392	52,293	+2,901

## PRIORITY AREAS

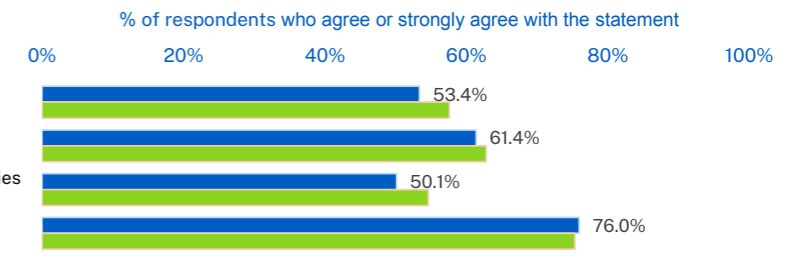
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

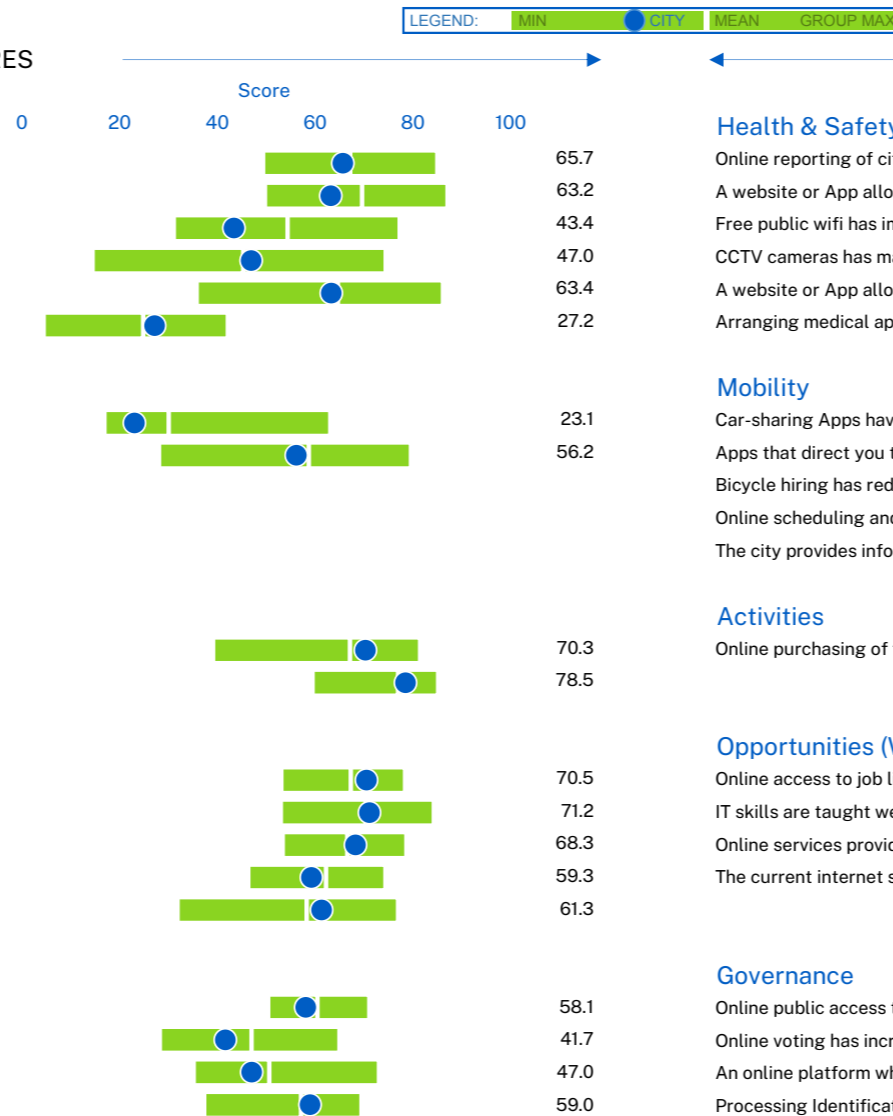
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

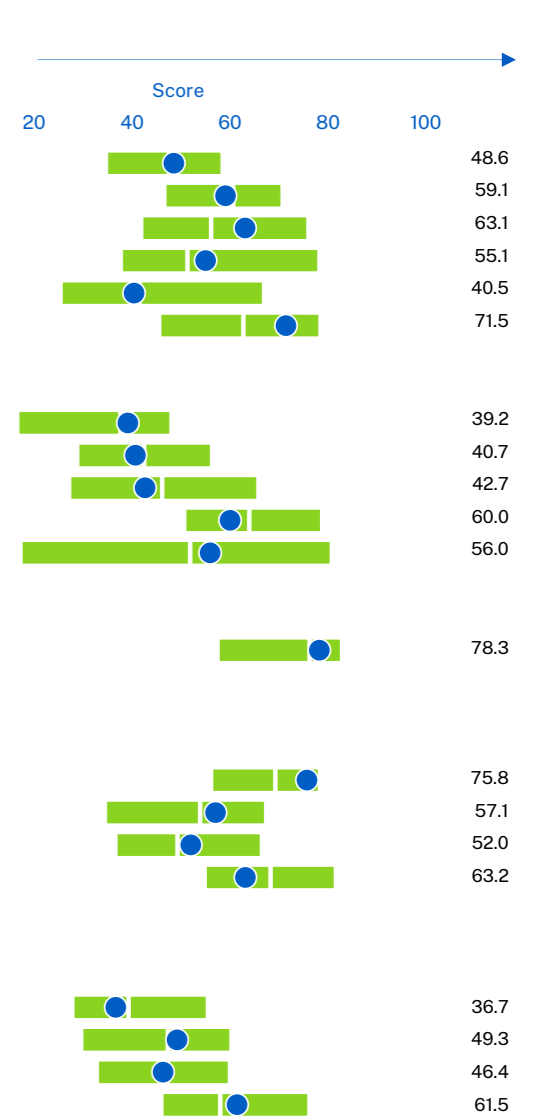
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





# Mexico City

SMART CITY RANKING

121

Out of 141



110 out of 118 in 2021

SMART CITY RATING

C

C in 2021

FACTOR RATINGS

C

STRUCTURES

CC

TECHNOLOGIES

GROUP

3

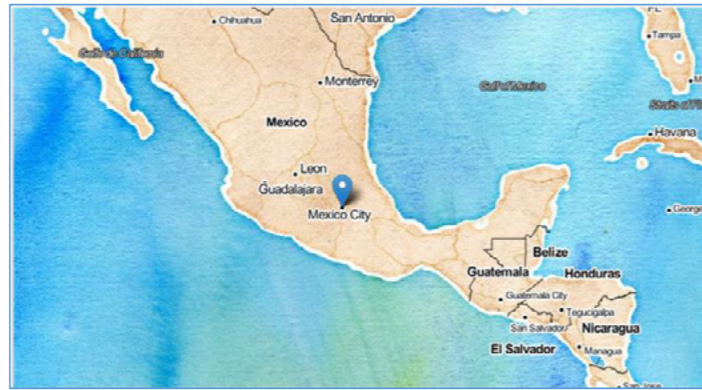
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 22,085,139  
HDI 0.815

(UN World Urbanisation Prospects 2022 estimate)



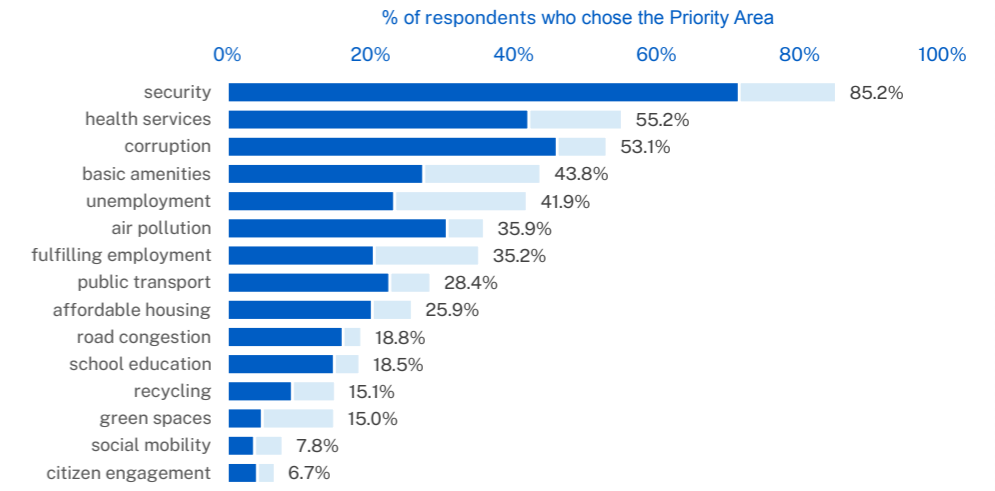
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.767	0.779	0.756	0.758	+0.002
Life expectancy at birth	75.0	75.1	70.1	70.2	+0.1
Expected years of schooling	14.3	14.8	14.9	14.9	+0.0
Mean years of schooling	8.6	8.8	9.2	9.2	+0.0
GNI per capita (PPP \$)	17,628	19,160	17,235	17,896	+662

## PRIORITY AREAS

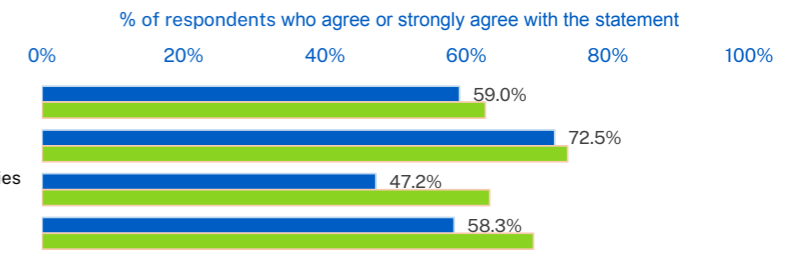
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

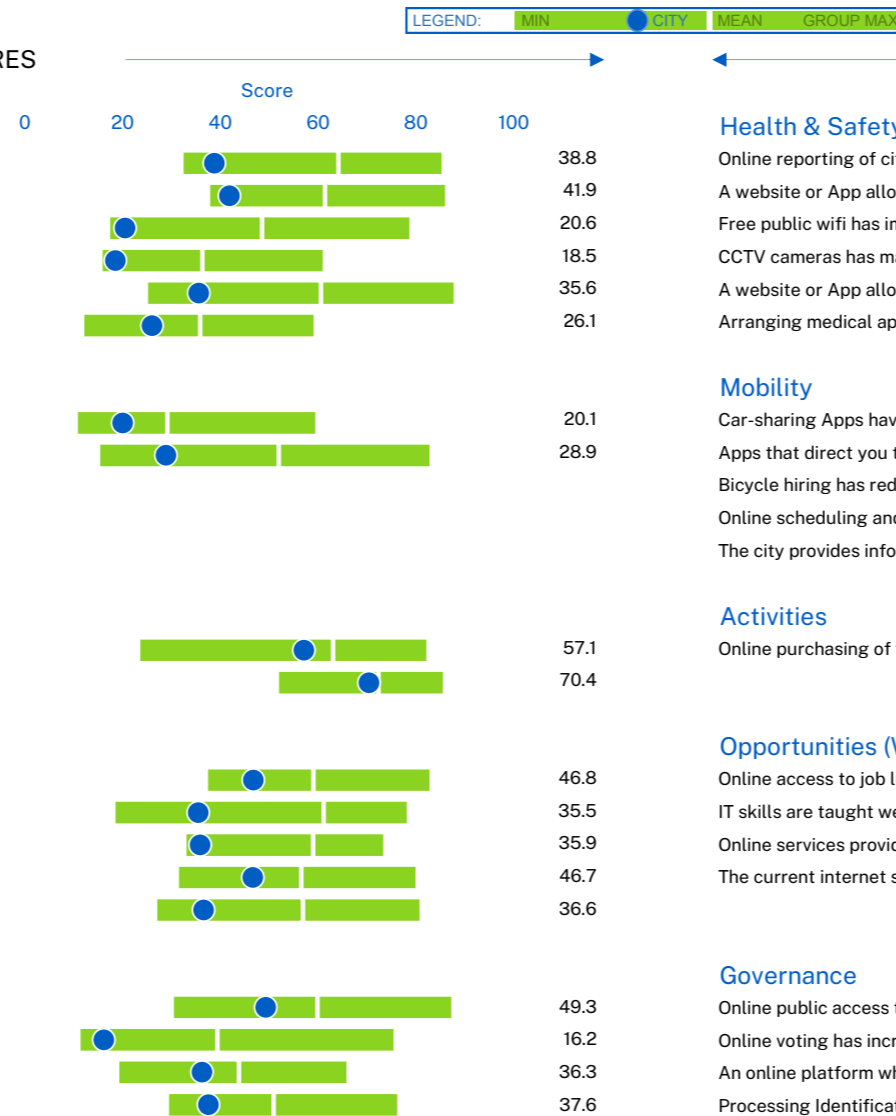
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

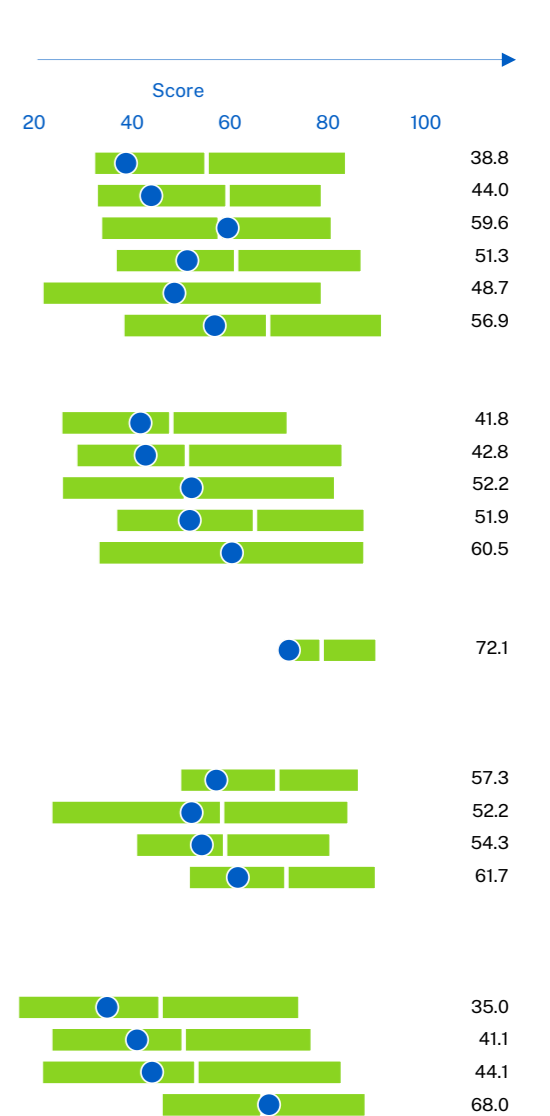
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 82

Out of 141



69 out of 118 in 2021

## SMART CITY RATING

# BB

CC in 2021

## FACTOR RATINGS

# BB

STRUCTURES

# BB

TECHNOLOGIES

GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,981,554  
HDI 0.915

(Eurostat)



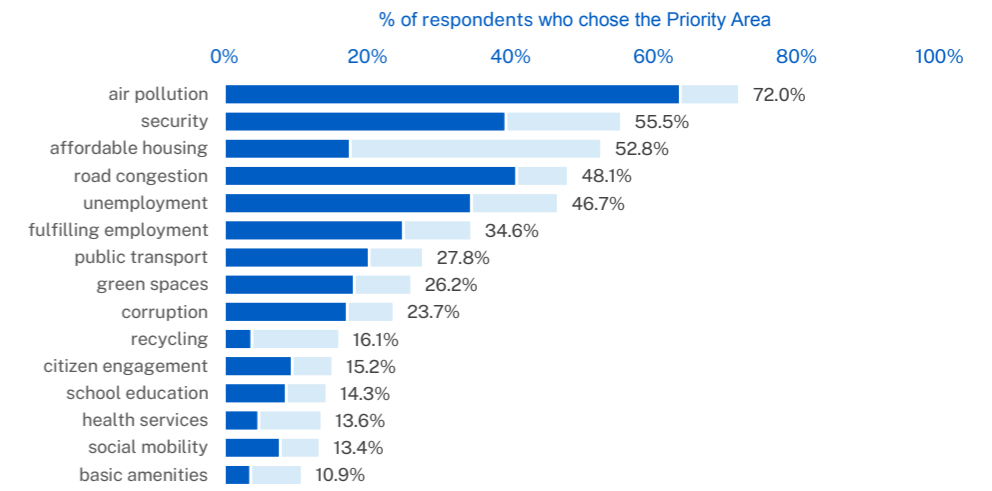
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.883	0.892	0.889	0.895	+0.006
Life expectancy at birth	83.4	83.5	82.4	82.9	+0.4
Expected years of schooling	16.2	16.1	16.2	16.2	+0.0
Mean years of schooling	10.2	10.4	10.7	10.7	+0.0
GNI per capita (PPP \$)	36,141	42,776	39,901	42,840	+2,939

## PRIORITY AREAS

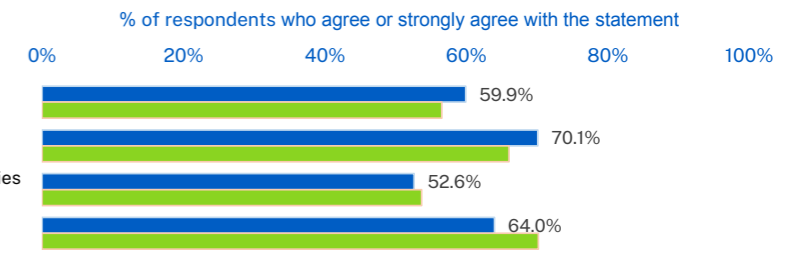
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The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

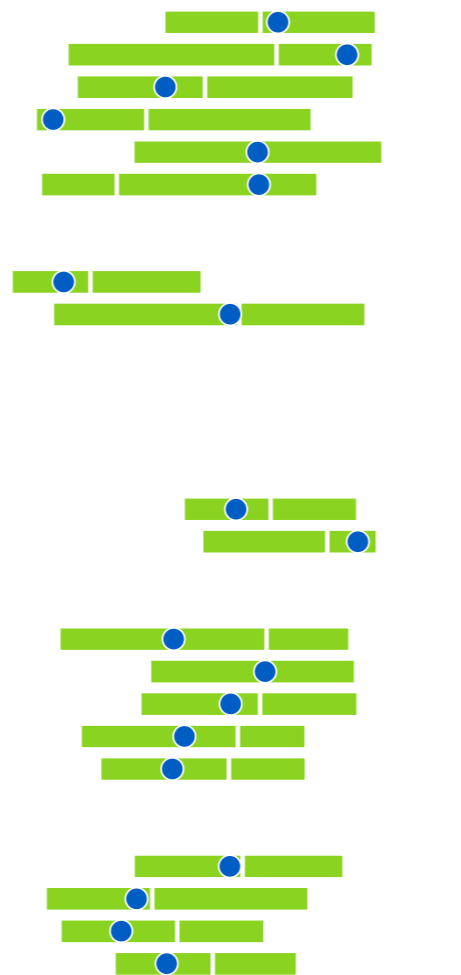
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

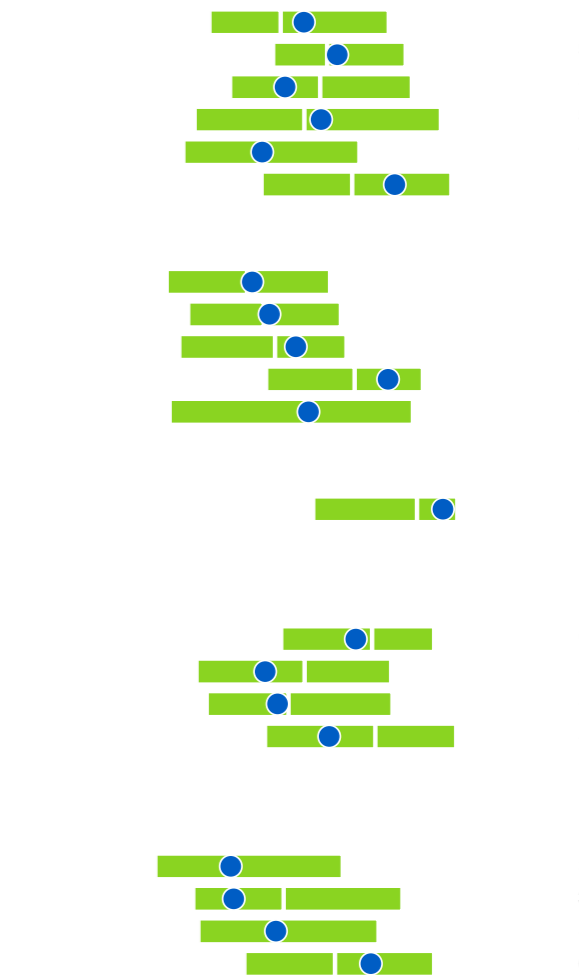
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Montreal

## SMART CITY RANKING

69

Out of 141



55 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

B

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

### BACKGROUND INFORMATION

#### City

Population 1,704,690  
HDI 0.923

(UN Data)



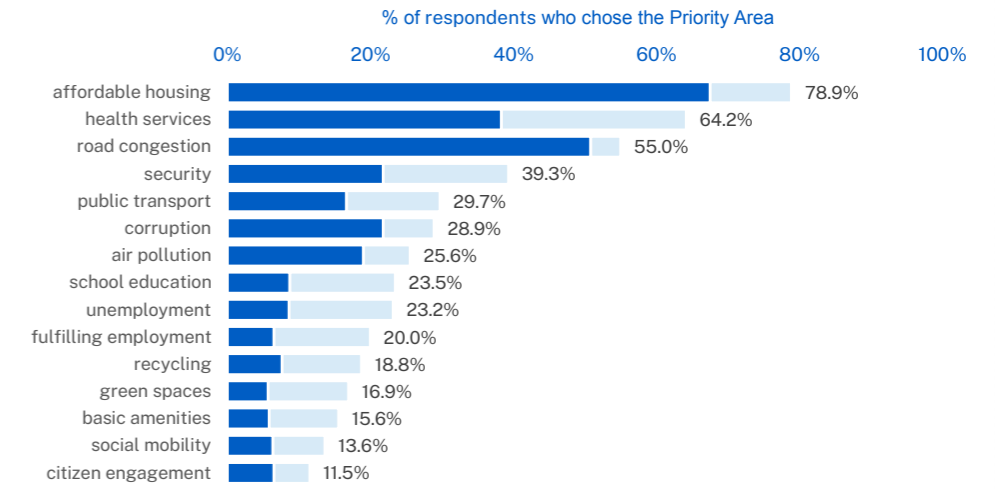
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.933	0.937	0.931	0.936	+0.005
Life expectancy at birth	82.1	82.4	82.1	82.7	+0.6
Expected years of schooling	16.2	16.4	16.4	16.4	+0.0
Mean years of schooling	13.8	8.7	8.8	8.8	+0.0
GNI per capita (PPP \$)	18,371	18,486	18,754	19,974	+1,220

### PRIORITY AREAS

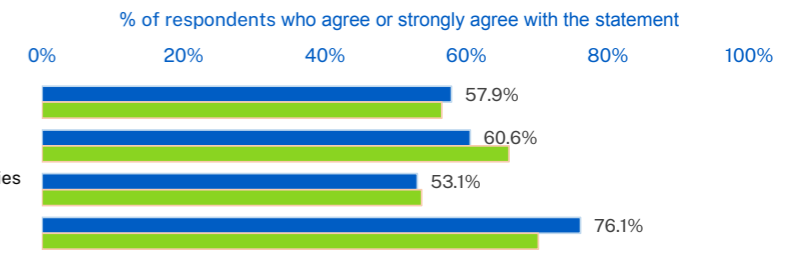
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### ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

### STRUCTURES

#### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

#### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

#### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

#### Opportunities (Work & School)

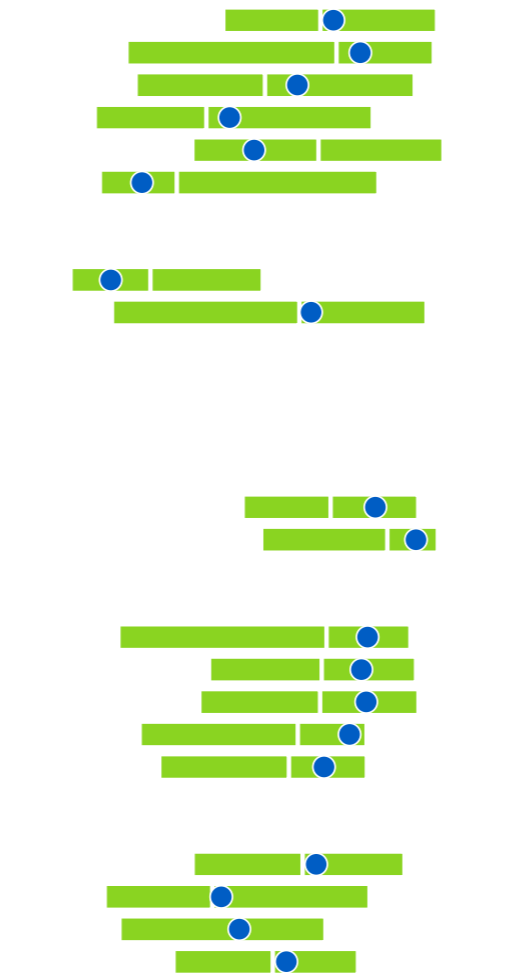
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

#### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



### TECHNOLOGIES

#### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

#### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

#### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

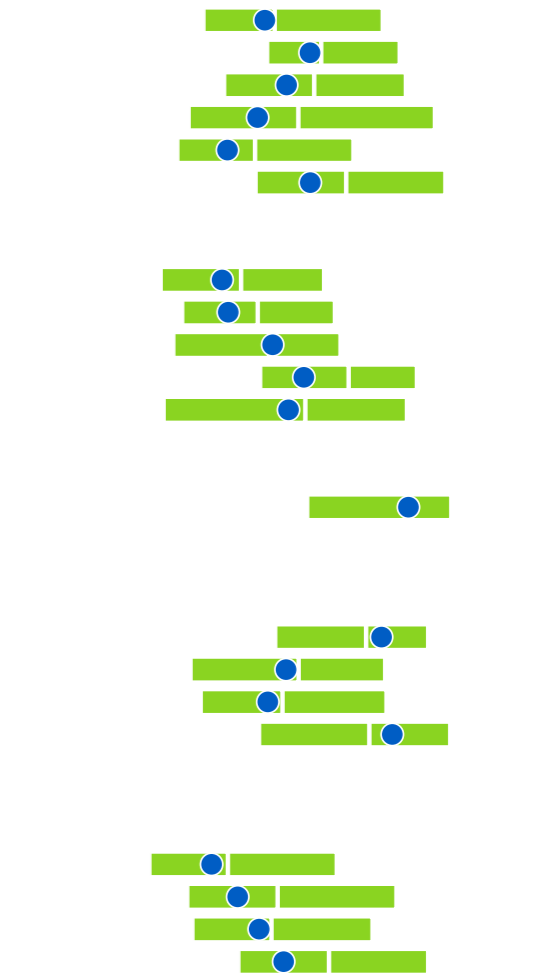
#### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

#### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Mumbai

SMART CITY RANKING

109

Out of 141



95 out of 118 in 2021

SMART CITY RATING

CC

CC in 2021

FACTOR RATINGS

CC

STRUCTURES

CCC

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 20,961,473  
HDI 0.688

(UN World Urbanisation Prospects 2022 estimate)



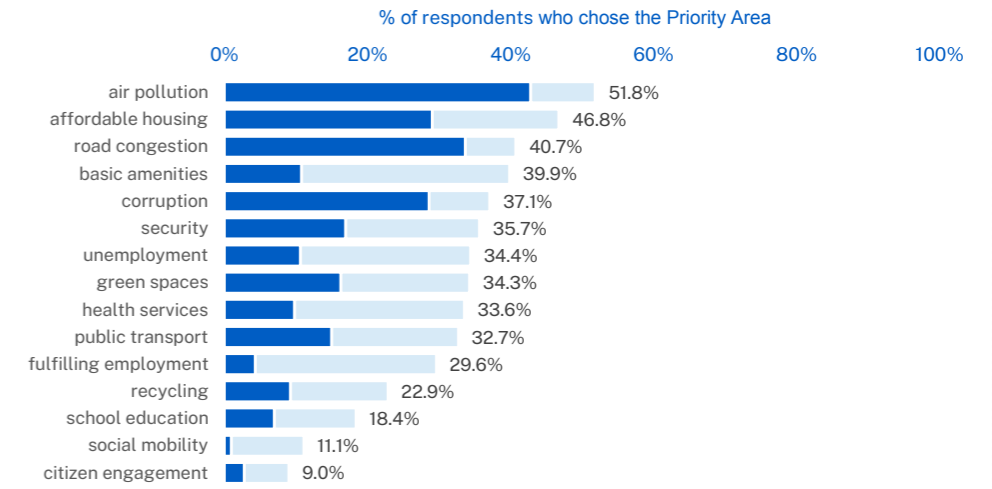
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.647	0.645	0.642	0.633	-0.009
Life expectancy at birth	69.4	69.7	70.2	67.2	-2.9
Expected years of schooling	12.3	12.2	11.9	11.9	+0.0
Mean years of schooling	6.5	6.5	6.7	6.7	+0.0
GNI per capita (PPP \$)	6,829	6,681	6,107	6,590	+482

## PRIORITY AREAS

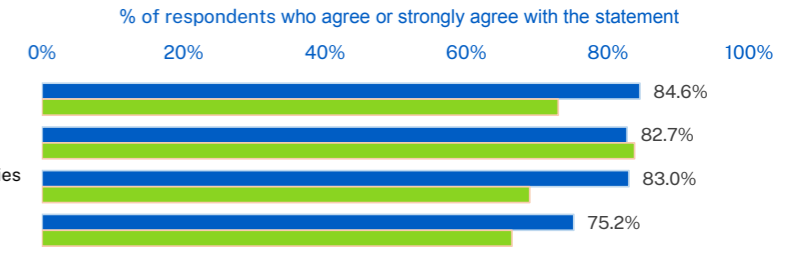
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

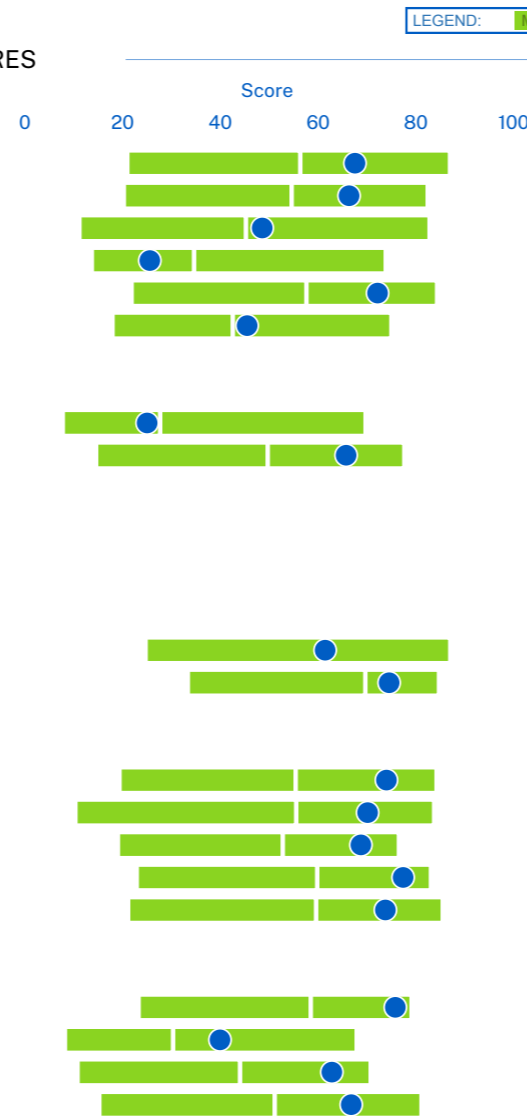
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to easily give away unwanted items
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- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
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- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

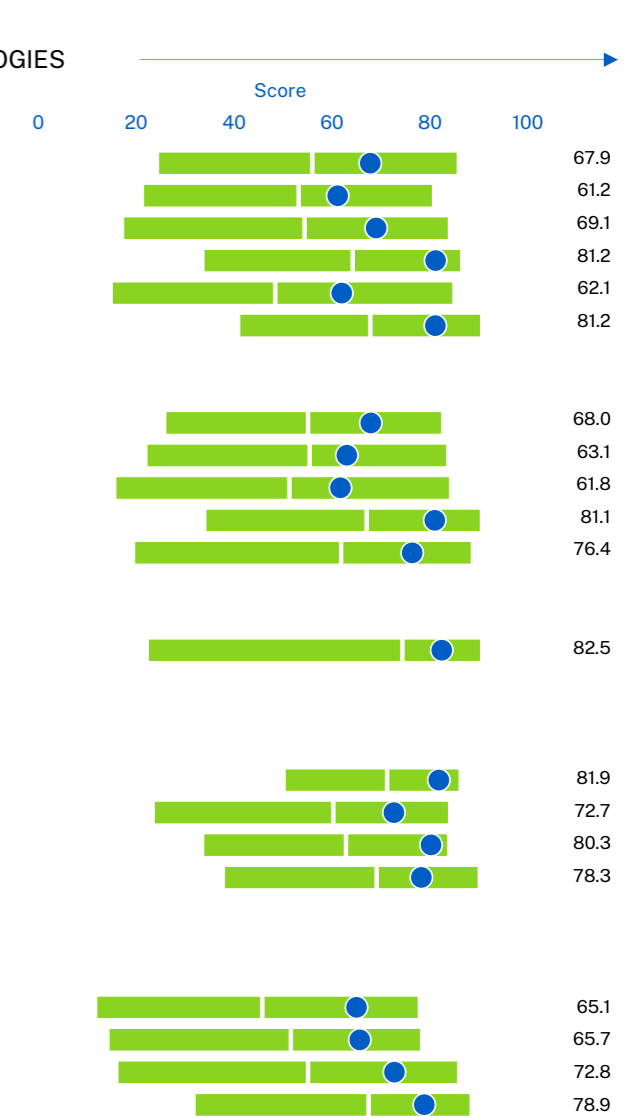
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- Online access to job listings has made it easier to find work
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- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Munich

## SMART CITY RANKING

20

Out of 141



15 out of 118 in 2021

## SMART CITY RATING

AA

AA in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 13,140,183  
HDI 0.950

(Eurostat)

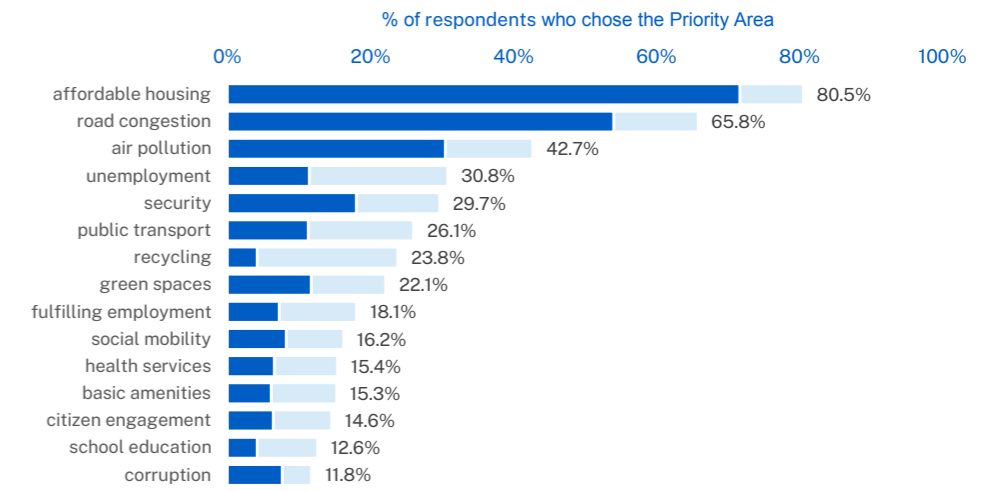


Country	2018	2019	2020	2021	1 yr change
HDI	0.939	0.947	0.944	0.942	-0.002
Life expectancy at birth	81.2	81.3	81.2	80.6	-0.5
Expected years of schooling	17.1	17.0	17.0	17.0	+0.0
Mean years of schooling	14.1	14.2	14.1	14.1	+0.0
GNI per capita (PPP \$)	46,946	55,314	53,078	54,534	+1,457

## PRIORITY AREAS

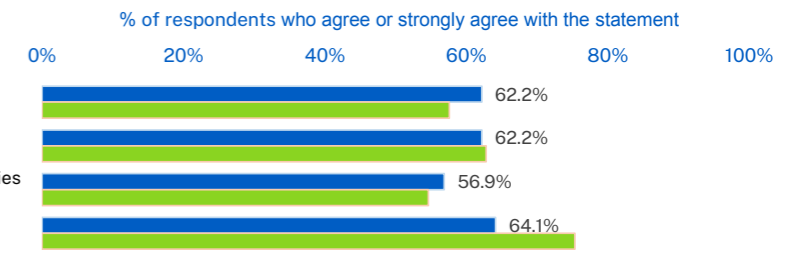
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

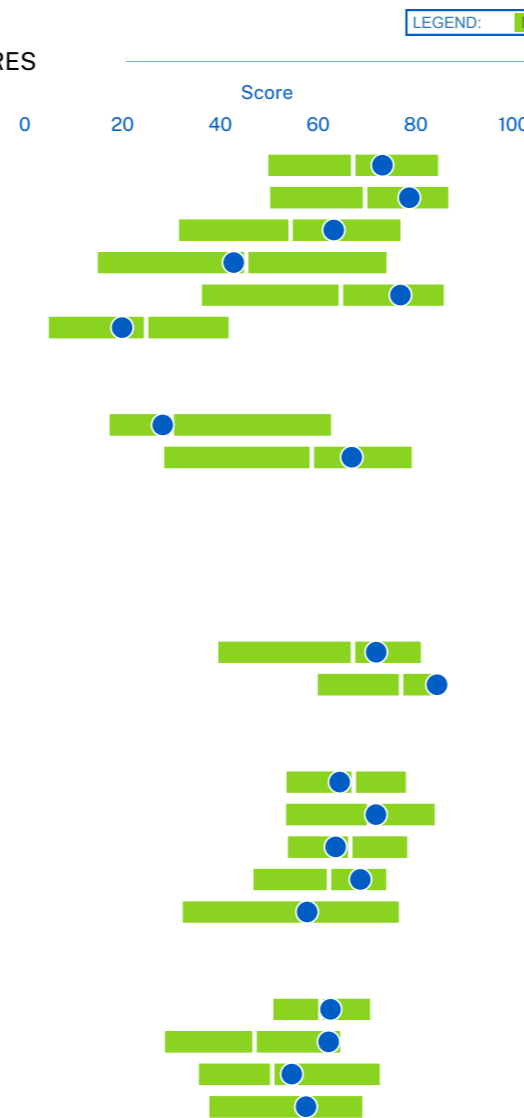
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

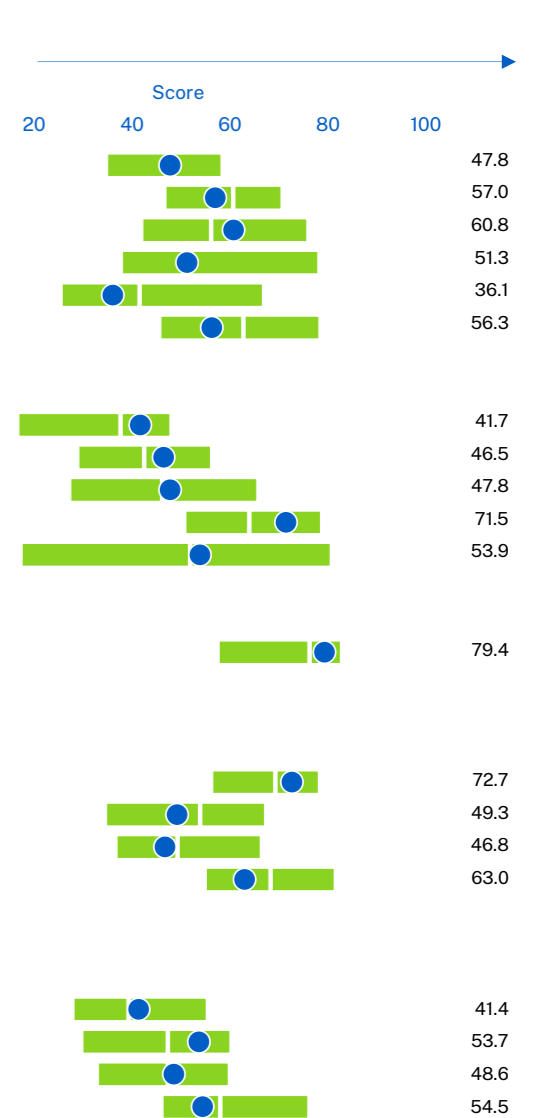
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Muscat

## SMART CITY RANKING

96

Out of 141

not out of 118 in 2021

## SMART CITY RATING

B

not in 2021

## FACTOR RATINGS

B

STRUCTURES

CCC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,622,620  
HDI 0.816

(UN World Urbanisation Prospects 2022 estimate)



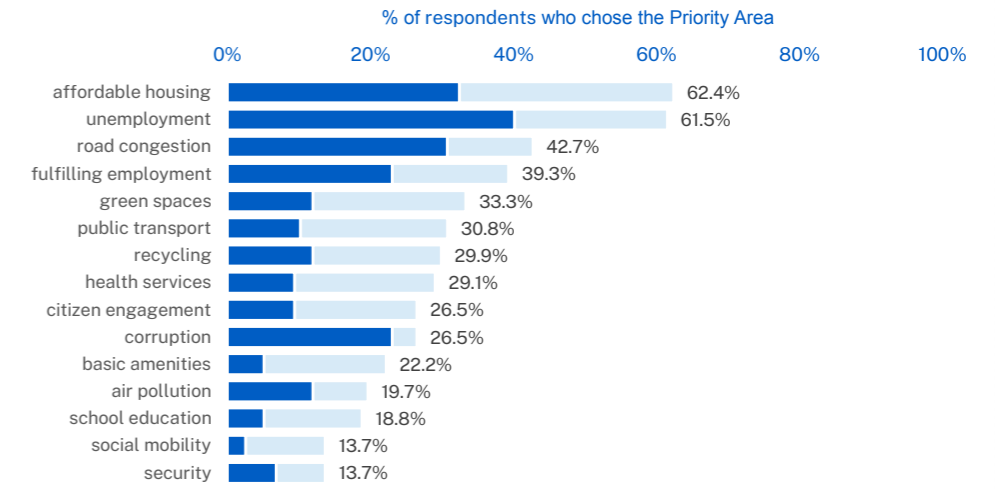
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.834	0.839	0.827	0.816	-0.011
Life expectancy at birth	78.0	78.0	74.8	72.5	-2.2
Expected years of schooling	14.1	14.3	14.6	14.6	+0.0
Mean years of schooling	10.8	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

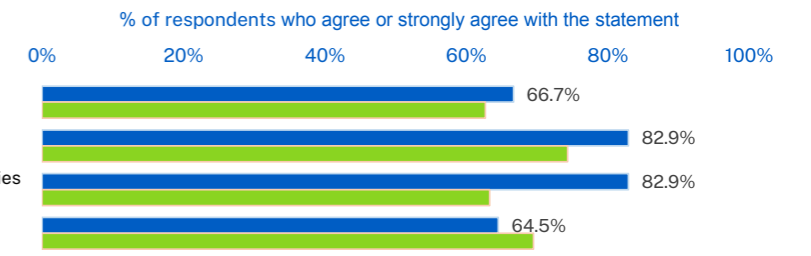
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

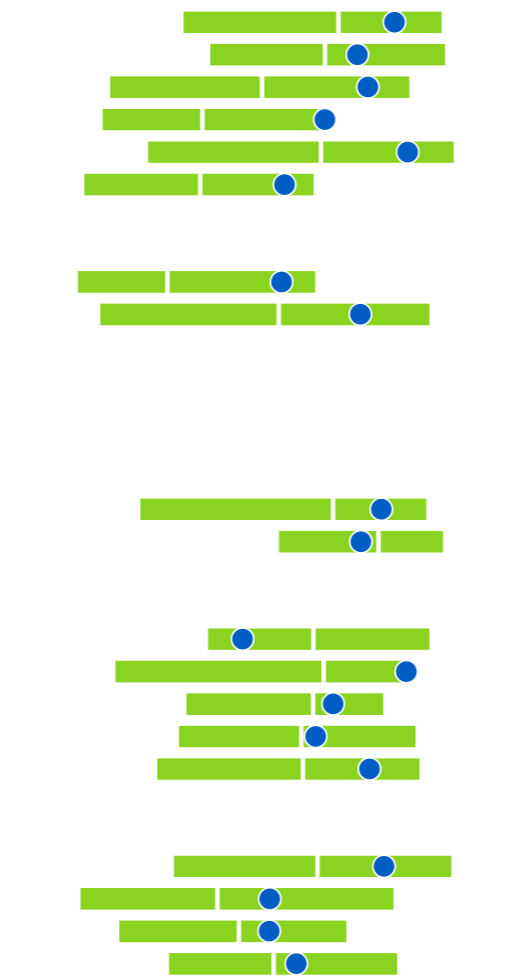
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

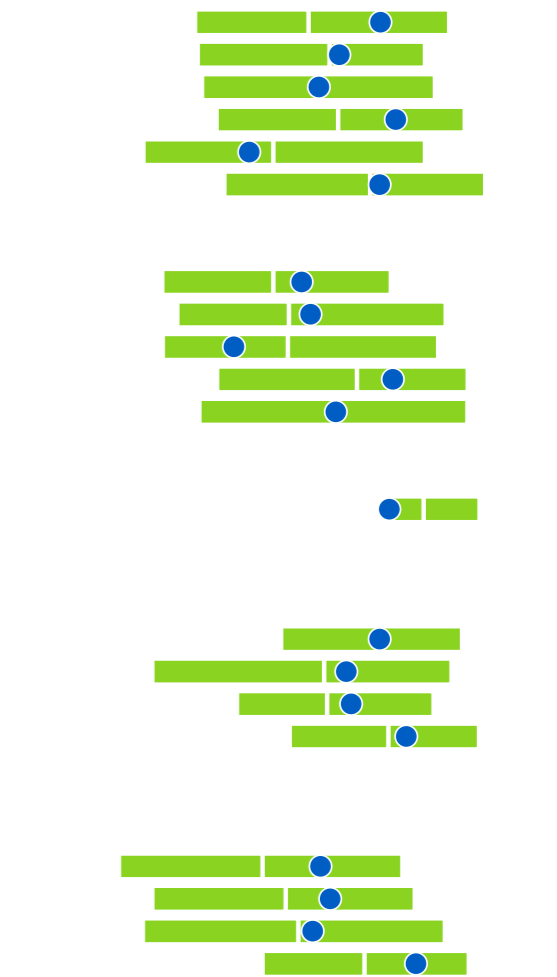
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Nairobi

SMART CITY RANKING

131

Out of 141



115 out of 118 in 2021

SMART CITY RATING

C

D in 2021

FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

GROUP

4

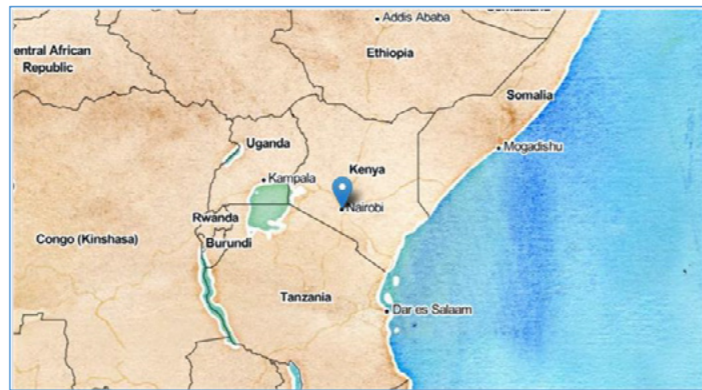
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,118,844  
HDI 0.636

(UN World Urbanisation Prospects 2022 estimate)



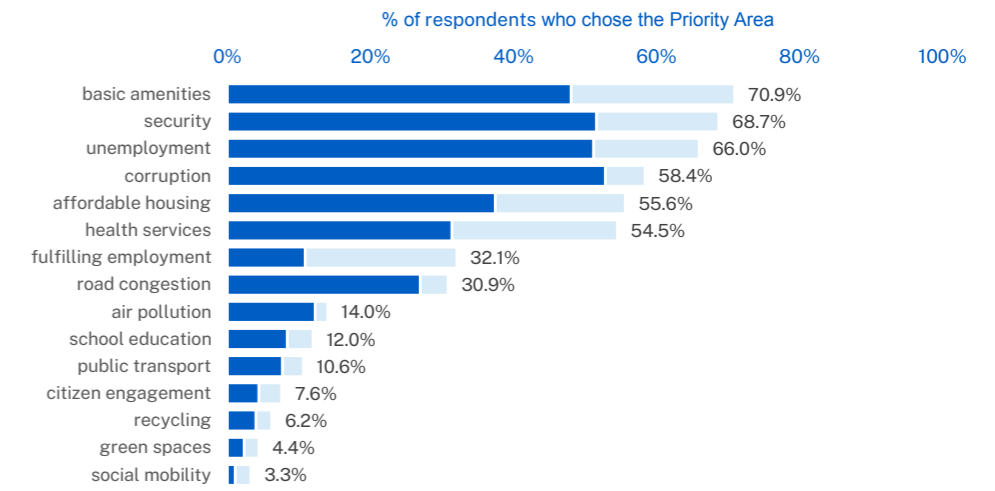
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.579	0.601	0.578	0.575	-0.003
Life expectancy at birth	66.3	66.7	62.7	61.4	-1.3
Expected years of schooling	11.1	11.3	10.7	10.7	+0.0
Mean years of schooling	6.6	6.6	6.7	6.7	+0.0
GNI per capita (PPP \$)	3,052	4,244	4,267	4,474	+207

## PRIORITY AREAS

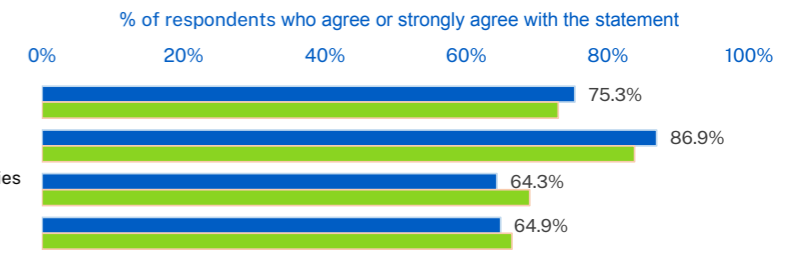
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

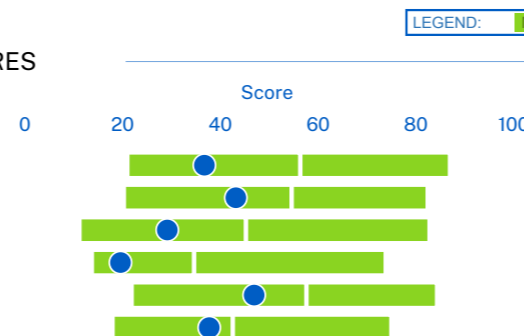
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

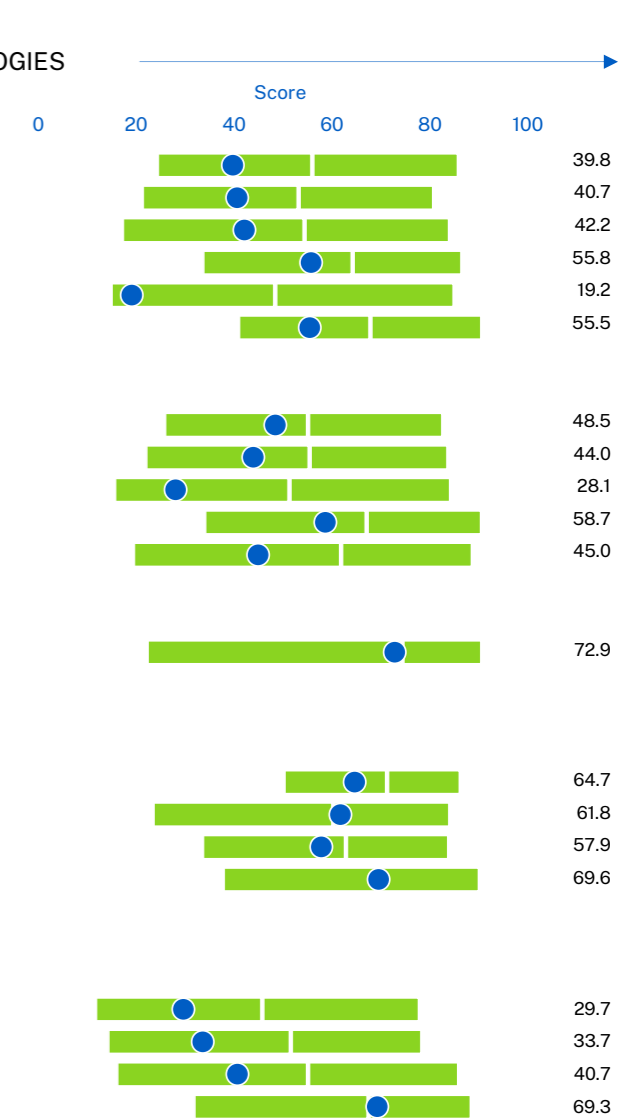
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Nanjing

## SMART CITY RANKING

58

Out of 141



57 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,429,381  
HDI 0.810

(UN World Urbanisation Prospects 2022 estimate)



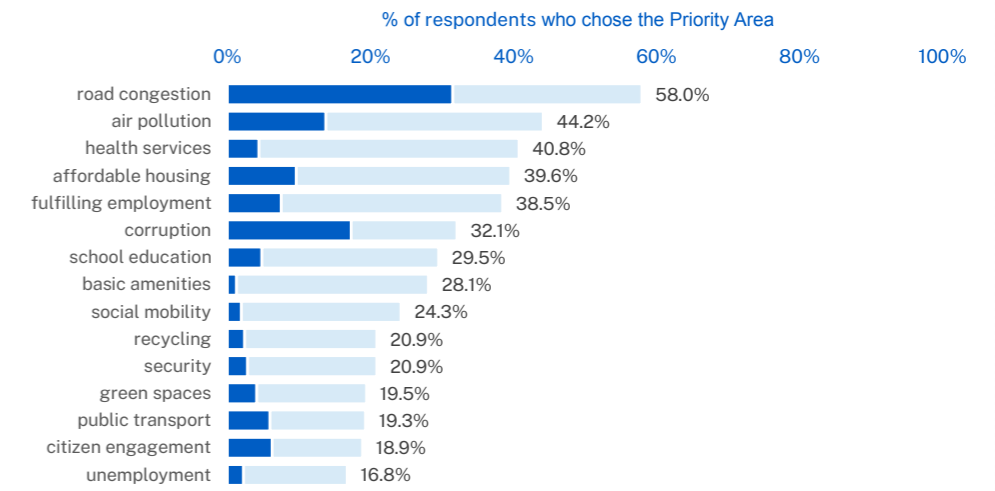
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

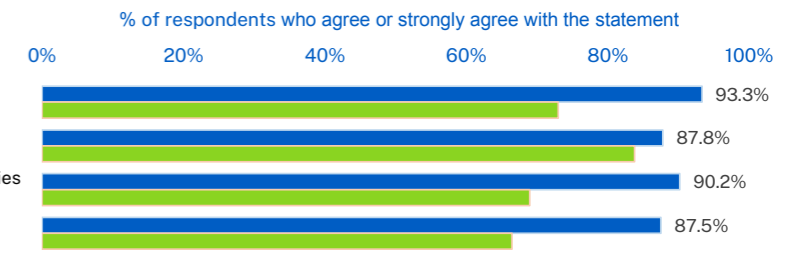
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The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

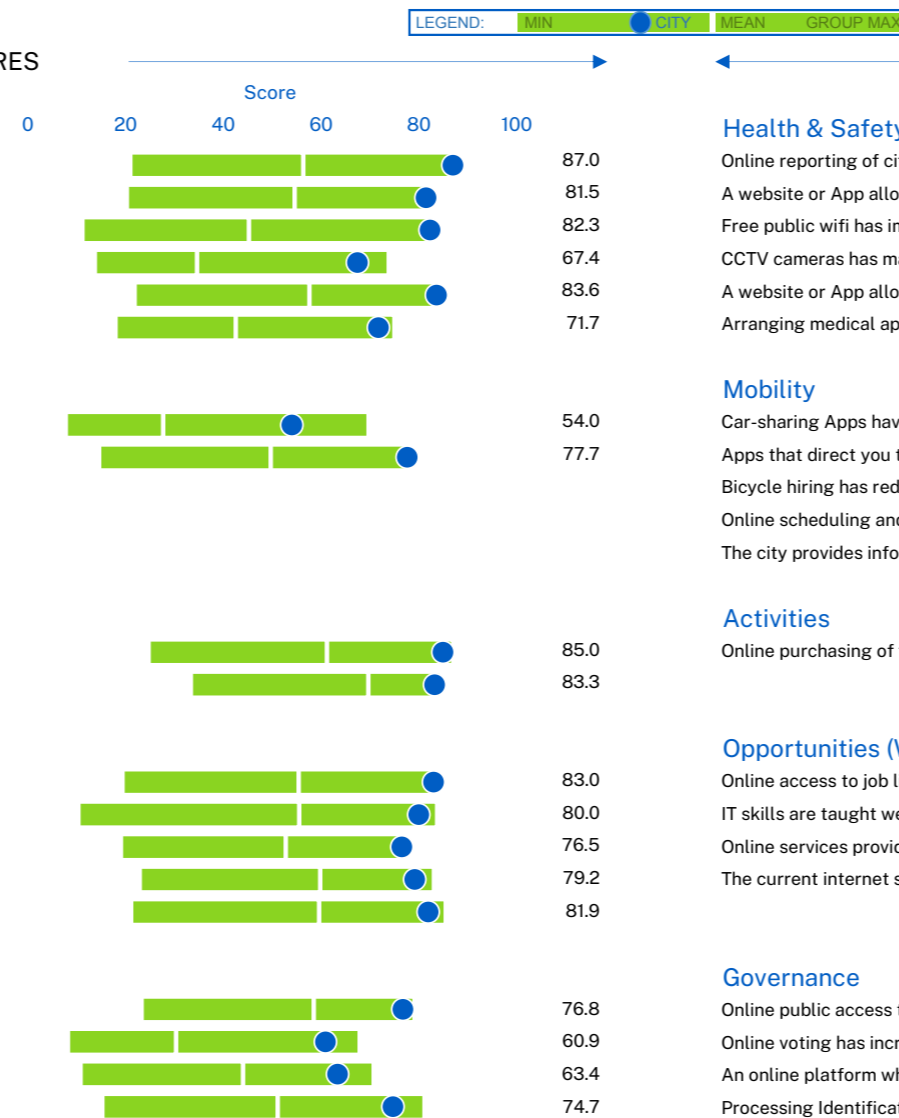
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

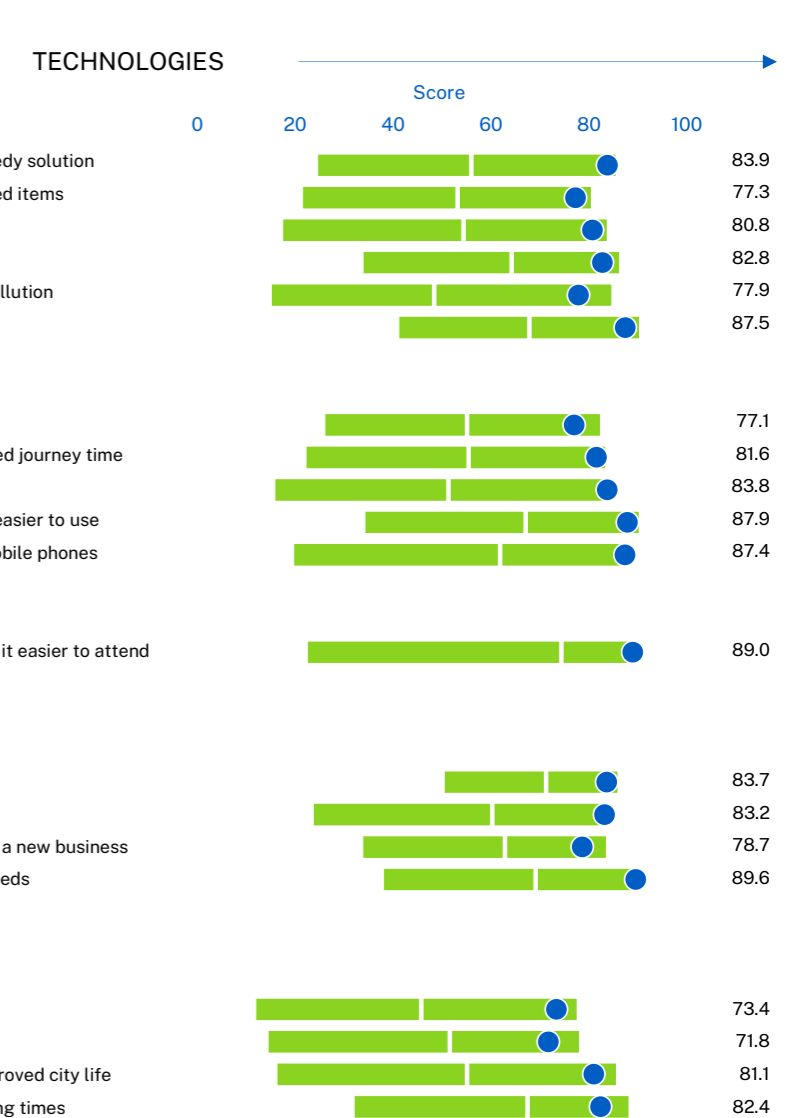
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





# New York

## SMART CITY RANKING

21

Out of 141



19 out of 118 in 2021

## SMART CITY RATING

BBB

AA in 2021

## FACTOR RATINGS

BBB

STRUCTURES

A

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 8,804,190  
HDI 0.938

(UN Data)

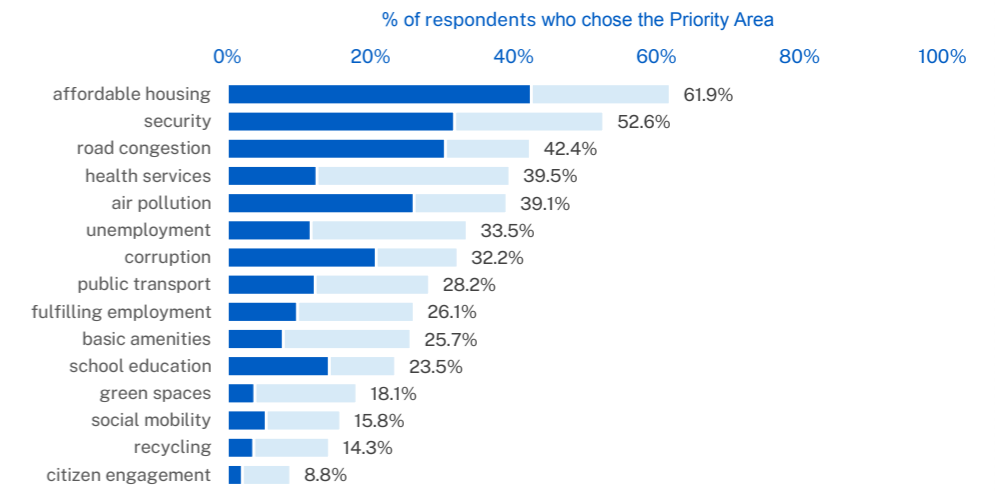


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

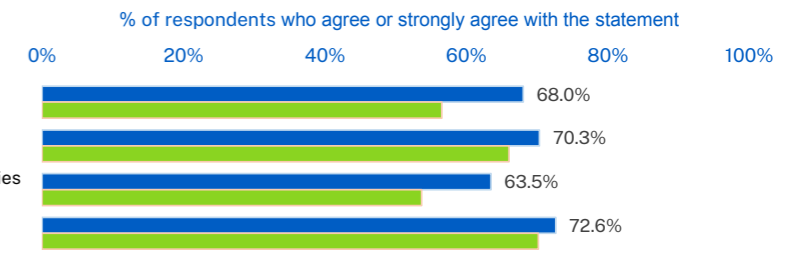
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

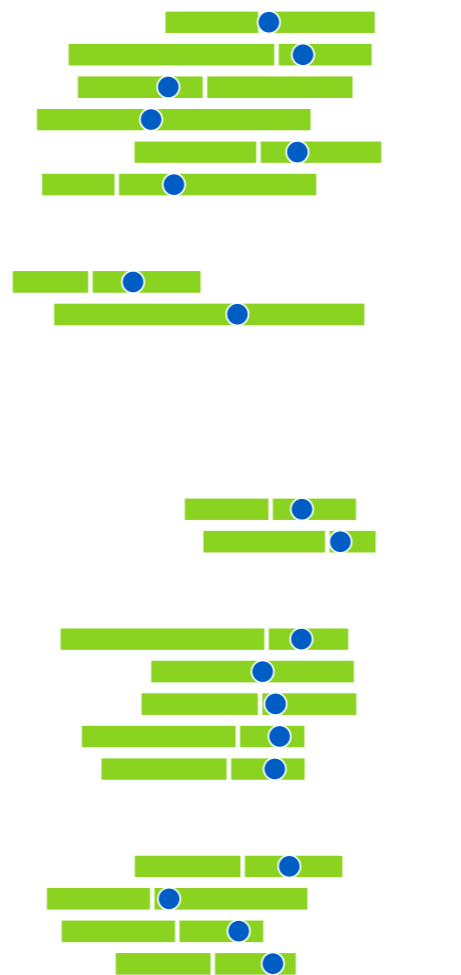
### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

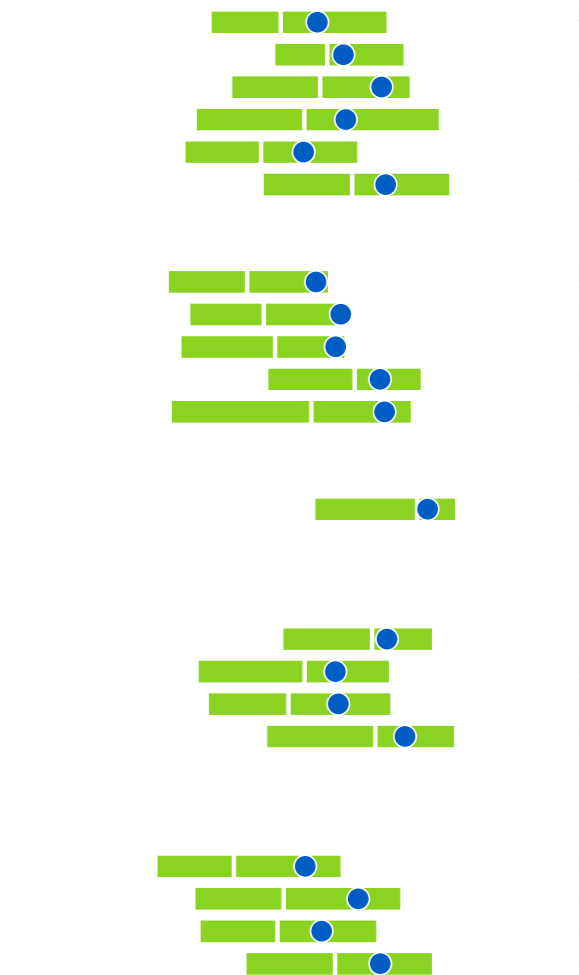
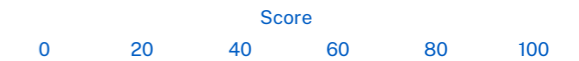
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Newcastle

## SMART CITY RANKING

77

Out of 141



61 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

B

STRUCTURES

CC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,656,980  
HDI 0.901

(Eurostat)

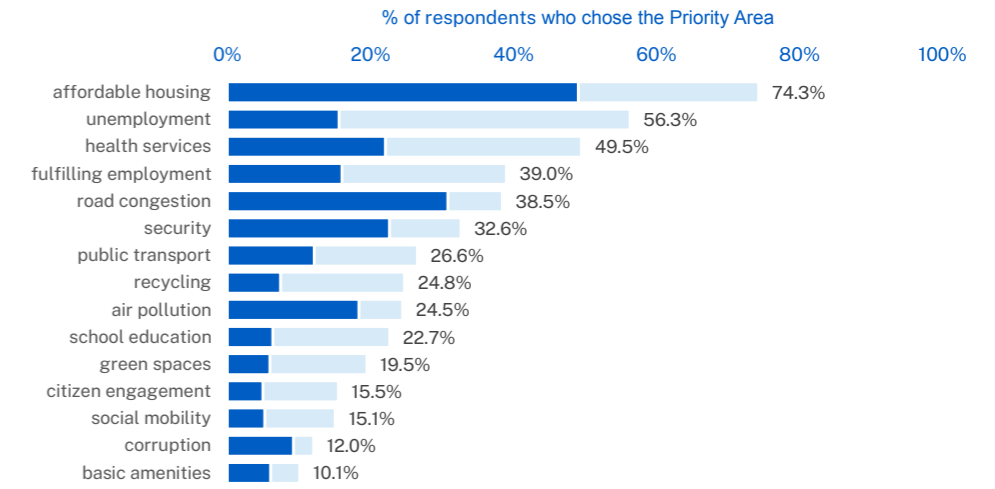


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.932	0.924	0.929	+0.005
Life expectancy at birth	81.2	81.3	80.4	80.7	+0.3
Expected years of schooling	17.4	17.5	17.3	17.3	+0.0
Mean years of schooling	13.0	13.2	13.4	13.4	+0.0
GNI per capita (PPP \$)	39,507	46,071	42,375	45,225	+2,850

## PRIORITY AREAS

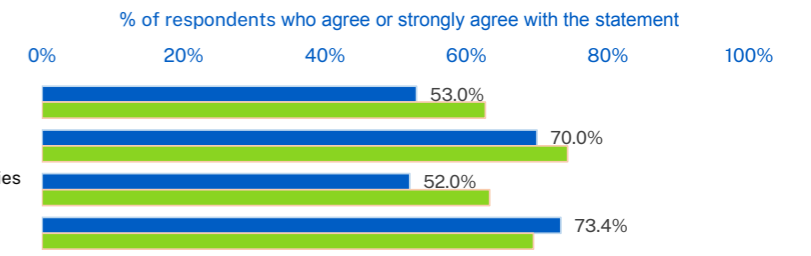
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Nicosia

SMART CITY RANKING

117

Out of 141

not out of 118 in 2021

SMART CITY RATING

C

not in 2021

FACTOR RATINGS

CC

STRUCTURES

C

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 896,007  
HDI 0.896

(Eurostat)

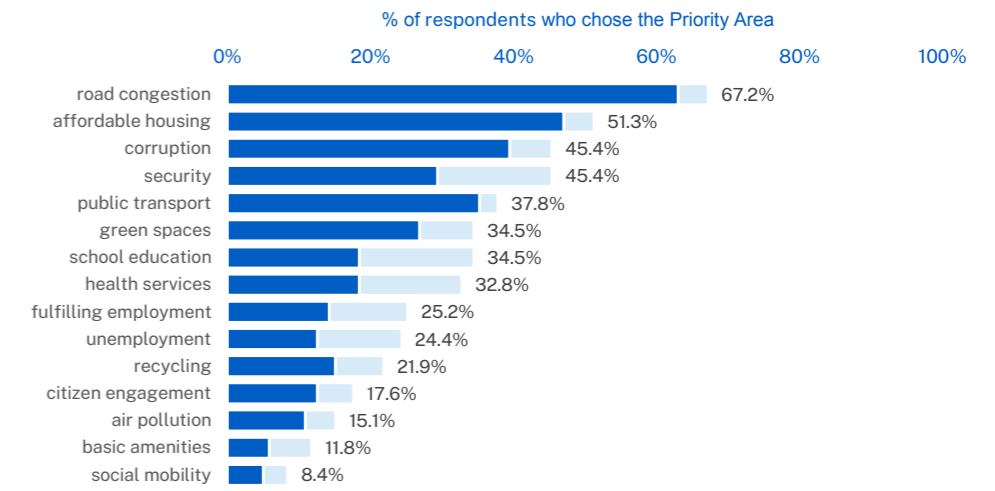


Country	2018	2019	2020	2021	1 yr change
HDI	0.892	0.897	0.894	0.896	+0.002
Life expectancy at birth	81.4	81.4	81.4	81.2	-0.2
Expected years of schooling	15.4	15.7	15.7	15.7	+0.0
Mean years of schooling	12.3	12.4	12.4	12.4	+0.0
GNI per capita (PPP \$)	38,544	39,568	36,519	38,188	+1,669

## PRIORITY AREAS

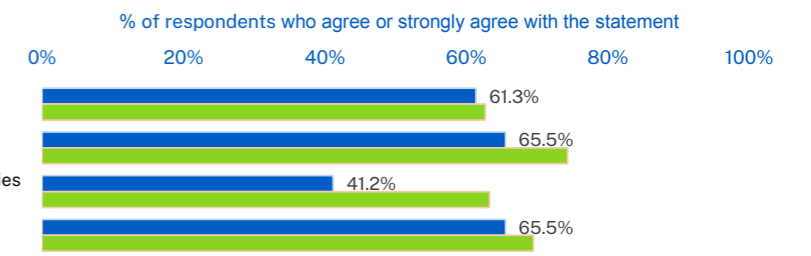
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

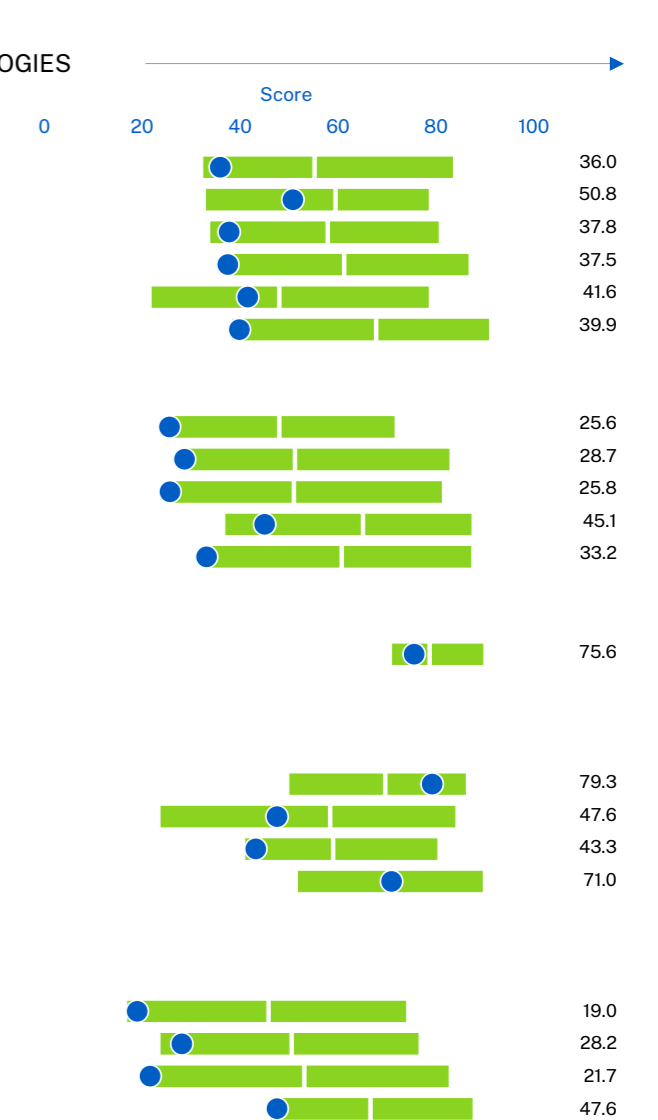
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Osaka

## SMART CITY RANKING

98

Out of 141



90 out of 118 in 2021

## SMART CITY RATING

B

CCC in 2021

## FACTOR RATINGS

BB

STRUCTURES

CCC

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,752,412  
HDI 0.928

(UN Data)



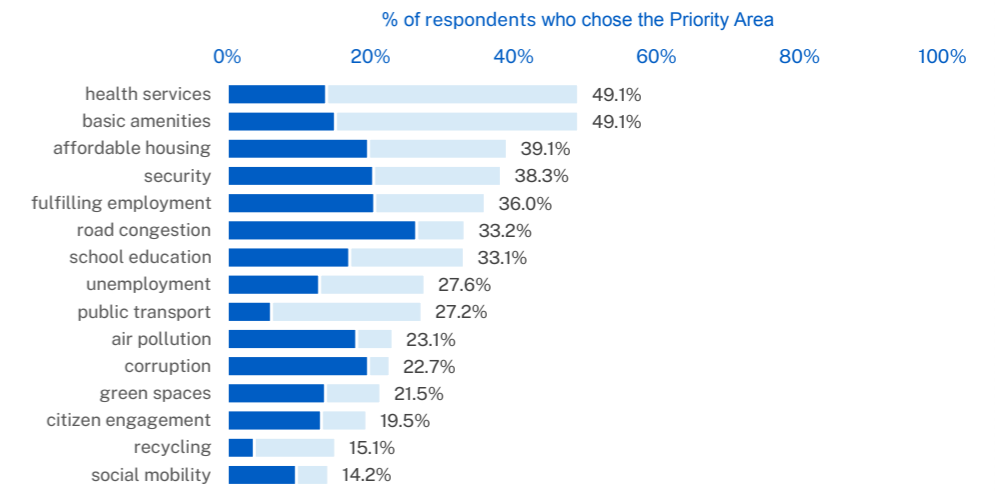
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.915	0.919	0.923	0.925	+0.002
Life expectancy at birth	84.5	84.6	84.7	84.8	+0.1
Expected years of schooling	15.2	15.2	15.2	15.2	+0.0
Mean years of schooling	12.8	12.9	13.4	13.4	+0.0
GNI per capita (PPP \$)	40,799	42,932	41,487	42,274	+787

## PRIORITY AREAS

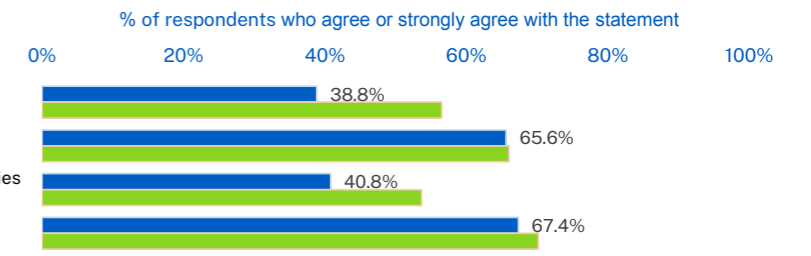
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 2

Out of 141

2 out of 118 in 2021

## SMART CITY RATING

# AAA

AAA in 2021

## FACTOR RATINGS

# AAA

STRUCTURES

# A

TECHNOLOGIES

GROUP

# 1

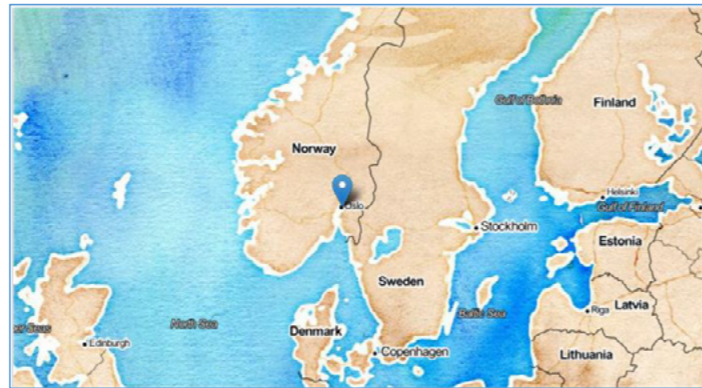
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 693,494  
HDI 0.980

(Eurostat)

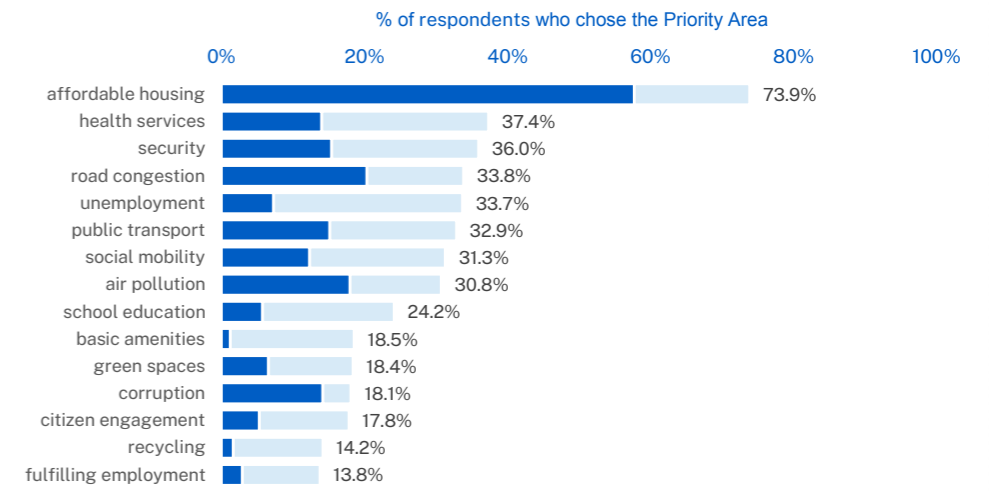


Country	2018	2019	2020	2021	1 yr change
HDI	0.954	0.957	0.959	0.961	+0.002
Life expectancy at birth	82.3	82.4	83.2	83.2	+0.0
Expected years of schooling	18.1	18.1	18.0	18.0	+0.0
Mean years of schooling	12.6	12.9	13.0	13.0	+0.0
GNI per capita (PPP \$)	68,059	66,494	62,573	64,660	+2,087

## PRIORITY AREAS

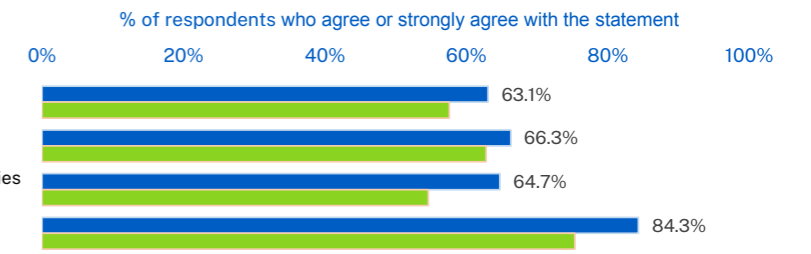
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



# Ottawa

SMART CITY RANKING

40

Out of 141

not out of 118 in 2021

SMART CITY RATING

A

not in 2021

FACTOR RATINGS

AA

STRUCTURES

BBB

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 934,240  
HDI 0.943

(UN Data)

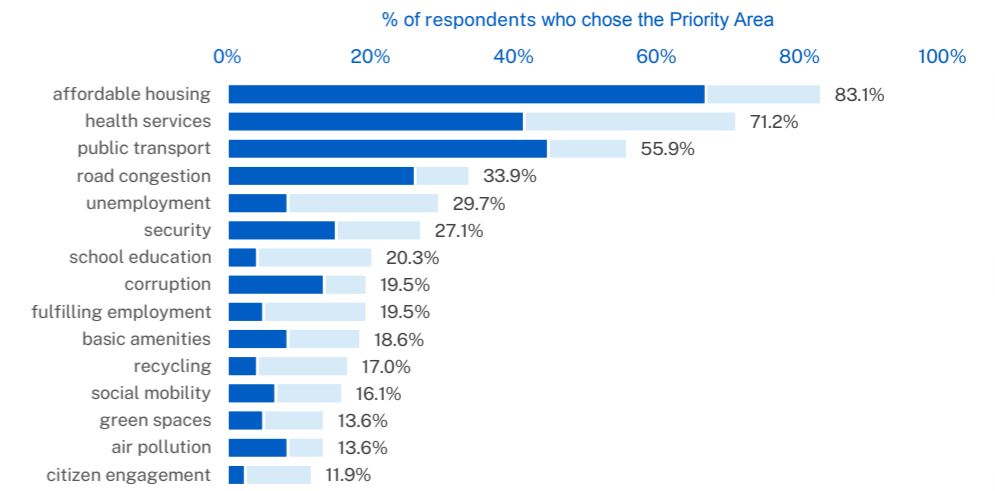


Country	2018	2019	2020	2021	1 yr change
HDI	0.933	0.937	0.931	0.936	+0.005
Life expectancy at birth	82.1	82.4	82.1	82.7	+0.6
Expected years of schooling	16.2	16.4	16.4	16.4	+0.0
Mean years of schooling	13.8	8.7	8.8	8.8	+0.0
GNI per capita (PPP \$)	18,371	18,486	18,754	19,974	+1,220

## PRIORITY AREAS

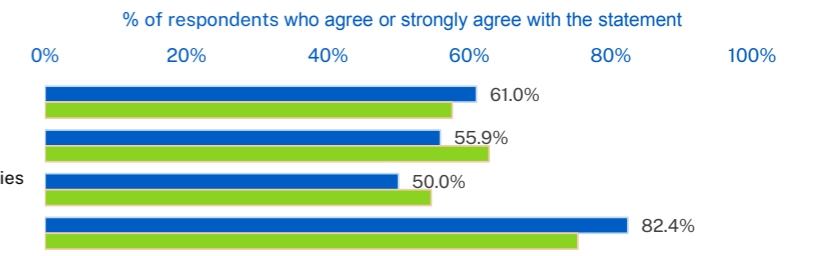
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

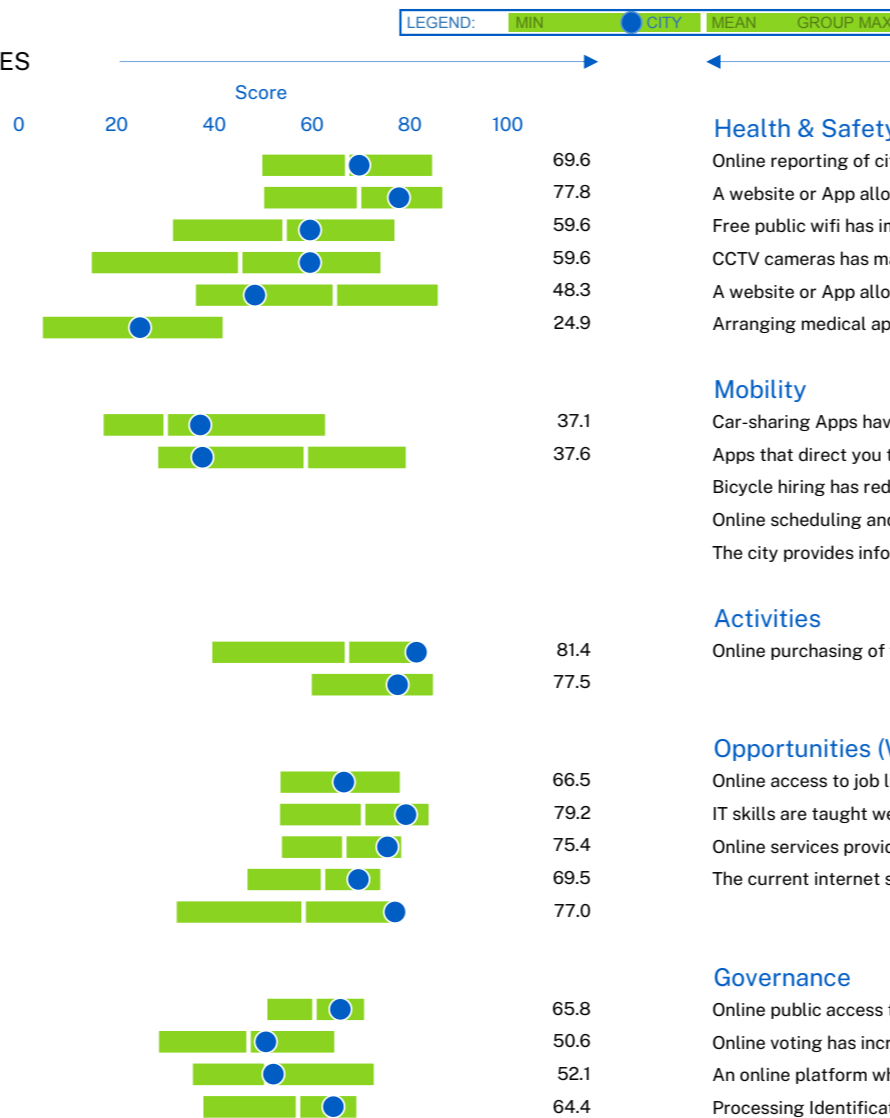
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
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 CCTV cameras has made residents feel safer  
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 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
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 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

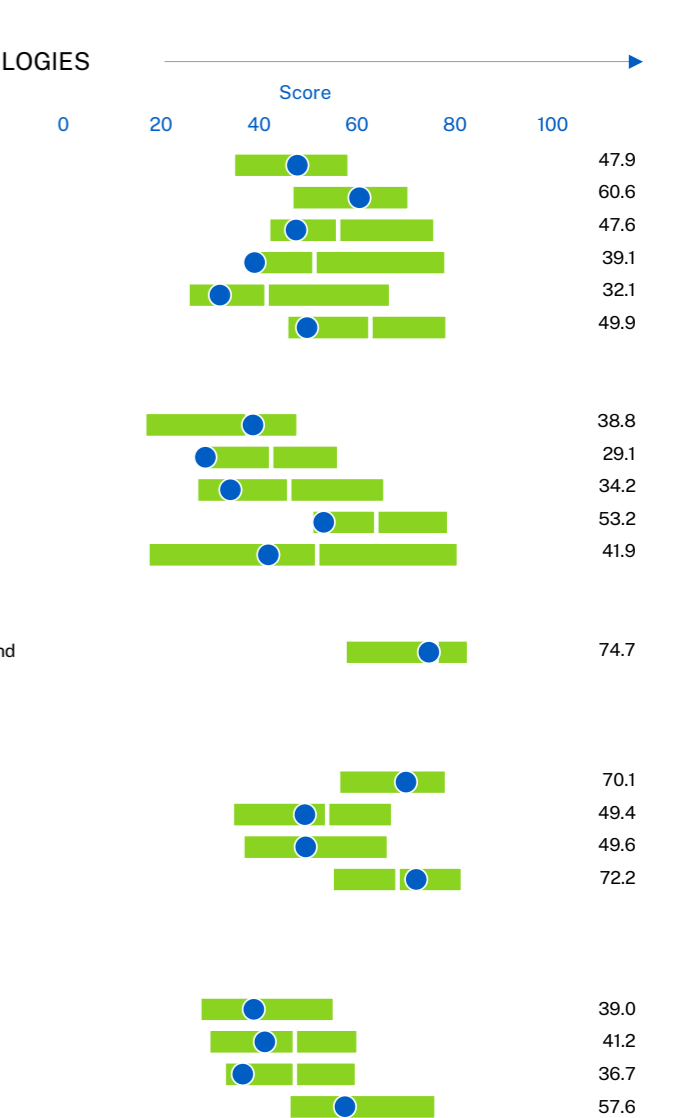
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



# Paris

## SMART CITY RANKING

46

Out of 141



49 out of 118 in 2021

## SMART CITY RATING

BBB

BBB in 2021

## FACTOR RATINGS

BB

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,147,716  
HDI 0.949

(Eurostat)



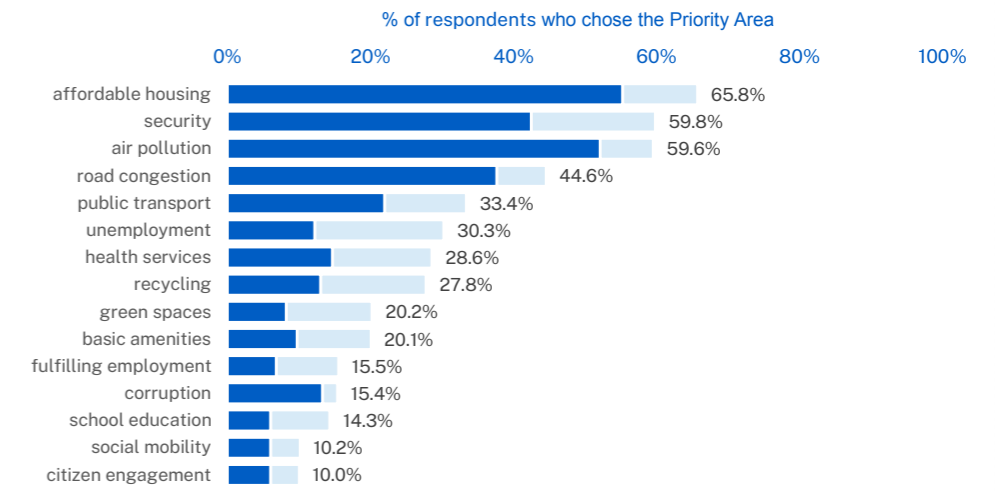
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.901	0.898	0.903	+0.005
Life expectancy at birth	82.5	82.7	82.2	82.5	+0.3
Expected years of schooling	15.5	15.6	15.8	15.8	+0.0
Mean years of schooling	11.4	11.5	11.6	11.6	+0.0
GNI per capita (PPP \$)	40,511	47,173	43,048	45,937	+2,889

## PRIORITY AREAS

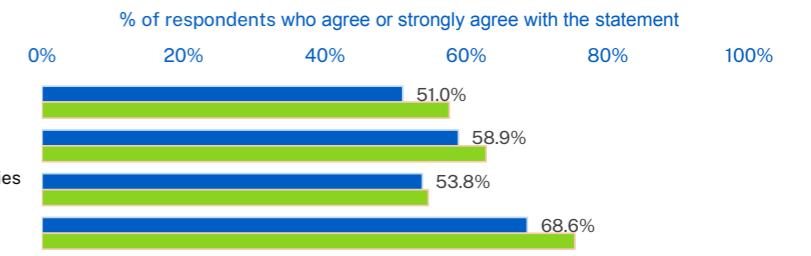
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

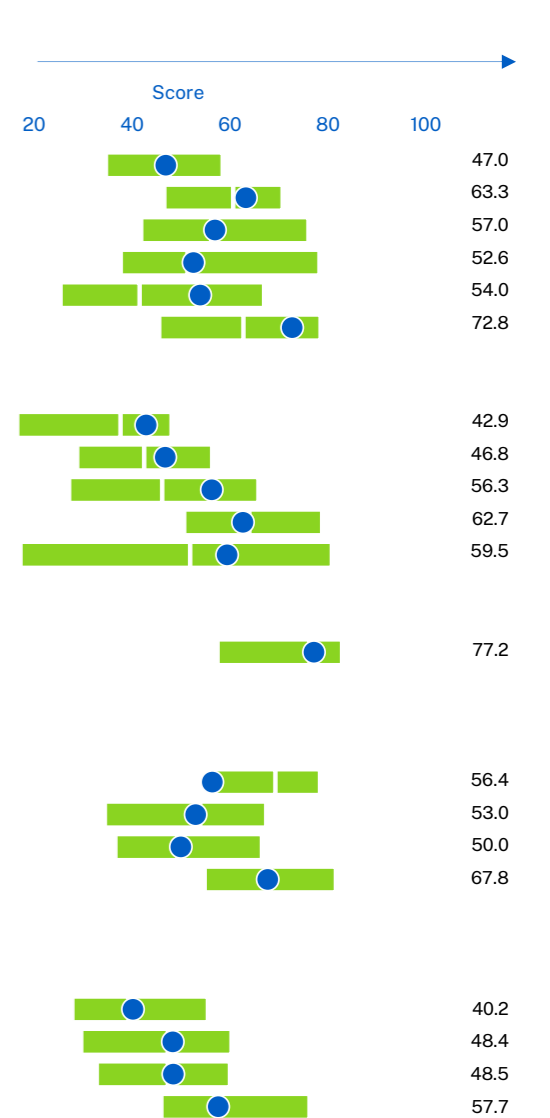
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Philadelphia

SMART CITY RANKING

92

Out of 141



85 out of 118 in 2021

SMART CITY RATING

B

B in 2021

FACTOR RATINGS

B

STRUCTURES

B

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,603,797  
HDI 0.923

(UN Data)



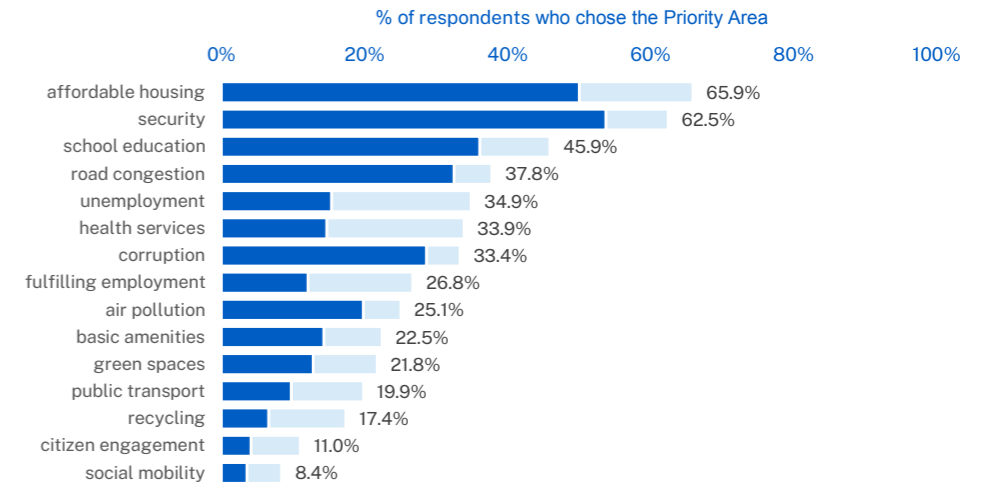
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

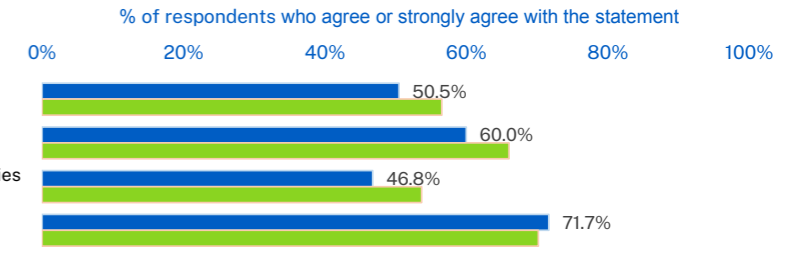
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

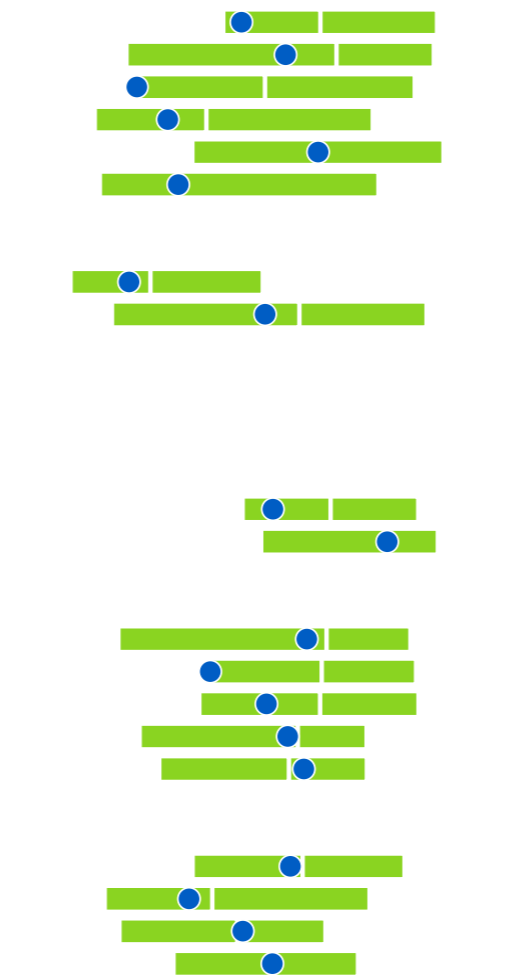
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

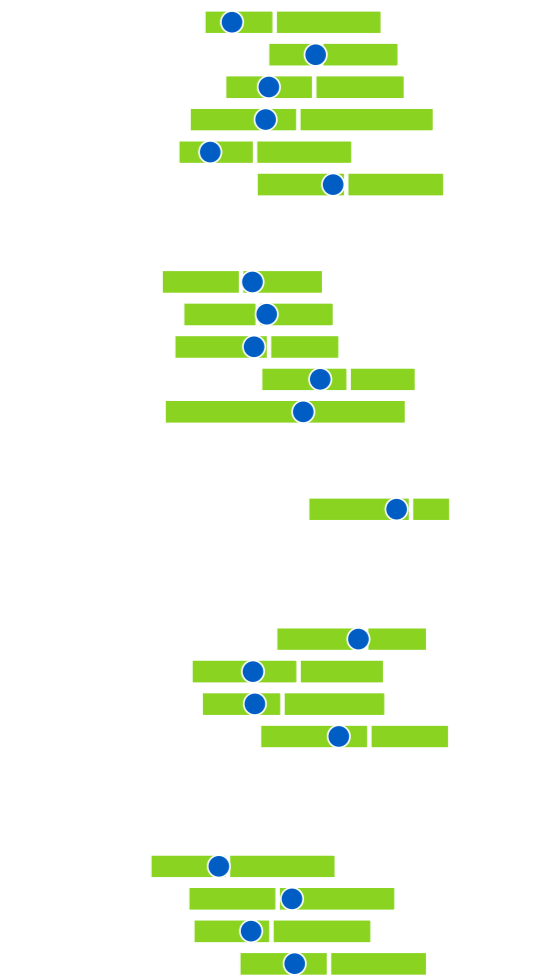
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- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





# Phoenix

## SMART CITY RANKING

93

Out of 141



77 out of 118 in 2021

## SMART CITY RATING

CC

CC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CC

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,608,139  
HDI 0.908

(UN Data)

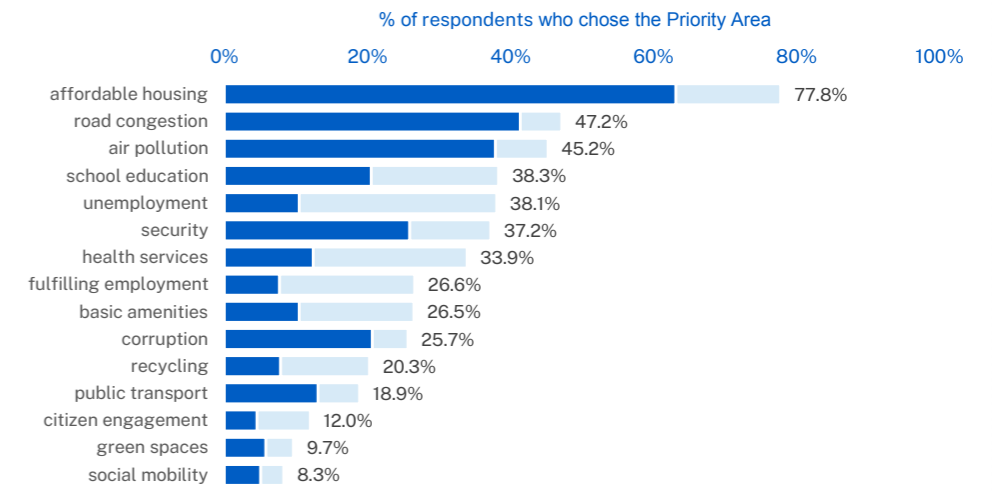


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

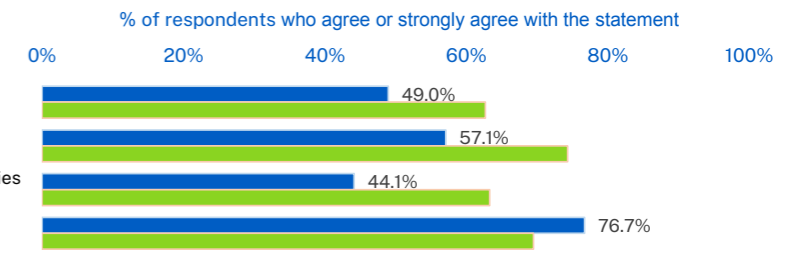
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

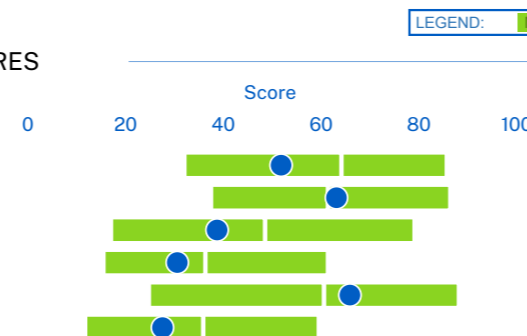
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
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### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

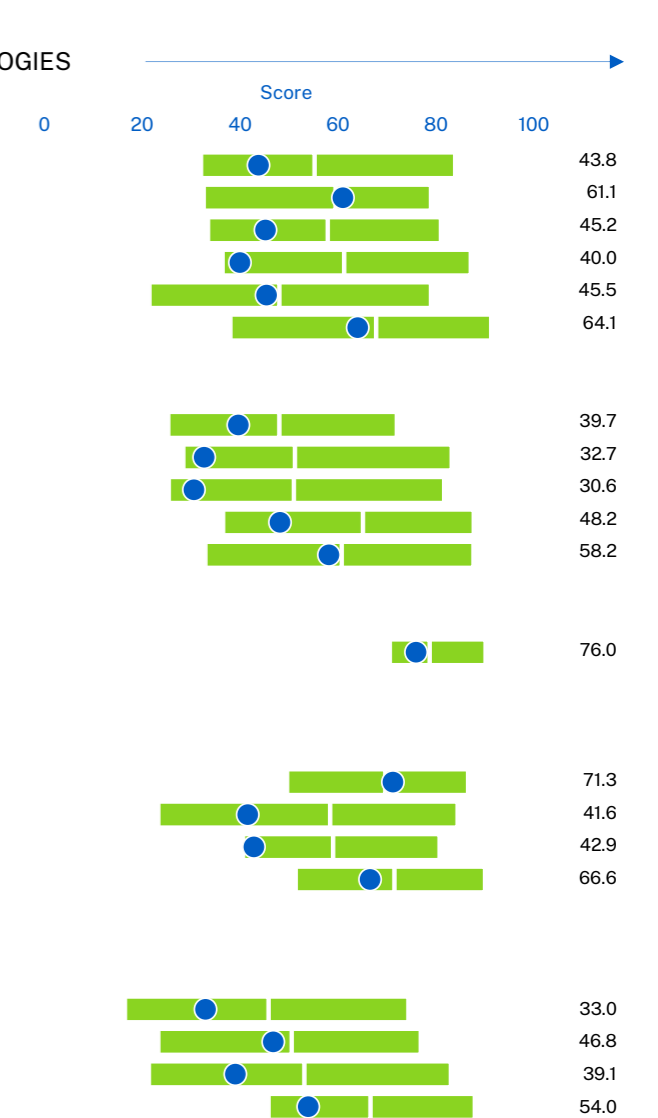
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- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Prague

## SMART CITY RANKING

14

Out of 141



10 out of 118 in 2021

## SMART CITY RATING

AA

A in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,335,084  
HDI 0.960

(Eurostat)



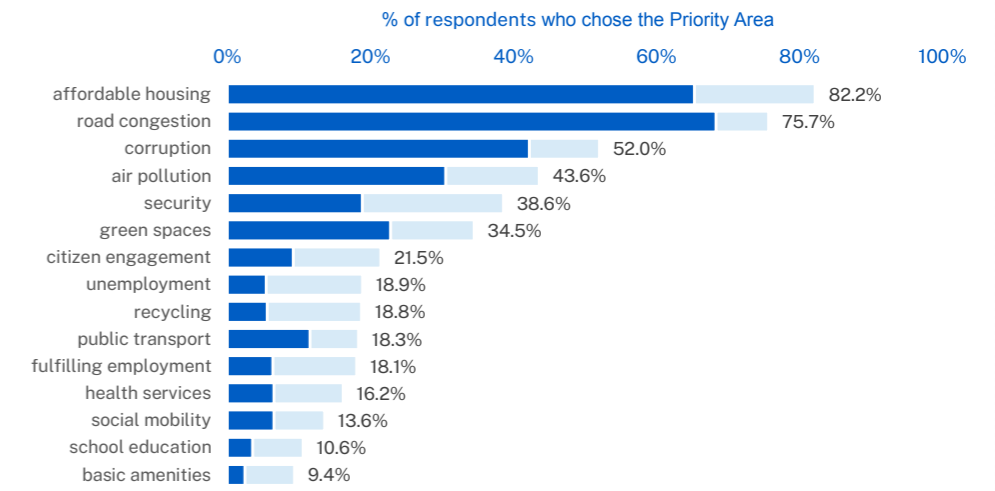
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.891	0.900	0.892	0.889	-0.003
Life expectancy at birth	79.2	79.4	78.6	77.7	-0.8
Expected years of schooling	16.8	16.8	16.2	16.2	+0.0
Mean years of schooling	12.7	12.7	12.9	12.9	+0.0
GNI per capita (PPP \$)	31,597	38,109	37,551	38,745	+1,194

## PRIORITY AREAS

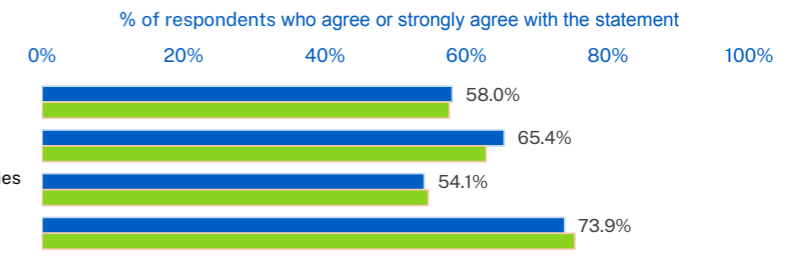
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LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

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- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

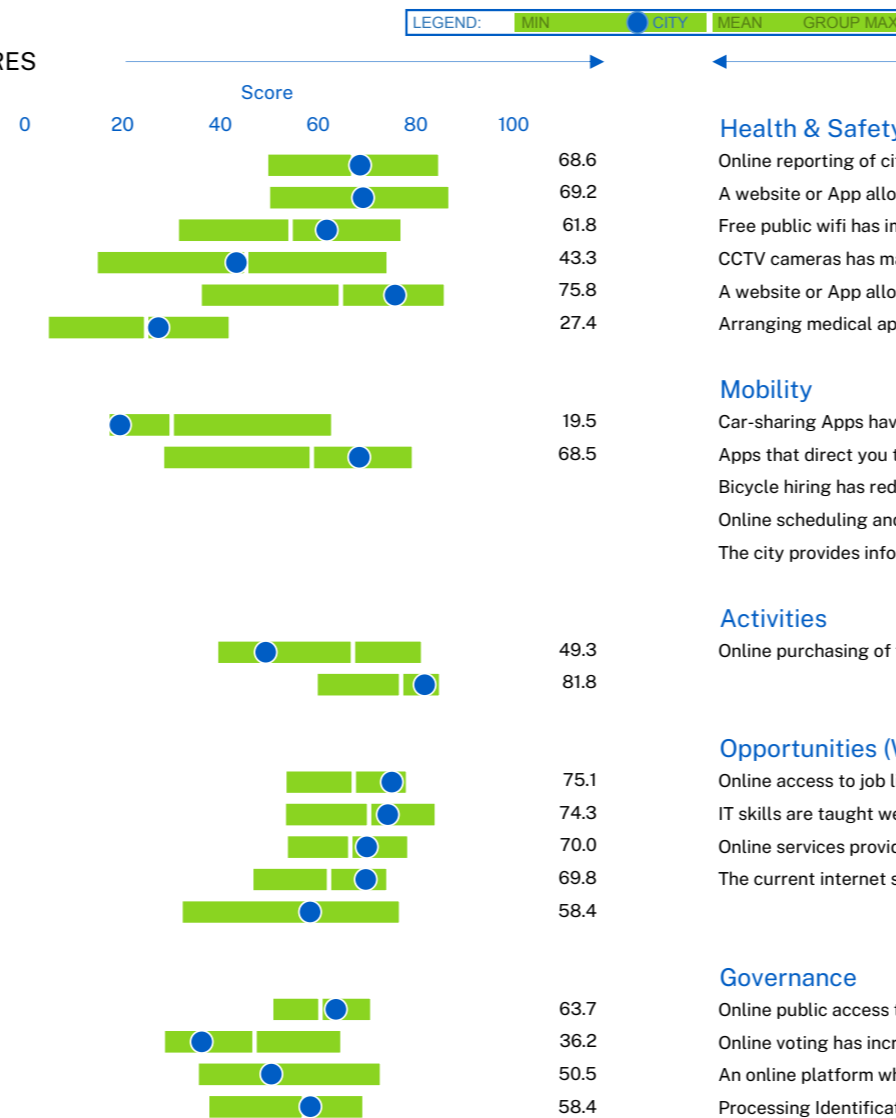
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
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## TECHNOLOGIES

### Health & Safety

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### Mobility

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- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

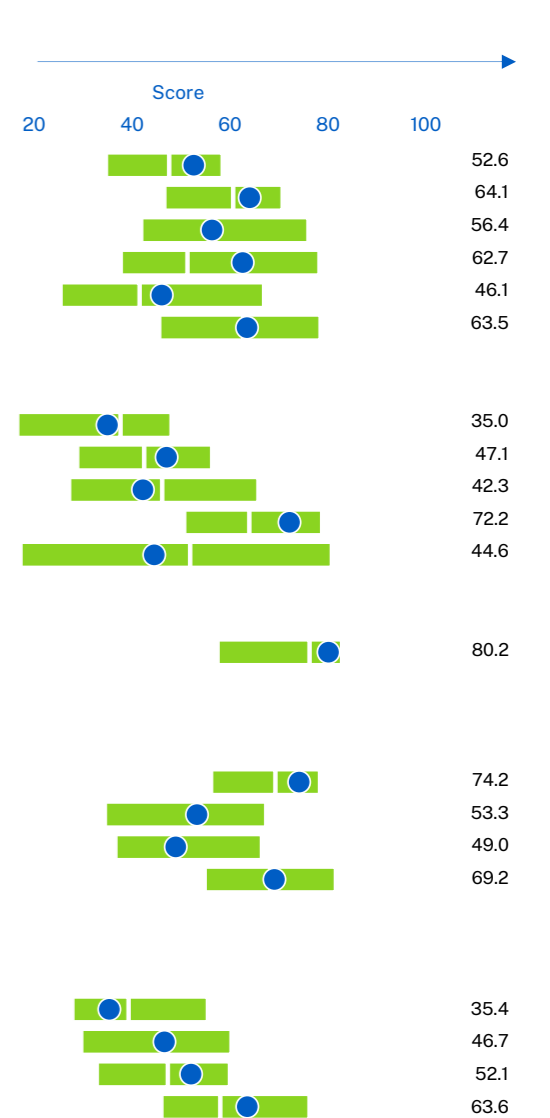
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- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Rabat

## SMART CITY RANKING

126

Out of 141



109 out of 118 in 2021

## SMART CITY RATING

C

C in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 193,193  
HDI 0.702

(UN World Urbanisation Prospects 2022 estimate)



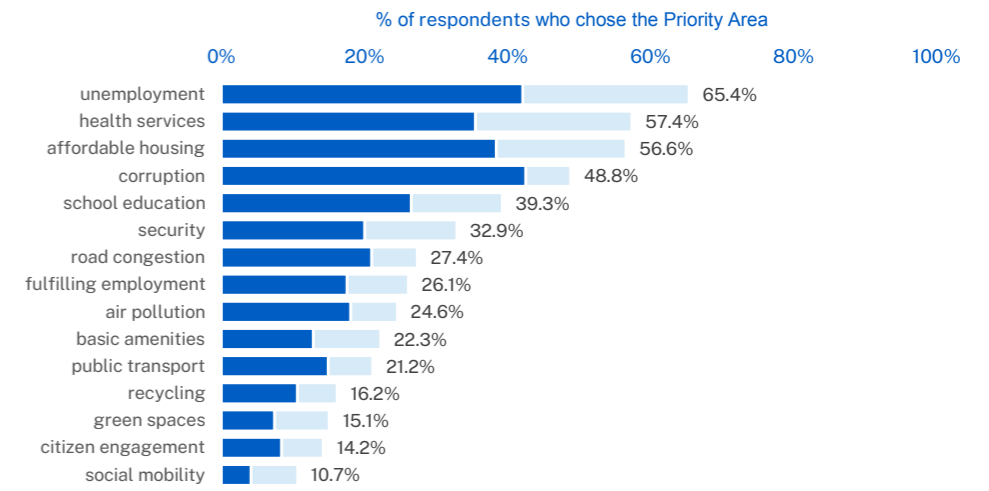
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.676	0.686	0.679	0.683	+0.004
Life expectancy at birth	76.5	76.7	73.9	74.0	+0.1
Expected years of schooling	13.1	13.7	14.2	14.2	+0.0
Mean years of schooling	5.5	5.6	5.9	5.9	+0.0
GNI per capita (PPP \$)	7,480	7,368	6,882	7,303	+421

## PRIORITY AREAS

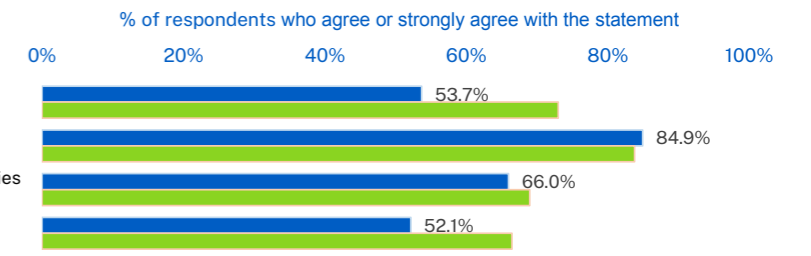
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## ATTITUDES

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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

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- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

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### Activities

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### Opportunities (Work & School)

- Employment finding services are readily available
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- Businesses are creating new jobs
- Minorities feel welcome

### Governance

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LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

## TECHNOLOGIES

### Health & Safety

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### Mobility

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- Online scheduling and ticket sales has made public transport easier to use
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### Activities

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### Opportunities (Work & School)

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- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

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- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

# Reykjavik

## SMART CITY RANKING

26

Out of 141

not out of 118 in 2021

## SMART CITY RATING

BBB

not in 2021

## FACTOR RATINGS

A

STRUCTURES

BBB

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 236,528  
HDI 0.959

(Eurostat)



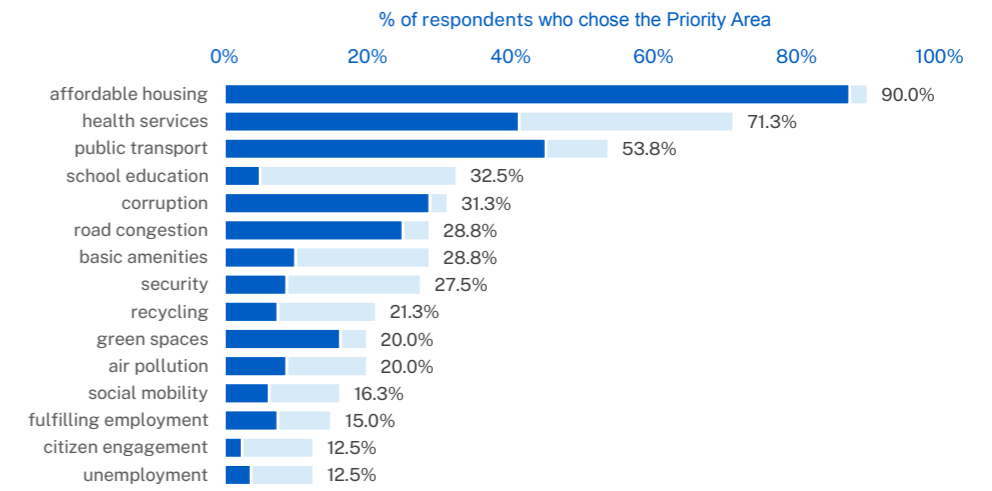
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.959	0.960	0.957	0.959	+0.002
Life expectancy at birth	82.8	82.4	82.6	82.7	+0.1
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	13.6	13.7	13.8	13.8	+0.0
GNI per capita (PPP \$)	56,492	58,055	54,141	55,782	+1,641

## PRIORITY AREAS

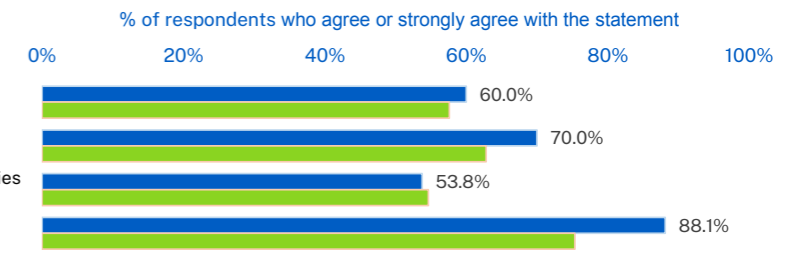
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY



## SMART CITY RANKING

# 83

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# B

not in 2021

## FACTOR RATINGS

# B

STRUCTURES

# B

TECHNOLOGIES

GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 614,618  
HDI 0.929

(Eurostat)



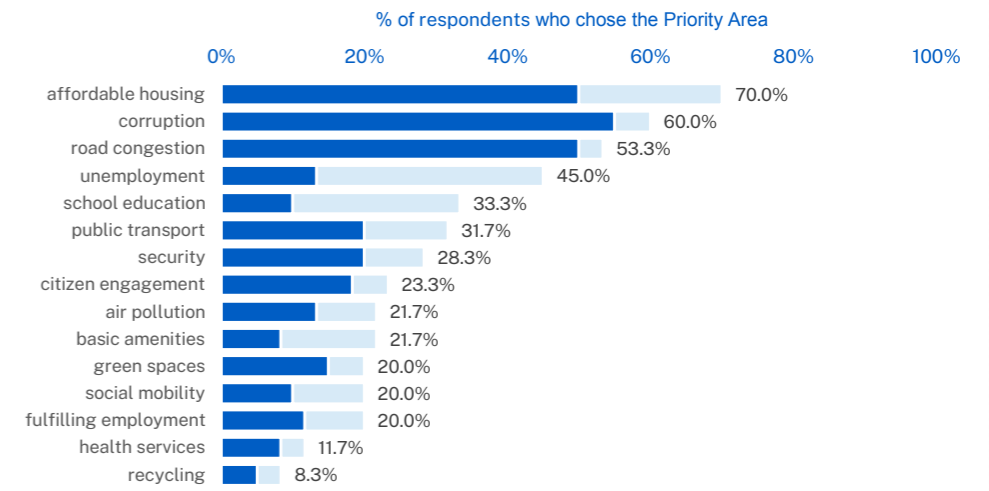
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.866	0.871	0.871	0.863	-0.008
Life expectancy at birth	75.0	75.5	75.5	73.6	-1.9
Expected years of schooling	16.2	16.2	16.2	16.2	+0.0
Mean years of schooling	13.2	13.3	13.3	13.3	+0.0
GNI per capita (PPP \$)	29,895	31,059	31,102	32,803	+1,701

## PRIORITY AREAS

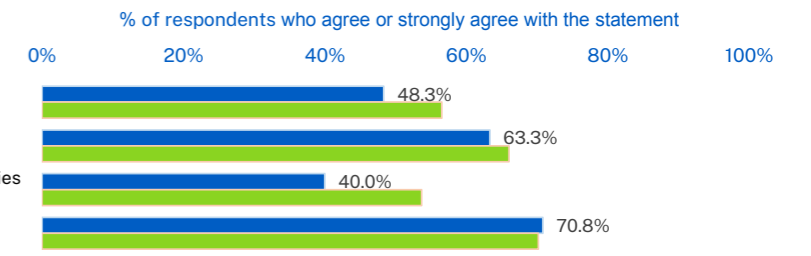
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

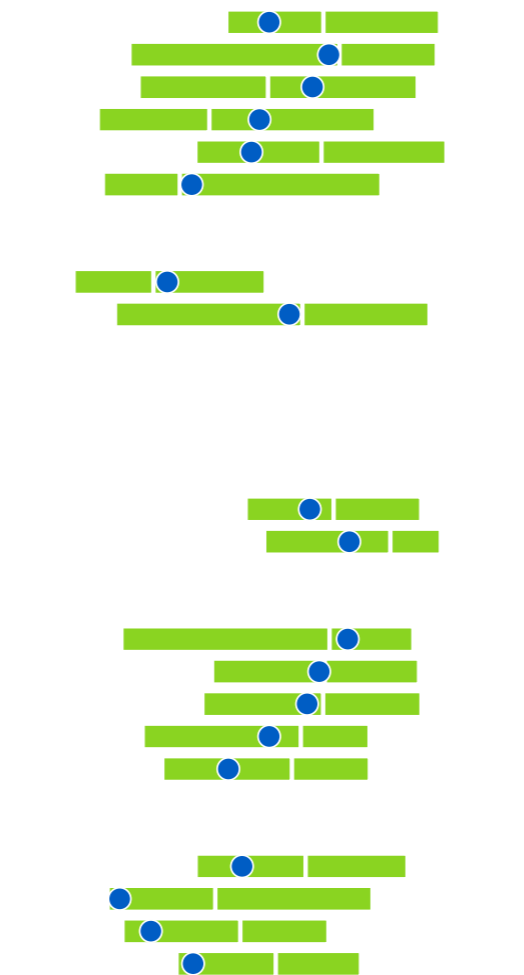
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

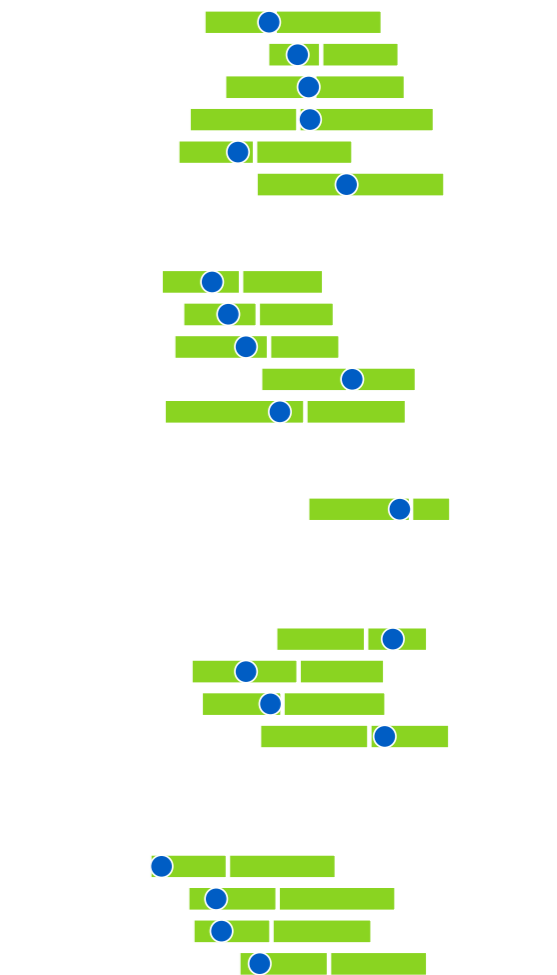
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Rio de Janeiro

## SMART CITY RANKING

136

Out of 141



118 out of 118 in 2021

## SMART CITY RATING

D

D in 2021

## FACTOR RATINGS

D

STRUCTURES

D

TECHNOLOGIES

GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 13,634,274  
HDI 0.783

(UN World Urbanisation Prospects 2022 estimate)



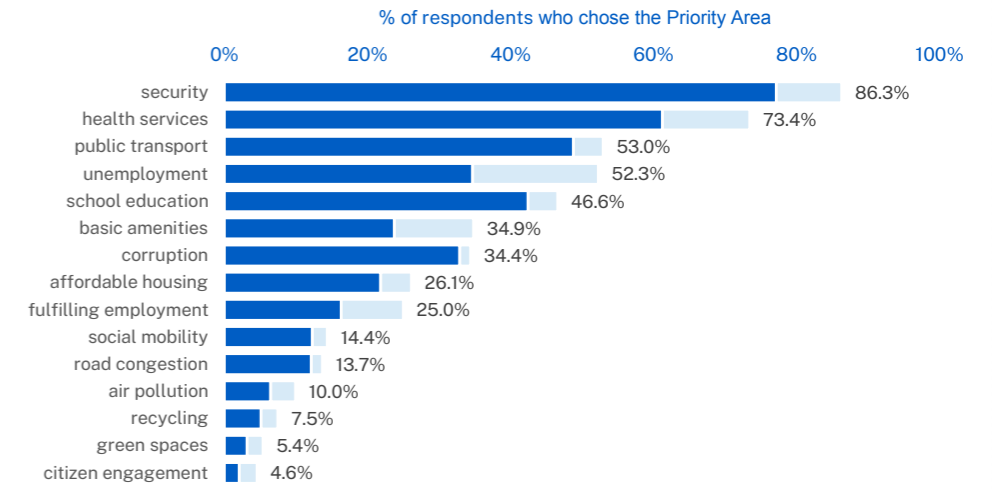
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.764	0.766	0.758	0.754	-0.004
Life expectancy at birth	75.1	75.3	74.0	72.8	-1.3
Expected years of schooling	15.7	15.6	15.6	15.6	+0.0
Mean years of schooling	8.0	10.6	10.9	10.9	+0.0
GNI per capita (PPP \$)	21,972	23,261	22,286	24,563	+2,277

## PRIORITY AREAS

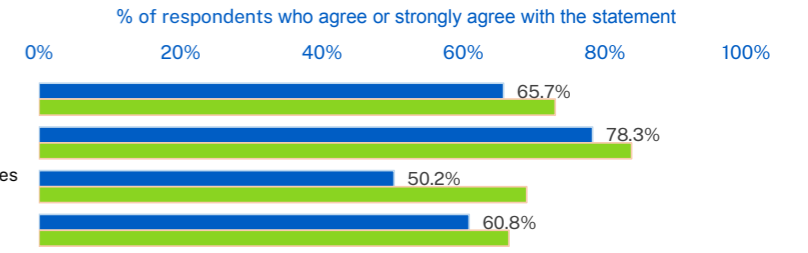
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The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

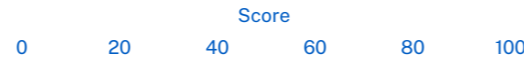
### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 30

Out of 141



39 out of 118 in 2021

## SMART CITY RATING

# BB

B in 2021

## FACTOR RATINGS

# B

STRUCTURES

# BB

TECHNOLOGIES

GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 7,538,200  
HDI 0.900

(UN World Urbanisation Prospects 2022 estimate)



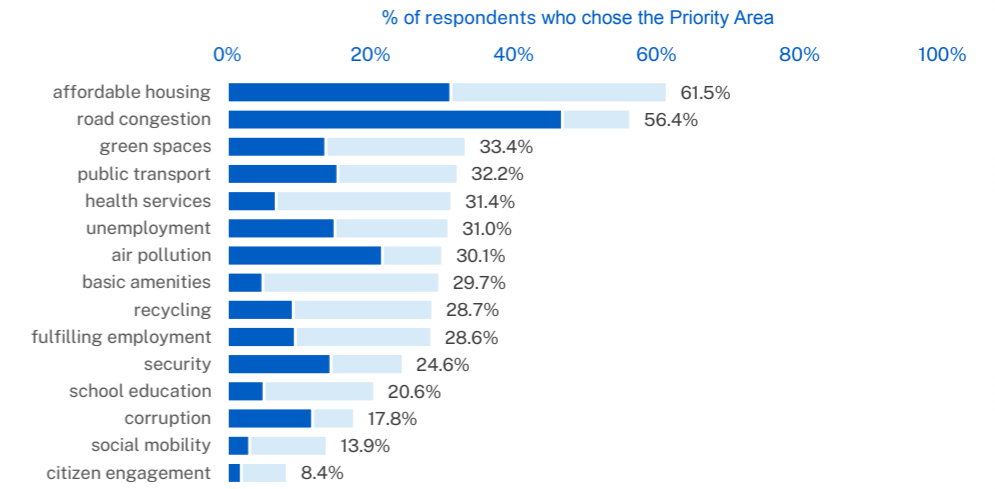
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.865	0.873	0.870	0.875	+0.005
Life expectancy at birth	77.2	77.3	76.2	76.9	+0.7
Expected years of schooling	15.7	16.0	16.1	16.1	+0.0
Mean years of schooling	10.6	8.3	8.3	8.3	+0.0
GNI per capita (PPP \$)	5,072	5,307	5,601	5,745	+143

## PRIORITY AREAS

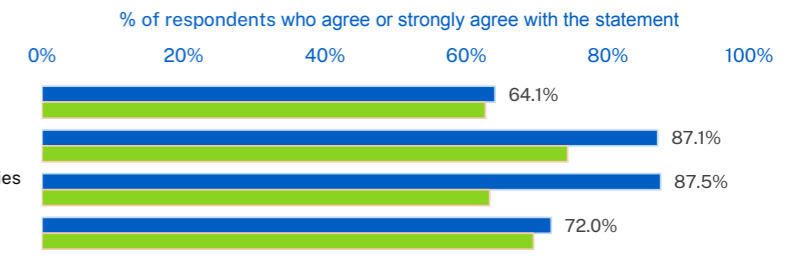
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

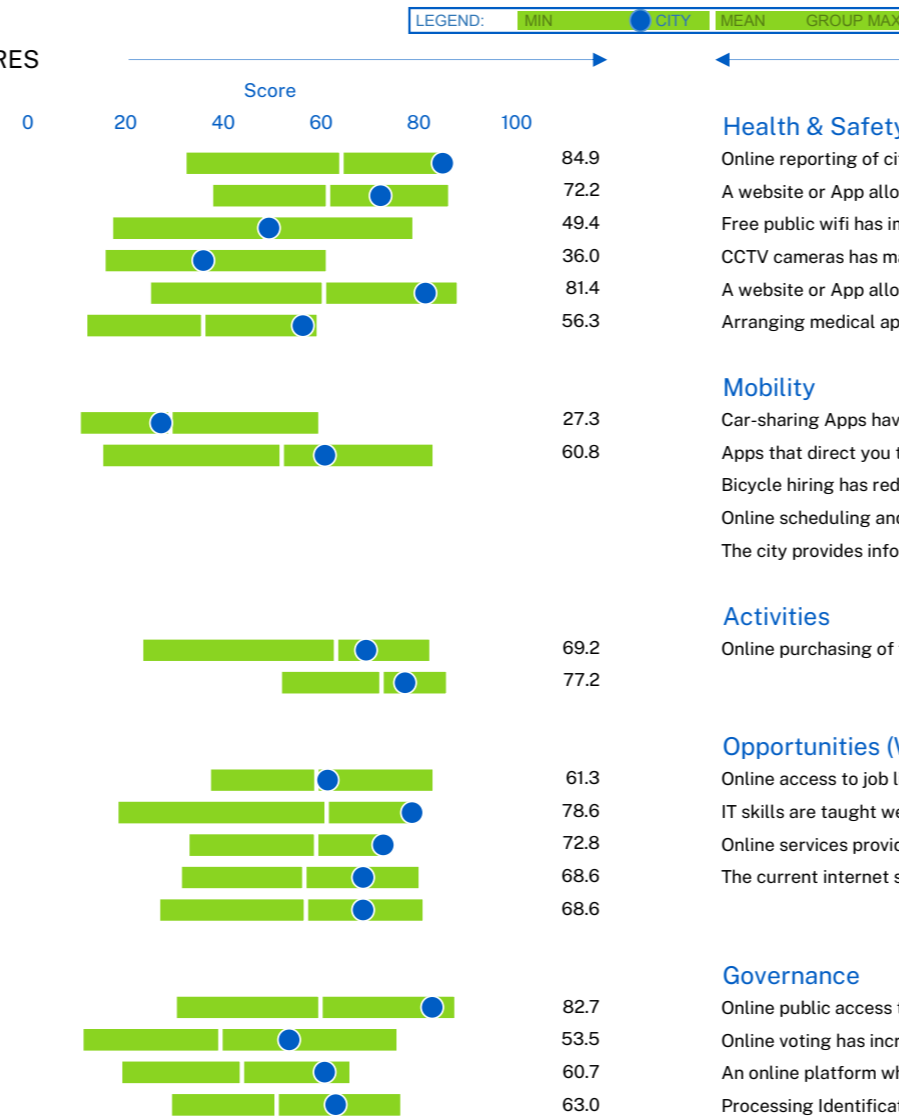
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

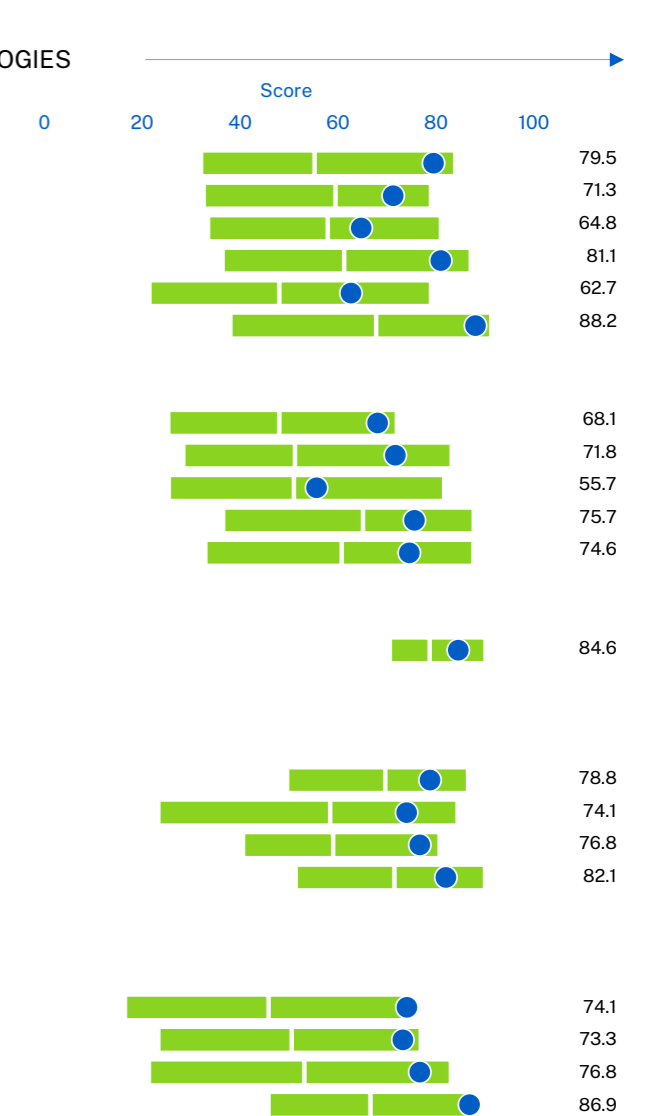
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Rome

## SMART CITY RANKING

122

Out of 141



111 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,730,399  
HDI 0.917

(Eurostat)

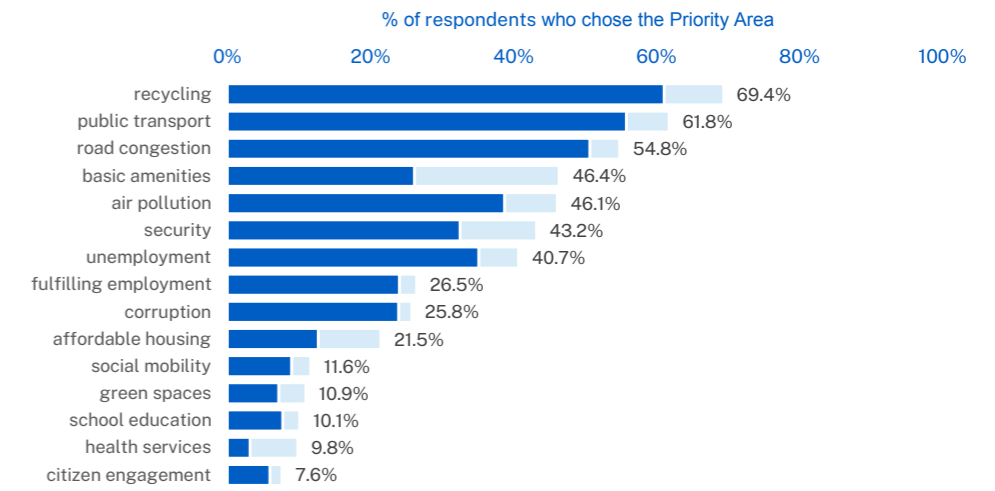


Country	2018	2019	2020	2021	1 yr change
HDI	0.883	0.892	0.889	0.895	+0.006
Life expectancy at birth	83.4	83.5	82.4	82.9	+0.4
Expected years of schooling	16.2	16.1	16.2	16.2	+0.0
Mean years of schooling	10.2	10.4	10.7	10.7	+0.0
GNI per capita (PPP \$)	36,141	42,776	39,901	42,840	+2,939

## PRIORITY AREAS

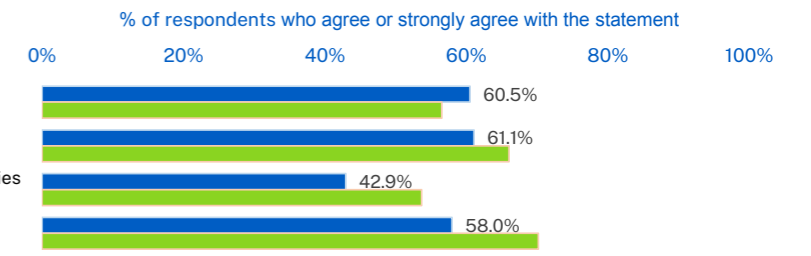
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

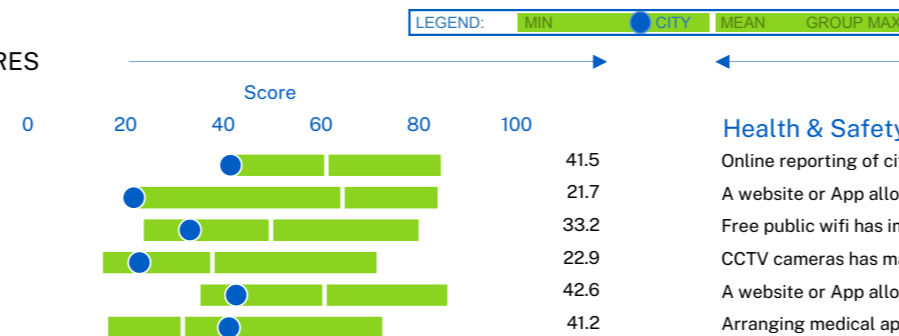
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

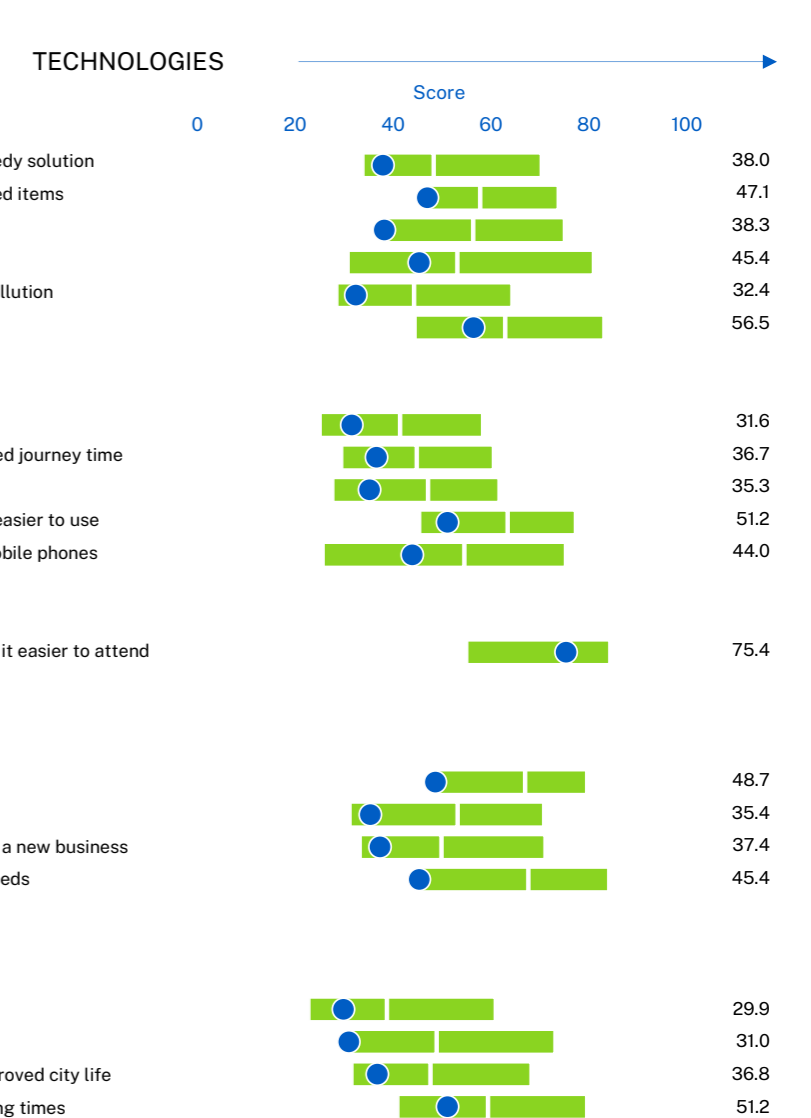
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times





# Rotterdam

## SMART CITY RANKING

41

Out of 141



43 out of 118 in 2021

## SMART CITY RATING

A

BB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,726,050  
HDI 0.941

(Eurostat)

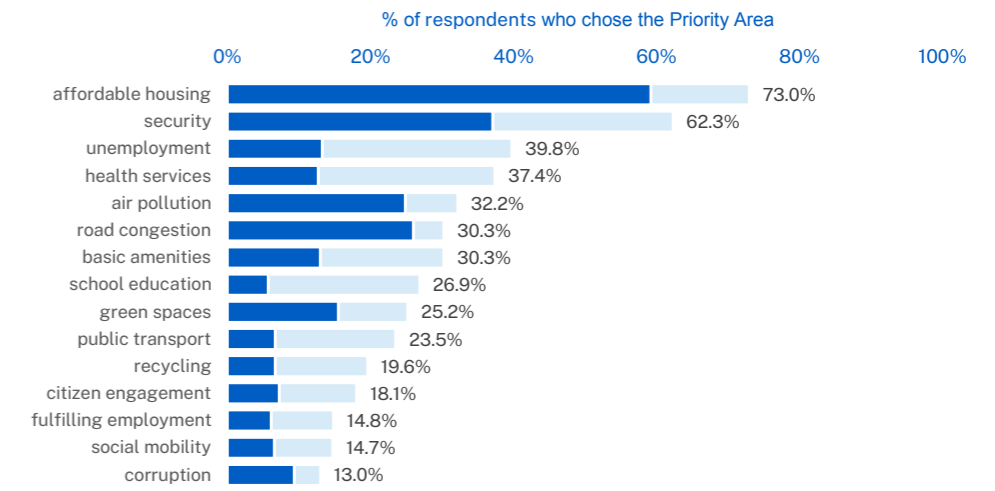


Country	2018	2019	2020	2021	1 yr change
HDI	0.934	0.944	0.939	0.941	+0.002
Life expectancy at birth	82.1	82.3	81.6	81.7	+0.0
Expected years of schooling	18.0	18.5	18.0	18.0	+0.0
Mean years of schooling	12.2	12.4	12.6	12.6	+0.0
GNI per capita (PPP \$)	50,013	57,707	53,504	55,979	+2,476

## PRIORITY AREAS

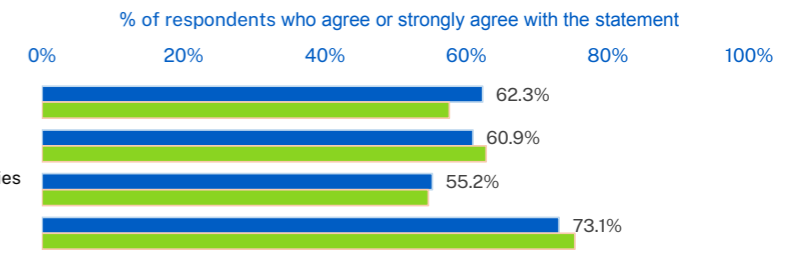
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

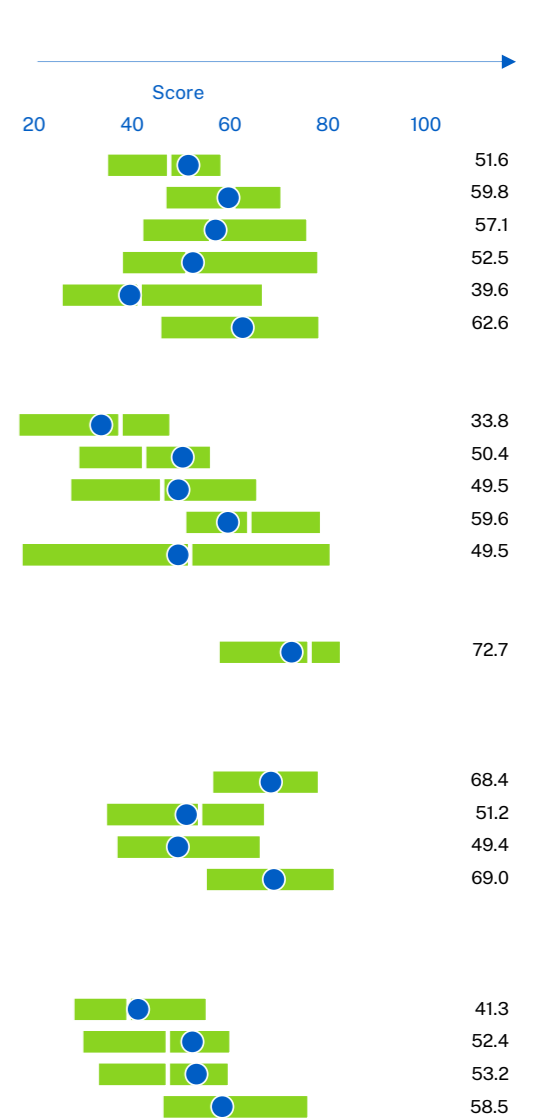
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# San Francisco

## SMART CITY RANKING

68

Out of 141



54 out of 118 in 2021

## SMART CITY RATING

BB

B in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

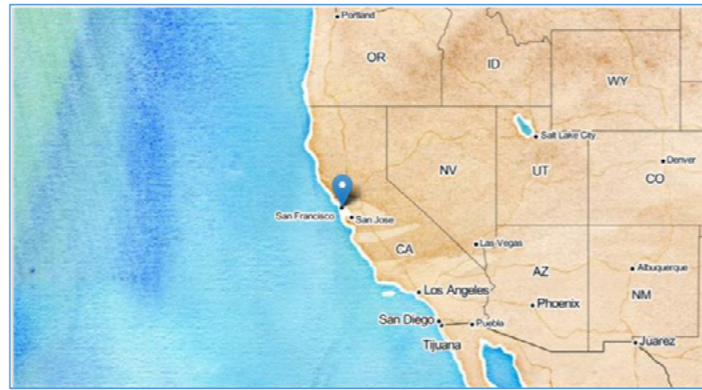
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 873,965  
HDI 0.931

(UN Data)



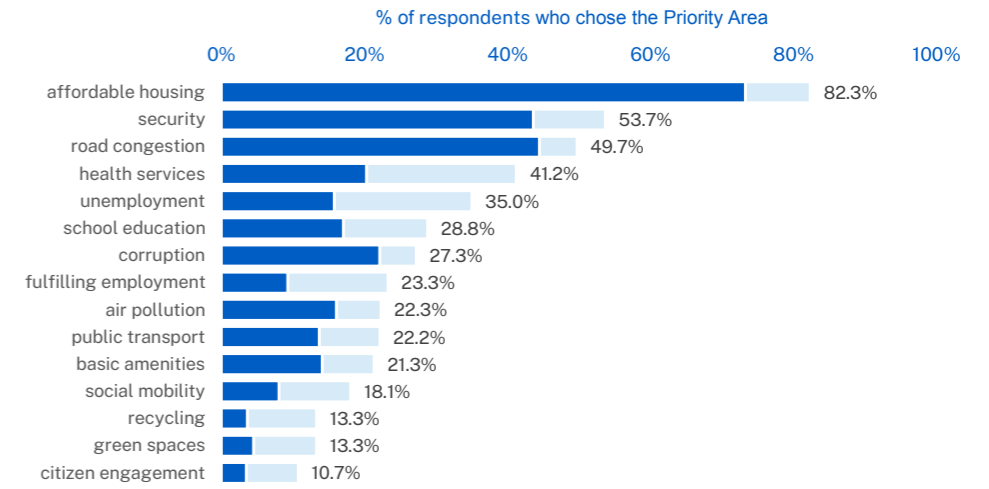
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

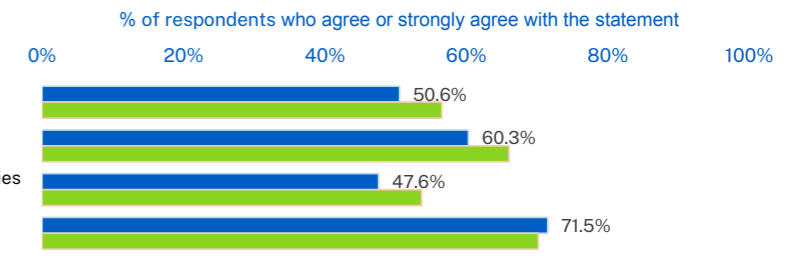
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]



# San José

## SMART CITY RANKING

127

Out of 141



112 out of 118 in 2021

## SMART CITY RATING

C

D in 2021

## FACTOR RATINGS

CC

STRUCTURES

C

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 351,958  
HDI 0.826

(UN Data)

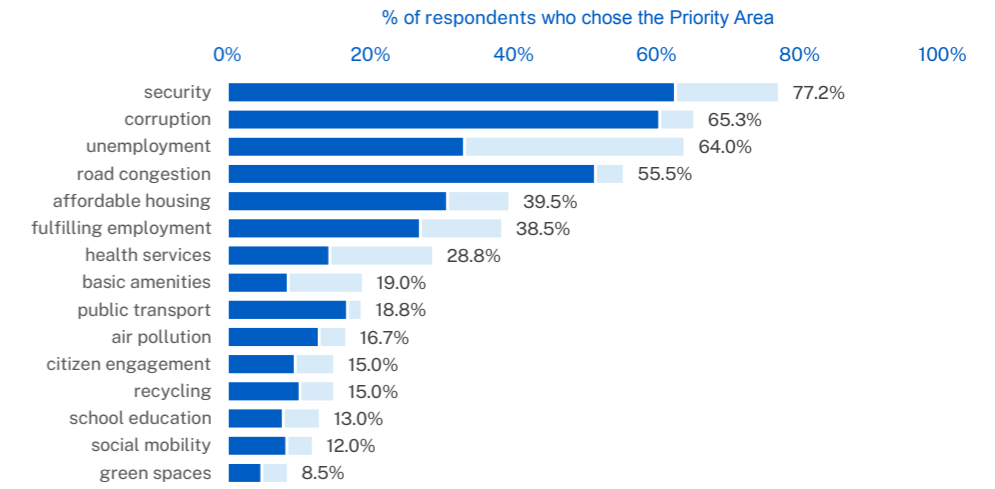


Country	2018	2019	2020	2021	1 yr change
HDI	0.811	0.819	0.816	0.809	-0.007
Life expectancy at birth	79.5	79.4	79.3	77.0	-2.3
Expected years of schooling	15.9	16.6	16.6	16.6	+0.0
Mean years of schooling	8.7	12.8	12.9	12.9	+0.0
GNI per capita (PPP \$)	41,779	48,511	47,946	49,452	+1,506

## PRIORITY AREAS

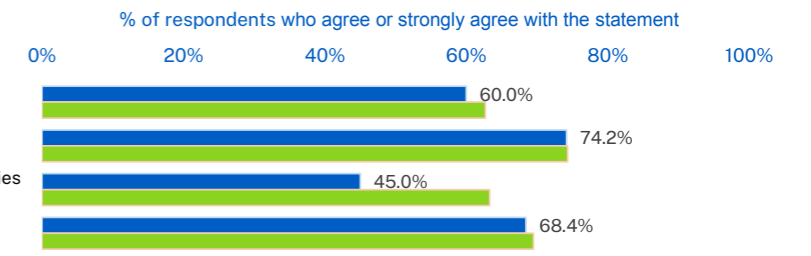
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

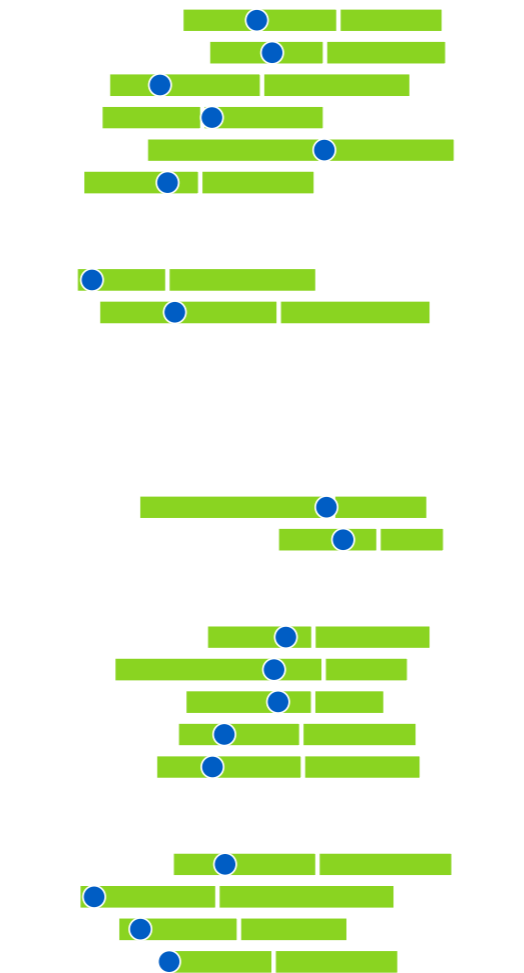
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

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### Mobility

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- Apps that direct you to an available parking space have reduced journey time
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- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

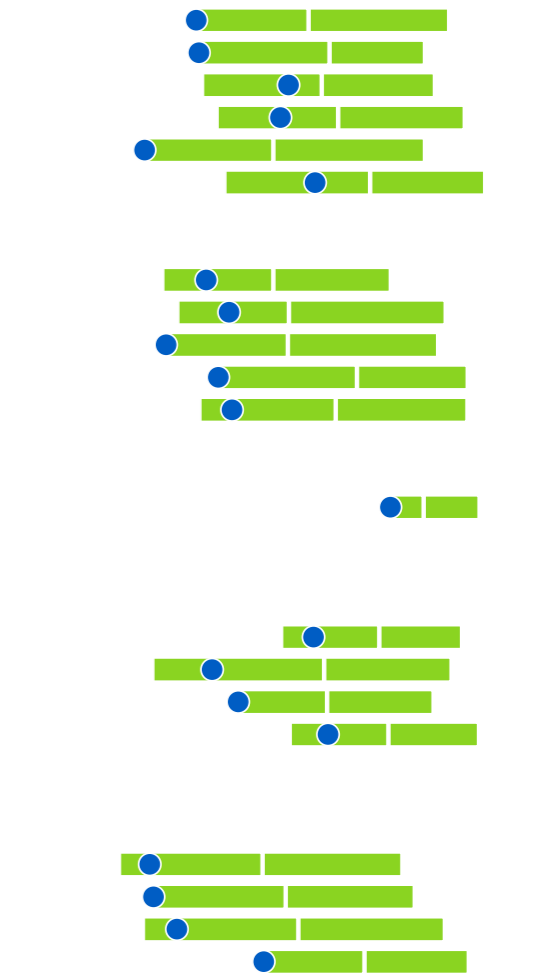
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



## SMART CITY RANKING

# 140

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# D

not in 2021

## FACTOR RATINGS

# D

STRUCTURES

# D

TECHNOLOGIES

## GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,181,655  
HDI 0.521

(UN World Urbanisation Prospects 2022 estimate)



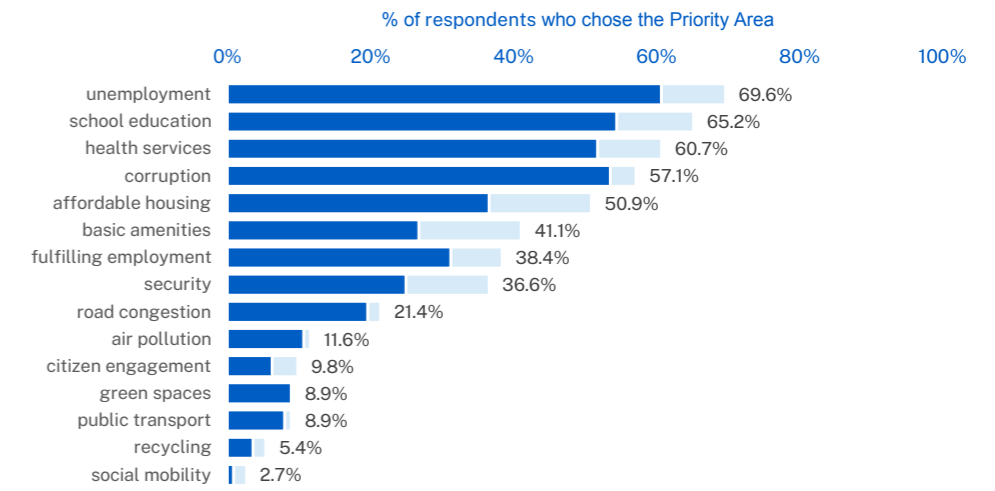
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.459	0.461	0.460	0.455	-0.005
Life expectancy at birth	64.6	65.1	64.7	63.8	-0.9
Expected years of schooling	9.1	9.1	9.1	9.1	+0.0
Mean years of schooling	3.2	3.2	3.2	3.2	+0.0
GNI per capita (PPP \$)	1,342	1,350	1,371	1,314	-56

## PRIORITY AREAS

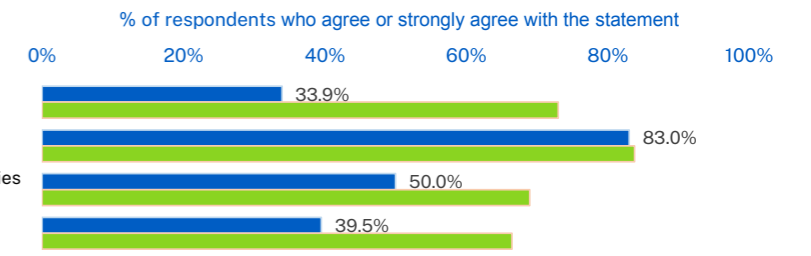
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The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

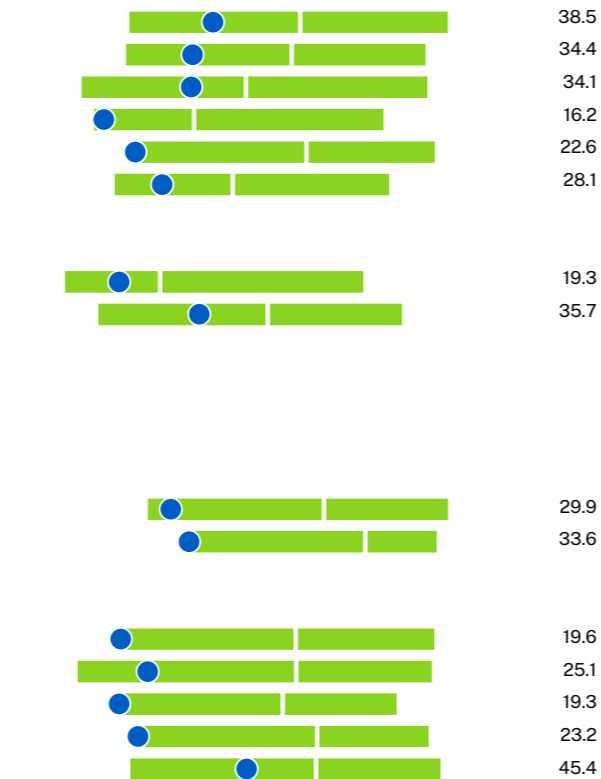
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

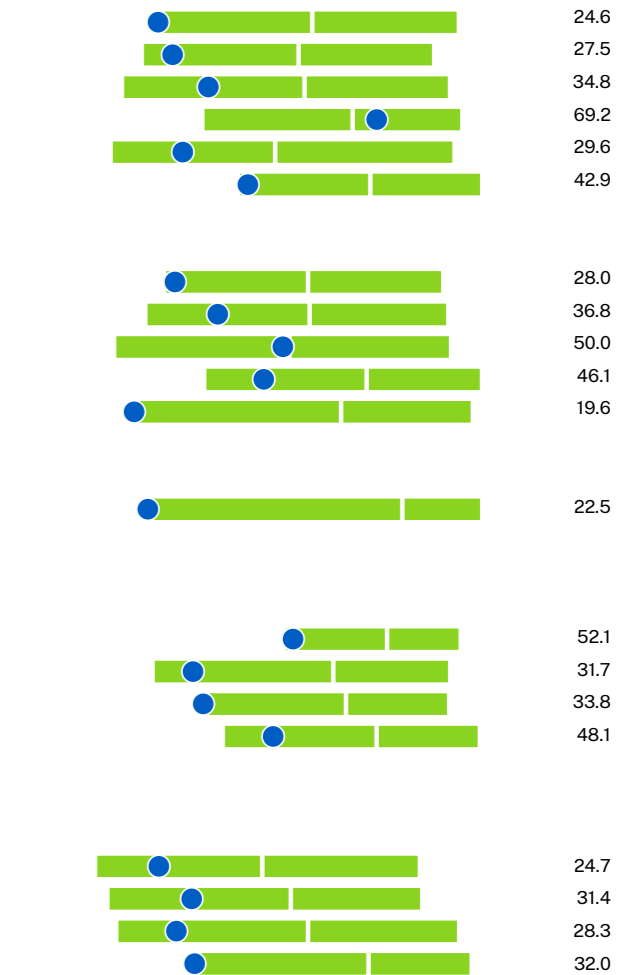
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Santiago

## SMART CITY RANKING

119

Out of 141



107 out of 118 in 2021

## SMART CITY RATING

C

C in 2021

## FACTOR RATINGS

C

STRUCTURES

C

TECHNOLOGIES

## GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,270,140  
HDI 0.886

(UN Data)



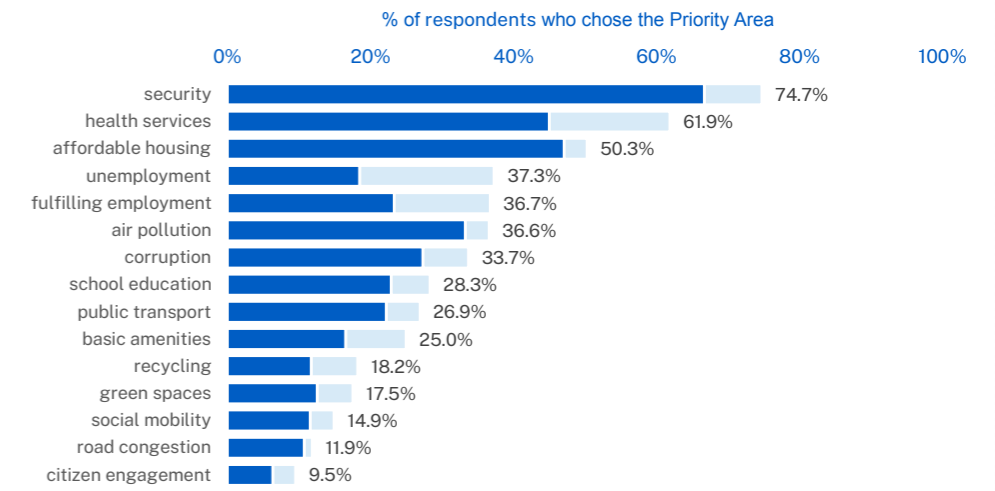
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.847	0.851	0.852	0.855	+0.003
Life expectancy at birth	80.0	80.2	79.4	78.9	-0.4
Expected years of schooling	16.5	16.4	16.7	16.7	+0.0
Mean years of schooling	10.4	12.7	12.9	12.9	+0.0
GNI per capita (PPP \$)	31,597	38,109	37,551	38,745	+1,194

## PRIORITY AREAS

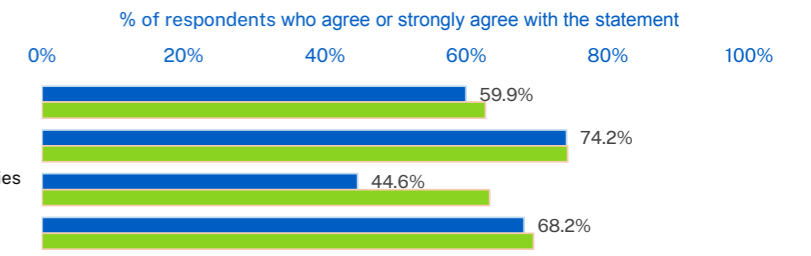
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Sao Paulo

## SMART CITY RANKING

130

Out of 141



117 out of 118 in 2021

## SMART CITY RATING

D

D in 2021

## FACTOR RATINGS

D

STRUCTURES

C

TECHNOLOGIES

GROUP

4

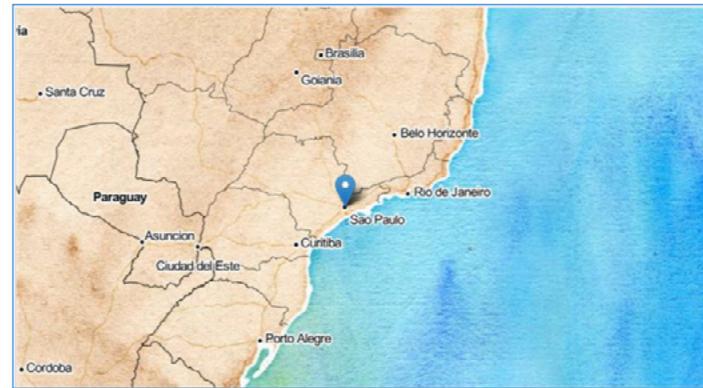
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 22,429,799  
HDI 0.780

(UN World Urbanisation Prospects 2022 estimate)

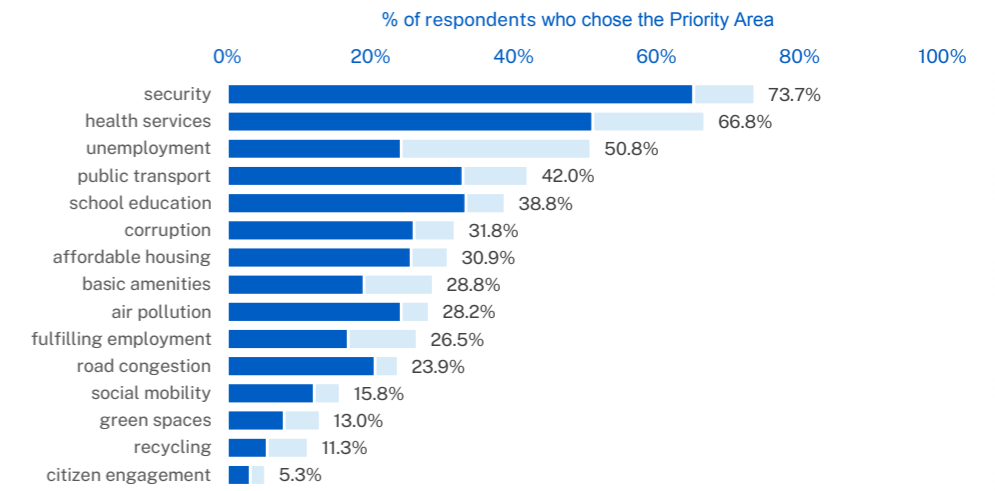


Country	2018	2019	2020	2021	1 yr change
HDI	0.764	0.766	0.758	0.754	-0.004
Life expectancy at birth	75.1	75.3	74.0	72.8	-1.3
Expected years of schooling	15.7	15.6	15.6	15.6	+0.0
Mean years of schooling	8.0	10.6	10.9	10.9	+0.0
GNI per capita (PPP \$)	21,972	23,261	22,286	24,563	+2,277

## PRIORITY AREAS

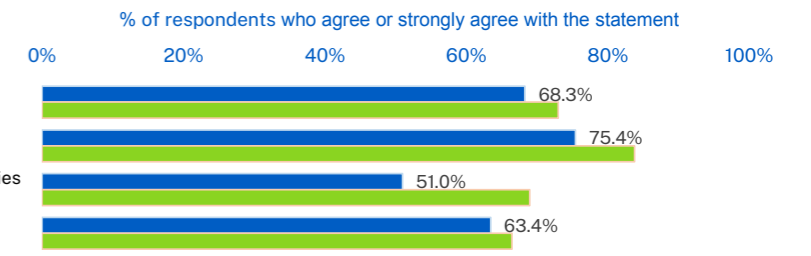
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

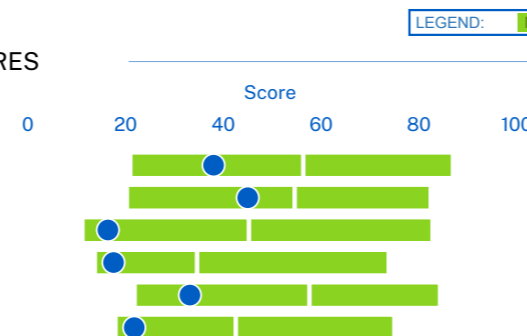
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

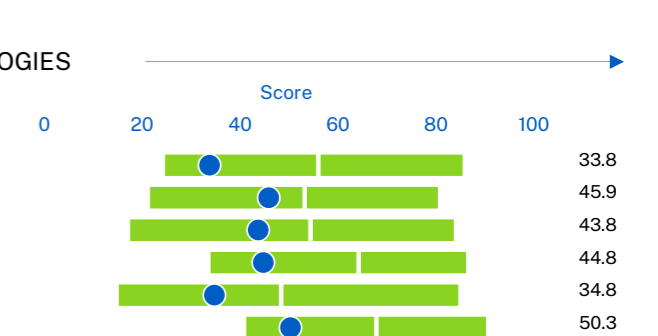
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Seattle

## SMART CITY RANKING

55

Out of 141



38 out of 118 in 2021

## SMART CITY RATING

BB

BBB in 2021

## FACTOR RATINGS

BB

STRUCTURES

B

TECHNOLOGIES

## GROUP

2

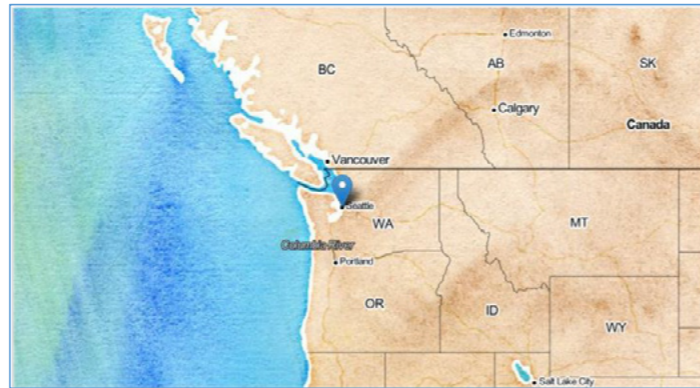
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 737,015  
HDI 0.940

(UN Data)

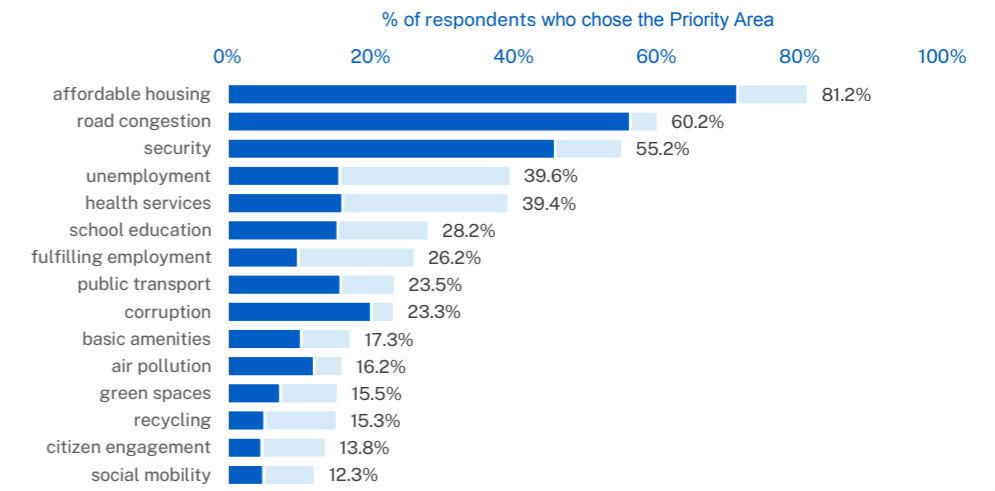


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

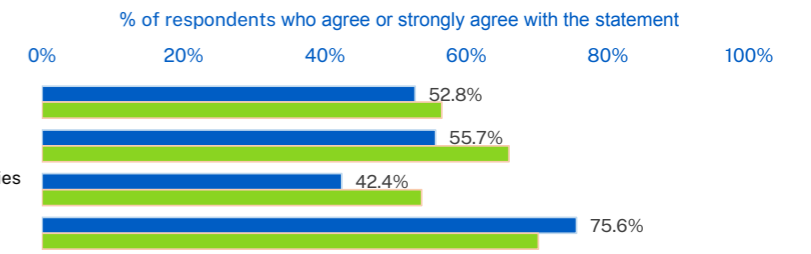
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## ATTITUDES

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You are comfortable with face recognition technologies to lower crime  
You feel the availability of online information has increased your trust in authorities  
The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

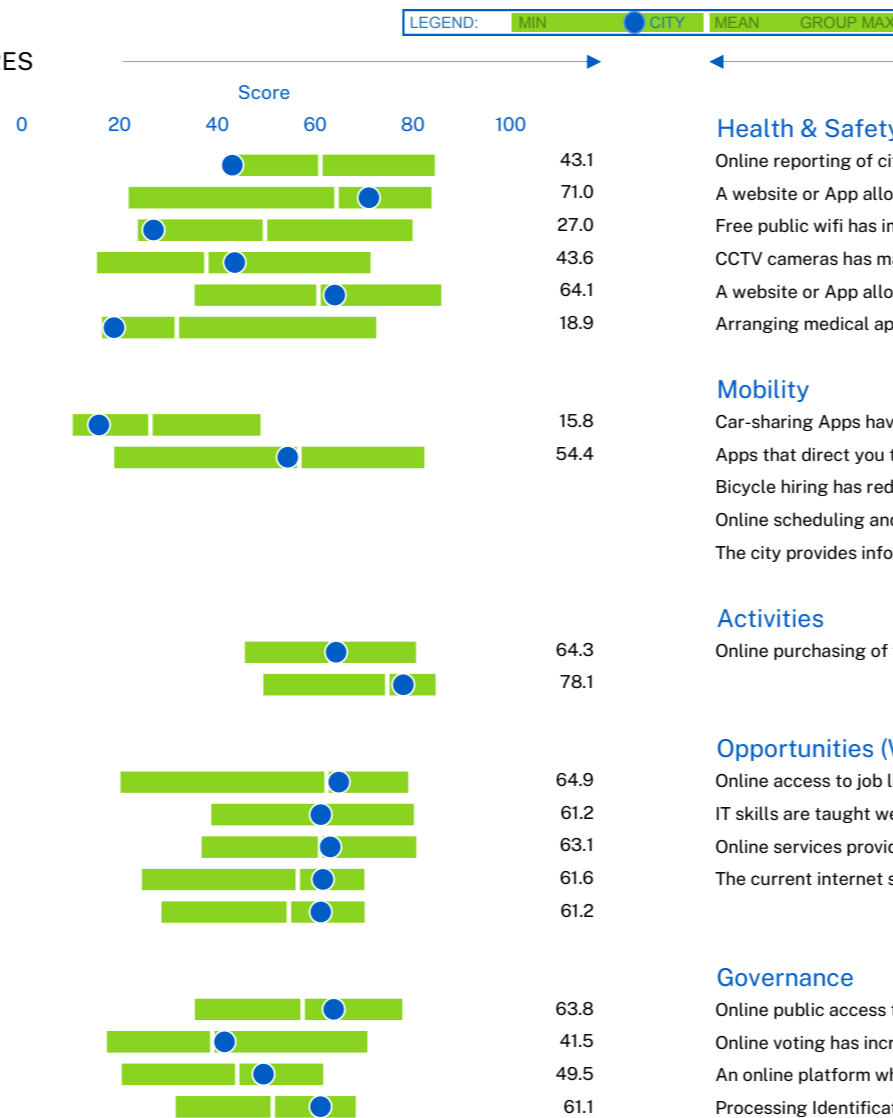
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

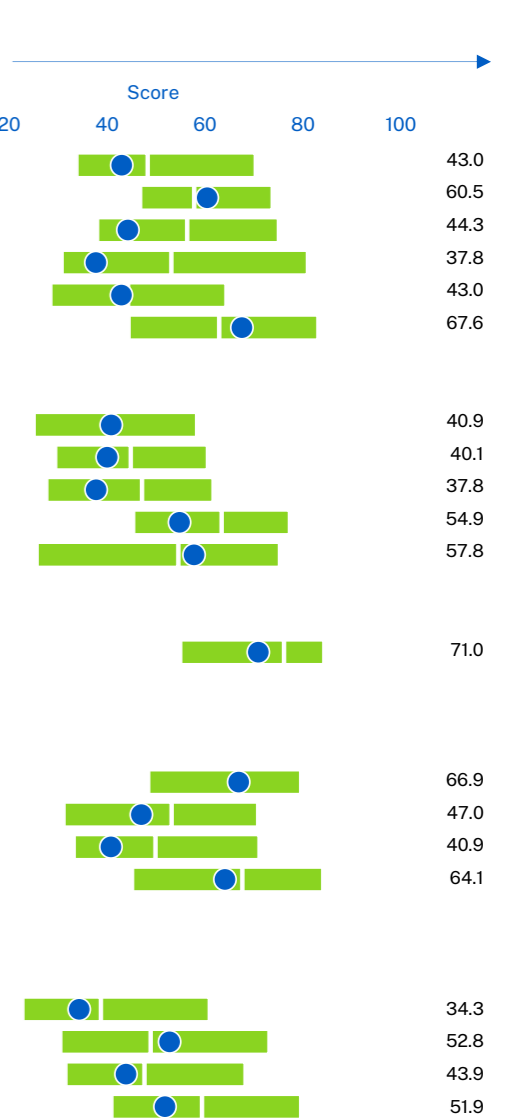
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 16

Out of 141



18 out of 118 in 2021

## SMART CITY RATING

# AA

AA in 2021

## FACTOR RATINGS

# BBB

STRUCTURES

# AAA

TECHNOLOGIES

## GROUP

# 1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,601,693  
HDI 0.952

(UN Data)

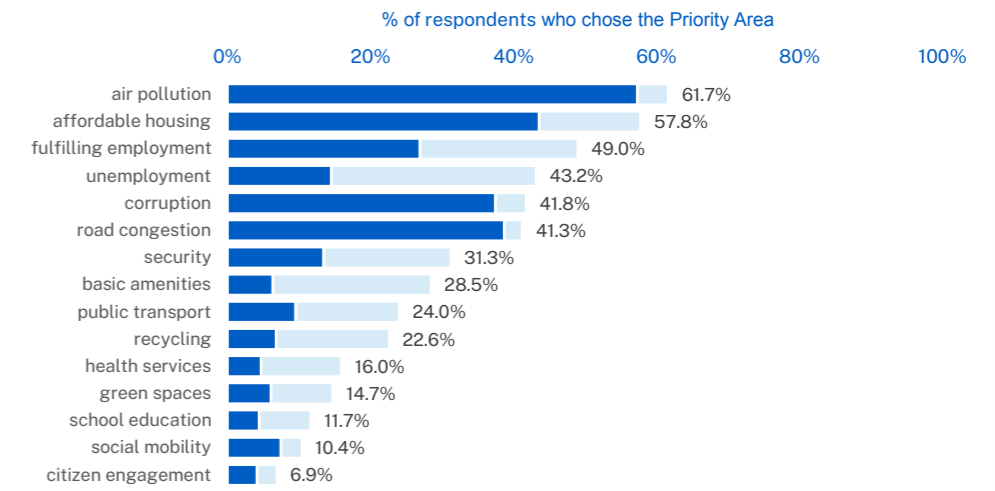


Country	2018	2019	2020	2021	1 yr change
HDI	0.906	0.916	0.922	0.925	+0.003
Life expectancy at birth	82.8	83.0	83.6	83.7	+0.1
Expected years of schooling	16.4	16.5	16.5	16.5	+0.0
Mean years of schooling	12.2	12.2	12.5	12.5	+0.0
GNI per capita (PPP \$)	36,757	43,044	42,698	44,501	+1,803

## PRIORITY AREAS

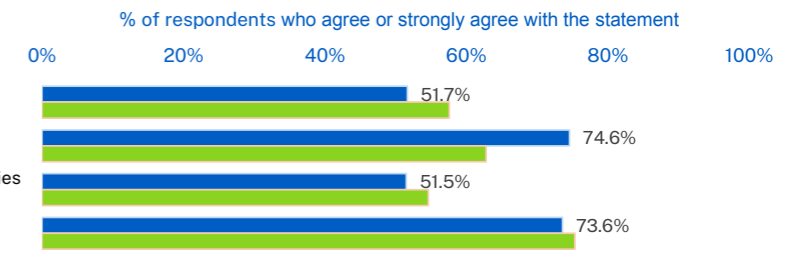
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
You are comfortable with face recognition technologies to lower crime  
You feel the availability of online information has increased your trust in authorities  
The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY





# Shanghai

SMART CITY RANKING

25

Out of 141



32 out of 118 in 2021

SMART CITY RATING

BB

BB in 2021

FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 28,516,903  
HDI 0.880

(UN World Urbanisation Prospects 2022 estimate)



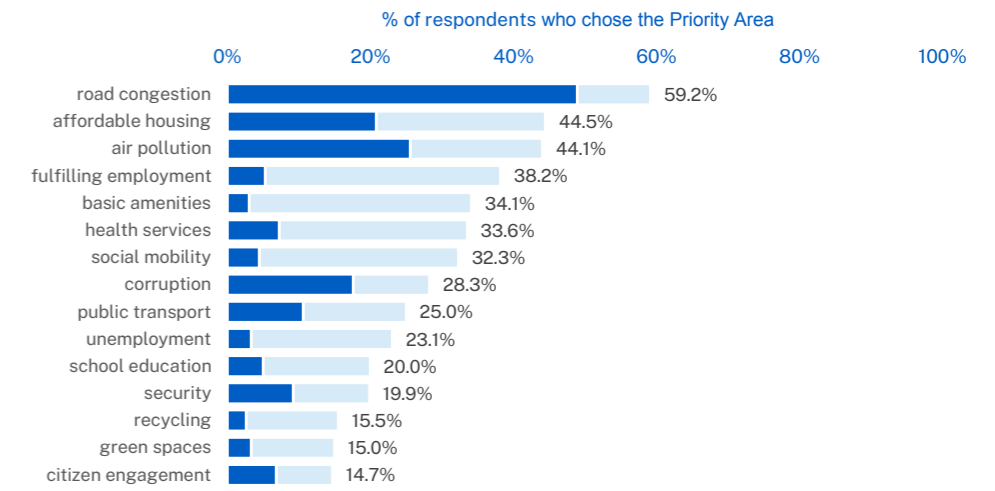
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

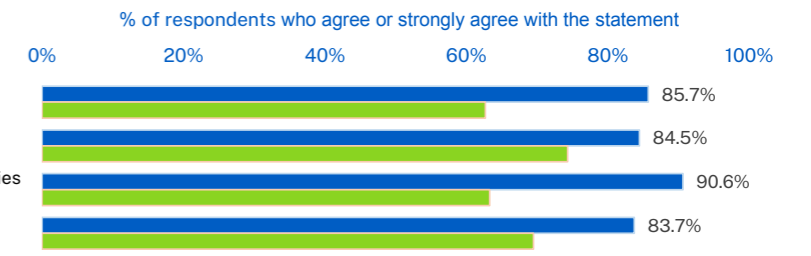
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

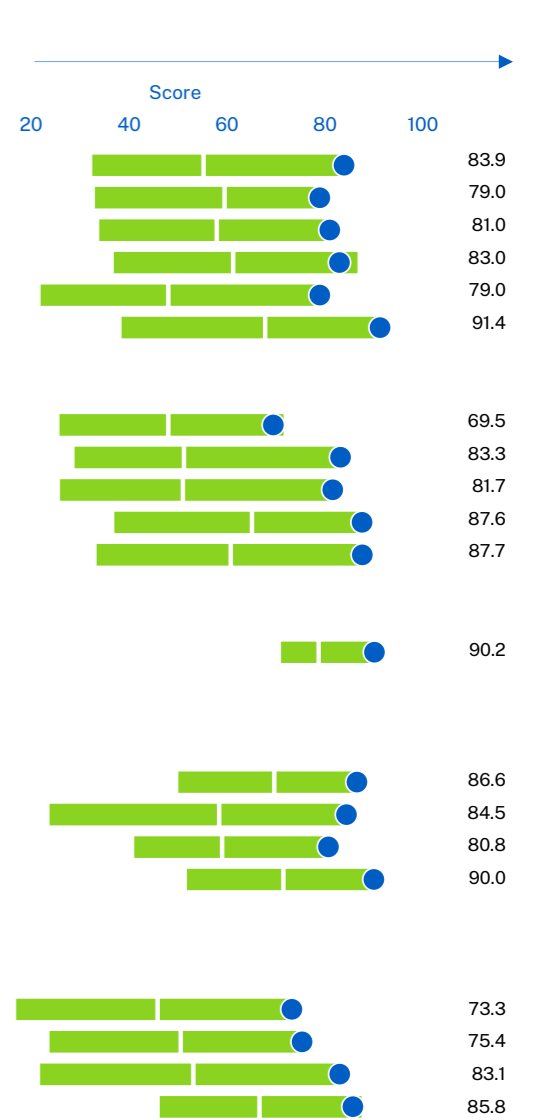
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Shenzhen

## SMART CITY RANKING

66

Out of 141



60 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 12,831,330  
HDI 0.799

(UN World Urbanisation Prospects 2022 estimate)



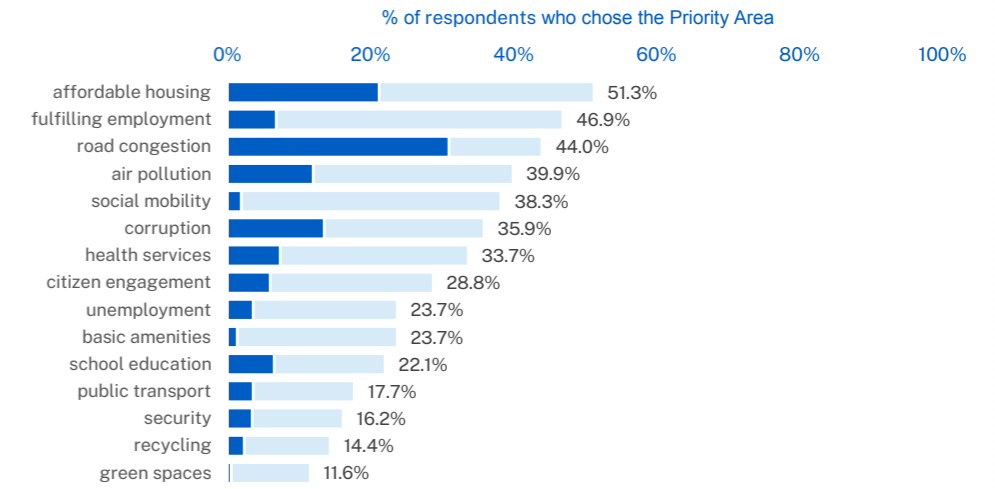
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	12.6	13.0	13.0	+0.0
GNI per capita (PPP \$)	48,836	58,662	58,144	60,365	+2,221

## PRIORITY AREAS

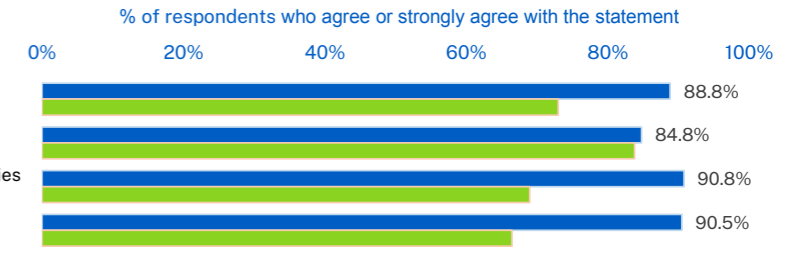
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

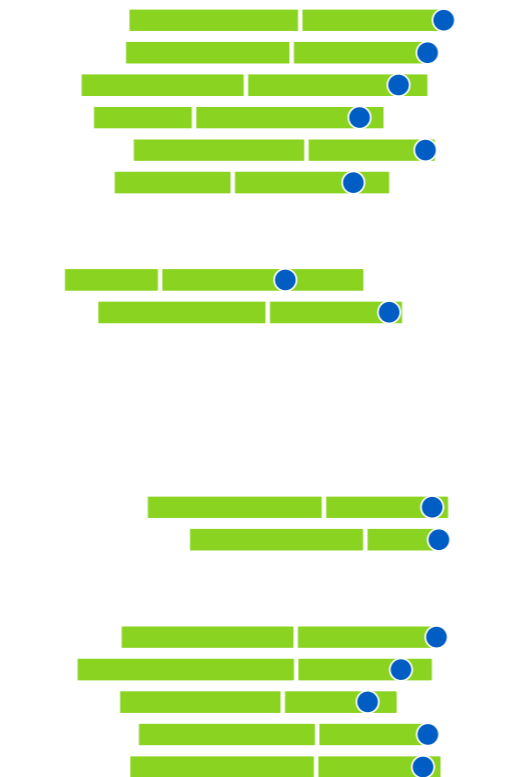
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: [MIN] [CITY] [MEAN] [GROUP MAX]

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100



# Singapore

## SMART CITY RANKING

7

Out of 141

7 out of 118 in 2021

## SMART CITY RATING

A

A in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 5,453,566  
HDI 0.939

(UN Data)

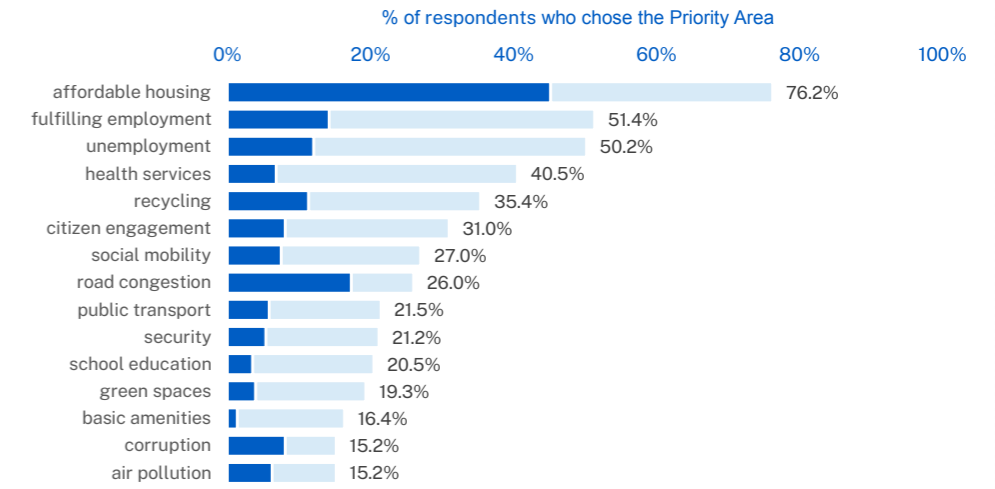


Country	2018	2019	2020	2021	1 yr change
HDI	0.935	0.938	0.939	0.939	+0.000
Life expectancy at birth	83.5	83.6	82.9	82.8	-0.1
Expected years of schooling	16.3	16.4	16.5	16.5	+0.0
Mean years of schooling	11.5	11.6	11.9	11.9	+0.0
GNI per capita (PPP \$)	83,793	88,155	81,035	90,919	+9,884

## PRIORITY AREAS

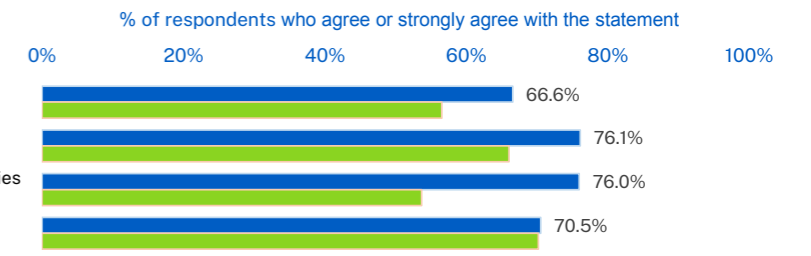
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The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

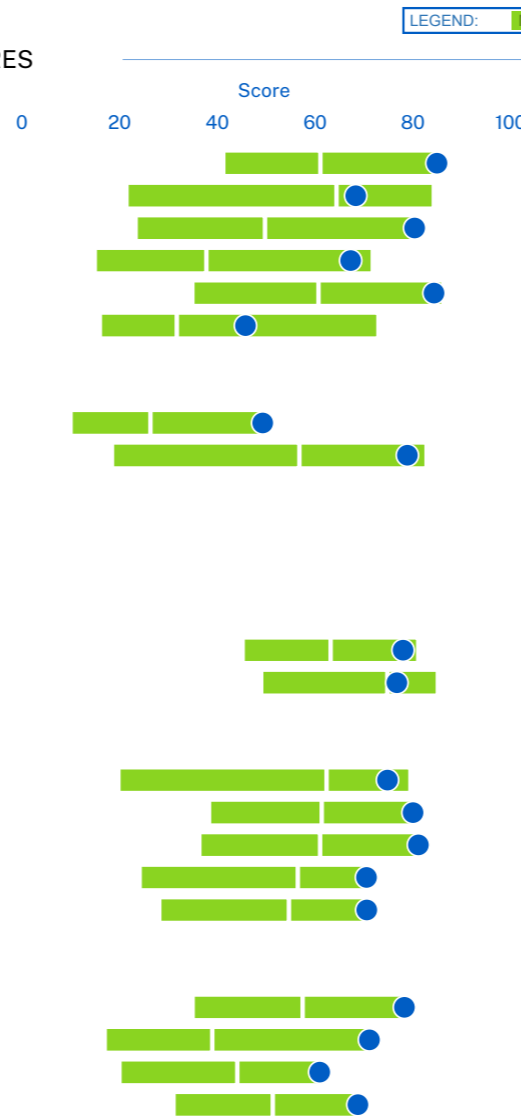
Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

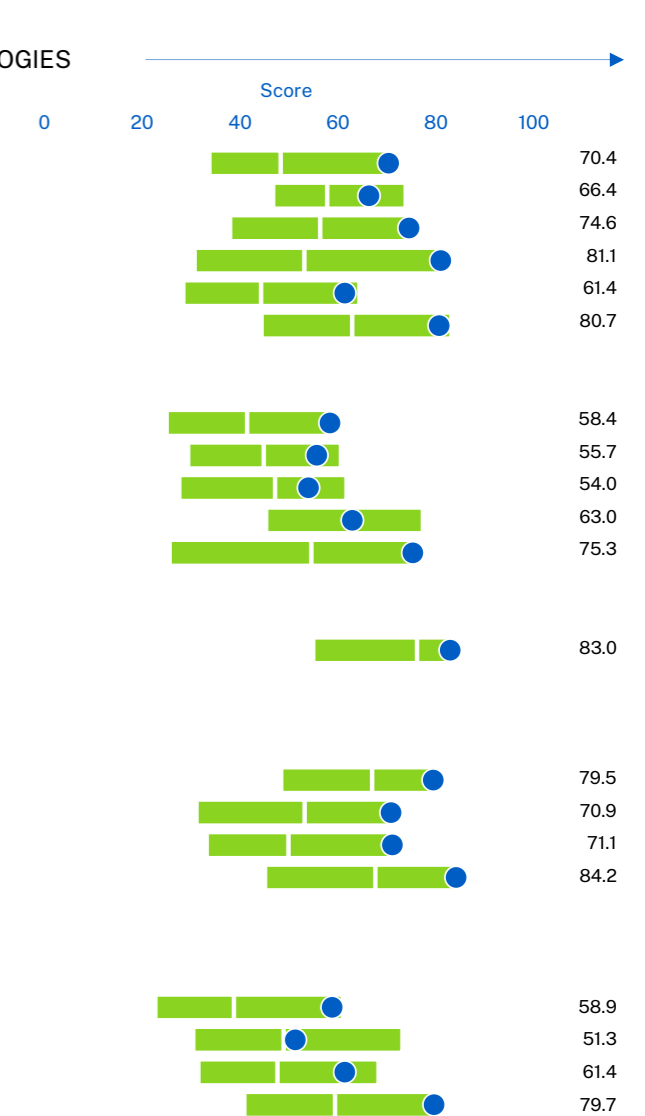
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 111

Out of 141



103 out of 118 in 2021

## SMART CITY RATING

# CC

C in 2021

## FACTOR RATINGS

# CC

STRUCTURES

# CC

TECHNOLOGIES

GROUP

# 3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,085,071  
HDI 0.856

(Eurostat)

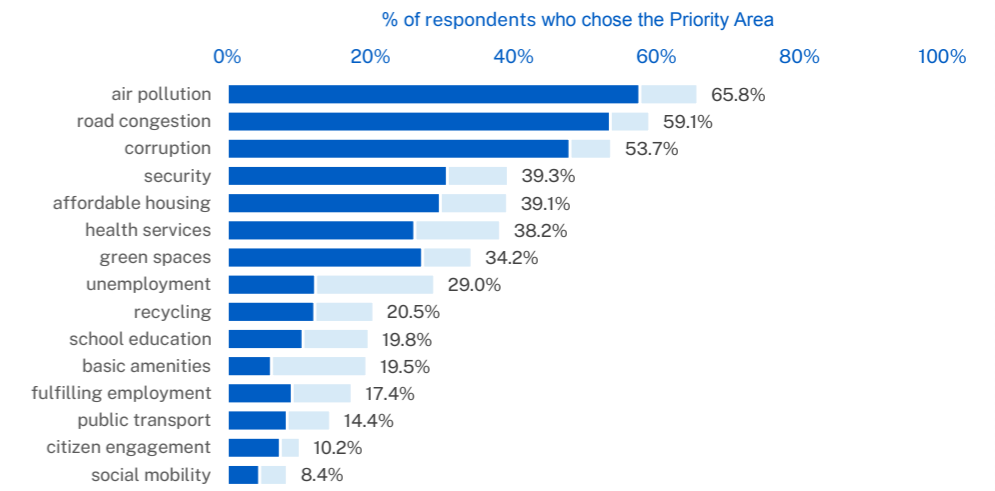


Country	2018	2019	2020	2021	1 yr change
HDI	0.816	0.816	0.802	0.795	-0.007
Life expectancy at birth	74.9	75.1	73.7	71.8	-1.9
Expected years of schooling	14.8	14.4	13.9	13.9	+0.0
Mean years of schooling	11.8	11.4	11.4	11.4	+0.0
GNI per capita (PPP \$)	19,646	23,325	22,020	23,079	+1,058

## PRIORITY AREAS

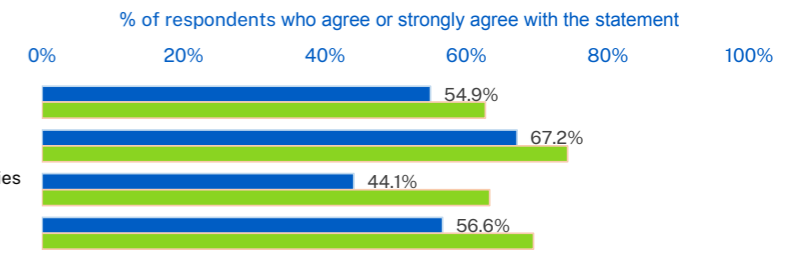
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
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- Minorities feel welcome

### Governance

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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Stockholm

## SMART CITY RANKING

10

Out of 141



11 out of 118 in 2021

## SMART CITY RATING

A

A in 2021

## FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,391,990  
HDI 0.972

(Eurostat)

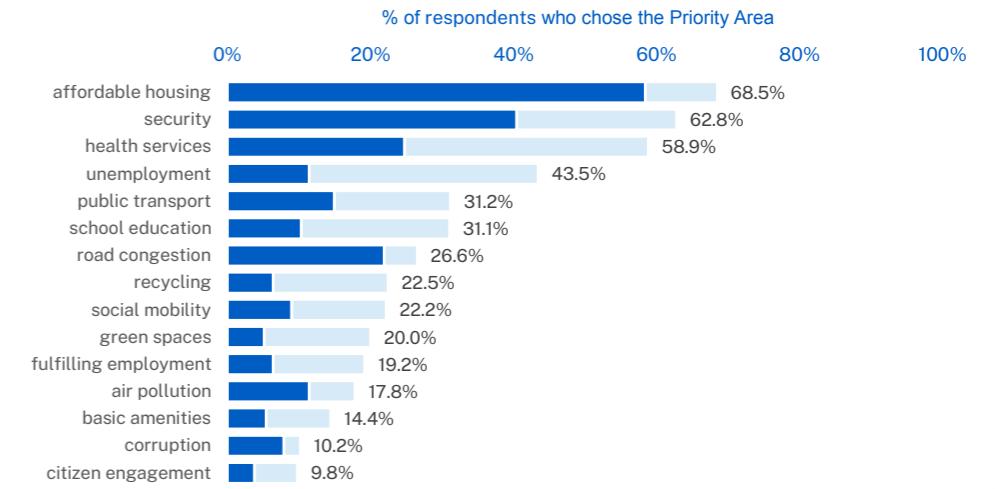


Country	2018	2019	2020	2021	1 yr change
HDI	0.937	0.945	0.942	0.947	+0.005
Life expectancy at birth	82.7	82.8	82.4	83.0	+0.5
Expected years of schooling	18.8	19.5	18.0	18.0	+0.0
Mean years of schooling	12.4	12.5	12.6	12.6	+0.0
GNI per capita (PPP \$)	47,955	54,508	52,359	54,489	+2,130

## PRIORITY AREAS

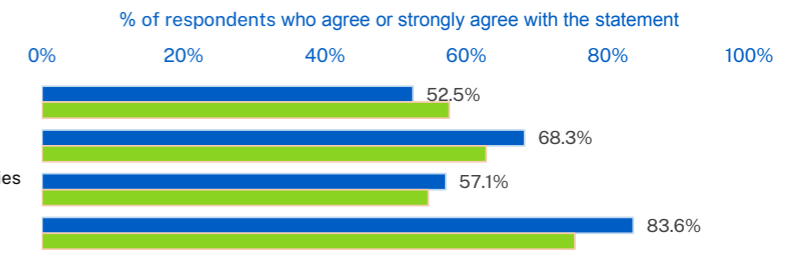
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

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- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

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## TECHNOLOGIES

### Health & Safety

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- A website or App allows residents to easily give away unwanted items
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### Mobility

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- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

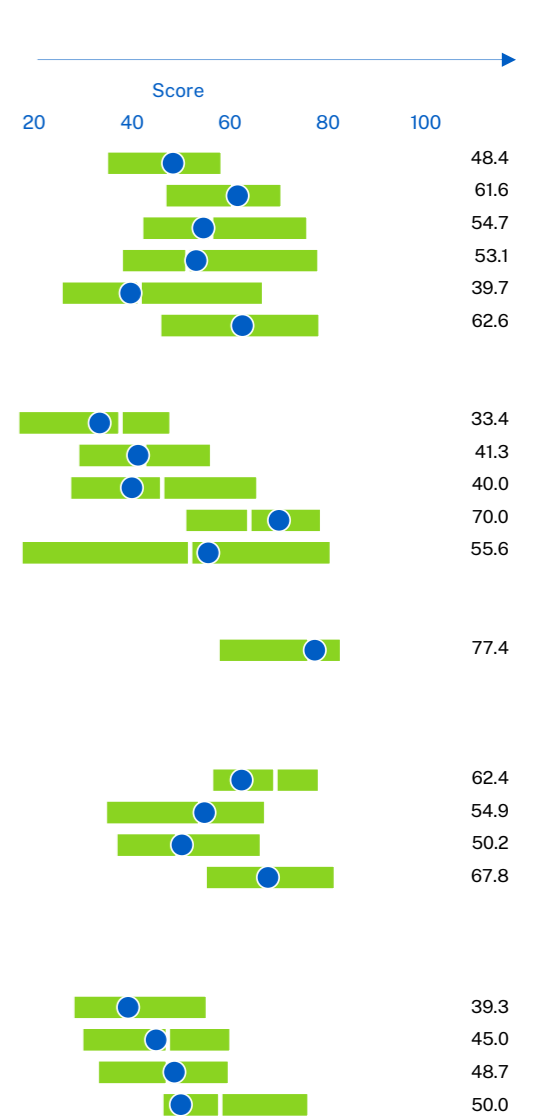
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Sydney

## SMART CITY RANKING

18

Out of 141



29 out of 118 in 2021

## SMART CITY RATING

AA

BB in 2021

## FACTOR RATINGS

A

STRUCTURES

AA

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 4,321,535  
HDI 0.952

(UN Data)



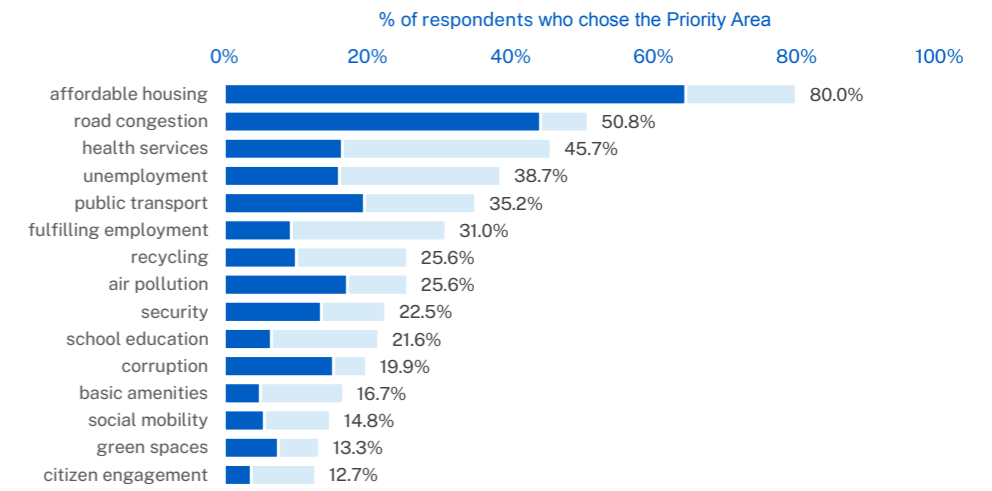
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.941	0.941	0.947	0.951	+0.004
Life expectancy at birth	83.4	83.1	84.3	84.5	+0.2
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	12.6	12.1	12.4	12.4	+0.0
GNI per capita (PPP \$)	43,821	52,085	49,392	52,293	+2,901

## PRIORITY AREAS

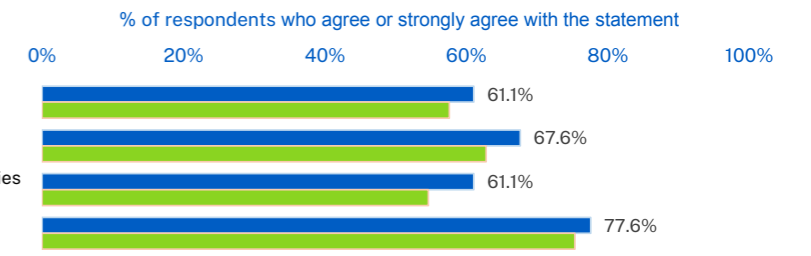
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

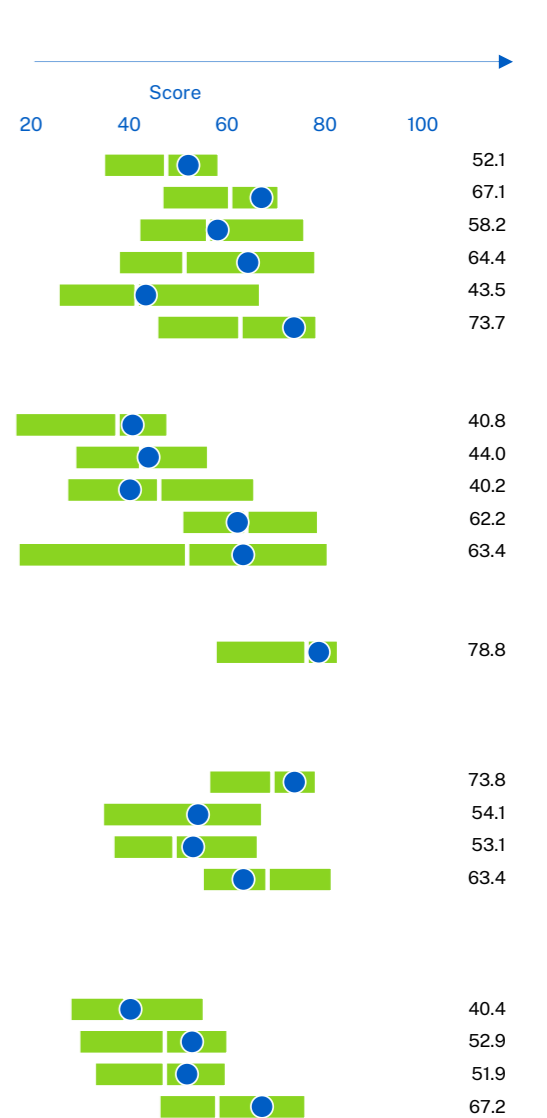
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Taipei City

SMART CITY RANKING

29

Out of 141



25 out of 118 in 2021

SMART CITY RATING

A

B in 2021

FACTOR RATINGS

BBB

STRUCTURES

A

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,742,379  
HDI (2019) 0.916

(UN World Urbanisation Prospects 2022 estimate)



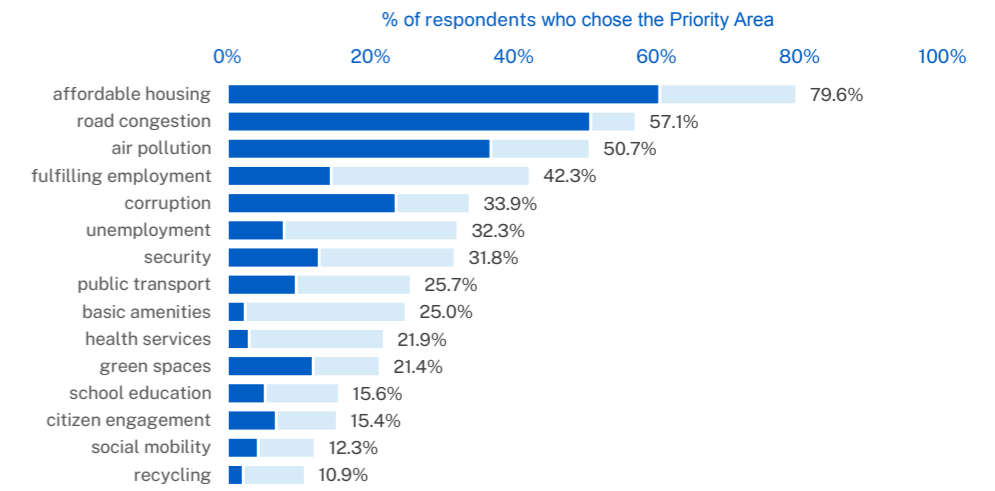
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.911	0.916	NA	NA	NA
Life expectancy at birth	80.7	80.9	NA	NA	NA
Expected years of schooling	16.5	16.5	NA	NA	NA
Mean years of schooling	12.2	12.3	NA	NA	NA
GNI per capita (PPP \$)	49,403	52,573	NA	NA	NA

## PRIORITY AREAS

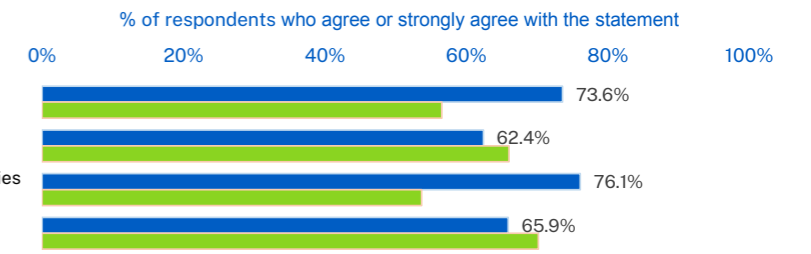
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 You are comfortable with face recognition technologies to lower crime  
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

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- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

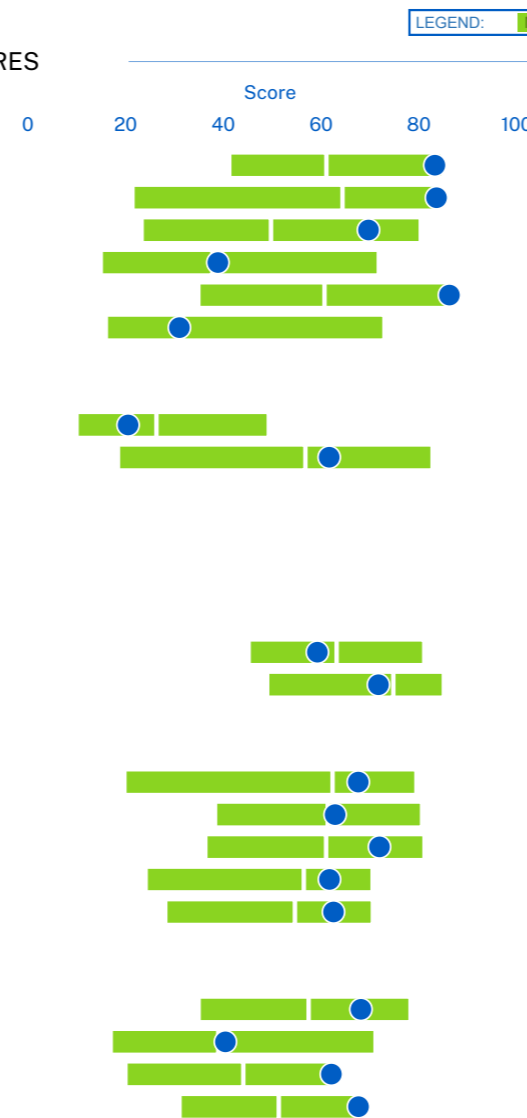
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
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## TECHNOLOGIES

### Health & Safety

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- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
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- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

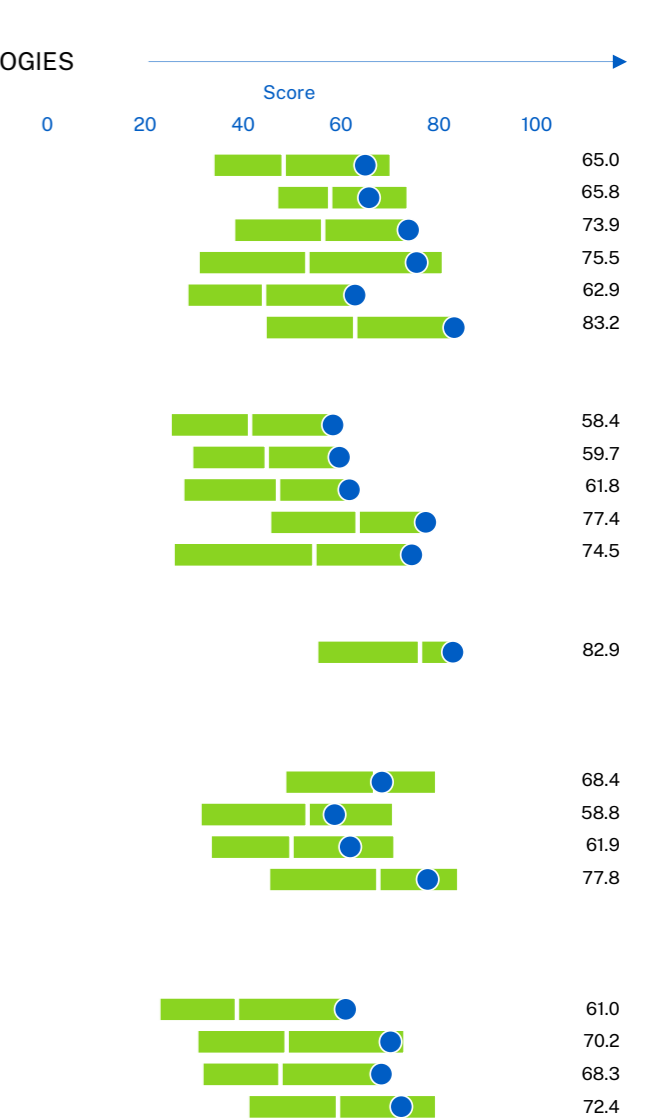
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Tallinn

## SMART CITY RANKING

32

Out of 141



24 out of 118 in 2021

## SMART CITY RATING

BBB

BBB in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 613,158  
HDI 0.932

(Eurostat)

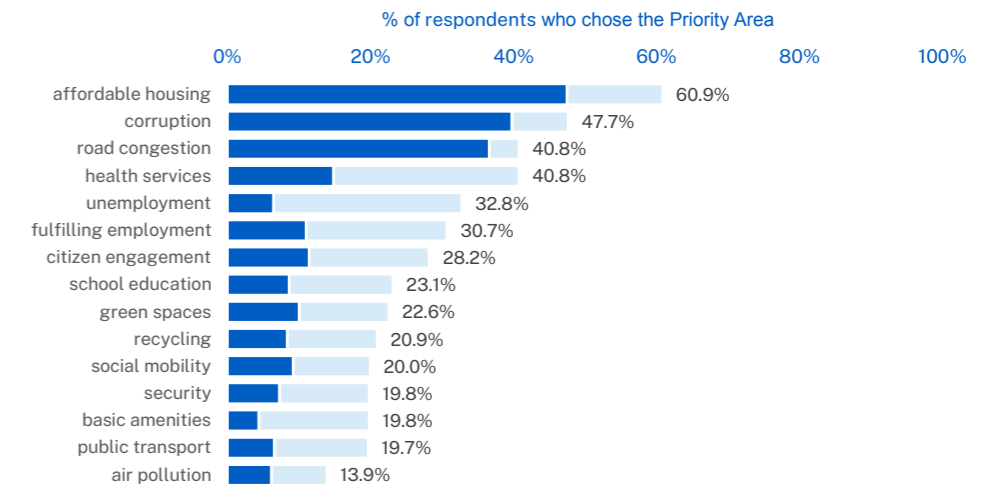


Country	2018	2019	2020	2021	1 yr change
HDI	0.882	0.892	0.892	0.890	-0.002
Life expectancy at birth	78.6	78.8	78.3	77.1	-1.2
Expected years of schooling	16.1	16.0	15.9	15.9	+0.0
Mean years of schooling	13.0	13.1	13.6	13.6	+0.0
GNI per capita (PPP \$)	30,379	36,019	35,132	38,048	+2,916

## PRIORITY AREAS

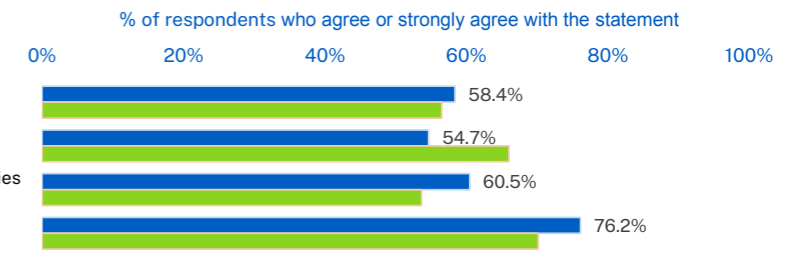
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## ATTITUDES

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 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

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- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

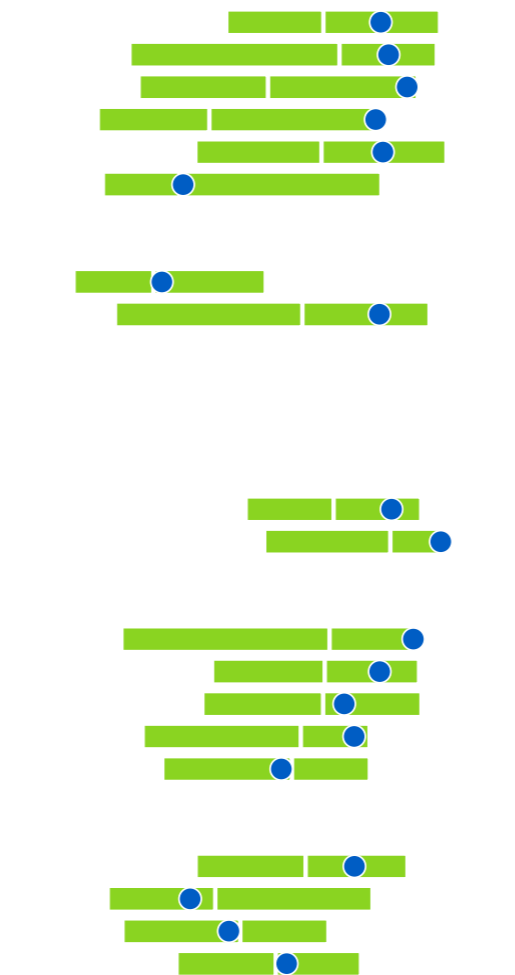
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

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- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

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- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

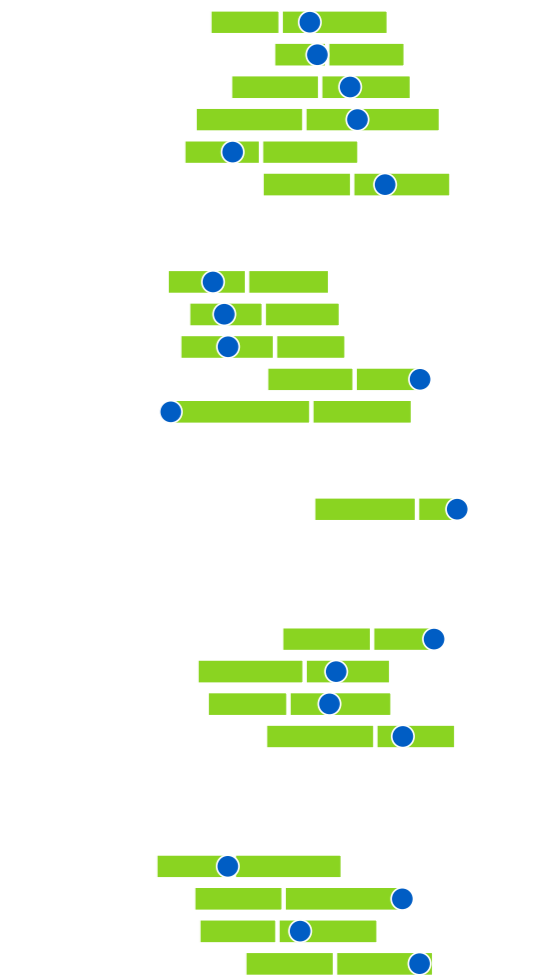
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times

Score 0 20 40 60 80 100





## SMART CITY RANKING

# 91

Out of 141



59 out of 118 in 2021

## SMART CITY RATING

# B

BB in 2021

## FACTOR RATINGS

# B

STRUCTURES

# BB

TECHNOLOGIES

GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 462,210  
HDI 0.919

(UN Data)

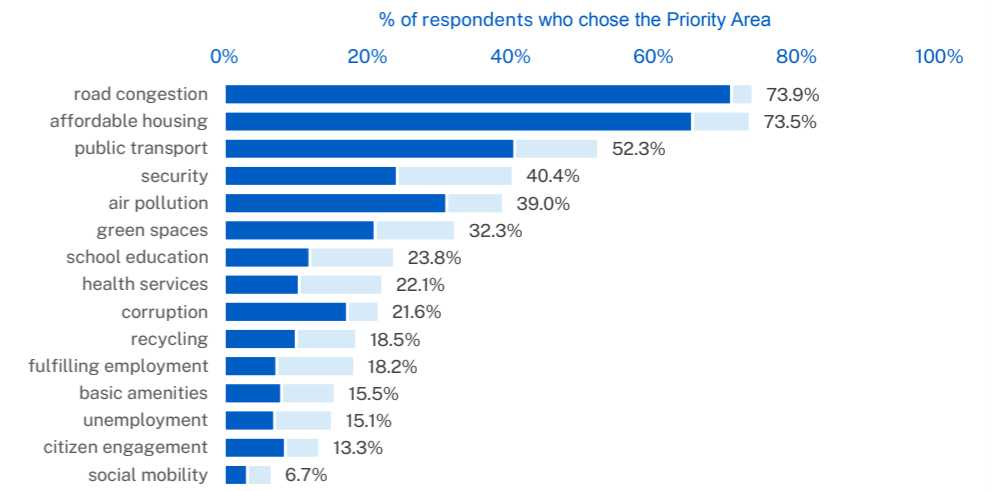


Country	2018	2019	2020	2021	1 yr change
HDI	0.906	0.919	0.917	0.919	+0.002
Life expectancy at birth	82.8	83.0	82.4	82.3	-0.1
Expected years of schooling	16.0	16.2	16.1	16.1	+0.0
Mean years of schooling	13.0	13.0	13.4	13.4	+0.0
GNI per capita (PPP \$)	33,650	40,187	39,015	41,524	+2,509

## PRIORITY AREAS

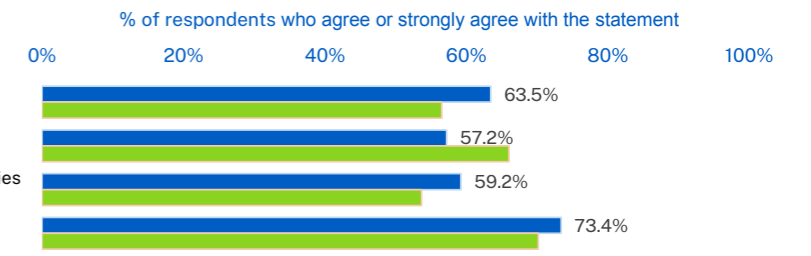
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

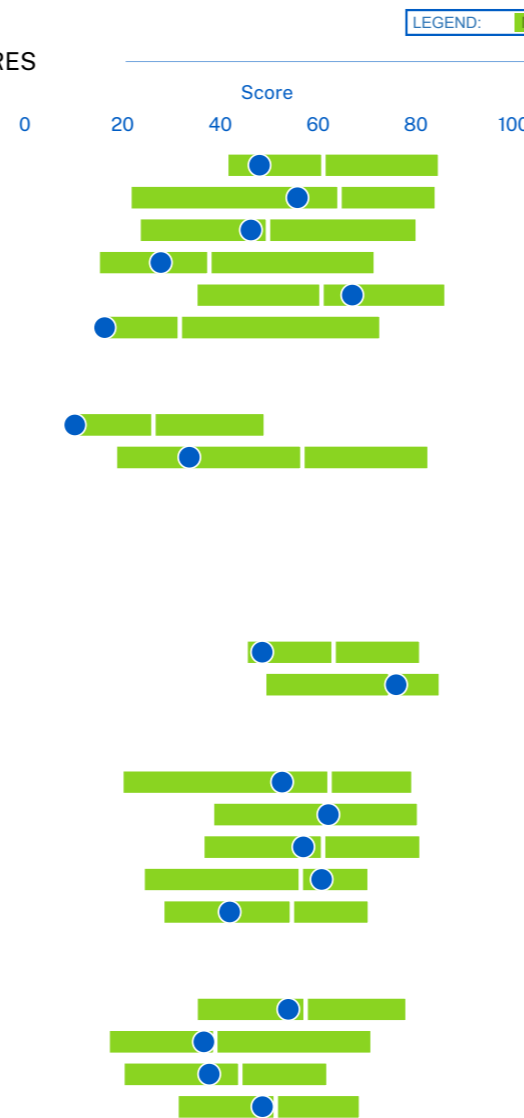
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

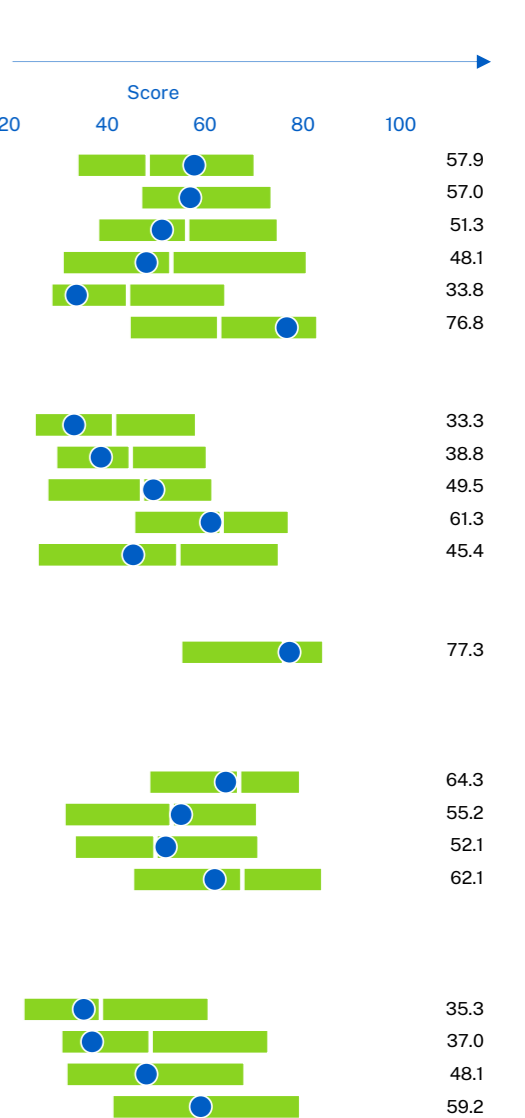
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# The Hague

SMART CITY RANKING

43

Out of 141



35 out of 118 in 2021

SMART CITY RATING

A

BB in 2021

FACTOR RATINGS

A

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,726,050  
HDI 0.941

(Eurostat)

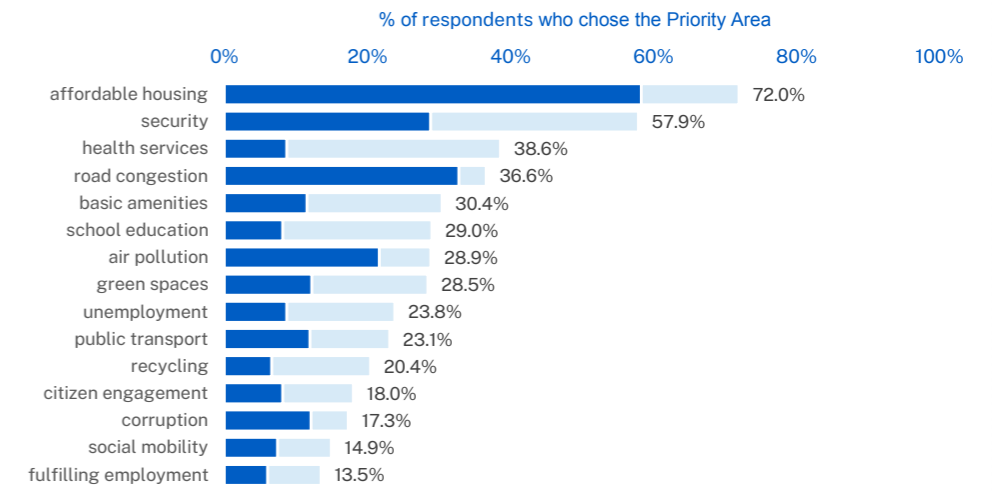


Country	2018	2019	2020	2021	1 yr change
HDI	0.934	0.944	0.939	0.941	+0.002
Life expectancy at birth	82.1	82.3	81.6	81.7	+0.0
Expected years of schooling	18.0	18.5	18.0	18.0	+0.0
Mean years of schooling	12.2	12.4	12.6	12.6	+0.0
GNI per capita (PPP \$)	50,013	57,707	53,504	55,979	+2,476

## PRIORITY AREAS

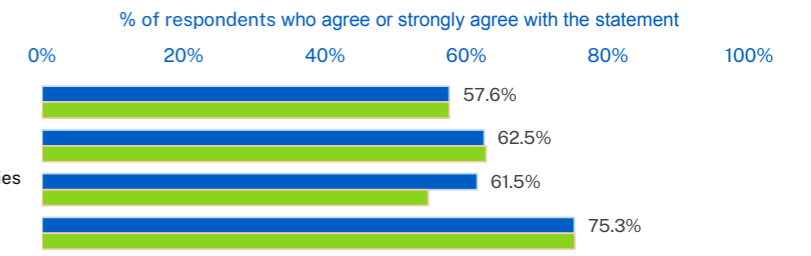
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]



# Tianjin

## SMART CITY RANKING

67

Out of 141



50 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

B

STRUCTURES

BB

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 14,011,828  
HDI 0.844

(UN World Urbanisation Prospects 2022 estimate)

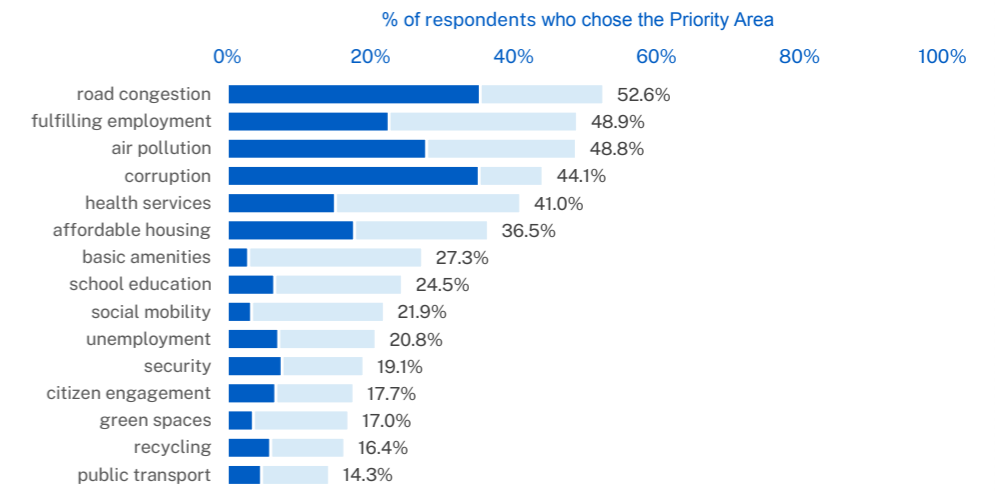


Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

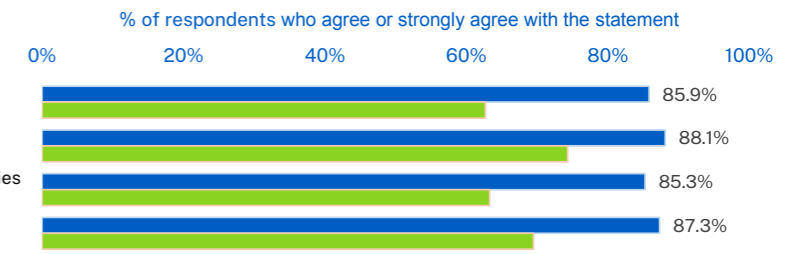
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

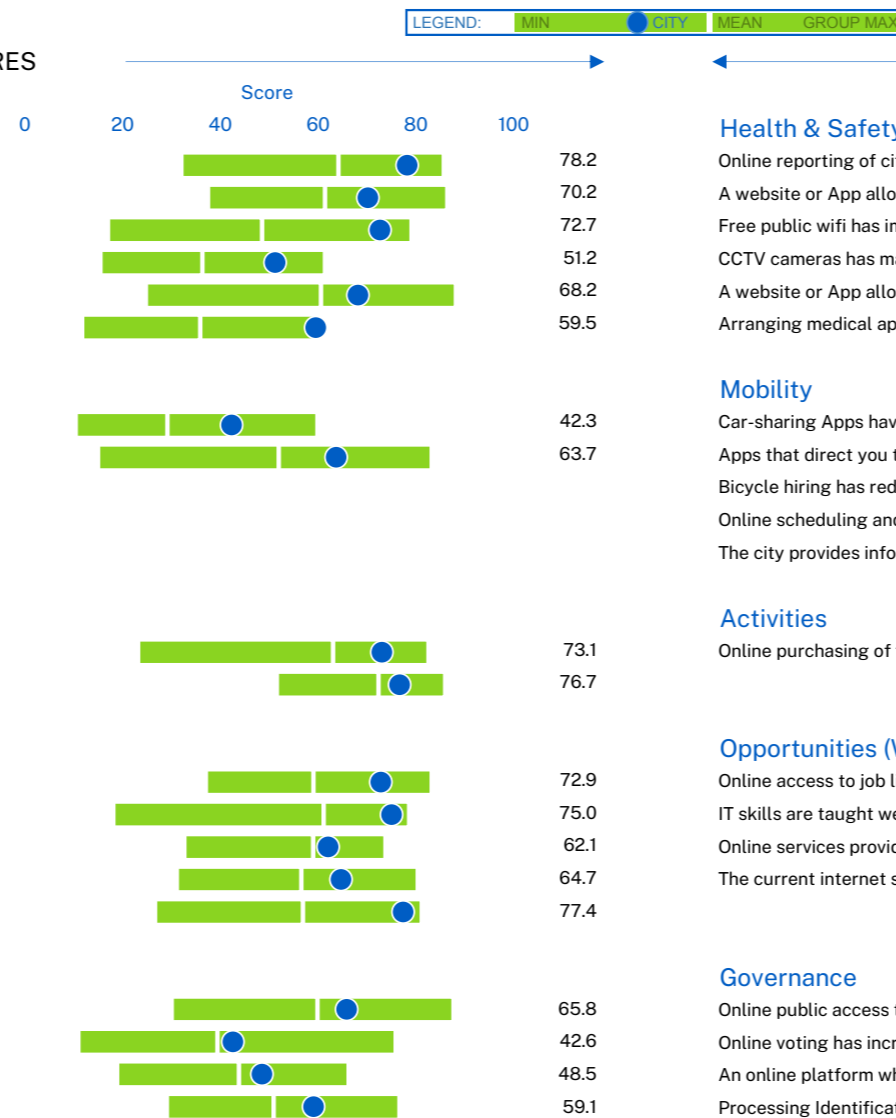
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

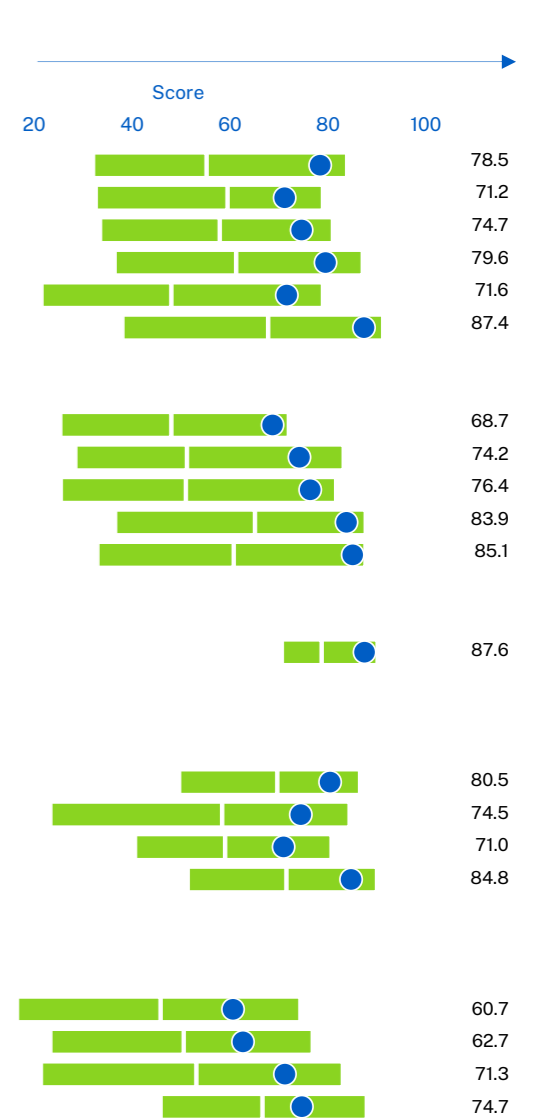
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Tokyo

## SMART CITY RANKING

72

Out of 141



67 out of 118 in 2021

## SMART CITY RATING

BB

BB in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 9,733,276  
HDI 0.951

(UN Data)



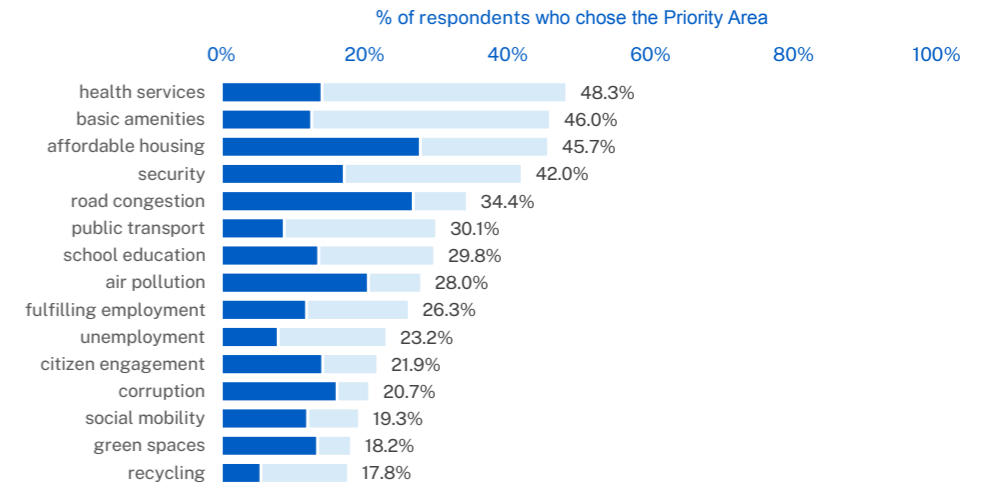
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.915	0.919	0.923	0.925	+0.002
Life expectancy at birth	84.5	84.6	84.7	84.8	+0.1
Expected years of schooling	15.2	15.2	15.2	15.2	+0.0
Mean years of schooling	12.8	12.9	13.4	13.4	+0.0
GNI per capita (PPP \$)	40,799	42,932	41,487	42,274	+787

## PRIORITY AREAS

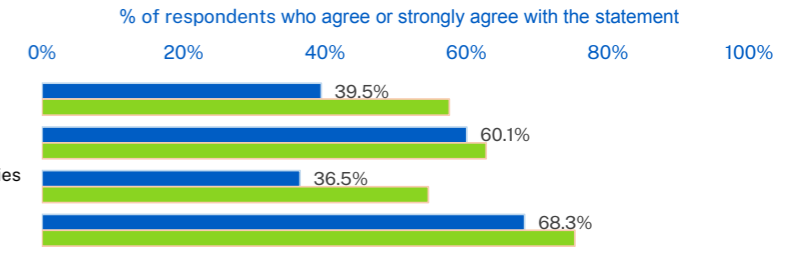
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

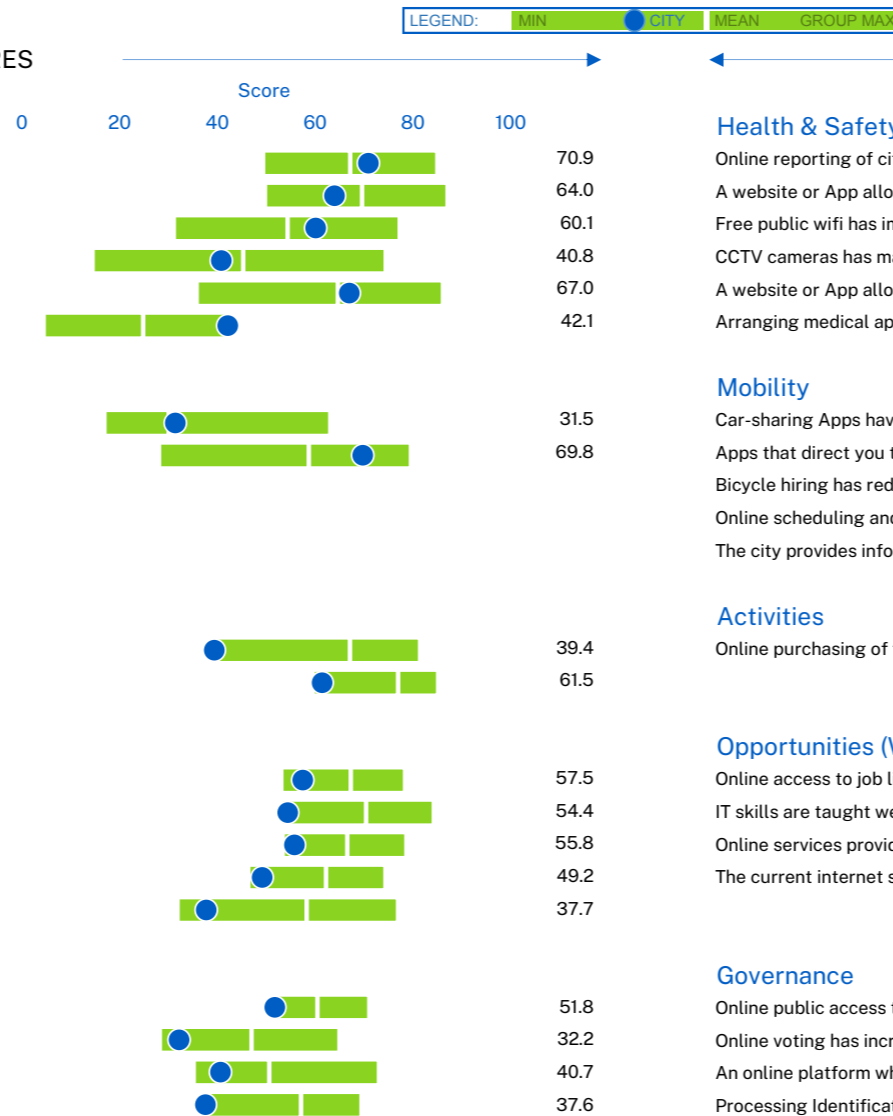
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

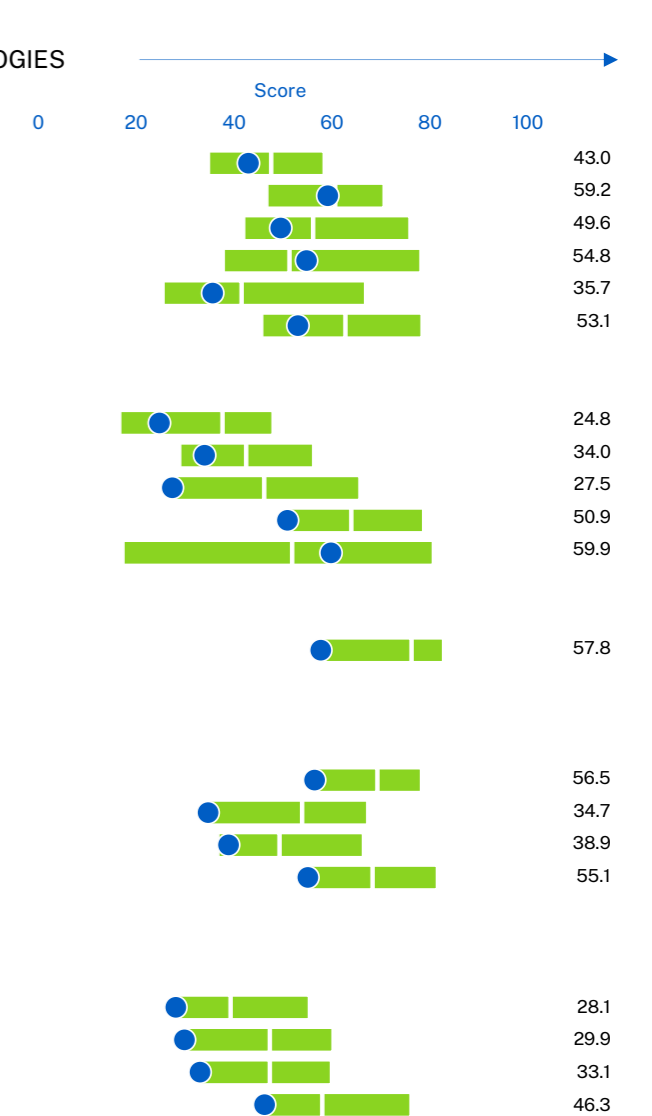
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Toronto

## SMART CITY RANKING

48

Out of 141



31 out of 118 in 2021

## SMART CITY RATING

BBB

A in 2021

## FACTOR RATINGS

BBB

STRUCTURES

BBB

TECHNOLOGIES

## GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,731,570  
HDI 0.943

(UN Data)

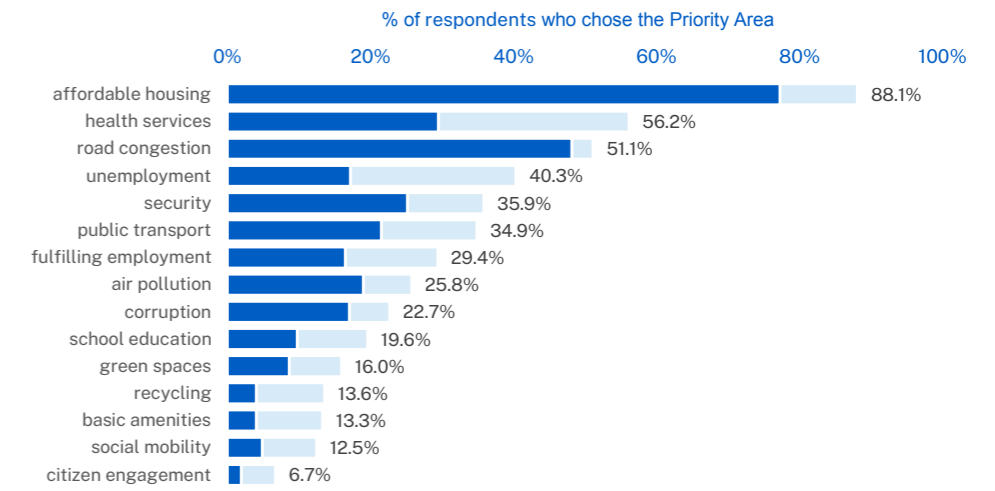


Country	2018	2019	2020	2021	1 yr change
HDI	0.933	0.937	0.931	0.936	+0.005
Life expectancy at birth	82.1	82.4	82.1	82.7	+0.6
Expected years of schooling	16.2	16.4	16.4	16.4	+0.0
Mean years of schooling	13.8	8.7	8.8	8.8	+0.0
GNI per capita (PPP \$)	18,371	18,486	18,754	19,974	+1,220

## PRIORITY AREAS

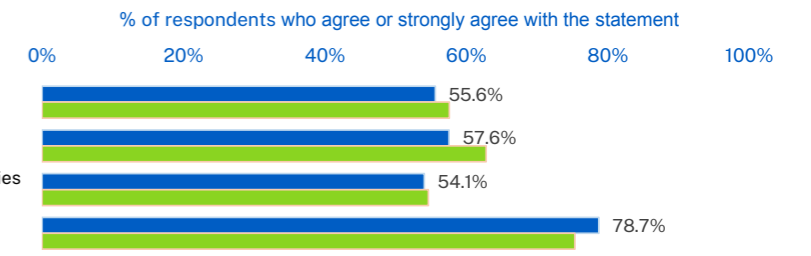
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
 Recycling services are satisfactory  
 Public safety is not a problem  
 Air pollution is not a problem  
 Medical services provision is satisfactory  
 Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
 Public transport is satisfactory

### Activities

Green spaces are satisfactory  
 Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available  
 Most children have access to a good school  
 Lifelong learning opportunities are provided by local institutions  
 Businesses are creating new jobs  
 Minorities feel welcome

### Governance

Information on local government decisions are easily accessible  
 Corruption of city officials is not an issue of concern  
 Residents contribute to decision making of local government  
 Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution  
 A website or App allows residents to easily give away unwanted items  
 Free public wifi has improved access to city services  
 CCTV cameras has made residents feel safer  
 A website or App allows residents to effectively monitor air pollution  
 Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion  
 Apps that direct you to an available parking space have reduced journey time  
 Bicycle hiring has reduced congestion  
 Online scheduling and ticket sales has made public transport easier to use  
 The city provides information on traffic congestion through mobile phones

### Activities

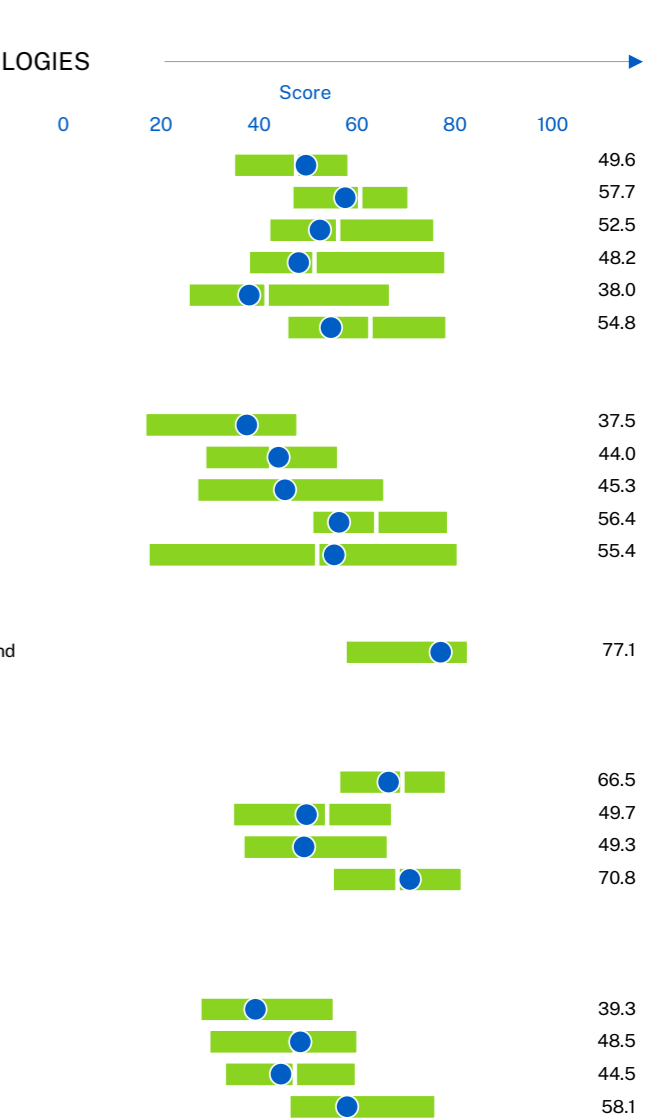
Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work  
 IT skills are taught well in schools  
 Online services provided by the city has made it easier to start a new business  
 The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
 Online voting has increased participation  
 An online platform where residents can propose ideas has improved city life  
 Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 137

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# D

not in 2021

## FACTOR RATINGS

# D

STRUCTURES

# D

TECHNOLOGIES

GROUP

# 4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 2,439,404  
HDI 0.775

(UN World Urbanisation Prospects 2022 estimate)

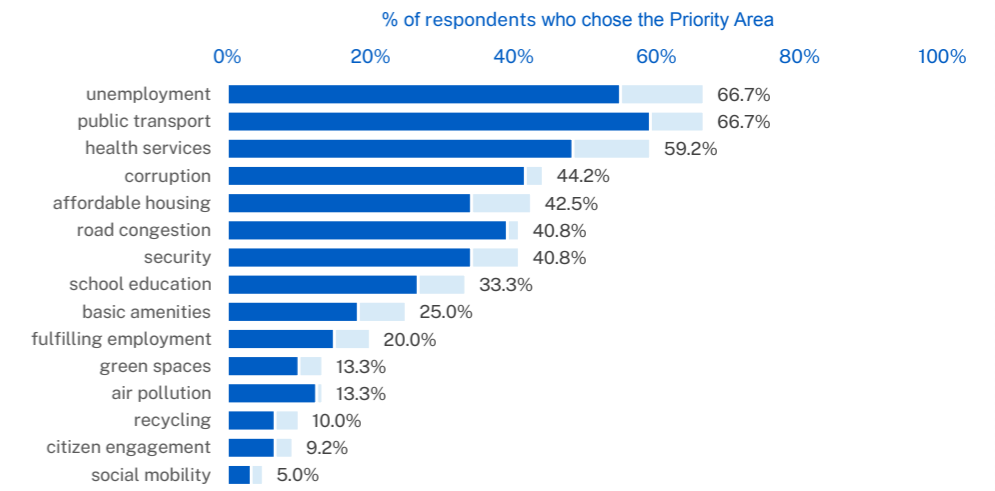


Country	2018	2019	2020	2021	1 yr change
HDI	0.743	0.745	0.737	0.731	-0.006
Life expectancy at birth	76.0	76.0	75.3	73.8	-1.5
Expected years of schooling	15.3	15.4	15.4	15.4	+0.0
Mean years of schooling	7.4	7.4	7.4	7.4	+0.0
GNI per capita (PPP \$)	11,027	10,910	10,046	10,258	+211

## PRIORITY AREAS

From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

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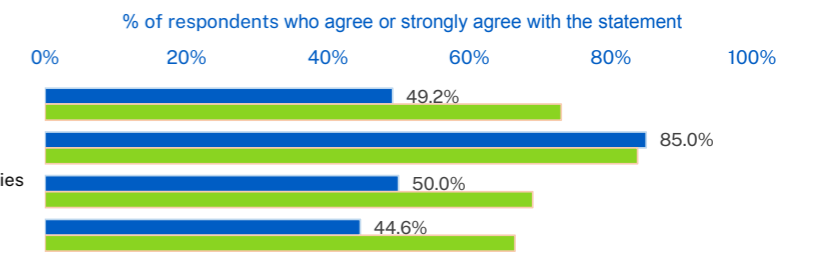
## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion

You are comfortable with face recognition technologies to lower crime

You feel the availability of online information has increased your trust in authorities

The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas

Recycling services are satisfactory

Public safety is not a problem

Air pollution is not a problem

Medical services provision is satisfactory

Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem

Public transport is satisfactory

### Activities

Green spaces are satisfactory

Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

Employment finding services are readily available

Most children have access to a good school

Lifelong learning opportunities are provided by local institutions

Businesses are creating new jobs

Minorities feel welcome

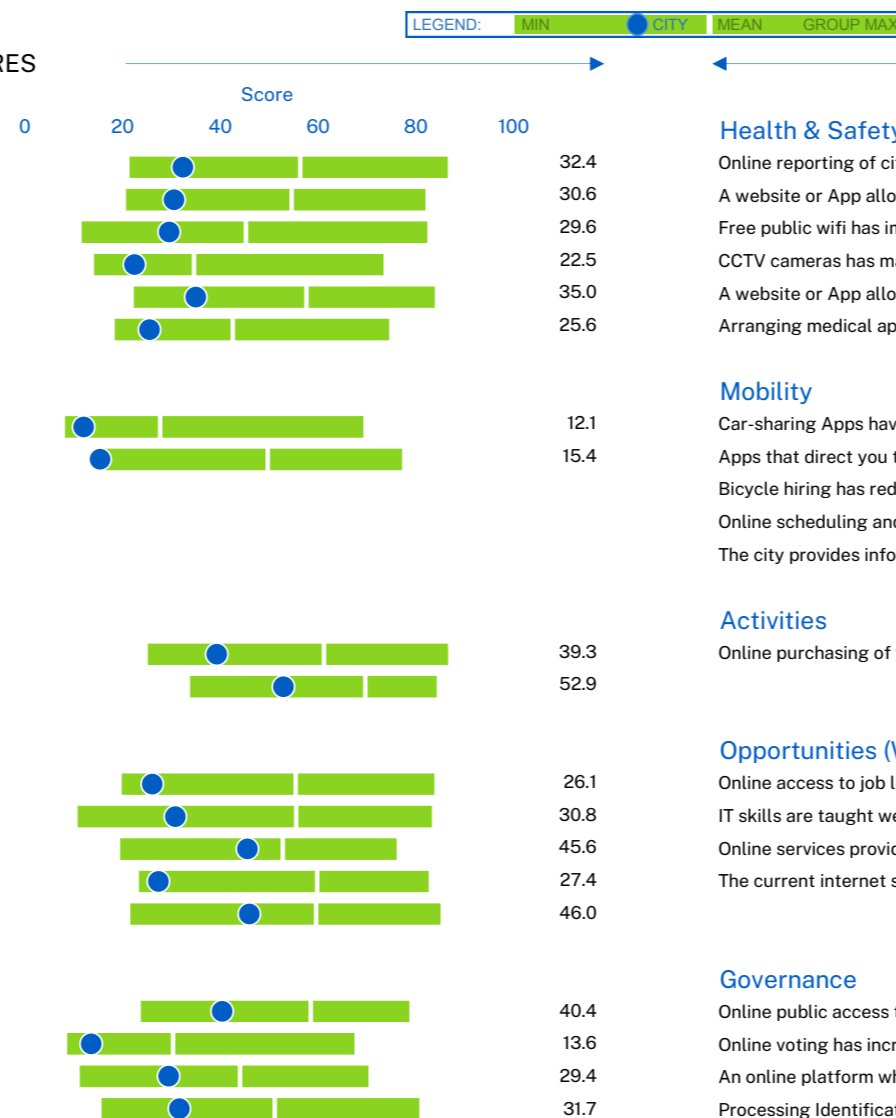
### Governance

Information on local government decisions are easily accessible

Corruption of city officials is not an issue of concern

Residents contribute to decision making of local government

Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

Online reporting of city maintenance problems provides a speedy solution

A website or App allows residents to easily give away unwanted items

Free public wifi has improved access to city services

CCTV cameras has made residents feel safer

A website or App allows residents to effectively monitor air pollution

Arranging medical appointments online has improved access

### Mobility

Car-sharing Apps have reduced congestion

Apps that direct you to an available parking space have reduced journey time

Bicycle hiring has reduced congestion

Online scheduling and ticket sales has made public transport easier to use

The city provides information on traffic congestion through mobile phones

### Activities

Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

Online access to job listings has made it easier to find work

IT skills are taught well in schools

Online services provided by the city has made it easier to start a new business

The current internet speed and reliability meet connectivity needs

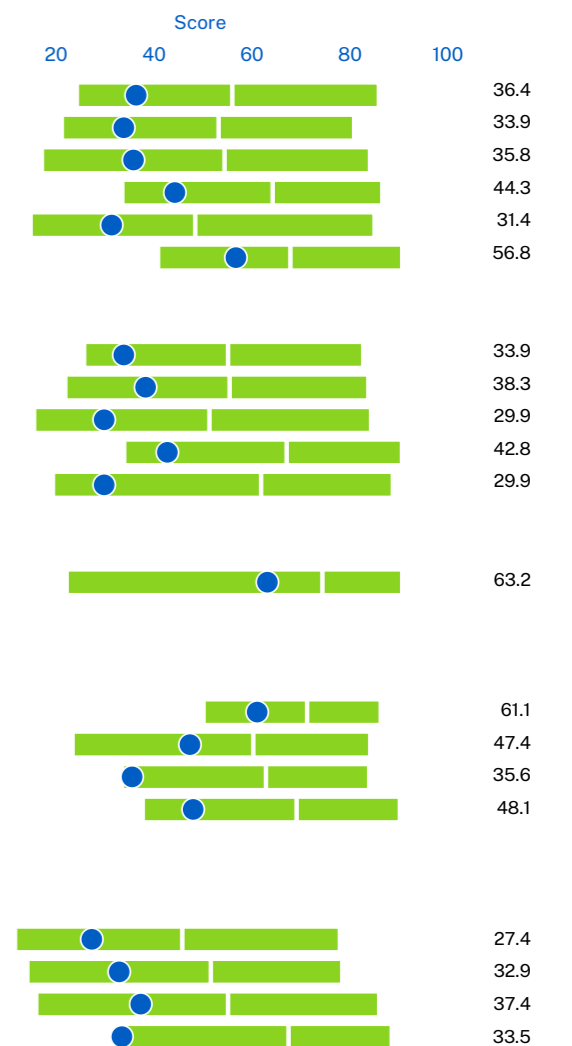
### Governance

Online public access to city finances has reduced corruption

Online voting has increased participation

An online platform where residents can propose ideas has improved city life

Processing Identification Documents online has reduced waiting times



# Vancouver

## SMART CITY RANKING

42

Out of 141



28 out of 118 in 2021

## SMART CITY RATING

A

A in 2021

## FACTOR RATINGS

A

STRUCTURES

BBB

TECHNOLOGIES

GROUP

1

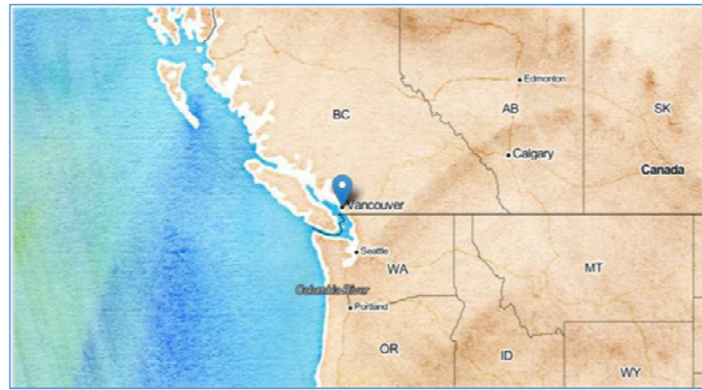
All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 631,490  
HDI 0.944

(UN Data)

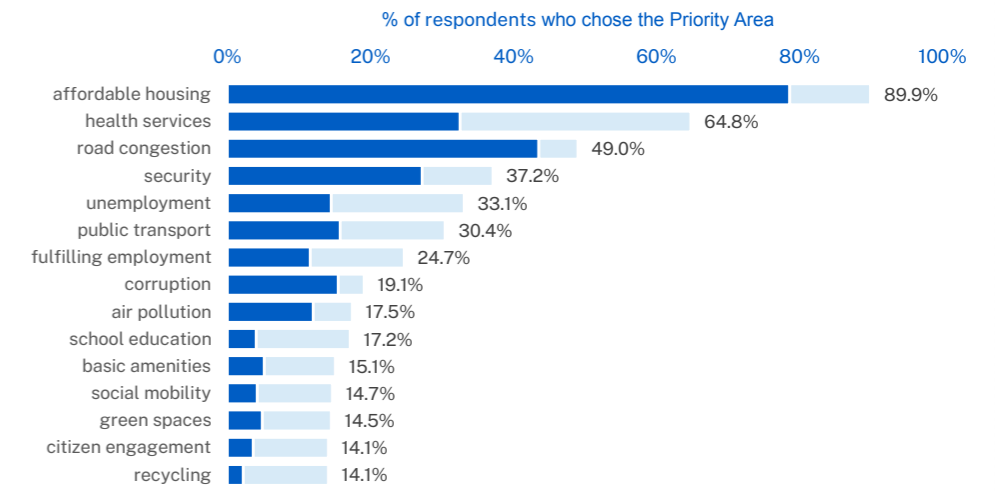


Country	2018	2019	2020	2021	1 yr change
HDI	0.933	0.937	0.931	0.936	+0.005
Life expectancy at birth	82.1	82.4	82.1	82.7	+0.6
Expected years of schooling	16.2	16.4	16.4	16.4	+0.0
Mean years of schooling	13.8	8.7	8.8	8.8	+0.0
GNI per capita (PPP \$)	18,371	18,486	18,754	19,974	+1,220

## PRIORITY AREAS

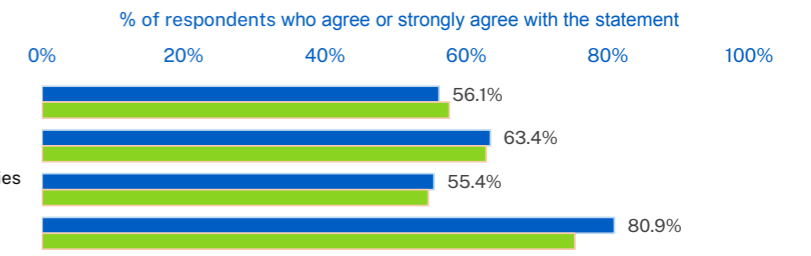
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

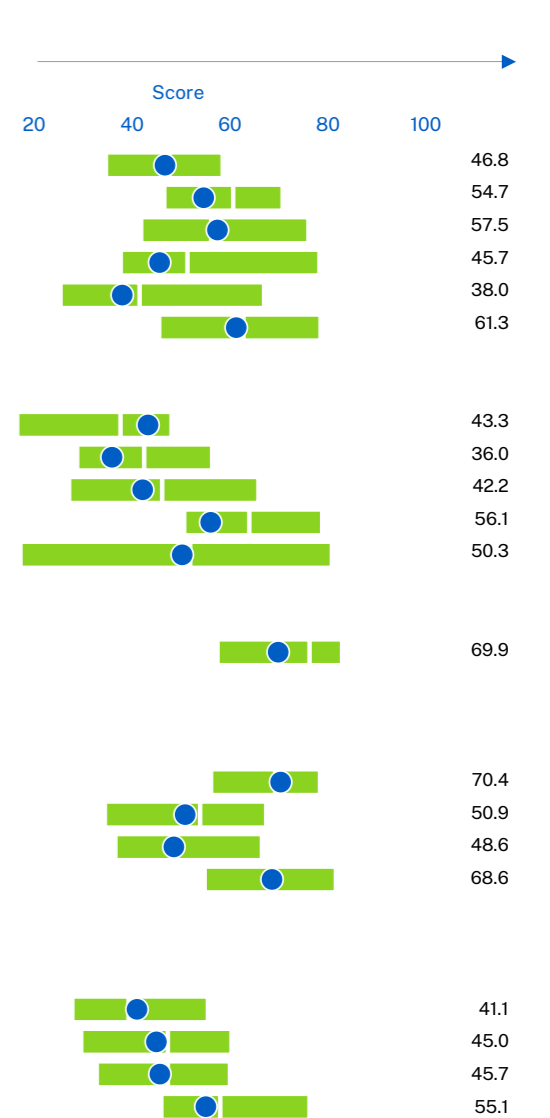
- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Vienna

## SMART CITY RANKING

28

Out of 141



20 out of 118 in 2021

## SMART CITY RATING

AA

AA in 2021

## FACTOR RATINGS

AA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,920,949  
HDI 0.942

(Eurostat)



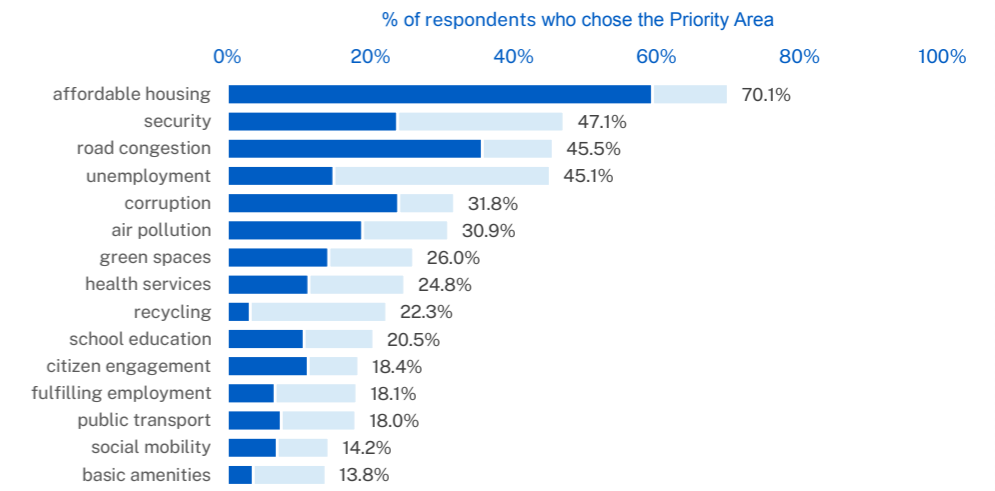
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.914	0.922	0.913	0.916	+0.003
Life expectancy at birth	81.4	81.5	81.5	81.6	+0.1
Expected years of schooling	16.3	16.1	16.0	16.0	+0.0
Mean years of schooling	12.6	12.5	12.3	12.3	+0.0
GNI per capita (PPP \$)	46,231	56,197	51,574	53,619	+2,044

## PRIORITY AREAS

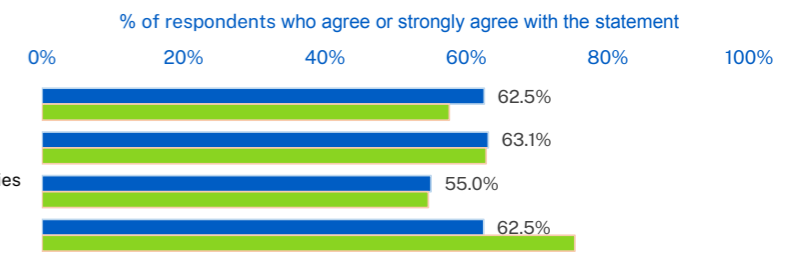
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY





## SMART CITY RANKING

# 65

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# BB

not in 2021

## FACTOR RATINGS

# BB

STRUCTURES

# BBB

TECHNOLOGIES

## GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 829,983  
HDI 0.913

(Eurostat)

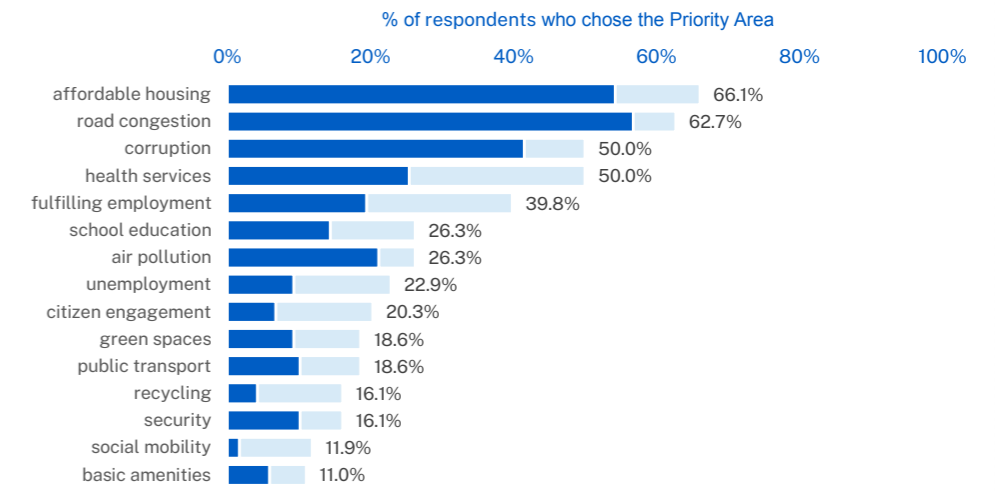


Country	2018	2019	2020	2021	1 yr change
HDI	0.880	0.884	0.879	0.875	-0.004
Life expectancy at birth	75.7	76.2	75.1	73.7	-1.3
Expected years of schooling	16.6	16.3	16.3	16.3	+0.0
Mean years of schooling	13.3	13.4	13.5	13.5	+0.0
GNI per capita (PPP \$)	33,963	35,705	36,077	37,931	+1,855

## PRIORITY AREAS

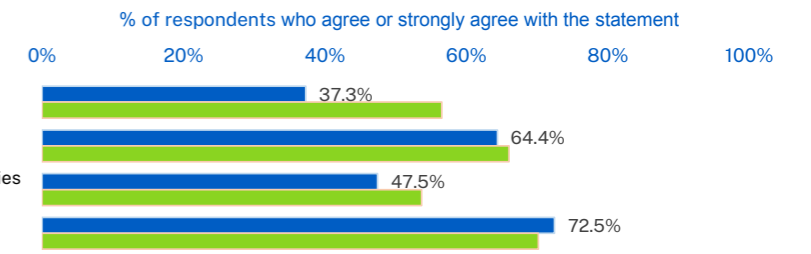
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: [GROUP MEAN] [CITY]

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

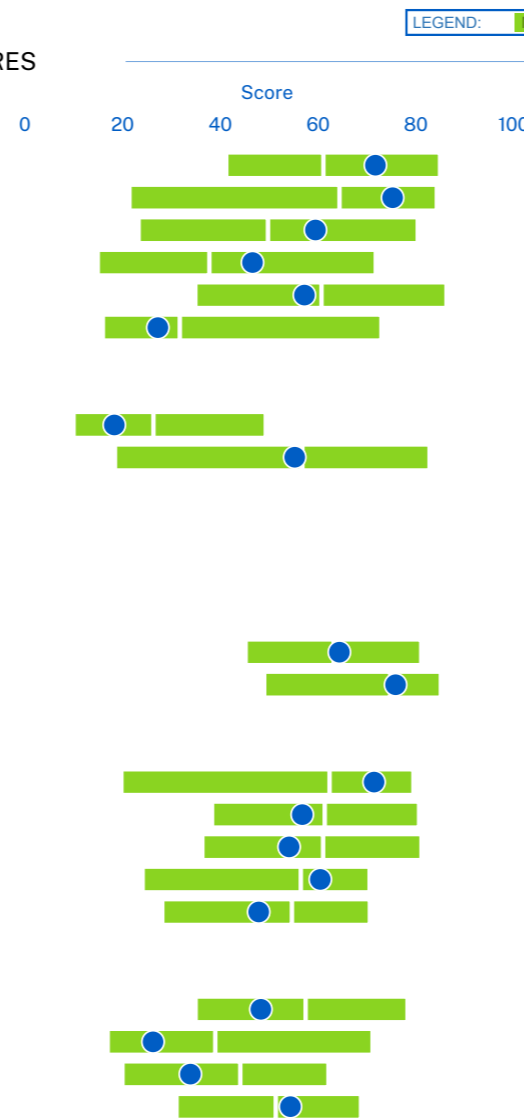
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

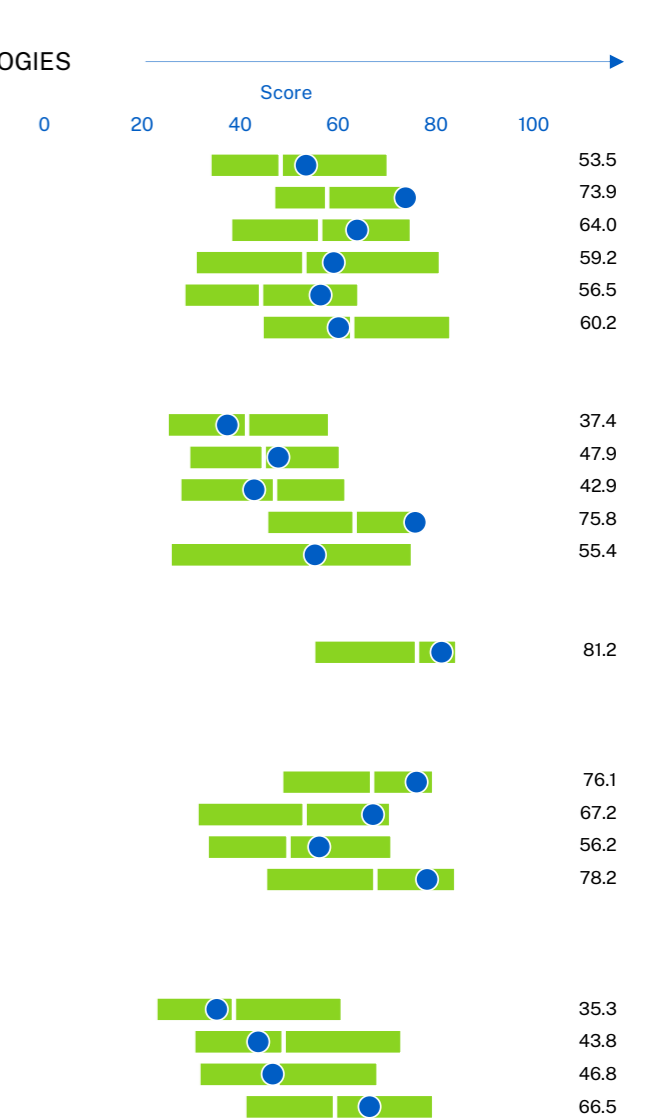
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Warsaw

SMART CITY RANKING

44

Out of 141



41 out of 118 in 2021

SMART CITY RATING

BBB

BB in 2021

FACTOR RATINGS

BBB

STRUCTURES

BBB

TECHNOLOGIES

GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 3,095,025  
HDI 0.926

(Eurostat)

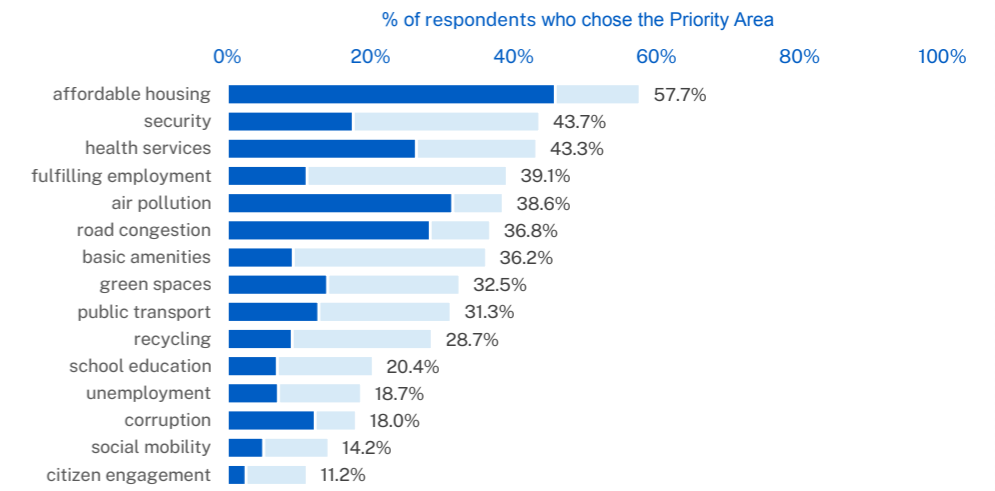


Country	2018	2019	2020	2021	1 yr change
HDI	0.872	0.880	0.876	0.876	+0.000
Life expectancy at birth	78.5	78.7	76.9	76.5	-0.5
Expected years of schooling	16.4	16.3	16.0	16.0	+0.0
Mean years of schooling	12.3	12.5	13.2	13.2	+0.0
GNI per capita (PPP \$)	27,626	31,623	31,164	33,034	+1,869

## PRIORITY AREAS

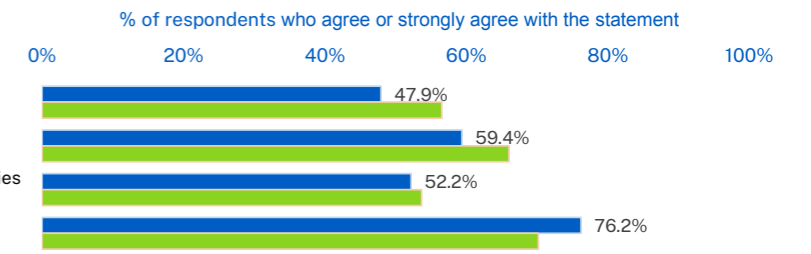
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## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

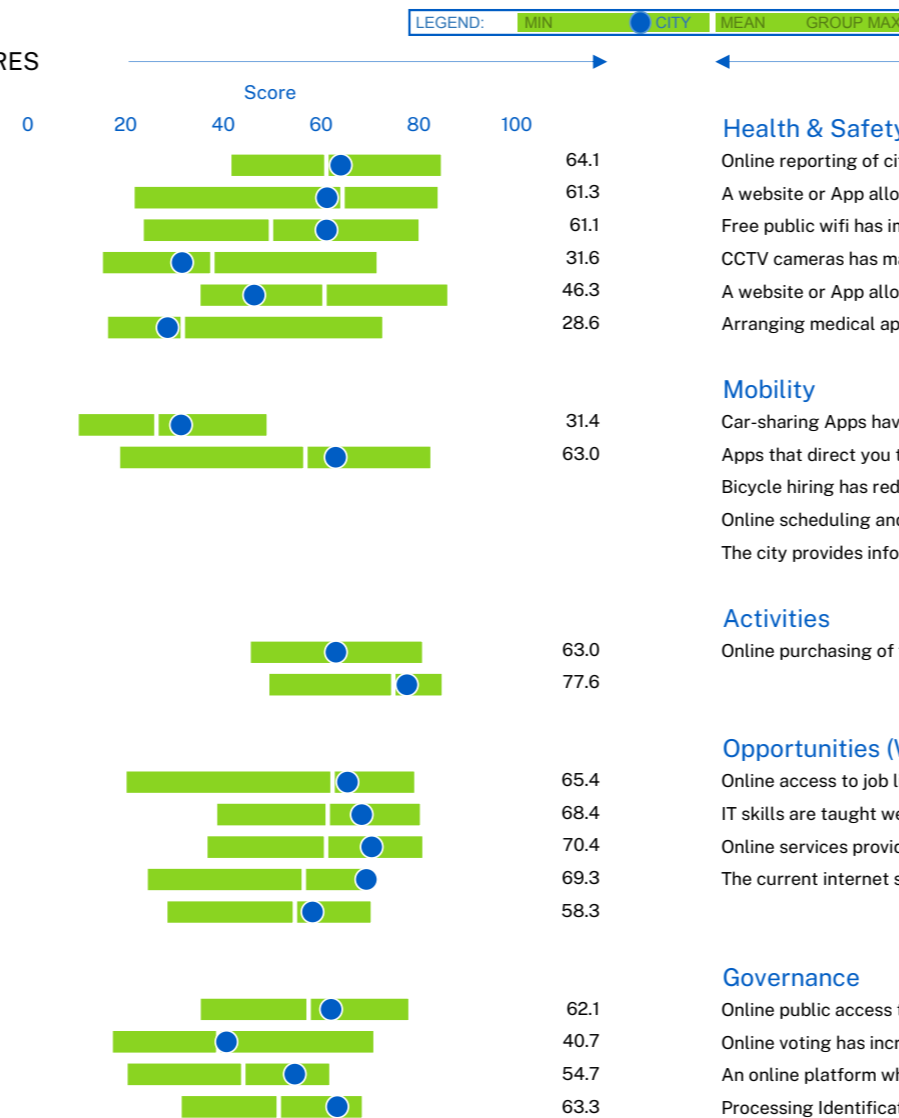
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
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- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

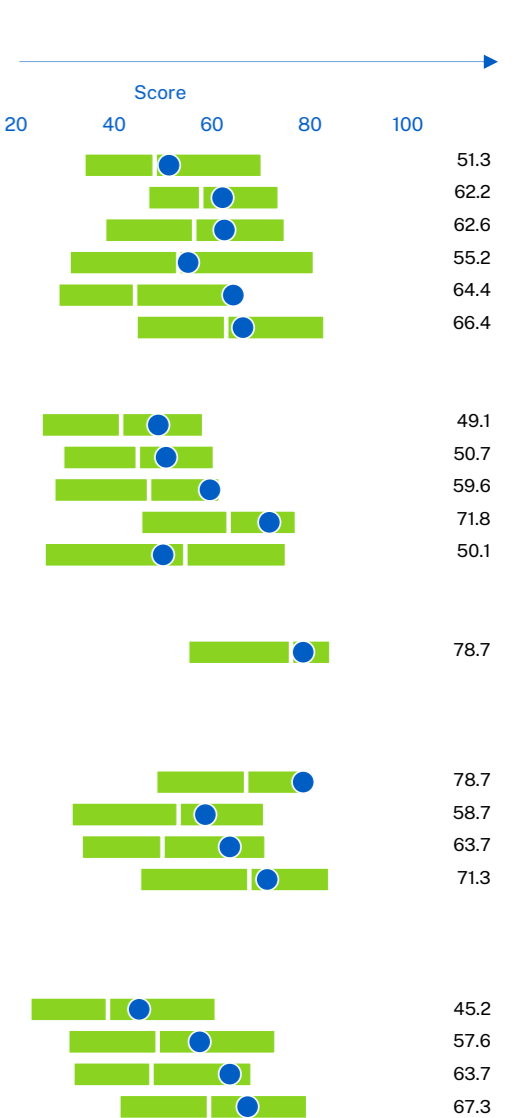
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- Online access to job listings has made it easier to find work
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- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Washington D.C.

## SMART CITY RANKING

39

Out of 141



26 out of 118 in 2021

## SMART CITY RATING

BB

A in 2021

## FACTOR RATINGS

BB

STRUCTURES

BB

TECHNOLOGIES

## GROUP

2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 689,545  
HDI 0.940

(UN Data)

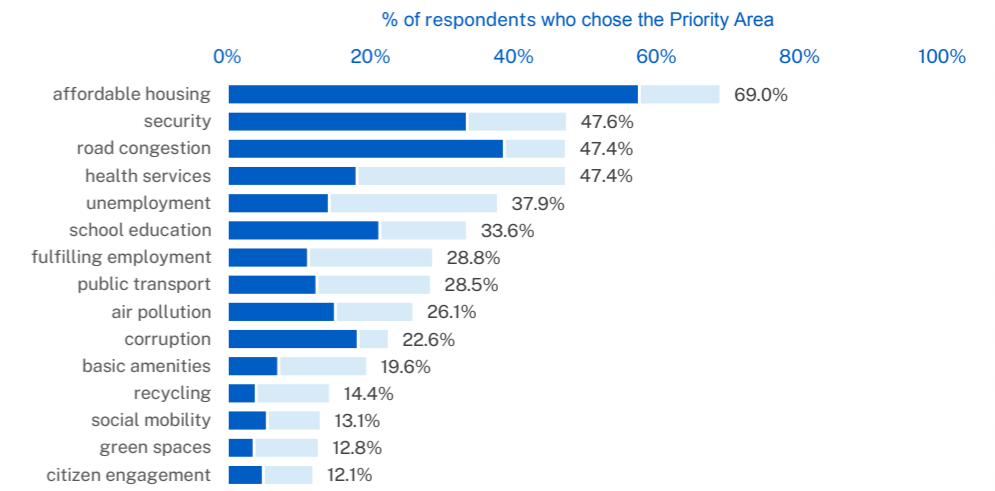


Country	2018	2019	2020	2021	1 yr change
HDI	0.920	0.926	0.920	0.921	+0.001
Life expectancy at birth	78.9	78.9	77.4	77.2	-0.2
Expected years of schooling	16.3	16.3	16.3	16.3	+0.0
Mean years of schooling	13.4	13.4	13.7	13.7	+0.0
GNI per capita (PPP \$)	56,140	63,826	61,462	64,765	+3,304

## PRIORITY AREAS

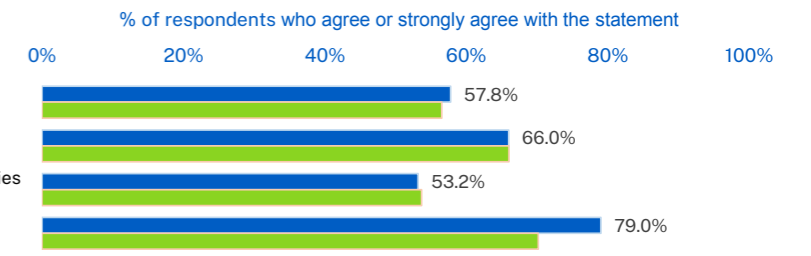
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
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 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
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### Governance

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## TECHNOLOGIES

### Health & Safety

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### Mobility

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### Activities

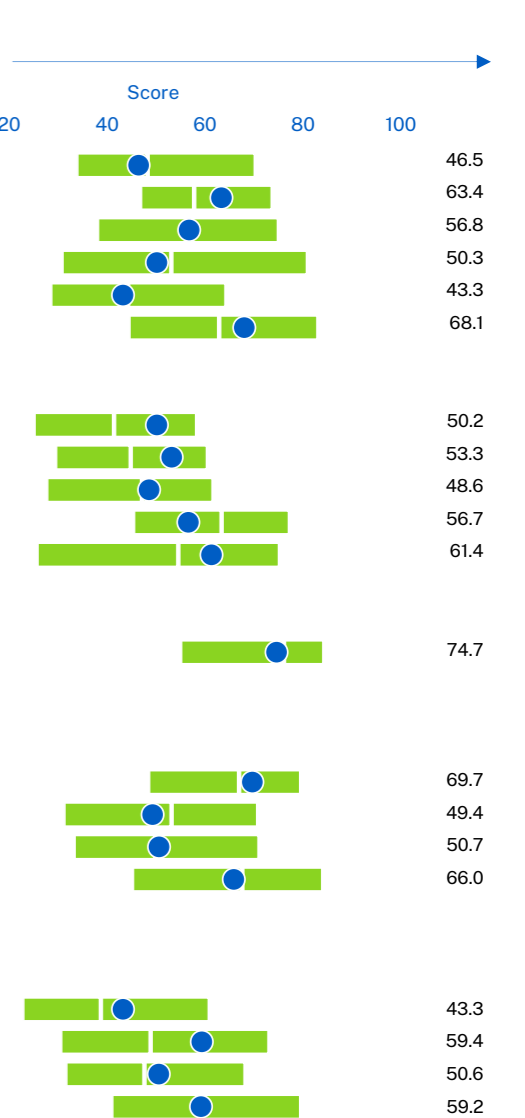
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### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

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- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



# Wellington

## SMART CITY RANKING

23

Out of 141

not out of 118 in 2021

## SMART CITY RATING

A

not in 2021

## FACTOR RATINGS

A

STRUCTURES

BBB

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 201,786  
HDI 0.958

(UN Data)



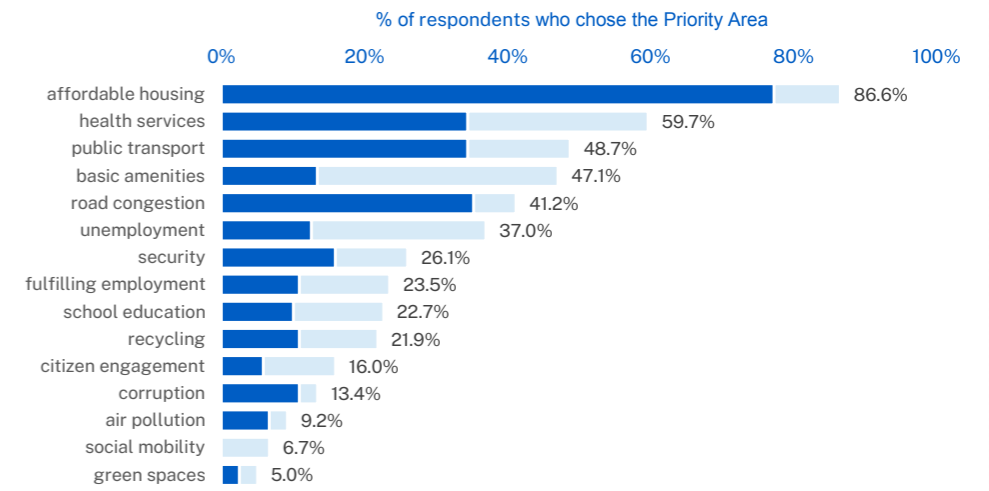
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.936	0.937	0.936	0.937	+0.001
Life expectancy at birth	82.4	82.6	82.7	82.5	-0.3
Expected years of schooling	18.0	18.0	18.0	18.0	+0.0
Mean years of schooling	13.1	7.9	8.7	8.7	+0.0
GNI per capita (PPP \$)	16,129	17,781	16,804	17,030	+226

## PRIORITY AREAS

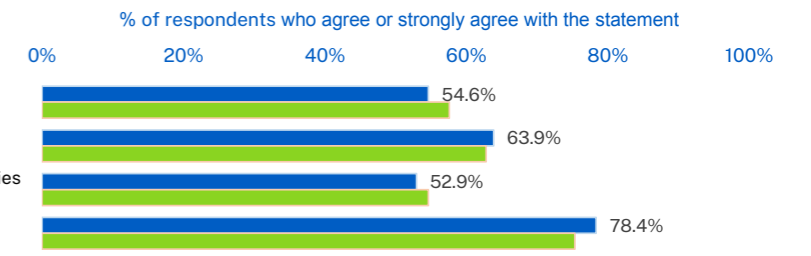
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## ATTITUDES

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 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

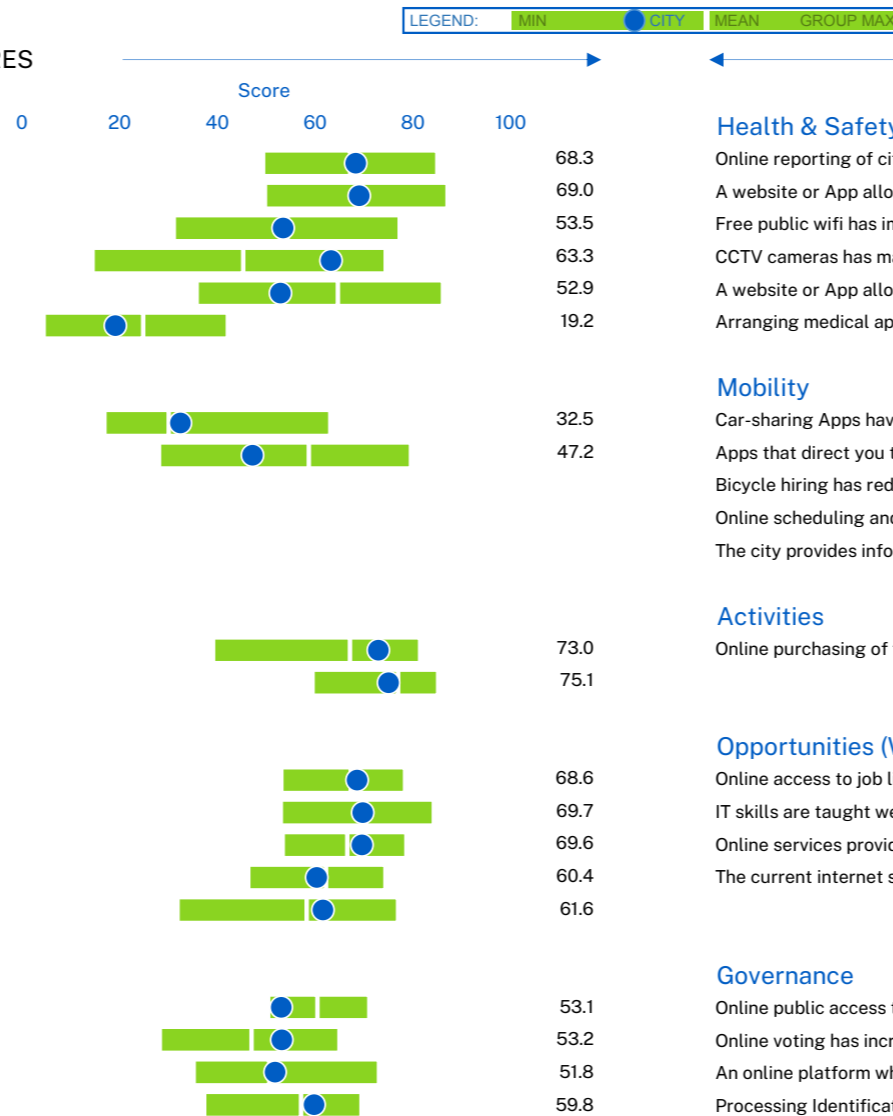
- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
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- Residents provide feedback on local government projects



## TECHNOLOGIES

### Health & Safety

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### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
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- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

- Online public access to city finances has reduced corruption
- Online voting has increased participation
- An online platform where residents can propose ideas has improved city life
- Processing Identification Documents online has reduced waiting times



## SMART CITY RANKING

# 106

Out of 141

not out of 118 in 2021

## SMART CITY RATING

# CCC

not in 2021

## FACTOR RATINGS

# B

STRUCTURES

# CCC

TECHNOLOGIES

GROUP

# 2

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 809,235  
HDI 0.916

(Eurostat)

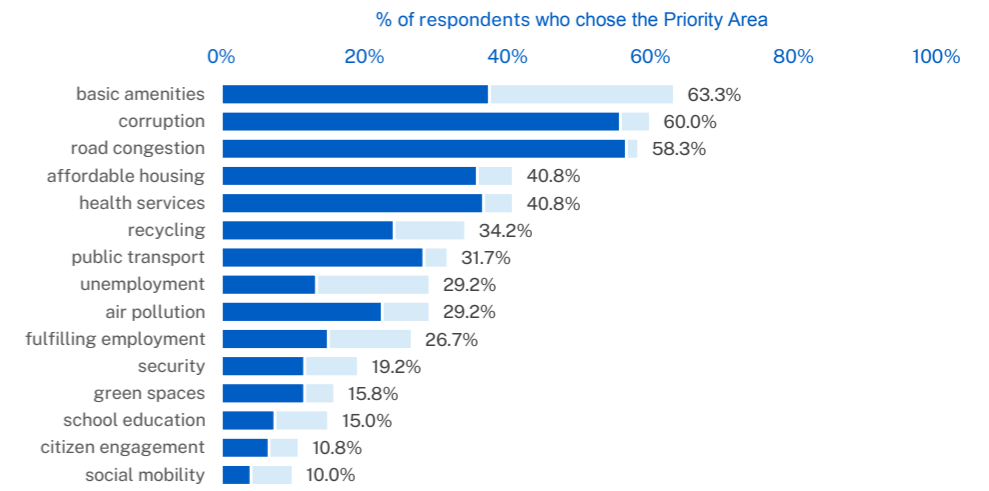


Country	2018	2019	2020	2021	1 yr change
HDI	0.856	0.861	0.855	0.858	+0.003
Life expectancy at birth	78.3	78.7	78.0	77.6	-0.4
Expected years of schooling	15.2	15.1	15.1	15.1	+0.0
Mean years of schooling	12.1	12.2	12.2	12.2	+0.0
GNI per capita (PPP \$)	27,784	28,898	27,185	30,132	+2,947

## PRIORITY AREAS

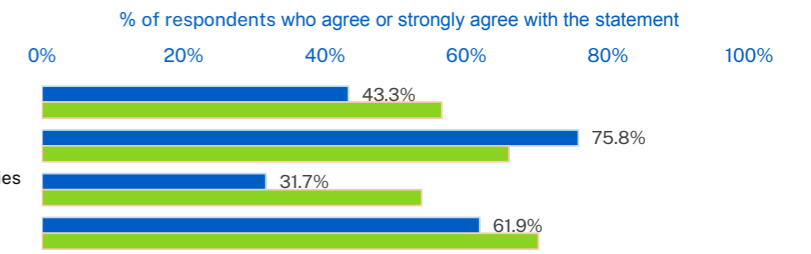
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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

Basic sanitation meets the needs of the poorest areas  
Recycling services are satisfactory  
Public safety is not a problem  
Air pollution is not a problem  
Medical services provision is satisfactory  
Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

Traffic congestion is not a problem  
Public transport is satisfactory

### Activities

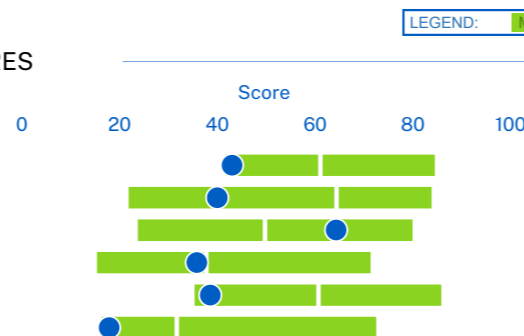
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### Opportunities (Work & School)

Employment finding services are readily available  
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Minorities feel welcome

### Governance

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### Health & Safety

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### Mobility

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Bicycle hiring has reduced congestion  
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The city provides information on traffic congestion through mobile phones

### Activities

Online purchasing of tickets to shows and museums has made it easier to attend

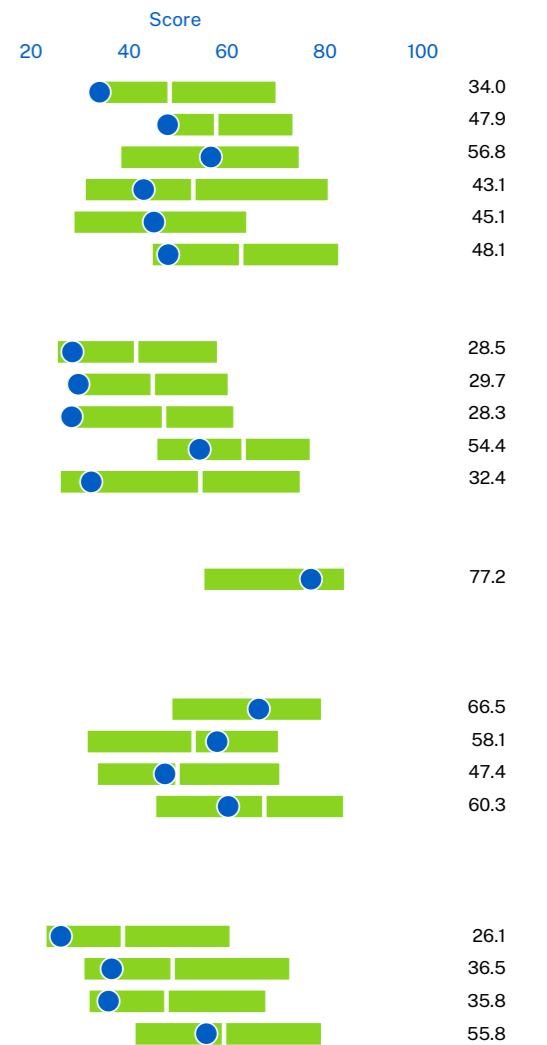
### Opportunities (Work & School)

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IT skills are taught well in schools  
Online services provided by the city has made it easier to start a new business  
The current internet speed and reliability meet connectivity needs

### Governance

Online public access to city finances has reduced corruption  
Online voting has increased participation  
An online platform where residents can propose ideas has improved city life  
Processing Identification Documents online has reduced waiting times

## TECHNOLOGIES



## SMART CITY RANKING

54

Out of 141



51 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

B

STRUCTURES

CC

TECHNOLOGIES

GROUP

3

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,331,133  
HDI 0.912

(Eurostat)

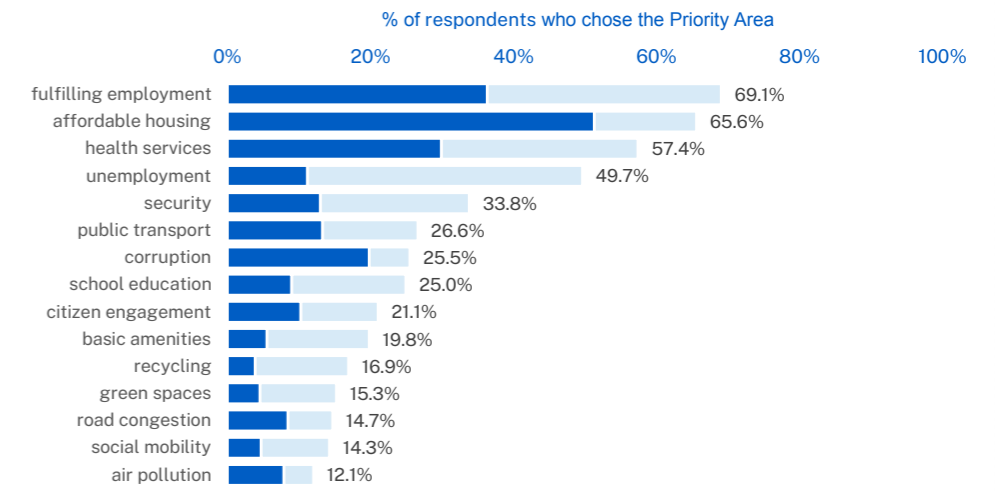


Country	2018	2019	2020	2021	1 yr change
HDI	0.893	0.904	0.899	0.905	+0.006
Life expectancy at birth	83.4	83.6	82.3	83.0	+0.7
Expected years of schooling	17.9	17.6	17.9	17.9	+0.0
Mean years of schooling	9.8	10.3	10.6	10.6	+0.0
GNI per capita (PPP \$)	35,041	40,975	36,516	38,354	+1,838

## PRIORITY AREAS

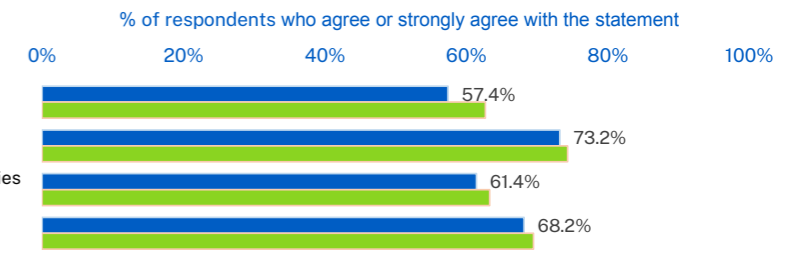
From a list of 15 indicators, survey respondents were asked to select 5 that they perceived as the most urgent for their city. This is the total bar. The higher the percentage of responses per area, the greater the priority for the city.

The left-hand, dark blue section of each bar shows the Alignment, i.e. the proportion of those respondents who also answered the survey on the corresponding area by giving it low priority. A strong Alignment (i.e. consistency across both areas explained) means that these areas may benefit from close observation.



## ATTITUDES

You are willing to concede personal data in order to improve traffic congestion  
 You are comfortable with face recognition technologies to lower crime  
 You feel the availability of online information has increased your trust in authorities  
 The proportion of your day-to-day payment transactions that are non-cash (% of transactions)



LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
- A website or App allows residents to easily give away unwanted items
- Free public wifi has improved access to city services
- CCTV cameras has made residents feel safer
- A website or App allows residents to effectively monitor air pollution
- Arranging medical appointments online has improved access

### Mobility

- Car-sharing Apps have reduced congestion
- Apps that direct you to an available parking space have reduced journey time
- Bicycle hiring has reduced congestion
- Online scheduling and ticket sales has made public transport easier to use
- The city provides information on traffic congestion through mobile phones

### Activities

- Online purchasing of tickets to shows and museums has made it easier to attend

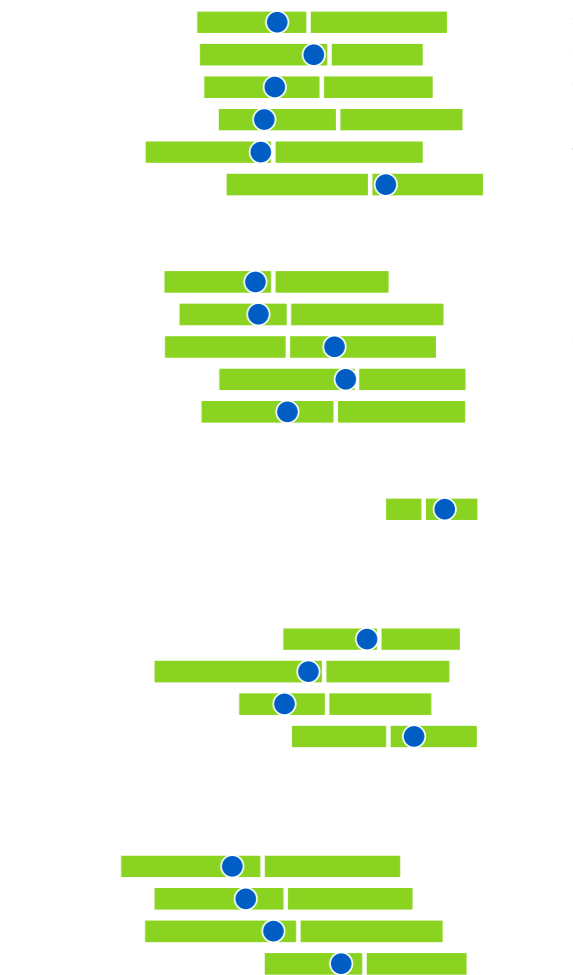
### Opportunities (Work & School)

- Online access to job listings has made it easier to find work
- IT skills are taught well in schools
- Online services provided by the city has made it easier to start a new business
- The current internet speed and reliability meet connectivity needs

### Governance

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- Online voting has increased participation
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Score 0 20 40 60 80 100



# Zhuhai

## SMART CITY RANKING

60

Out of 141



52 out of 118 in 2021

## SMART CITY RATING

CCC

CCC in 2021

## FACTOR RATINGS

CCC

STRUCTURES

CCC

TECHNOLOGIES

## GROUP

4

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,847,411  
HDI 0.799

(UN World Urbanisation Prospects 2022 estimate)



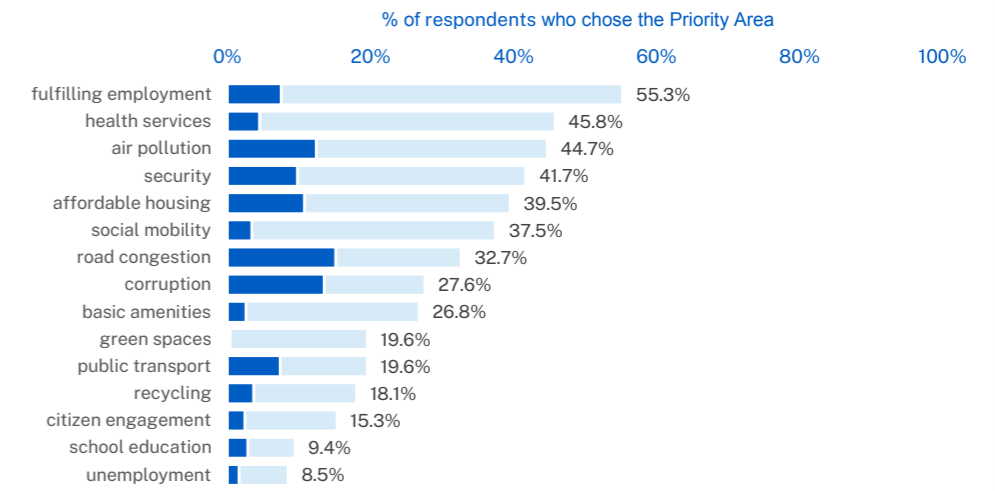
Map tiles by Stamen Design CC BY 3.0 Map Data © OpenStreetMap

Country	2018	2019	2020	2021	1 yr change
HDI	0.758	0.761	0.764	0.768	+0.004
Life expectancy at birth	76.7	76.9	78.1	78.2	+0.1
Expected years of schooling	13.9	14.0	14.2	14.2	+0.0
Mean years of schooling	7.9	8.1	7.6	7.6	+0.0
GNI per capita (PPP \$)	16,127	16,057	16,201	17,504	+1,303

## PRIORITY AREAS

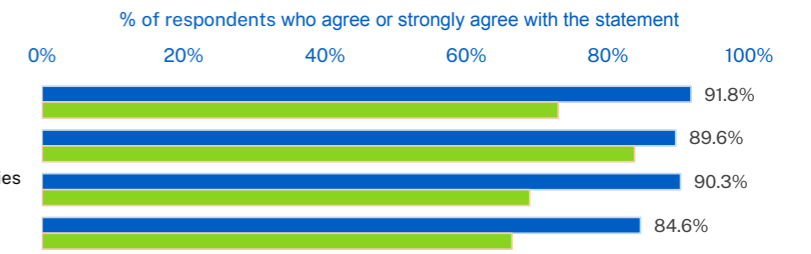
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## ATTITUDES

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LEGEND: GROUP MEAN CITY

## STRUCTURES

### Health & Safety

- Basic sanitation meets the needs of the poorest areas
- Recycling services are satisfactory
- Public safety is not a problem
- Air pollution is not a problem
- Medical services provision is satisfactory
- Finding housing with rent equal to 30% or less of a monthly salary is not a problem

### Mobility

- Traffic congestion is not a problem
- Public transport is satisfactory

### Activities

- Green spaces are satisfactory
- Cultural activities (shows, bars, and museums) are satisfactory

### Opportunities (Work & School)

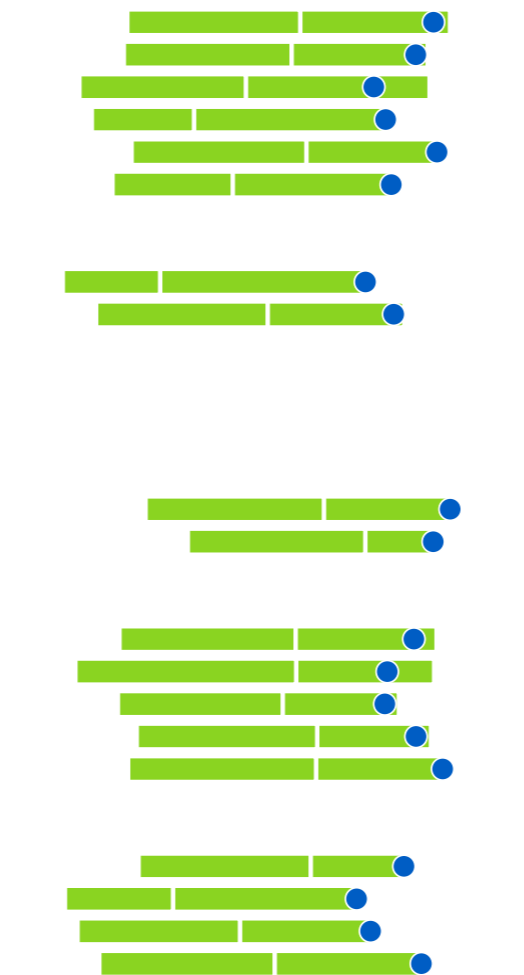
- Employment finding services are readily available
- Most children have access to a good school
- Lifelong learning opportunities are provided by local institutions
- Businesses are creating new jobs
- Minorities feel welcome

### Governance

- Information on local government decisions are easily accessible
- Corruption of city officials is not an issue of concern
- Residents contribute to decision making of local government
- Residents provide feedback on local government projects

LEGEND: MIN CITY MEAN GROUP MAX

Score 0 20 40 60 80 100



## TECHNOLOGIES

### Health & Safety

- Online reporting of city maintenance problems provides a speedy solution
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### Activities

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### Opportunities (Work & School)

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### Governance

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Score 0 20 40 60 80 100



## SMART CITY RANKING

1

Out of 141

1 out of 118 in 2021

## SMART CITY RATING

AAA

AAA in 2021

## FACTOR RATINGS

AAA

STRUCTURES

A

TECHNOLOGIES

GROUP

1

All ratings range from AAA to D

## BACKGROUND INFORMATION

### City

Population 1,553,423  
HDI 0.989

(Eurostat)

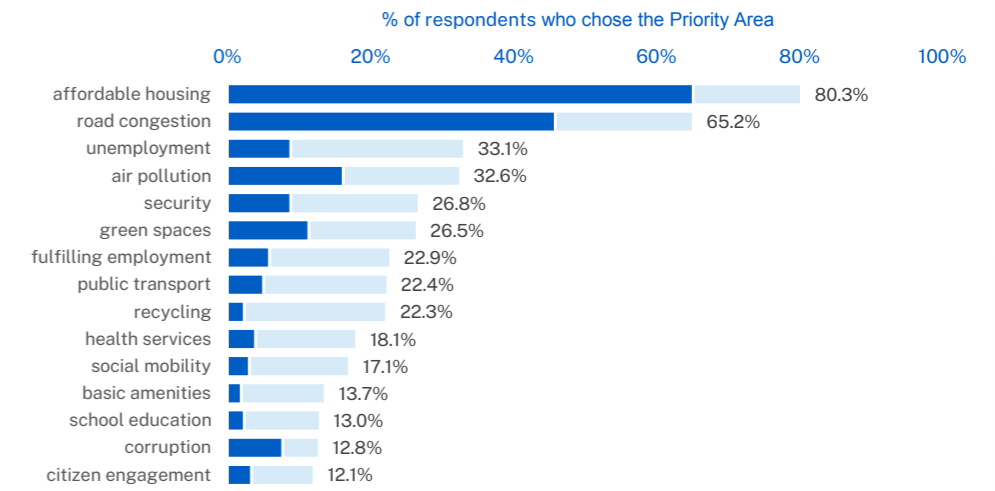


Country	2018	2019	2020	2021	1 yr change
HDI	0.946	0.955	0.956	0.962	+0.006
Life expectancy at birth	83.6	83.8	83.1	84.0	+0.9
Expected years of schooling	16.2	16.3	16.5	16.5	+0.0
Mean years of schooling	13.4	13.4	13.9	13.9	+0.0
GNI per capita (PPP \$)	59,375	69,394	65,011	66,933	+1,922

## PRIORITY AREAS

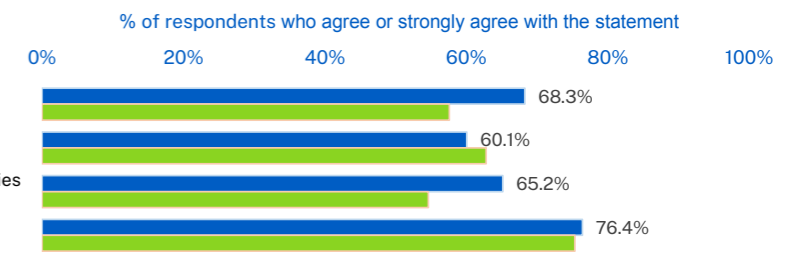
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LEGEND: [GROUP MEAN] [CITY]

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### Mobility

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### Activities

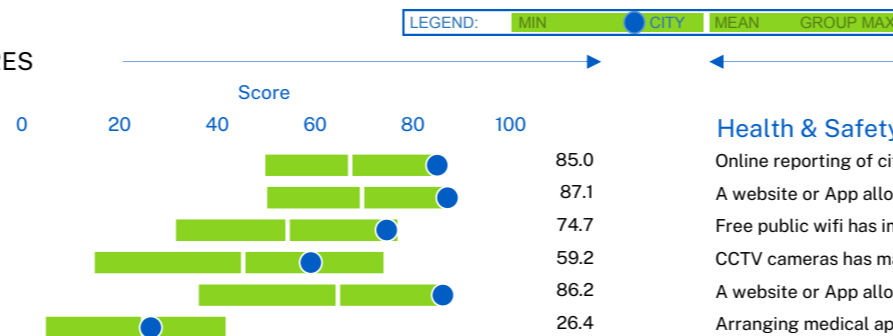
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