

Safest cities of the world INDEX

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Abstract:

Big cities are now hothouses for economic growth, innovation, urban and development. This success also attracts petty crimes, hackers' attacks or terrorist attacks. However, against those wrongdoers, new technology is starting to become available in order to help the society, increase the safety and security of the dwellers and raise their quality of life. The paper is based on comparative indexes about the safest cities of the world, as a result from two reports given by the research and analysis division of The Economist Group, The Economist Intelligence Unit (EIU). These reports were made in 2015 and 2017 and rank 60 cities from all over the world, across 49 indicators, covering digital security, health security, infrastructure security and personal security. My article focuses on urban developing, digital security, personal security like terrorist attacks, criminality, the best place to live, the biggest cities of the world, comparisons between 2015 and 2017, in order to understand how the world is changing and how that creates opportunities to be seized and risks to be managed.

Key Words: *Index, comparisons, biggest cities, terrorist attacks, society, public security, digital security.*

1. Introduction

"New treats demand new approaches."

According to The Economist Intelligence Unit, from 2015 till now, the world's urban population is estimated to have grown by more than 150m people, raising the total number of people living in cities to above 4bn. However, the size of the cities remained almost the same, even though there is a massive migration from rural areas for the city in developing countries and some cities are becoming smaller in those countries with ageing, low fertility rates, natural disasters, economic problems and declining population. As example, the population in Seoul, the capital of South Korea, has shrunk by 800, 00 since 1990 (<http://safecities.economist.com/the-safe-cities-index-2015>). In 2016, there were 31 megacities with more than 10m inhabitants and it is foreseen that the number of them will rise to 41 by 2030. Lagos, the most

populous city in Nigeria, is predicted to double in size in next 13 years. In 2015, the level of urbanization ranges from 82% of the population in North America to 40% in Africa. (<http://safecities.economist.com/safe-cities-index-2017>)

While the population grows, public security becomes a problem for the cities worldwide. Beside the big pressure for the housing supply, healthcare, power and water infrastructure and transport, citizen safety is quite a challenge. Nowadays, criminality and terrorist attack are hard to fight. The recent events in Europe in cities like London, Paris, Barcelona and Brussels, demonstrate that urban development and economic growth may attract terrorist activities. Also, the population diversity combining different nationalities, can lead to violent outburst and mis understandings.

New technology is rapidly implemented in pursuit of the current major shift “the smart cities”. Those digital technologies bring benefits and help the authorities to combat crime more effectively, are permitting remote and efficient management of infrastructure and services. But this major shift also creates vulnerabilities if the investments in those “smart solutions” like Internet of the Things technologies - web interconnected devices, software and cloud storage systems, sensors that collect and transmit data from physical objects, etc – are not accompanied by commensurate investment in cyber security, coming lower on the list of spending priorities for cities economically developed. (<http://safecities.economist.com/safe-cities-index-2017>)

2. Safest cities Index

This index aims to capture complexity covering 49 indicators about digital security, health security, infrastructure security and personal security ranking 60 cities from the urbanizing developing world and the stagnant developed world. Since 2015, in the top three of the list remains Tokyo, Singapore and Osaka, with a top ten comprised of Asian and European Cities.

EXHIBIT 1: Safe Cities Index 2017 overall results					
Average 72					
1	Tokyo	89.80	21	New York	81.01
2	Singapore	89.64	22	Taipei	80.70
3	Osaka	88.87	23	Washington, DC	80.37
4	Toronto	87.36	24	Paris	79.71
5	Melbourne	87.30	25	Milan	79.30
6	Amsterdam	87.26	26	Dallas *	78.73
7	Sydney	86.74	27	Rome	78.67
8	Stockholm	86.72	28	Abu Dhabi	76.91
9	Hong Kong	86.22	29	Buenos Aires	76.35
10	Zurich	85.20	30	Doha	73.59
11	Frankfurt	84.86	31	Kuala Lumpur *	73.11
12	Madrid	83.88	32	Beijing	72.06
13	Barcelona	83.71	33	Athens *	71.90
14	Seoul	83.61	34	Shanghai	70.93
15	San Francisco	83.55	35	Santiago	70.03
16	Wellington *	83.18	36	Kuwait City	67.61
17	Brussels	83.01	37	Rio de Janeiro	66.54
18	Los Angeles	82.26	38	Sao Paulo	66.30
19	Chicago	82.21	39	Mexico City	65.52
20	London	82.10	40	Istanbul	65.23
			41	Moscow	63.99
			42	Jeddah *	62.80
			43	Delhi	62.34
			44	Lima	61.90
			45	Mumbai	61.84
			46	Bogota *	61.36
			47	Riyadh	61.23
			48	Casablanca *	61.20
			49	Bangkok	60.05
			50	Johannesburg	59.17
			51	Cairo *	58.33
			52	Tehran	56.49
			53	Quito *	56.39
			54	Caracas *	55.22
			55	Manila *	54.86
			56	Ho Chi Minh City	54.33
			57	Jakarta	53.39
			58	Dhaka *	47.37
			59	Yangon *	46.47
			60	Karachi *	38.77

Figure 1. (<http://safecities.economist.com/safe-cities-index-2017>).

In 2015, the rank was like this:

Table 1. (<http://safecities.economist.com/the-safe-cities-index-2015>)

1.	Tokyo	11.	Hong Kong
2.	Singapore	12.	San Francisco
3.	Osaka	13.	Taipei
4.	Stockholm	14.	Montreal
5.	Amsterdam	15.	Barcelona
6.	Sydney	16.	Chicago
7.	Zurich	17.	Los Angeles
8.	Toronto	18.	London
9.	Melbourne	19.	Washington DC
10.	New York	20.	Frankfurt

Comparing the two indexes, it can be observed that Madrid is up 13 places and Seoul up six, New York is down 11 places, Washington DC is down 4 places, Hong Kong is up 2 places, Toronto is up 4 places, Frankfurt is up 9 places, Taipei is down 9 places and Montreal doesn't appear anymore in the 2017 index.

Looking up at 2017 index, Asia and the Middle East and Africa dominate the bottom of the index: Dhaka, Yangon and Karachi are at the bottom of the list, Manila, Ho Chi Minh City and Jakarta are in South-east Asia, Dhaka and Karachi are in South Asia and two are in the Middle East and Africa – Cairo and Teheran. Those cities are to be found in the ten cities at the bottom of the overall index. (<http://safecities.economist.com/safe-cities-index-2017>)

3. Digital Security Index

It can be supposed that digital security means answering two questions that are being asked everywhere, millions of times a second, by the devices: "*Are you who you say you are?*" and "*It is my data safe with you?*" with solutions, which protect and enhance assets and interactions.

(<https://www.gemalto.com/companyinfo/digital-security/digital-security-markets>)

Digital security also means strengthen capabilities in forensics and technology crime prevention.

Smart cities connect their infrastructure *to broadband Internet, wirelessly – enabled sensors, big data and analytics and they are more vulnerable to cyber – attack if security measures are not widely implemented.*

(<https://dkf1ato8y5dsg.cloudfront.net/uploads/5/82/safe-cities-index-eng-web.pdf>)

The consequences can be dramatic and can create chaos. It seems that "*more and more cities are moving towards open digital platforms*", a fact that leaves them open to cyber attacks, and these can be serious because is talking about water supply, transport and electricity grids. "*The more data is centralized, the more available is to be penetrated*" and "*cities that have multiple communications systems and highly disaggregated networks are going to be much less vulnerable*".

(<https://dkf1ato8y5dsg.cloudfront.net/uploads/5/82/safe-cities-index-eng-web.pdf>)

In the bottom index, Asian and North American cities perform well on digital security. But in comparison with the 2015 index, New York is down 6 places, San Francisco and Los Angeles one place. On the other hand Chicago is up 7 places.

Again, three cities of the top ten are in Asia but six cities are in North America. This means that cities in some part of the world are starting to respond to digital threats.

Top 20 cities: Digital Security Evolution in 2017

EXHIBIT 3: Digital security, top 10, bottom 10

Average 66.2

TOP 10			BOTTOM 10		
1	Tokyo	88.40	51	Moscow	49.03
2	Singapore	86.84	52	Bangkok	44.44
3	Chicago	86.75	53	Cairo *	43.29
4	Amsterdam	85.79	54	Karachi *	43.22
5	Hong Kong	85.77	55	Tehran	39.88
6	Toronto	85.33	56	Ho Chi Minh City	39.78
7	Los Angeles	85.12	57	Yangon *	39.07
7	San Francisco	85.12	58	Dhaka *	38.33
9	New York	84.95	59	Manila *	36.61
10	Dallas *	84.65	60	Jakarta	36.60

Figure 2. Top 10 cities: Digital Security in 2015.

Table 2. (<https://dkf1ato8y5dsg.cloudfront.net/uploads/5/82/eiu-safe-cities-index-2015-white-paper-1.pdf>)

1.	Tokyo	6.	Los Angeles
2.	Singapore	7.	Stockholm
3.	New York	8.	San Francisco
4.	Hong Kong	9.	Abu Dhabi
5.	Osaka	10.	Chicago

In August, Los Angeles (which competes with San Francisco for the 7 place in digital category) launched the first city-based cyber lab in the US. Run as public-private partnership, the lab will analyse cyber-attacks and hacking attempts on city networks as they occur and disseminate information on these in order to help businesses and residents secure their networks and devices.

(<https://www.lamayor.org/mayor-garcetti-launches-nation%E2%80%99s-first-city-based-cyber-lab> <https://dkf1ato8y5dsg.cloudfront.net/uploads/5/82/safe-cities-index-eng-web.pdf>)

Also, London (situated on 24 place), has created a not for profit organization founded as a joint venture by the Mayor of London, the Metropolitan Police Service (MPS) and the City of London Police in order to help businesses, to embrace digital innovations and operate in a secure online environment protecting themselves against cyber criminals. Their purpose is to provide simple, measurable and effective digital

security solutions to businesses, to enable businesses to operate in a secure digital environment, to target victims of cyber crime and provide support to prevent repeat victimization, to evidence a positive shift in the digital security of businesses, offering training and education programmes for it. (<https://londondsc.co.uk/#aboutus> <http://safecities.economist.com/safe-cities-index-2017>)

In the index, four of the five cities at the bottom of this category have low income and the poverty or health security can push cyber security on the bottom list of priorities.

Brazil is one the top cities for cybercrime in the world and the cost of data breach increased from R\$3.96 million to R\$4.31 million, according to the report from the Ponemon Institute “2016 Cost of Data Breach Study: Brazil”. (<https://securityintelligence.com/the-true-cost-of-cybercrime-in-brazil/>)

Some specialists believe that protecting citizens from cyber threats is a key responsibility for governments, especially when a city is serious in becoming a smart city and going to the next level, that the cyber security is not to be ignored, because is one of the fundamental cornerstones of the entire process.

4. Personal Security Index

For the urban residents, personal safety, the threat of crime and violence are uppermost, because safety and security are very important in making a city a good place in which to live or to work. And this requires substantial investment.

The well- known terrorist attack from Barcelona (Las Ramblas in august 2017), from Nice, London, Istanbul, Brussels, Siria, Iraq and many others that we didn't heard about shock with the number of deaths few far from urban crime or other forms of violence – globally deaths from terrorist attacks are estimated at 30.000 in 2015 and the global economic impact of terrorism reached US\$ 89.6 billion in 2015, decreasing by 15% from its 2014 level according to Global Terrorism INDEX 2016 given by Institute for Economics&Peace. The most affected country is Iraq, suffering the highest economic impact from terrorism – 17% of its GDP in 2015. And there are other negative aspects. Tourism's contribution to GDP is twice as large in countries with no terrorist attacks and the economic resources devoted to peacekeeping and peacebuilding represent 2% of the economic impact of armed conflict and terrorism.(<http://economicsandpeace.org/wp-content/uploads/2016/11/Global-Terrorism-Index-2016.2.pdf>) However the total number of terrorist attacks in 2016 decreased by 9% and total deaths due to terrorist attacks decreased by 13% compared to 2015. The total number of terrorist attacks was 11.072 in 2016, resulting 25.600 number of deaths - a substantial fall compared to the previous year.

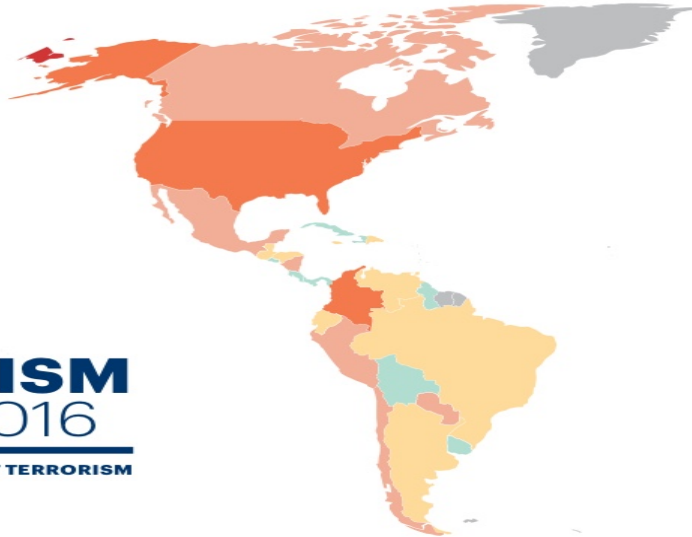
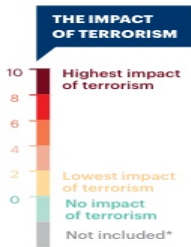
In 2016, 55% of terrorist attacks took place in Iraq, Afghanistan, India, Pakistan and Philippines, 75% of resulted deaths caused by terrorist attacks took place in Iraq, Afghanistan, Syria, Nigeria and Pakistan. (<https://www.state.gov/j/ct/rls/crt/2016/272241.htm>)

RANK	COUNTRY	SCORE
1	Iraq	9.96
2	Afghanistan	9.444
3	Nigeria	9.314
4	Pakistan	8.613
5	Syria	8.587
6	Yemen	8.076
7	Somalia	7.548
8	India	7.484
9	Egypt	7.328

10	Libya	7.283
11	Ukraine	7.132
12	Philippines	7.098
13	Cameroon	7.002
14	Turkey	6.738
15	Thailand	6.706
16	Niger	6.682
17	Democratic Republic of the Congo	6.633
18	Sudan	6.6

19	Kenya	6.578
20	Central African Republic	6.518
21	South Sudan	6.497
22	Bangladesh	6.479
23	China	6.108
24	Lebanon	6.068
25	Mali	6.03
26	Colombia	5.954
27	Chad	5.83

28	Palestine	5.659
29	France	5.603
30	Russia	5.43
31	Burundi	5.417
32	Saudi Arabia	5.404
33	Israel	5.248
34	United Kingdom	5.08
35	Tunisia	4.963
36	United States	4.877



GLOBAL TERRORISM INDEX 2016

MEASURING THE IMPACT OF TERRORISM

RANK	COUNTRY	SCORE
77	Venezuela	1.998
78	Macedonia	1.86
79	Djibouti	1.78
80	Brazil	1.74
81	Madagascar	1.671
82	Bulgaria	1.631
83	Dominican Republic	1.562
84	Kyrgyzstan	1.445
85	Guinea	1.403
86	Belarus	1.357
87	Georgia	1.257

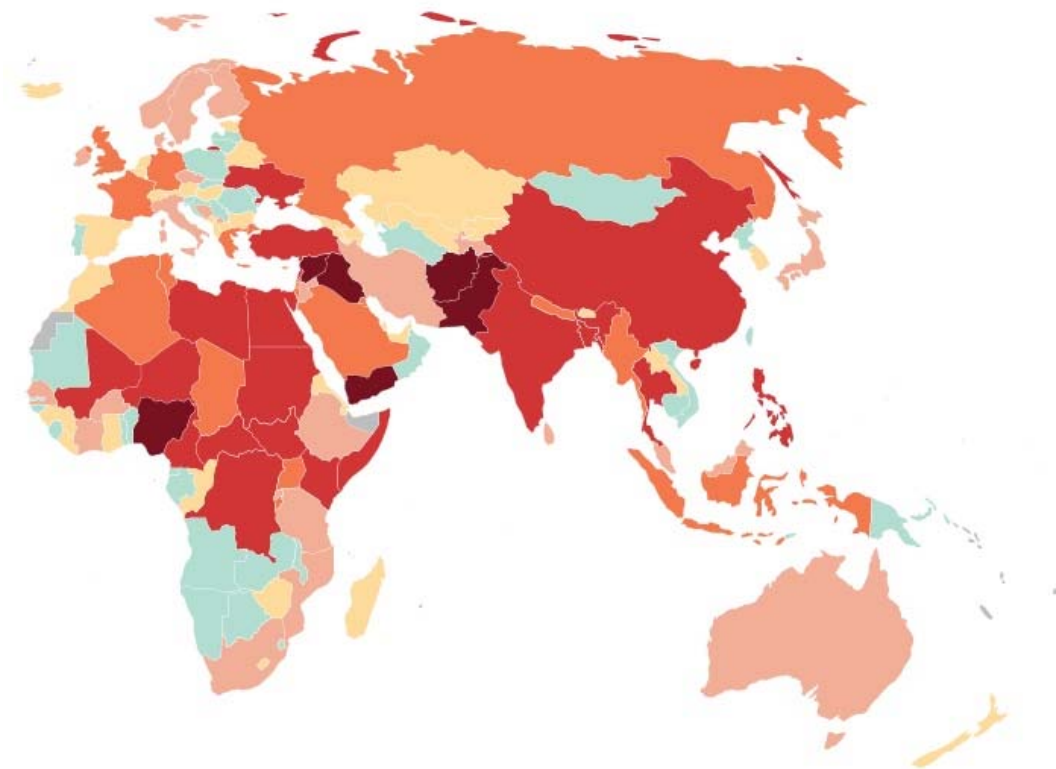
88	Belgium	1.245
89	Spain	1.203
90	Guatemala	1.144
90	Honduras	1.144
92	Albania	1.103
92	Estonia	1.103
94	Kazakhstan	0.934
95	Morocco	0.892
95	Lesotho	0.892
97	Netherlands	0.864
98	Ecuador	0.753

99	Laos	0.695
100	Eritrea	0.534
101	Argentina	0.499
101	Trinidad and Tobago	0.499
103	United Arab Emirates	0.422
104	Zimbabwe	0.413
105	Congo	0.365
106	Azerbaijan	0.346
106	Ghana	0.346
108	Switzerland	0.288
108	Armenia	0.288

110	Iceland	0.25
110	Liberia	0.25
112	Hungary	0.23
112	New Zealand	0.23
112	South Korea	0.23
112	Qatar	0.23
116	Austria	0.182
117	Montenegro	0.154
117	Uzbekistan	0.154
119	Bhutan	0.115
119	Jamaica	0.115

Figure 3

37	Kuwait	4.449	47	Iran	3.949	57	Peru	2.984	67	Japan	2.447
38	Indonesia	4.429	48	Paraguay	3.84	58	Jordan	2.858	68	Finland	2.377
39	Nepal	4.415	49	Tanzania	3.832	59	Australia	2.742	69	Italy	2.363
40	Uganda	4.327	50	Mexico	3.723	60	Chile	2.699	70	Kosovo	2.205
41	Germany	4.308	51	Mozambique	3.536	61	Malaysia	2.691	71	Czech Republic	2.179
42	Algeria	4.282	52	South Africa	3.531	62	Bosnia and Herzegovina	2.675	72	Cote d'Ivoire	2.177
43	Greece	4.218	53	Sri Lanka	3.486	63	Burkina Faso	2.623	73	Denmark	2.152
44	Bahrain	4.206	54	Ethiopia	3.454	64	Senegal	2.598	74	Nicaragua	2.093
45	Myanmar	4.167	55	Ireland	3.429	65	Rwanda	2.589	75	Norway	2.077
46	Sweden	3.984	56	Tajikistan	3.086	66	Canada	2.518	76	Cyprus	2.04



* refer to the GTI methodology in Appendix C

121	Serbia	0.086	130	Equatorial Guinea	0	130	Gambia	0	130	North Korea	0
122	Guinea-Bissau	0.077	130	Panama	0	130	Haiti	0	130	Singapore	0
122	Cambodia	0.077	130	Timor-Leste	0	130	Lithuania	0	130	Sierra Leone	0
122	Taiwan	0.077	130	Swaziland	0	130	Latvia	0	130	El Salvador	0
125	Mauritania	0.067	130	Romania	0	130	Mongolia	0	130	Slovakia	0
126	Portugal	0.058	130	Zambia	0	130	Mauritius	0	130	Slovenia	0
126	Croatia	0.058	130	Benin	0	130	Malawi	0	130	Togo	0
128	Bolivia	0.038	130	Botswana	0	130	Namibia	0	130	Turkmenistan	0
129	Moldova	0.019	130	Costa Rica	0	130	Oman	0	130	Uruguay	0
130	Angola	0	130	Cuba	0	130	Papua New Guinea	0	130	Viet Nam	0
130	Guyana	0	130	Gabon	0	130	Poland	0			

Figure 4

**Global Terrorism Database, EIU calculations.
Figures are the average of 2007–2016**

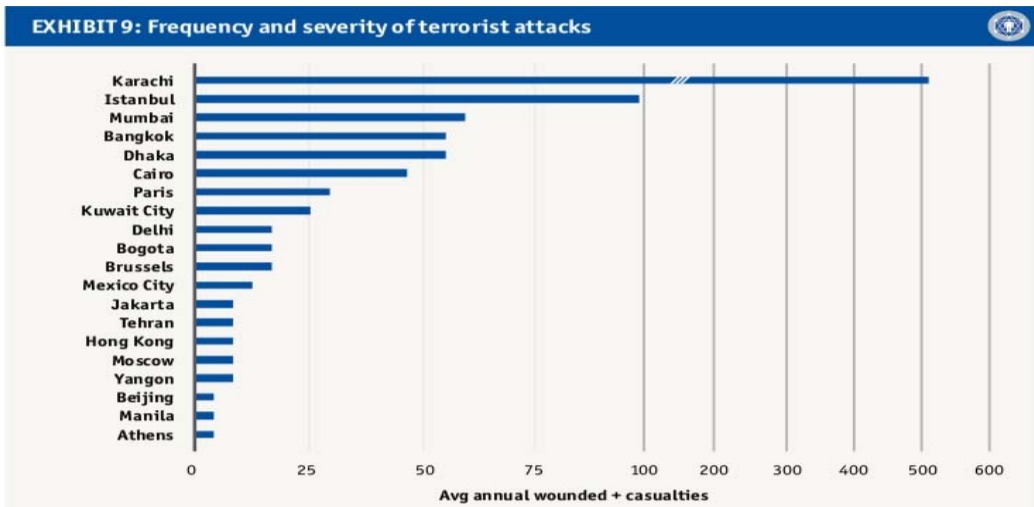


Figure 5



Figure 6

It can be seen that Karachi is at the bottom list in the index offered by EIU because of the most frequent and severe terrorist attacks, although there are some newspaper which consider that, in 2017, the frequency of the attacks in Karachi, is decreasing. (<https://www.dawn.com/news/1359553>)

On the other Hand, Asia has the world’s safest cities when it comes to personal security and the specialists consider it natural, because of the cultural component to it.

Cities are densely populated areas, so that's why terrorists choose crowded places to set off the bombs – also they are going to get maximum media coverage and their actions will spread immediately, causing panic among the population. Another effect of the terrorist actions seems to be the social cohesion – hate crime and tensions between groups of different religion or nationality, are increasing. In this case, cities should take into consideration to invest in surveillance technologies (police cameras positioned throughout a city) and community control.

5. The ideal place to live

Choosing the best place to live in - this decision could be based on a mixture of reasons like safety, creativity, opportunities, culture etc. EIU created a general index in 2015, after tracking 50 cities based on other six indexes: safe, liveability, costs of living, business environment, democracy level, global food security.

Index of indexes: Top 25 cities		
Rank (vs 50 cities in Safe Cities Index)	City	Average position across six EIU indexes
1	Toronto	17
2	Montreal	23
3	Stockholm	25
4	Amsterdam	25
5	San Francisco	26
6	Melbourne	27
7	Zurich	27
8	Washington DC	27
9	Sydney	28
10	Chicago	28
11	Los Angeles	30
12	Brussels	32
13	New York	33
14	Frankfurt	33
15	Osaka	33
16	Tokyo	35
17	Barcelona	36
18	Santiago	36
19	Paris	37
20	Madrid	40
21	Taipei	40
22	London	41
23	Seoul	45
24	Hong Kong	45
25	Rome	46

Figure 7

6. Conclusions

The global GDP is produced in a measure of 60% by the world's top 600 cities, which means that cities are becoming the powerhouses of the global economy. (<https://dkf1ato8y5dsg.cloudfront.net/uploads/5/82/safe-cities-index-eng-web.pdf>)

The population growth, the migration patterns, climate changes and natural disaster are now a great challenge for the urban infrastructure and the economic system and so the urban security becomes the latest concern of municipal leaders and residents.

Fortress mentality cannot create urban environments safe and liveable – especially now, when online world has no borders. Despite all the risks, now we have plenty of tools to increase urban safety and security. Threats, violence, crime or terrorist attack can be reduced if the citizens involve in this “smart city” process – they have a central role in creating a safe environment – using the apps, and contributing to crime reduction or combating pollution levels. Technology, used wisely, also can help in improving crime detection or can enhance the efficiency of urban infrastructure. Resources help even more, so the efforts can concentrate on prevention.

Those indexes show the difficulties that a city in developing country has to face with. They were also made for us to understand how the world is changing and how that creates opportunities to be seized and risks to be managed, how many changes can appear in just two years among the cities, how ranks can change and how the world is embracing slowly but surely, the process of so-called “smart cities”.

This article is based for the most part on official reports given by the research and analysis division of The Economist Group, The Economist Intelligence Unit, by the Institute for Economics&Peace and by US Department of the State, between 2015- 2017. Although had been taken all the efforts to verify the accuracy of the information it can be accept any occurred error.

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