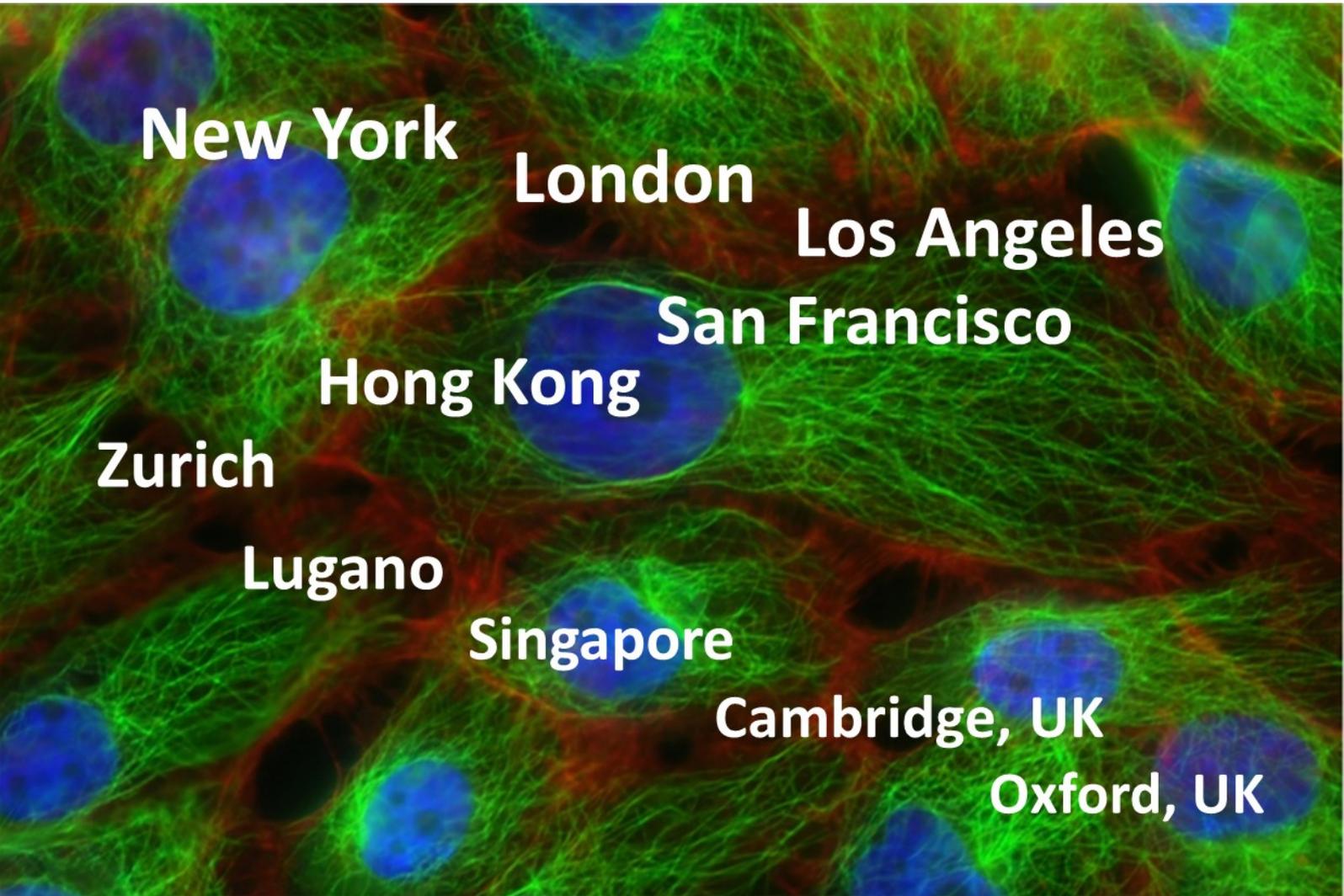




## The Smart Centres Index 6



November 2022



Distributed Futures





We are pleased to present the sixth edition of the [Smart Centres Index](#) (SCI 6).

The SCI has been developed by Z/Yen, as part of its Long Finance Initiative and the Distributed Futures Programme, to track commercial centres' ability to create, develop, and deploy technology. It aims to help investors, governments, and regulators track the attractiveness of technology centres for new technologies and products by measuring how attuned centres and their regulatory systems are to attracting innovation and growth in Science, Technology, Energy Systems, Machine Learning, Distributed Ledgers, and Fintech.

The SCI tracks three dimensions related to innovation and technology in the cities that we rank:

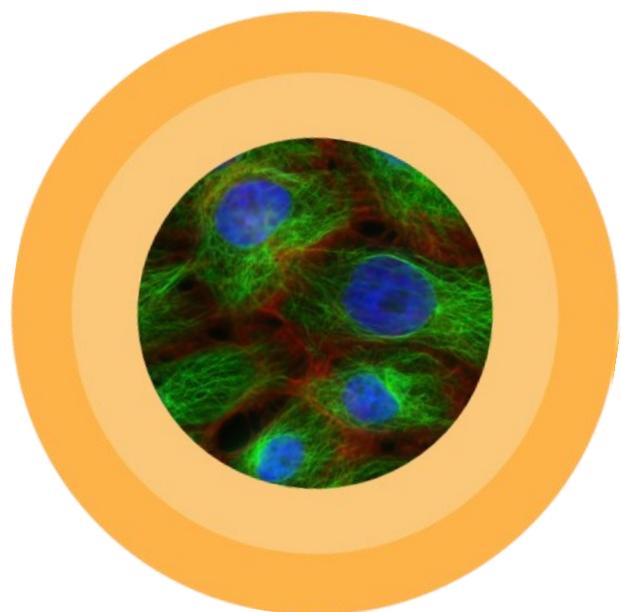
- Innovation Support - the support provided by regulatory and other systems to innovation and technology in a centre.
- Creative Intensity - the intensity of technology and innovation services and opportunities in a centre.
- Delivery Capability - the quality of the technology and innovation work that is taking place in a centre.

[Z/Yen](#) helps organisations make better choices - our clients consider us a commercial think-tank that spots, solves, and acts. Our name combines Zen and Yen - 'a philosophical desire to succeed' - in a ratio, recognising that all decisions are trade-offs. One of Z/Yen's specialisms is the development and publication of research combining factor analysis and professional assessments.

[Long Finance](#) is a Z/Yen initiative designed to address the question **"When would we know our financial system is working?"** This question underlies Long Finance's goal to improve society's understanding and use of finance over the long-term. In contrast to the short-termism that defines today's economic views, the Long Finance timeframe is roughly 100 years.

The authors of this report, Mike Wardle and Professor Michael Mainelli, would like to thank Bikash Kharel and the rest of the Z/Yen team for their contributions with research, modelling, and ideas.

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Cover Photo By [National Cancer Institute](#) on [Unsplash](#): Stress Fibers and Microtubules in Human Breast Cancer Cells

## Foreword

This is an extraordinary moment for the latest Smart Centres Index to be published.

Innovation and technology continue to advance at ever increasing pace. The scope and scale of these advances are difficult to immediately grasp. Novel computational methods, materials and sensing are transforming the physical sciences. The ability to engineer with biology is transforming the life and health sciences. It is however, the convergence of the scientific capabilities that have led to the largest steps forward and is most set to change the scene. The ability to engineer 'in silico' has, across all the areas, allowed innovation to make rapid progress.

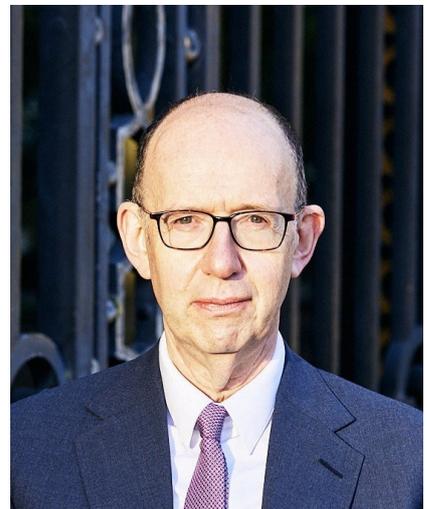
The context in which this progress is being made is, of course exceptionally challenging. Globally we are facing an economic downturn, the magnitude of which is uncertain, but likely serious. We have war in Europe and consequent disruption, not least to energy supply. Tension arising from worsening relationships between China and the US and its allies is mounting. Our collective understanding of the implications of climate change has improved, and from that we have an appreciation of the massive steps required to prevent further damage and slow its advance. The immediate threat of pandemic illness is receding but the longer-term threats remain.

Innovation and technology have consequently ceased to be peripheral concerns in geopolitics. They are critical to growth and prosperity, to security and defence, to health and to climate change mitigation and to contributing to global goals. They are a source of national strategic advantage and hence of active contest. In this context, the UK seeks to establish itself as a 'science superpower' and has committed to the investment necessary to achieve this. The UK is not unusual in this regard, though it possesses particular assets it can leverage that make its ambition credible.

Central to this ambition are the UK's cities and the innovation ecosystems they sustain. There is a tension between support for these centres and the desire to 'level-up' - reducing regional inequities and economic 'dead spots' that blight the lives of citizens. This tension is again not unusual globally, though it is particularly marked in the UK.

The Smart Centres Index is a source of rich insight and analysis that can illuminate global trends and can inform national policies. It can help address these tensions. It is a vital tool for policy makers and innovators alike. I commend it to you.

**Professor Sir Anthony Finkelstein CBE FREng**  
**President**  
**City, University of London**



## Summary And Headlines

### Commentary

The Smart Centres Index focuses on technology and innovation in financial and commercial centres across the world, including Science, Energy Systems, and Machine Learning, along with other applications. The index is designed to improve our understanding of science & technology policy, regulation, and delivery.

The SCI takes into account the three dimensions of Innovation Support, Creative Intensity, and Delivery Capability. In broad terms, centres in North America and Western Europe score well for Innovation Support and Delivery Capability but vary in terms of their Creative Intensity. Centres in Asia/Pacific score lower for Innovation Support.

As a mark of continued technological progress, we asked respondents to the SCI survey to predict the time frame over which they expected quantum computers to be able to break current public key encryption. Two thirds of respondents expected this point to be reached within five years. This increase in computational power will continue to drive the way in which technology shapes our lives.

In this edition of the SCI, leading US centres show a strong performance and Asia/Pacific centres are generally improving in the index, having lagged behind in previous editions.

Leading centres in the SCI are based in places which combine a high performing university sector across STEM subjects, with well-developed regulatory, commercial, and financial services.

### SCI 6 Results

- New York maintained its first position in the index, with London second.
- Los Angeles and San Francisco overtook Hong Kong.
- Five Western European centres feature in the top 10, with three from the US. Singapore joins Hong Kong in the top 10 among Asia/Pacific centres.
- Following an average increase of 2.3% in ratings in SCI 5, the average rating in SCI 6 fell by 4.17% and only four centres rose in the SCI 6 ratings.
- Seven centres rose 10 or more places in the rankings in SCI 6, while just two centres fell 10 or more places.

### North America

- Nine North American centres feature in SCI 6 and three are in the world top 10, with Los Angeles and San Francisco moving up into 3rd and 4th place.
- All centres in the region other than Boston maintained or improved their rank position compared with SCI 5.

### Asia/Pacific

- 21 Asia/Pacific centres feature in the SCI.
- Hong Kong, Singapore, Tokyo, and Shanghai rank in the top 20 in the world.
- Only three centres in the region fell in the rankings in SCI 6, with Tokyo, Chengdu, and Taipei improving more than 10 places.

### **Western Europe**

- 27 Western European centres feature in SCI 6, with five centres ranking in the top 10.
- 11 centres in the region fell in the rankings while 16 centres maintained or improved their rank position.
- Gibraltar and Milan rose more than 10 places.

### **Middle East & Africa**

- Tel Aviv leads this region in 14th position - down one place from SCI 5.
- Other leading centres in the region slipped a few rank places.

### **Eastern Europe & Central Asia**

- Sofia overtook Prague as the leading centre in the region, although both centres lost ground.
- Istanbul was the only centre in Eastern Europe & Central Asia to improve its position.
- Astana entered the SCI for the first time.

### **Latin America & The Caribbean**

- Mexico City and the Cayman Islands are joined in this edition of the index by Trinidad & Tobago within the Latin America & The Caribbean region.
- Mexico City fell eight rank places in SCI 6, while Cayman Islands improved six places, recovering some of the ground it lost in SCI 5.

### **SCI 6**

The SCI is a factor assessment index, combining a number of instrumental factors - data measures drawn from a range of data providers across the world - and assessments given by business and finance professionals of three dimensions related to innovation and technology in major commercial centres:

- Innovation Support - the support provided by regulatory and other systems to innovation and technology in a centre.
- Creative Intensity - the intensity of technology and innovation services and opportunities in a centre.
- Delivery Capability - the quality of the technology and innovation work that is taking place in a centre.

These dimensions are brought together in the overall SCI ratings to produce the index, which is updated every six months.

SCI 6 was compiled using 138 instrumental factors. These quantitative measures are provided by third parties including the World Bank, The Economist Intelligence Unit, the OECD, and the United Nations. Details can be found in Appendix 4.

The instrumental factors were combined with 1,725 assessments provided by respondents to the [SCI online questionnaire](#). Details of the 269 respondents are shown in Appendix 2. Further details of the methodology behind SCI 6 are in Appendix 3.

We researched 131 commercial and financial centres for this sixth edition of the Smart Centres Index (SCI 6). The 75 centres listed in SCI 6 are those which received an adequate number of assessments from survey respondents. Assessments of respondents' home centres were excluded from the data, in order to avoid home centre bias.

## SCI 6 Ranks And Ratings

Table 1 | Smart Centres Index 6: Ranks And Ratings

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
New York	1	733	1	746	0	▼13
London	2	731	2	736	0	▼5
Los Angeles	3	714	10	709	▲7	▲5
San Francisco	4	708	9	710	▲5	▼2
Hong Kong	5	706	3	721	▼2	▼15
Zurich	6	705	4	716	▼2	▼11
Lugano	7	704	8	711	▲1	▼7
Singapore	8	703	12	707	▲4	▼4
Cambridge, UK	9	702	7	712	▼2	▼10
Oxford, UK	10	701	14	703	▲4	▼2
Chicago	11	697	11	708	0	▼11
Malta	12	696	15	702	▲3	▼6
Copenhagen	13	693	5	715	▼8	▼22
Tel Aviv	14	692	13	706	▼1	▼14
Seattle	15	691	18	697	▲3	▼6
Boston	16	689	6	713	▼10	▼24
Tokyo	17	677	28	675	▲11	▲2
Amsterdam	18	676	19	695	▲1	▼19
Toronto	19	675	31	672	▲12	▲3
Shanghai	20	674	20	692	0	▼18
Geneva	21	673	16	700	▼5	▼27
Busan	22	672	27	676	▲5	▼4
Stockholm	23	671	17	698	▼6	▼27
Seoul	24	669	24	680	0	▼11
Brussels	25	664	29	674	▲4	▼10
Dubai	26	661	23	681	▼3	▼20
Beijing	27	657	22	685	▼5	▼28
Luxembourg	28	656	25	679	▼3	▼23
Bangkok	29	655	32	671	▲3	▼16
Vancouver	30	654	44	659	▲14	▼5
Dublin	31	653	21	691	▼10	▼38
Shenzhen	32	652	34	669	▲2	▼17
Washington DC	33	651	35	668	▲2	▼17
Berlin	34	650	30	673	▼4	▼23
Osaka	35	649	39	664	▲4	▼15
Sydney	36	646	42	661	▲6	▼15
Abu Dhabi	37	641	33	670	▼4	▼29
Vienna	38	638	41	662	▲3	▼24

Table 1 (continued) | Smart Centres Index 6: Ranks And Ratings

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Chengdu	39	636	52	643	▲ 13	▼ 7
Melbourne	40	635	45	657	▲ 5	▼ 22
Sofia	41	622	37	666	▼ 4	▼ 44
Gibraltar	42	621	55	638	▲ 13	▼ 17
Guangzhou	43	616	46	655	▲ 3	▼ 39
Frankfurt	44	615	47	652	▲ 3	▼ 37
Prague	45	613	36	667	▼ 9	▼ 54
Paris	46	609	38	665	▼ 8	▼ 56
GIFT City-Gujarat	47	607	50	646	▲ 3	▼ 39
Edinburgh	48	606	48	650	0	▼ 44
Hamburg	49	601	54	641	▲ 5	▼ 40
Istanbul	50	599	58	627	▲ 8	▼ 28
Tianjin	51	598	59	625	▲ 8	▼ 27
Milan	52	588	65	619	▲ 13	▼ 31
Cape Town	53	587	49	647	▼ 4	▼ 60
Johannesburg	54	586	62	622	▲ 8	▼ 36
Manila	55	585	61	623	▲ 6	▼ 38
Madrid	56	584	64	620	▲ 8	▼ 36
Budapest	57	583	56	632	▼ 1	▼ 49
Munich	58	582	60	624	▲ 2	▼ 42
Mexico City	59	577	51	645	▼ 8	▼ 68
Guernsey	60	575	53	642	▼ 7	▼ 67
Taipei	61	574	74	562	▲ 13	▲ 12
Kuala Lumpur	62	572	57	631	▼ 5	▼ 59
Stuttgart	63	570	71	593	▲ 8	▼ 23
Astana	64	569	New	New	New	New
Rome	65	566	70	598	▲ 5	▼ 32
Cayman Islands	66	564	72	585	▲ 6	▼ 21
Warsaw	67	563	63	621	▼ 4	▼ 58
Moscow	68	562	68	604	0	▼ 42
Riyadh	69	561	69	600	0	▼ 39
Bahrain	70	557	73	576	▲ 3	▼ 19
Trinidad & Tobago	71	550	New	New	New	New
Athens	72	537	67	605	▼ 5	▼ 68
Isle of Man	73	533	66	613	▼ 7	▼ 80
Mumbai	74	498	75	501	▲ 1	▼ 3
New Delhi	75	454	76	472	▲ 1	▼ 18

## The Three SCI Dimensions

We develop the SCI ratings and rankings by looking at three separate dimensions of technology and innovation development:

- Innovation Support - the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem.
- Creative Intensity - the extent to which technology and innovative industries are embedded in the economy of the centre.
- Delivery Capability - the quality of the innovation work being undertaken in the centre.

We develop ratings for each dimension, which are ranked equally in creating the SCI. Full details of the separate ratings for each dimension are at Appendix 1. Table 2 shows the rating details for each dimension for the top 20 centres in SCI 6.

**Table 2 | Rating Details For SCI 6 Dimensions: Top 20 Centres in SCI 6**

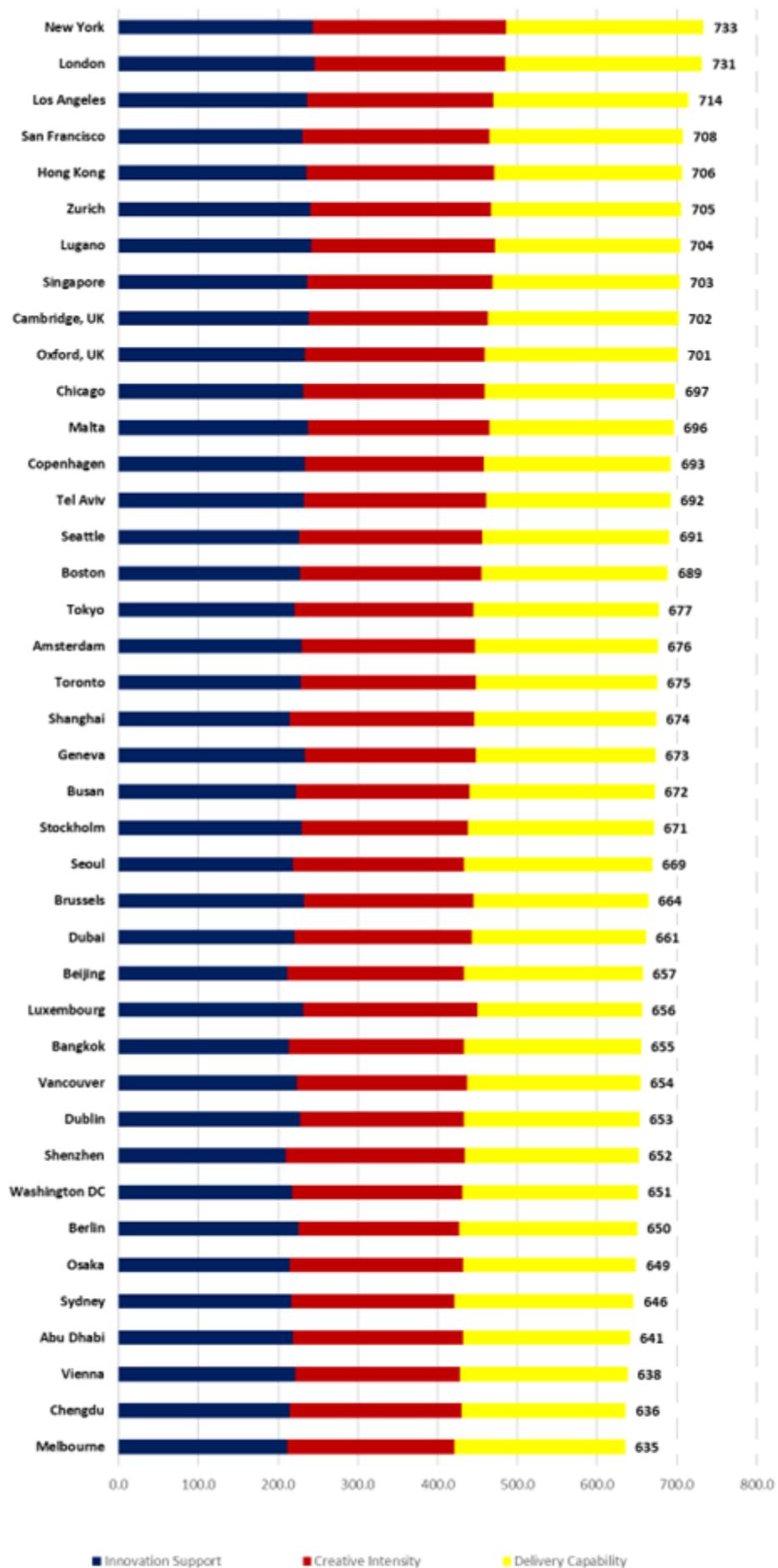
SCI 6 Ranking	Centre	SCI Dimensions					
		Innovation Support		Creative Intensity		Delivery Capability	
		Rank	Rating	Rank	Rating	Rank	Rating
1	New York	2	243	1	243	1	247
2	London	1	245	2	240	2	246
3	Los Angeles	7	236	5	234	3	245
4	San Francisco	17	230	4	235	4	243
5	Hong Kong	9	235	3	236	10	235
6	Zurich	4	240	13	227	7	238
7	Lugano	3	241	8	231	17	232
8	Singapore	7	236	6	233	13	234
9	Cambridge, UK	5	238	16	225	6	239
10	Oxford, UK	10	233	15	226	5	242
11	Chicago	15	232	12	228	8	238
12	Malta	6	238	13	227	19	231
13	Copenhagen	10	233	16	225	12	235
14	Tel Aviv	14	232	10	229	20	231
15	Seattle	24	226	9	230	10	235
16	Boston	21	227	11	228	14	233
17	Tokyo	29	221	18	225	18	232
18	Amsterdam	19	229	26	218	21	229
19	Toronto	20	228	23	220	23	227
20	Shanghai	37	214	7	232	22	228

This analysis shows the effect that particular dimensions have on the placing of centres in the SCI. In particular:

- Leading centres have a spread of strengths across the dimensions.
- Individual centres have differing areas of strength, with Hong Kong and Zurich, for example, closely matched in their overall rank, but with different profiles in the dimensions.

The SCI 6 results showing the contribution of each dimension for the top 40 centres are shown in Chart 1.

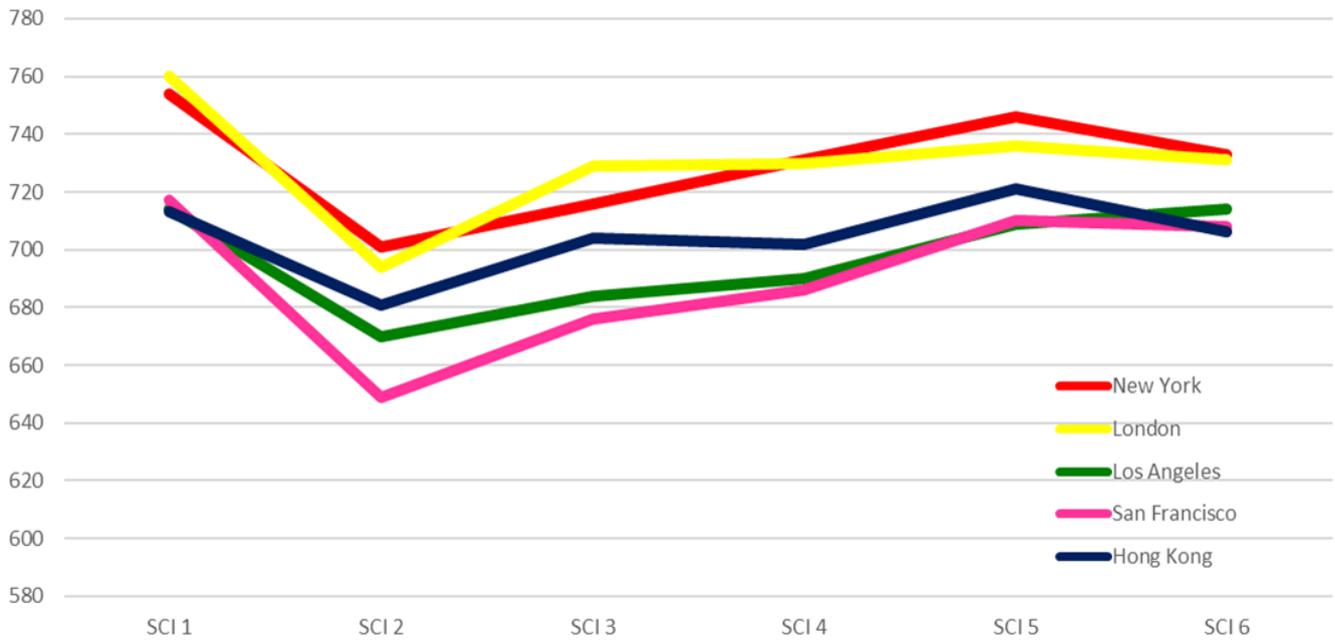
Chart 1 | SCI 6: Contribution Of The Dimensions To Overall Ratings: Top 40 Centres



## Top Five Centres

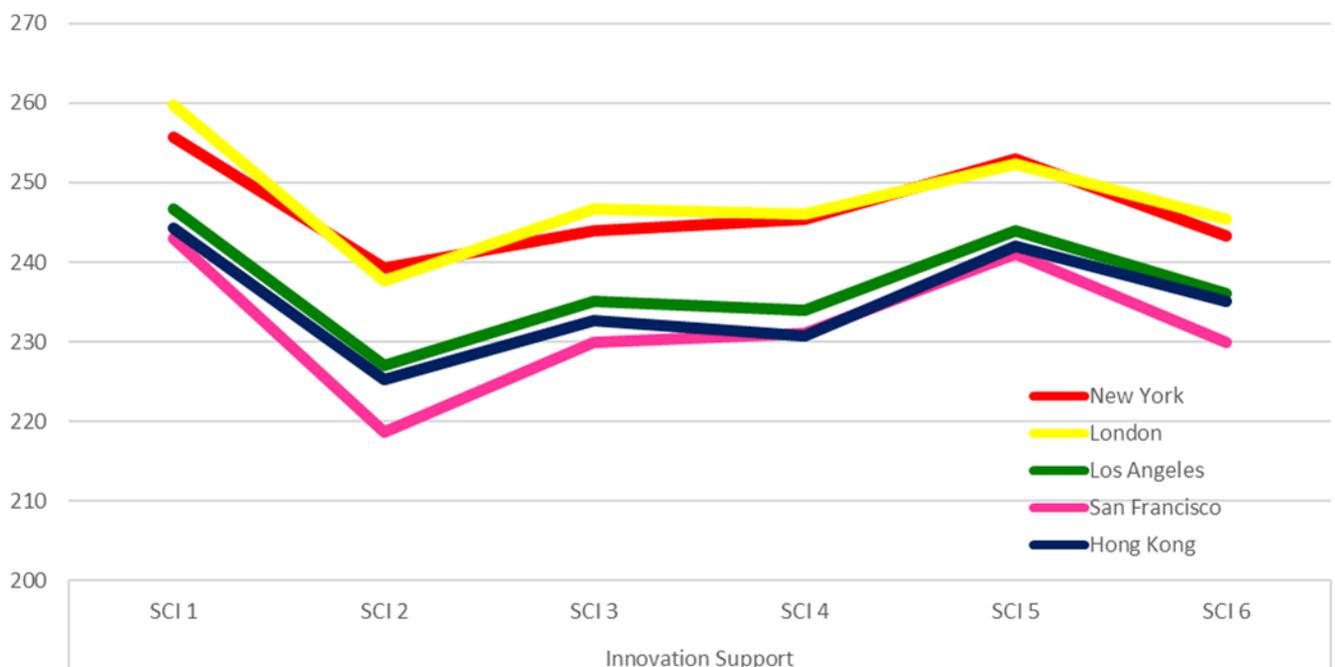
Among the top five centres in the SCI, New York has lost some of its lead over London, and Los Angeles' strong performance is clear.

**Chart 2 | The Top Five Centres Over Time**



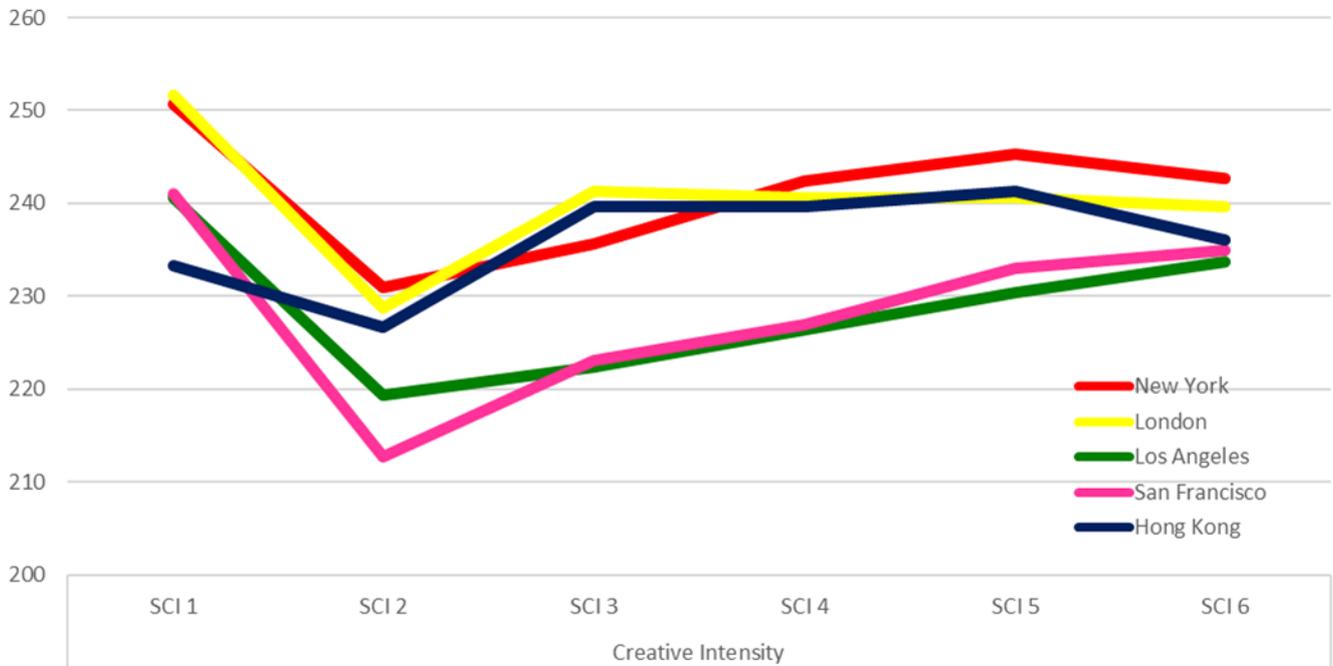
London outperforms New York in Innovation Support in SCI 6. San Francisco has fallen back on this measure.

**Chart 3 | Top Five Centres - Innovation Support - Ratings Over Time**



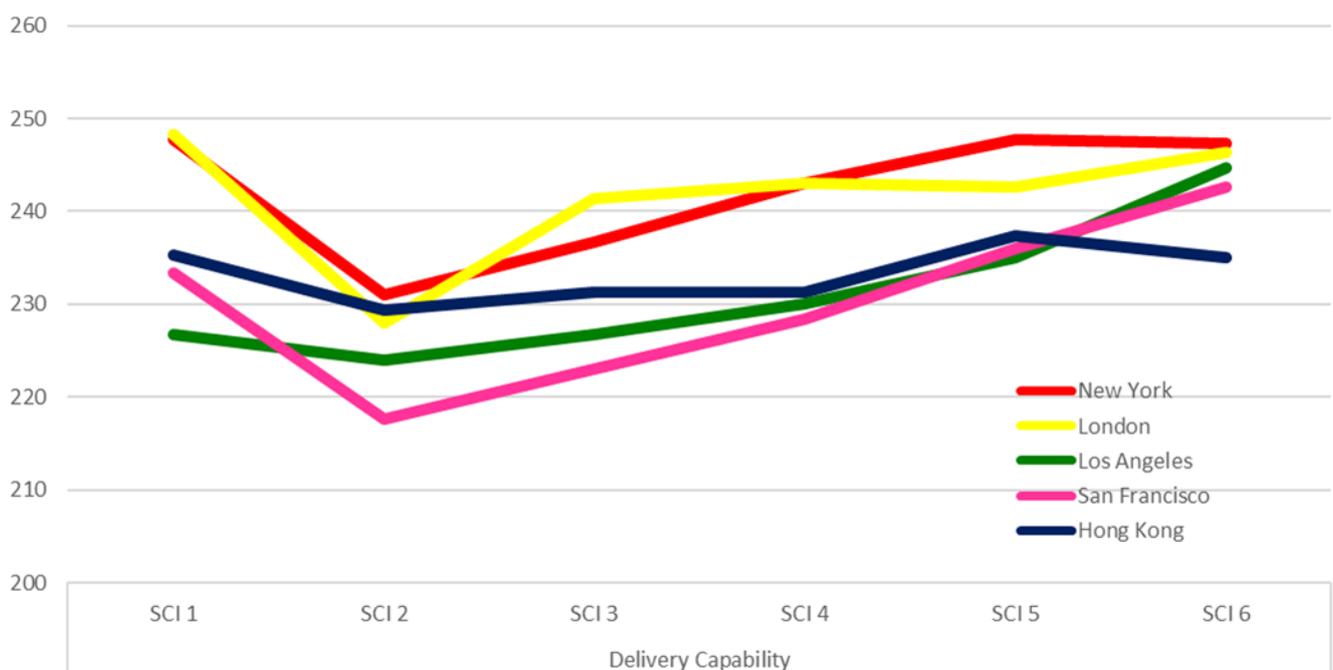
In the Creative Intensity dimension, New York has a clear lead, and Hong Kong has fallen against other centres on this measure in SCI 6.

**Chart 4 | Top Five Centres - Creative Intensity Ratings Over Time**



For Delivery Capability, as in other areas, New York has fallen in the ratings slightly, with other centres improving, other than Hong Kong.

**Chart 5 | Top Five Centres - Delivery Capability - Ratings Over Time**

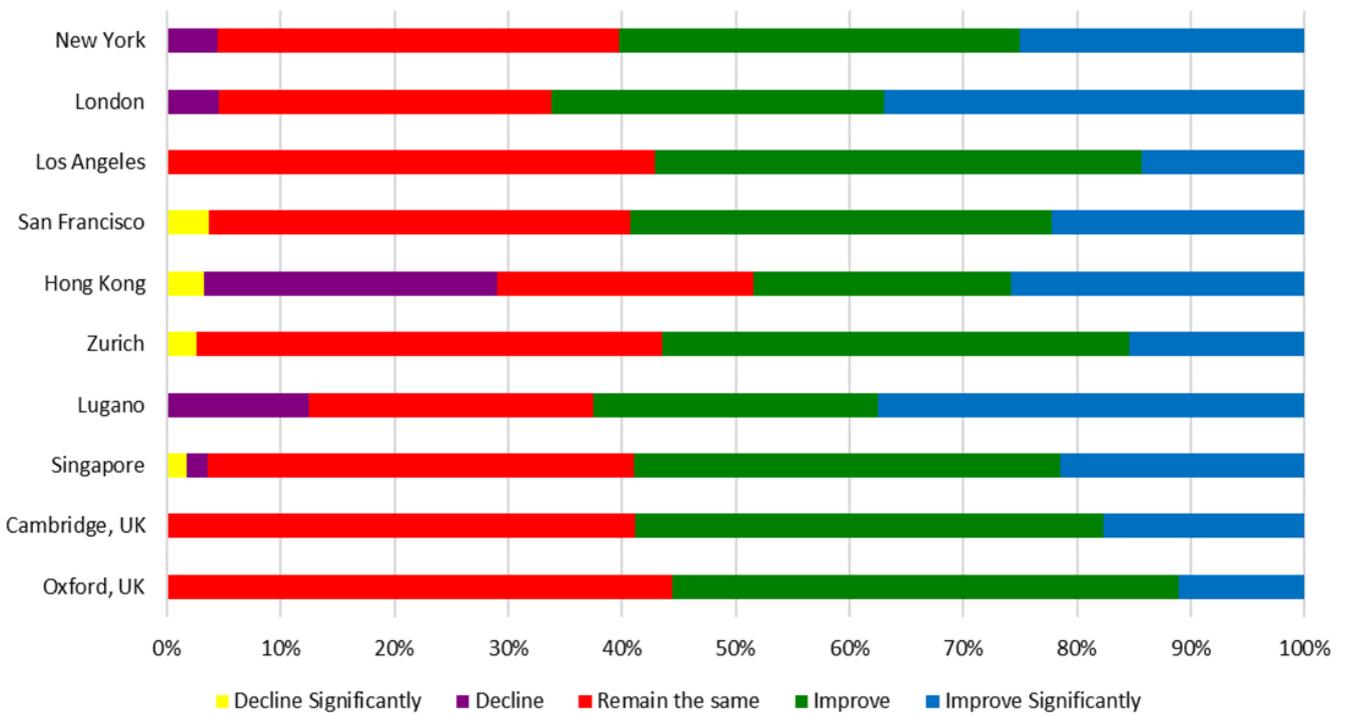


## SCI 6: Further Analysis

### Future Performance

We asked respondents to the SCI survey to assess whether the centres they rated were likely to improve, decline, or stay the same in relation to their innovation and technology offerings over the next two to three years. The results for the top 10 centres are shown in Chart 6. For all centres in this group other than Hong Kong, the majority of respondents thought that the centre would improve over this period. London has the highest proportion of those rating its performance who consider that it will improve or improve significantly over the next period.

**Chart 6 | Future Performance - Top 10 Centres**



*“Attractive incentives for R&D continue in China, and more tax breaks are expected to encourage targeted sectors of technology.”*

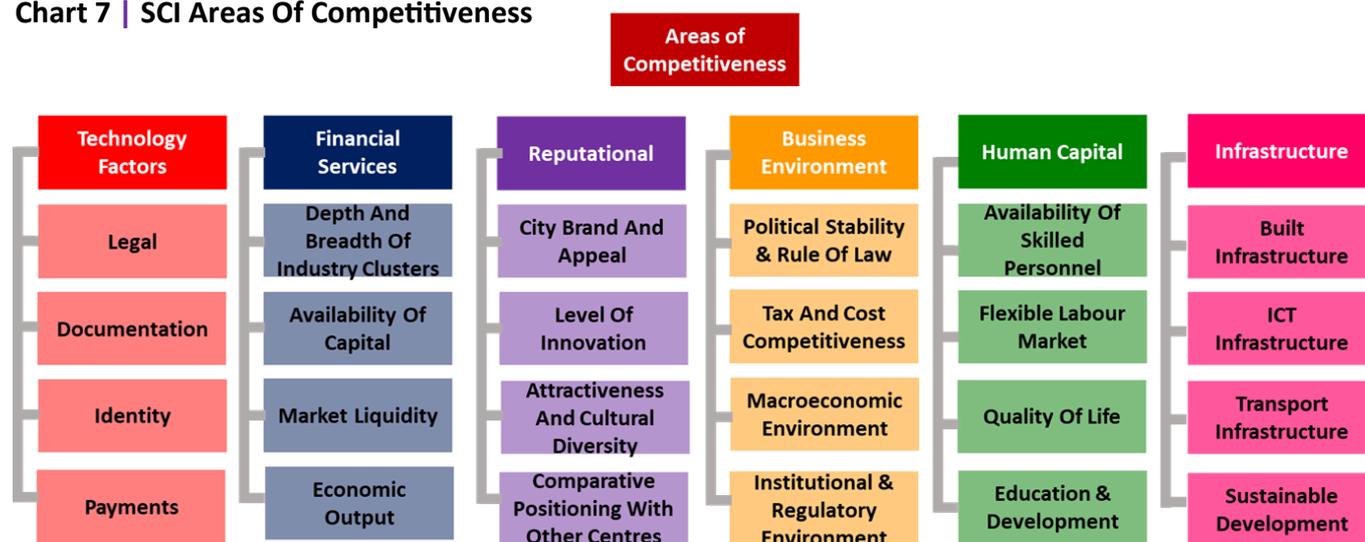
**Chairman, Investment Firm, Shanghai**

## Areas Of Competitiveness

SCI 6 is created using 138 instrumental factors which relate to a range of aspects of competitiveness, including measures relating to technology development. These factors are grouped into six broad areas of competitiveness: Technology, Financial Services, Reputational, Business Environment, Human Capital, and Infrastructure.

These areas and the instrumental factor themes which comprise each area are shown in Chart 7.

**Chart 7 | SCI Areas Of Competitiveness**



To assess centres' technology and innovation offerings against each of these areas, the SCI model is run for each area separately. The top ranked 15 centres in each sub-index are shown in Table 3.

**Table 3 | Top 15 Centres By Areas Of Competitiveness**

Rank	Technology	Business Environment	Human Capital	Infrastructure	Financial Services	Reputational
1	New York	London	New York	London	London	Lugano
2	London	New York	London	New York	New York	Cambridge, UK
3	Singapore	Amsterdam	Singapore	Singapore	San Francisco	Oxford, UK
4	Los Angeles	Singapore	Hong Kong	Zurich	Los Angeles	New York
5	Lugano	Copenhagen	San Francisco	Hong Kong	Boston	London
6	Amsterdam	Hong Kong	Chicago	Cambridge, UK	Chicago	Los Angeles
7	Chicago	Zurich	Toronto	Lugano	Singapore	San Francisco
8	San Francisco	San Francisco	Amsterdam	San Francisco	Zurich	Hong Kong
9	Hong Kong	Tel Aviv	Los Angeles	Los Angeles	Hong Kong	Zurich
10	Zurich	Lugano	Zurich	Oxford, UK	Tel Aviv	Malta
11	Boston	Los Angeles	Luxembourg	Seattle	Geneva	Geneva
12	Luxembourg	Seoul	Tel Aviv	Tel Aviv	Oxford, UK	Chicago
13	Brussels	Oxford, UK	Boston	Amsterdam	Malta	Singapore
14	Toronto	Cambridge, UK	Geneva	Chicago	Cambridge, UK	Boston
15	Busan	Chicago	Brussels	Geneva	Lugano	Stockholm

The leading centres in the index have a balance of strengths across all six areas of competitiveness. Some centres have distinct areas of strength, for example, Amsterdam for the Business Environment, and Lugano for reputational measures.

### Index Ranking For Technology

As shown in Table 3, we have conducted an analysis of the assessments provided by respondents using only the instrumental factors that have a direct relationship to technology. We compare this analysis with the main index in Table 6. The plus and minus figures show the difference between the main index and the index calculated using only technology factors.

Comparing the rankings using only technology factors with the overall SCI rankings makes minor differences for some centres. However, in the technology rankings, Singapore, Amsterdam, Luxembourg, Brussels, Toronto, and Busan gain a significant advantage.

**Table 4 | Top 15 Centres Using All Factors And Only Technology Factors**

SCI 6		
Rank	All Factors	Technology Factors
1	New York	New York
2	London	London
3	Los Angeles	Singapore (+5)
4	San Francisco	Los Angeles (-1)
5	Hong Kong	Lugano (+2)
6	Zurich	Amsterdam (+12)
7	Lugano	Chicago (+4)
8	Singapore	San Francisco (-4)
9	Cambridge, UK	Hong Kong (-4)
10	Oxford, UK	Zurich (-4)
11	Chicago	Boston (+5)
12	Malta	Luxembourg (+16)
13	Copenhagen	Brussels (+12)
14	Tel Aviv	Toronto (+5)
15	Seattle	Busan (+7)

*“The availability of skills is very good in the UK.”*

**CEO, Professional Services Firm, London**

Table 5 shows the top 10 instrumental factors in terms of their correlation with the SCI ranking. This shows the impact of both finance and FinTech measures, but also the contribution of infrastructure, innovation, wealth, and safe and effective governance on developing an innovation ecosystem.

**Table 5 | Top 10 Instrumental Factors By R Squared Correlation**

Instrumental Factor	R Squared
Fintech Activity Index	0.544
Global Innovation Index	0.534
Urban Mobility Readiness Index	0.516
Safe Cities	0.492
Adjusted Net National Income Per Capita	0.472
The Global Green Finance Index	0.462
Global Financial Centres Index	0.444
Telecommunication Infrastructure Index	0.441
Innovation Cities Global Index	0.428
Government Effectiveness	0.415

Focusing only on the instrumental factors which relate to technology, the factors most closely correlated in terms of their R Squared relationship with the SCI ratings are set out in Table 6.

**Table 6 | Top 10 Technology Instrumental Factors By R Squared Correlation**

Technology Factors	R Squared
Fintech Activity Index	0.544
Telecommunication Infrastructure Index	0.441
E-Government Development Index	0.361
FinTech Index	0.335
Smart City Index	0.331
E-Participation Index	0.291
ICT Development Index	0.280
Global AI Index	0.232
Open Data Barometer	0.221
Worldwide Broadband Speed League	0.173

## Commentary On Factors

The SCI survey asks respondents to comment on factors that affect the development of technology and innovation in centres, and in particular regulation, taxation, and the availability of skills. The results are summarised in Table 7.

**Table 7 | Commentary On Areas Of Competitiveness**

Area Of Competitiveness	Number Of Mentions	Main Themes
Regulatory Environment	65	<ul style="list-style-type: none"> <li>Consistency of regulatory approach supports business.</li> <li>There is a balance between regulation and allowing innovation.</li> <li>Regulatory systems need to support innovation and be flexible.</li> </ul>
Taxation	53	<ul style="list-style-type: none"> <li>Some support for lowering taxation on business.</li> <li>Tax incentives for R&amp;D help stimulate innovation.</li> </ul>
The Availability Of Skills	62	<ul style="list-style-type: none"> <li>There is a need continuously to retrain and upskill the workforce.</li> <li>Centres that are welcoming to overseas talent are likely to thrive.</li> </ul>

We also asked respondents to identify current interesting and successful initiatives in the fields of technology and innovation. These included:

- Automated waste collection and segregation.
- Smart identification for retail banking in support of financial inclusion and micro finance over mobile technology in Africa.
- Digitalisation of knowledge as a working and measurable asset (shift from intangibles to tangibles).
- Blockchain in Central Securities Depositories and Central Counterparty processing.
- Bahamas Sand Dollar: one of only 5 or so central bank digital currencies in the world, along with the Bahamas Digital Assets and Registered Exchanges Act.
- Crypto Legislation in Switzerland and to a lesser extent in Germany.
- Application of digital instant payments in many countries is an important development, including cross-border instant payments.
- AI based applications development in Canada and in Toronto in particular.
- Second-order open source intelligence (combining results of first order intelligence using machine learning).
- Use of blockchain for voting security.
- Central Bank Digital Currency adoption.
- Digital-only banks.
- Insurtech.
- Gibraltar DLT Principle 10.
- London's Green Index.
- Some blockchain applications in Luxembourg between financial actors and the government for lending.
- Quantum information and communications technology.
- Regulatory innovation and digital asset transactions.

## Reputation

We analyse the reputational advantage of centres by comparing the average assessment given in the survey to the overall SCI 6 rating. Centres with a high reputational advantage are perceived by respondents to the survey to be performing better than the underlying data may suggest and may need to pay attention to the strength of their underlying ecosystem. Those with a negative reputational advantage may need to market their strengths better to achieve a truer perception of their performance. The top 15 and lowest 15 centres on this measure are shown in Tables 8 and 9.

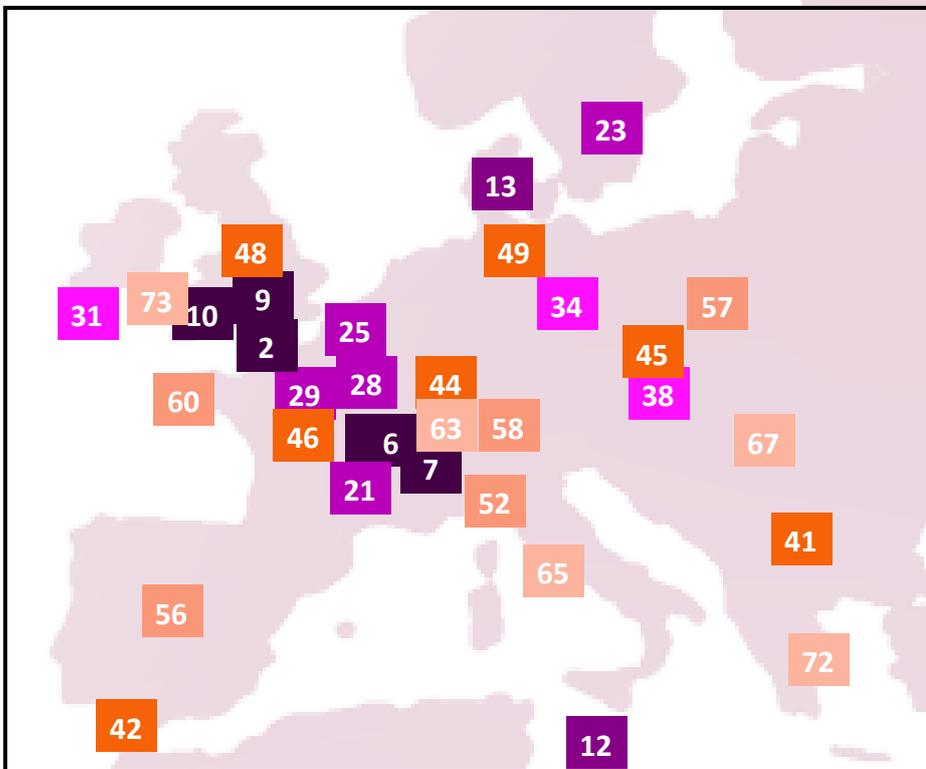
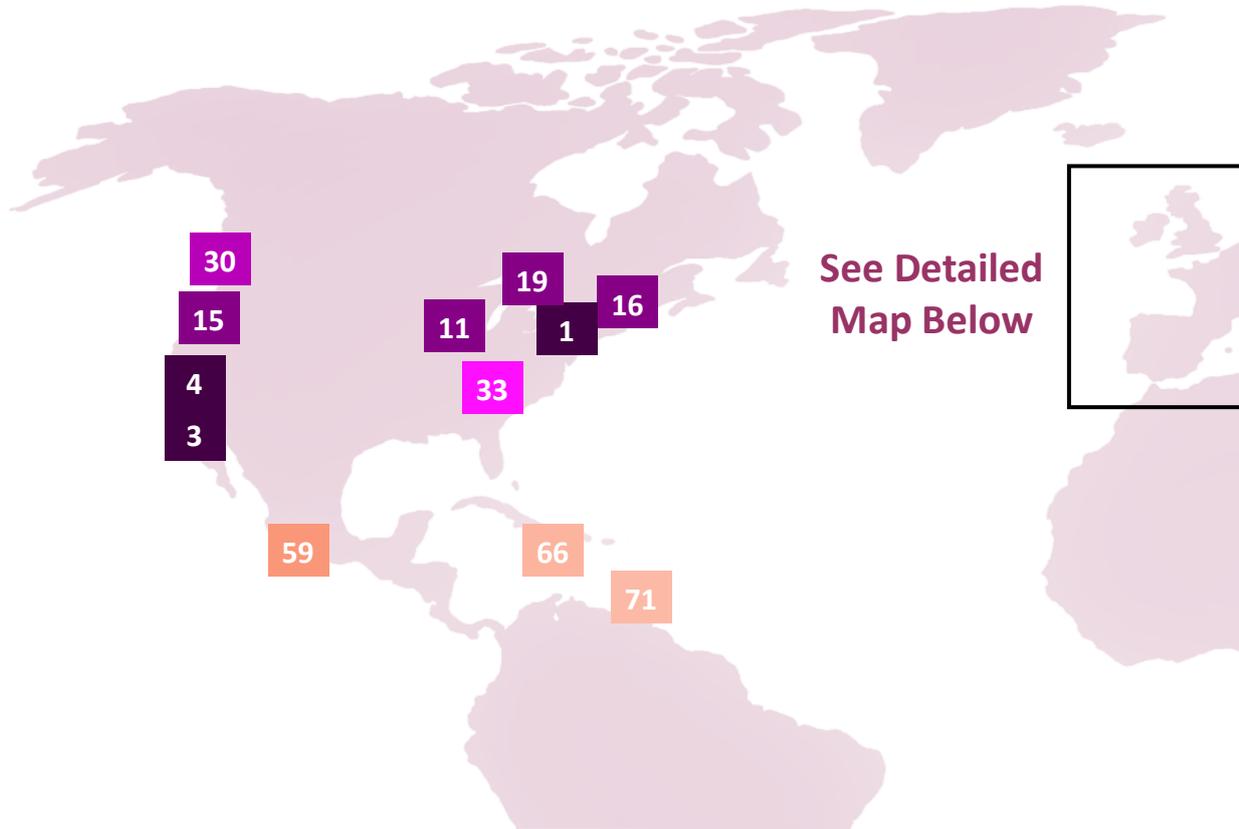
**Table 8 | Top 15 Centres By Reputational Advantage**

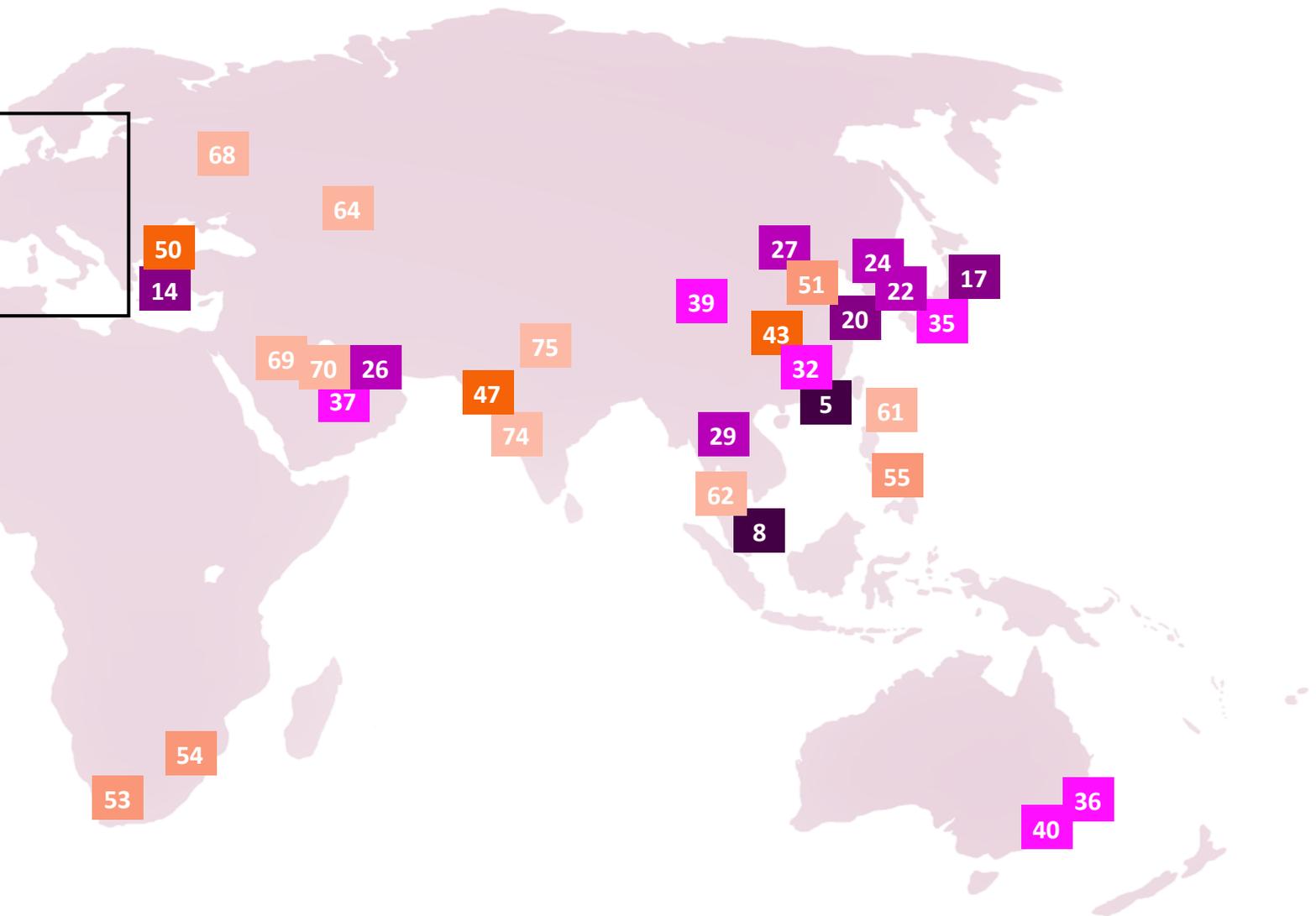
Centre - Top 15	Weighted Average Assessment	SCI 6 Rating	SCI 6 Reputational Advantage
GIFT City-Gujarat	793	607	186
Copenhagen	832	693	139
Stockholm	800	671	129
San Francisco	832	708	124
London	840	731	109
Tel Aviv	801	692	109
Geneva	779	673	106
New York	835	733	102
Los Angeles	815	714	101
Frankfurt	715	615	100
Gibraltar	720	621	99
Busan	767	672	95
Oxford, UK	794	701	93
Amsterdam	768	676	92
Zurich	793	705	88

**Table 9 | Lowest 15 Centres By Reputational Advantage**

Centre - Lowest 15	Weighted Average Assessment	SCI 6 Rating	SCI 6 Reputational Advantage
Cayman Islands	487	564	-77
Trinidad & Tobago	470	550	-80
Taipei	482	574	-92
Stuttgart	476	570	-94
Osaka	554	649	-95
Tianjin	499	598	-99
Bangkok	554	655	-101
Dublin	539	653	-114
Athens	405	537	-132
Guangzhou	482	616	-134
Chengdu	500	636	-136
Melbourne	497	635	-138
Isle of Man	388	533	-145
New Delhi	125	454	-329
Mumbai	166	498	-332

## The SCI 6 World - Centres In The Index





The numbers indicate the rank of each centre in SCI 6.

An interactive map showing the data for each centre is at <https://www.longfinance.net/programmes/financial-centre-futures/smart-centres-index/sci-6-explore-data/sci-6-map/>

## Regional Analysis

In our analysis of the SCI data, we look at six regions of the world to explore centres' strengths in technology and finance.

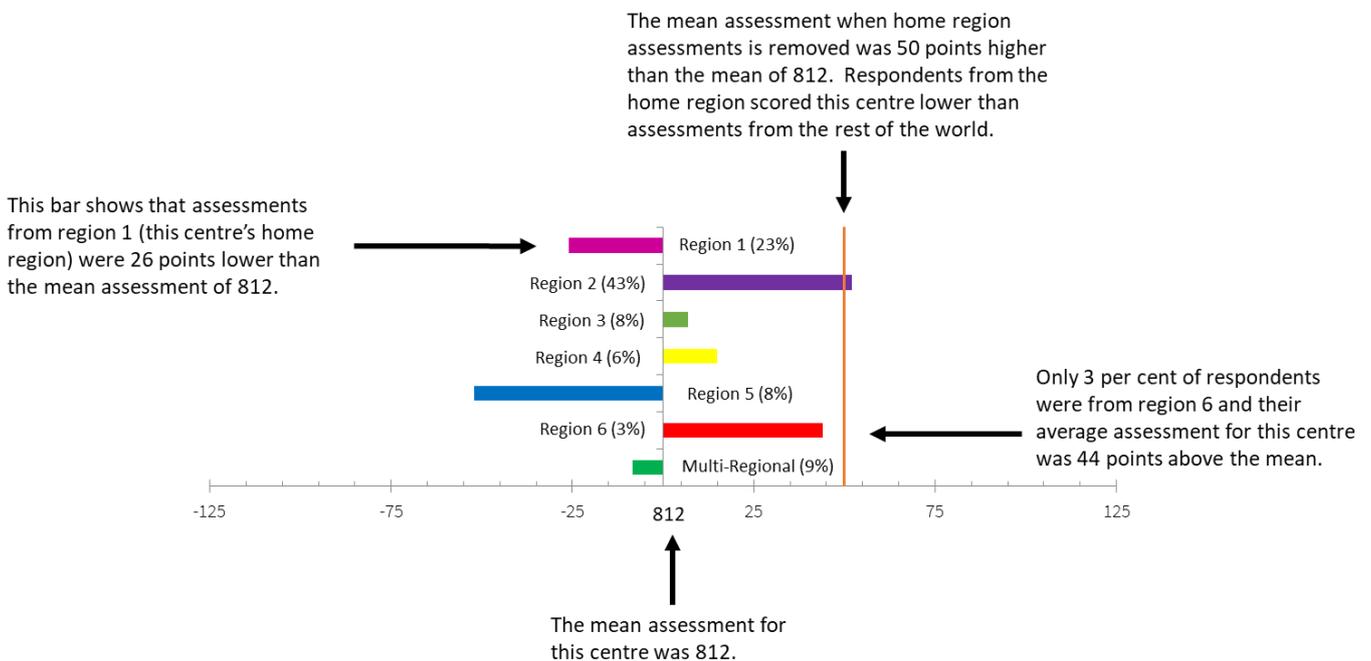
Alongside the ranks and ratings of centres, we investigate the average assessments received by regions and centres in more detail. We display this analysis in charts, which show:

- The mean assessment provided to that centre.
- The difference in the mean assessment when home region assessments are removed from the analysis.
- The difference between the mean and the assessments provided by respondents based in other regional centres.
- The proportion of assessments provided by each region.

Chart 8 shows an example of this analysis. Coloured bars to the left of the vertical axis indicate that respondents from that region gave lower than average assessments. Bars to the right indicate respondents from that region gave higher than average assessments. Assessments given to a centre by people based in that centre are excluded to remove 'home' bias.

The additional vertical axis (in red) shows the mean of assessments when assessments from the home region are removed. The percentage figure noted by each region indicates the percentage of the total number of assessments that are from that region.

**Chart 8 | Example: Assessments Compared With The Mean For A Centre**



## North America

- Delivery Capability scores higher on average than the other dimensions among North American centres.
- The Canadian centres of Toronto and Vancouver improved their ranks significantly in SCI 6.
- Only respondents from Western Europe score New York lower than the overall average.

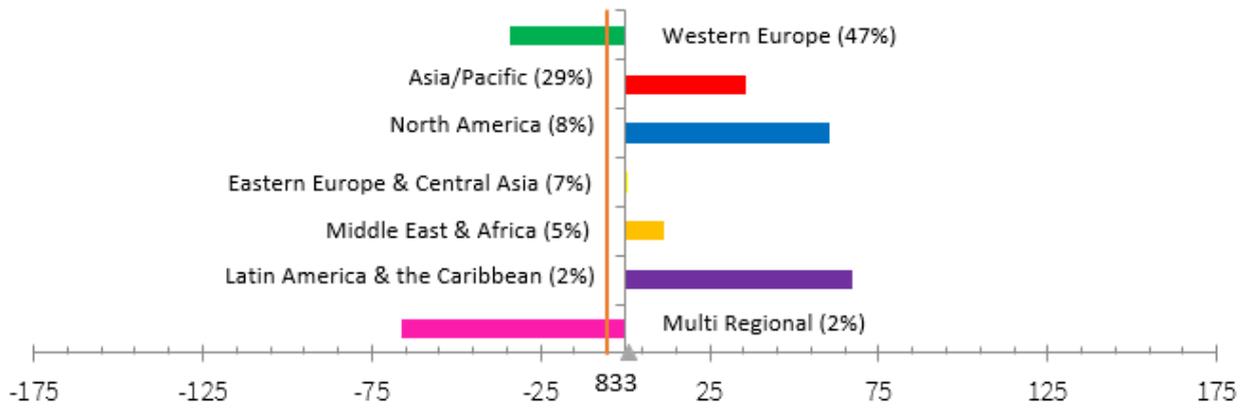
**Table 10 | North American Centres In SCI 6: Ranks And Ratings**

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
New York	1	733	1	746	0	▼13
Los Angeles	3	714	10	709	▲7	▲5
San Francisco	4	708	9	710	▲5	▼2
Chicago	11	697	11	708	0	▼11
Seattle	15	691	18	697	▲3	▼6
Boston	16	689	6	713	▼10	▼24
Toronto	19	675	31	672	▲12	▲3
Vancouver	30	654	44	659	▲14	▼5
Washington DC	33	651	35	668	▲2	▼17

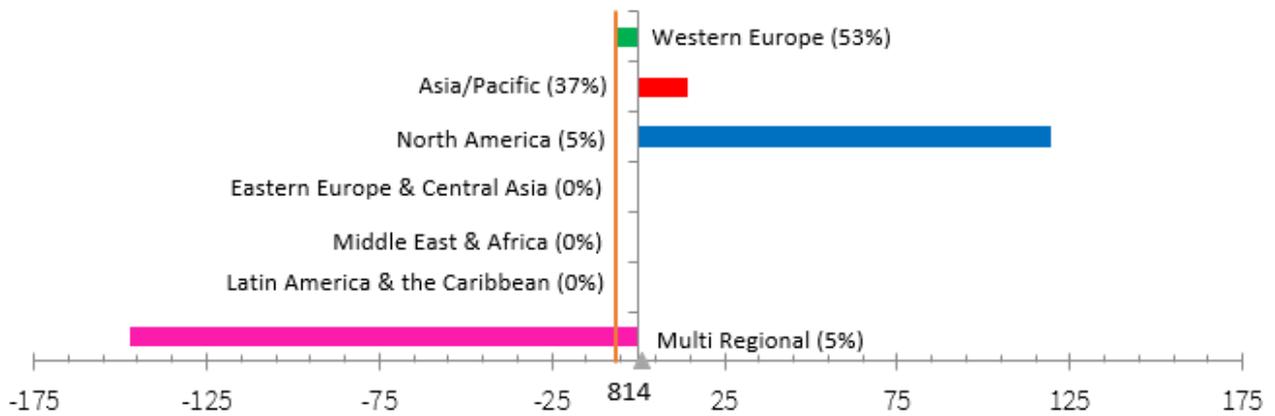
**Table 11 | North American Centres In SCI 6: SCI Dimensions**

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
New York	2	243	1	243	1	247
Los Angeles	7	236	5	234	3	245
San Francisco	17	230	4	235	4	243
Chicago	15	232	12	228	8	238
Seattle	24	226	9	230	10	235
Boston	21	227	11	228	14	233
Toronto	20	228	23	220	23	227
Vancouver	26	223	32	214	34	217
Washington DC	34	217	33	214	29	220

**Chart 9 | New York Average Assessments – Difference From The Mean**



**Chart 10 | Los Angeles Average Assessments – Difference From The Mean**



*“It is necessary to continuously train professionals related to the Fourth Industrial Revolution to lead the development of related technologies.”*

**Manager, Technology Firm, Seoul**

## Asia/Pacific

- Hong Kong and Singapore feature in the top 10 centres in SCI 6 and most centres in the region rose in the rankings.
- Asia/Pacific centres on average scored lower for Innovation Support, including regulation, than their overall ranking in the SCI; and higher Delivery Capability.
- Respondents from Western Europe and Eastern Europe & Central Asia rated Hong Kong lower than average.

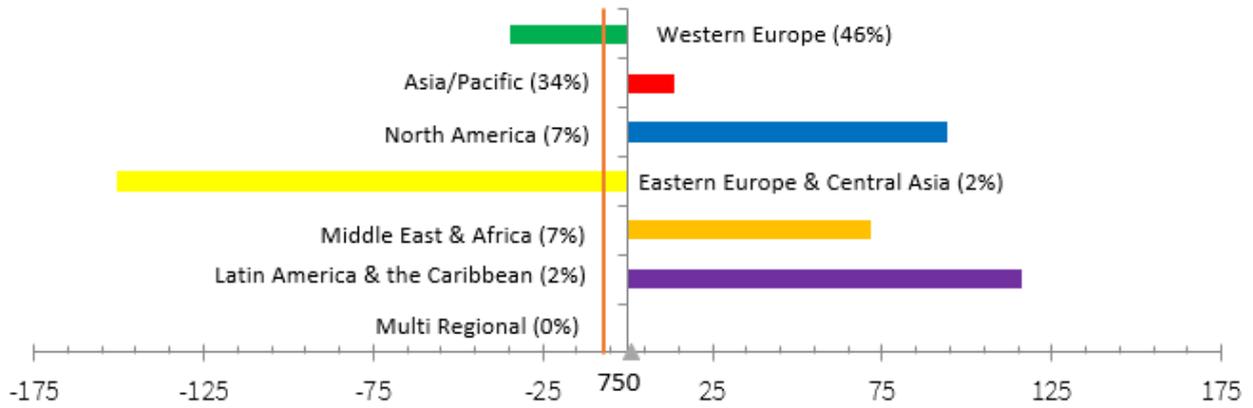
**Table 12 | Top 15 Asia/Pacific Centres In SCI 6: Ranks And Ratings**

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Hong Kong	5	706	3	721	▼ 2	▼ 15
Singapore	8	703	12	707	▲ 4	▼ 4
Tokyo	17	677	28	675	▲ 11	▲ 2
Shanghai	20	674	20	692	0	▼ 18
Busan	22	672	27	676	▲ 5	▼ 4
Seoul	24	669	24	680	0	▼ 11
Beijing	27	657	22	685	▼ 5	▼ 28
Bangkok	29	655	32	671	▲ 3	▼ 16
Shenzhen	32	652	34	669	▲ 2	▼ 17
Osaka	35	649	39	664	▲ 4	▼ 15
Sydney	36	646	42	661	▲ 6	▼ 15
Chengdu	39	636	52	643	▲ 13	▼ 7
Melbourne	40	635	45	657	▲ 5	▼ 22
Guangzhou	43	616	46	655	▲ 3	▼ 39
GIFT City-Gujarat	47	607	50	646	▲ 3	▼ 39

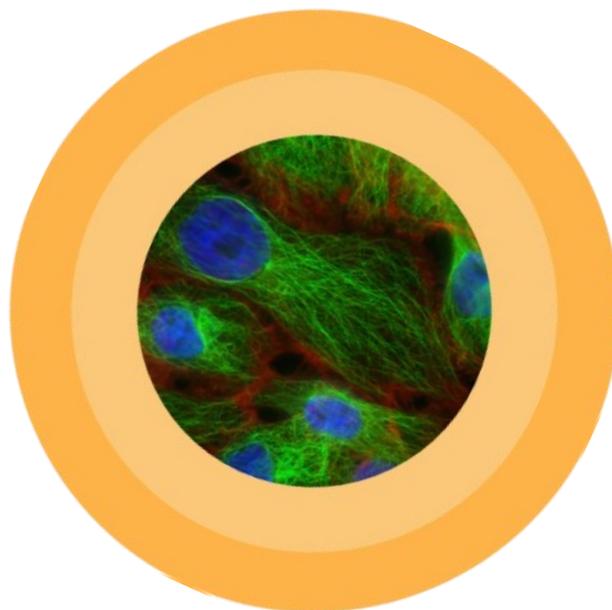
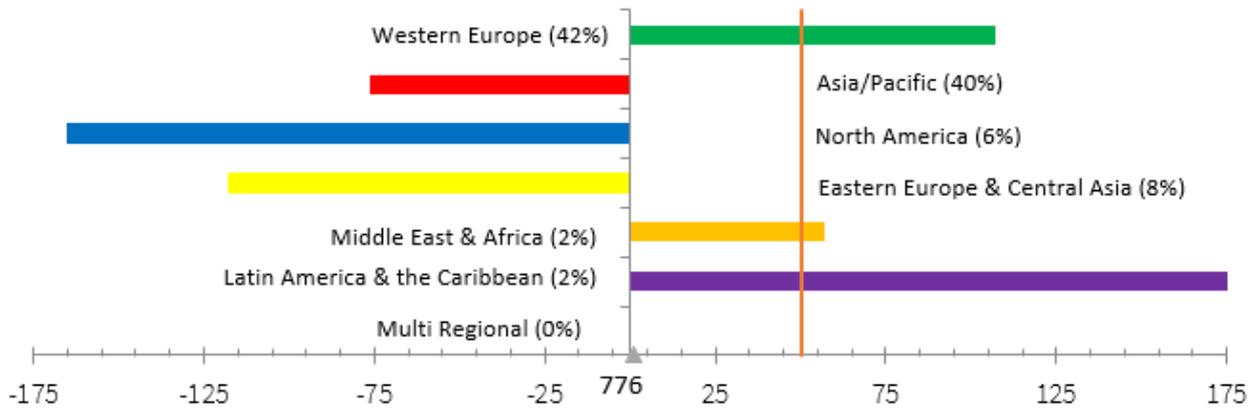
**Table 13 | Top 15 Asia/Pacific Centres In SCI 6: SCI Dimensions**

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Hong Kong	9	235	3	236	10	235
Singapore	7	236	6	233	13	234
Tokyo	29	221	18	225	18	232
Shanghai	37	214	7	232	22	228
Busan	27	222	28	218	16	232
Seoul	32	219	31	214	9	236
Beijing	43	211	21	222	26	224
Bangkok	41	213	22	220	28	222
Shenzhen	45	209	18	225	32	218
Osaka	37	214	26	218	35	217
Sydney	36	216	41	205	25	225
Chengdu	37	214	29	216	49	206
Melbourne	42	212	36	210	37	214
Guangzhou	69	190	24	219	46	207
GIFT City-Gujarat	57	200	39	206	55	201

**Chart 11 | Hong Kong Average Assessments – Difference From The Mean**



**Chart 12 | Singapore Average Assessments – Difference From The Mean**



## Western Europe

- London takes the top position in the region, with Zurich and Lugano in 6th and 7th position.
- Western European centres scored higher for Innovation Support on average compared with the other dimensions.
- Performance was mixed for centres in the region, with 11 out of the 27 centres in the region falling in the rankings.
- Respondents from Western Europe, the Middle East & Africa, and Latin America & The Caribbean scored London lower than average.

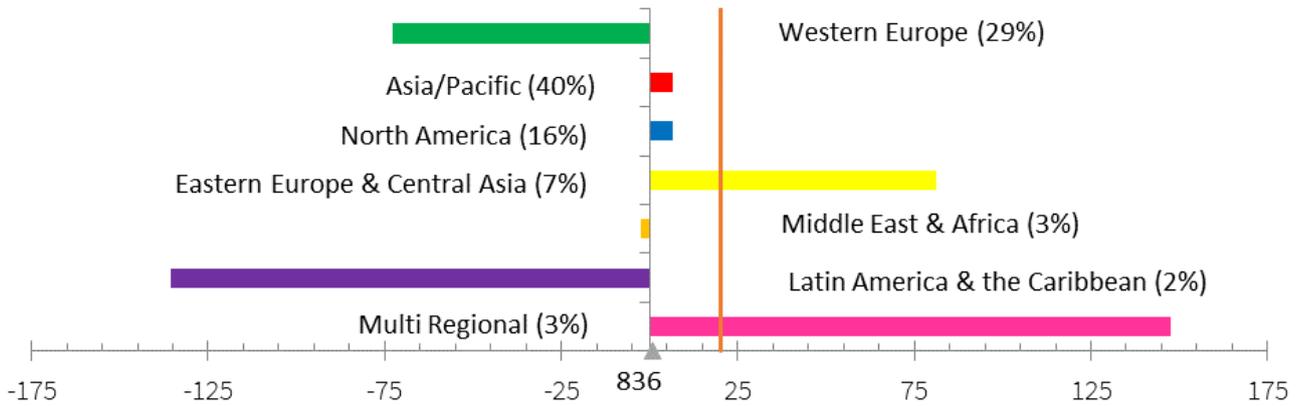
**Table 14 | Top 15 Western European Centres In SCI 6: Ranks And Ratings**

Centre	SCI 6		SCI 5		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
London	2	731	2	736	0	▼5
Zurich	6	705	4	716	▼2	▼11
Lugano	7	704	8	711	▲1	▼7
Cambridge, UK	9	702	7	712	▼2	▼10
Oxford, UK	10	701	14	703	▲4	▼2
Malta	12	696	15	702	▲3	▼6
Copenhagen	13	693	5	715	▼8	▼22
Amsterdam	18	676	19	695	▲1	▼19
Geneva	21	673	16	700	▼5	▼27
Stockholm	23	671	17	698	▼6	▼27
Brussels	25	664	29	674	▲4	▼10
Luxembourg	28	656	25	679	▼3	▼23
Dublin	31	653	21	691	▼10	▼38
Berlin	34	650	30	673	▼4	▼23
Vienna	38	638	41	662	▲3	▼24

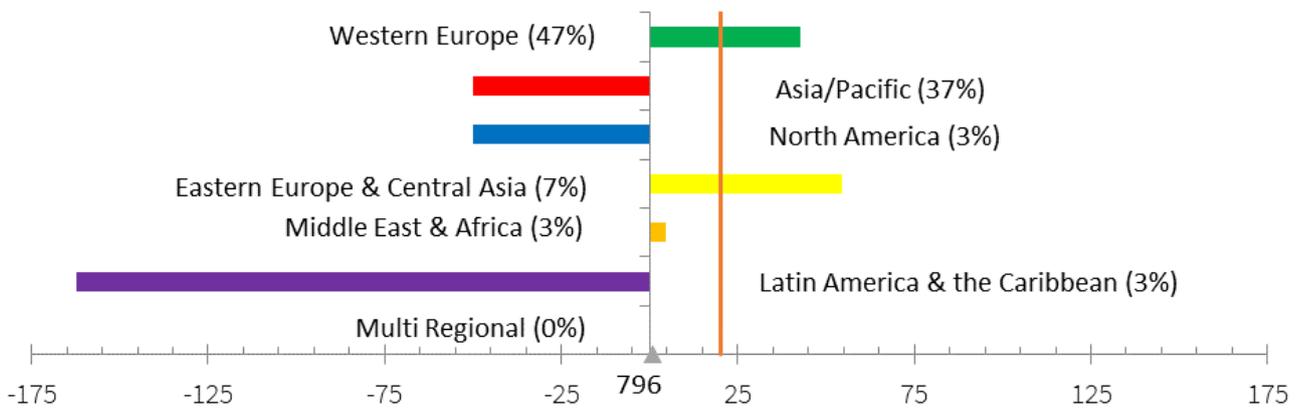
**Table 15 | Top 15 Western European Centres In SCI 6: SCI Dimensions**

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
London	1	245	2	240	2	246
Zurich	4	240	13	227	7	238
Lugano	3	241	8	231	17	232
Cambridge, UK	5	238	16	225	6	239
Oxford, UK	10	233	15	226	5	242
Malta	6	238	13	227	19	231
Copenhagen	10	233	16	225	12	235
Amsterdam	19	229	26	218	21	229
Geneva	10	233	30	215	24	225
Stockholm	18	230	37	208	15	233
Brussels	13	233	35	213	31	219
Luxembourg	16	231	24	219	48	206
Dublin	22	227	39	206	30	220
Berlin	25	226	43	201	27	224
Vienna	28	222	38	206	40	210

**Chart 13 | London Average Assessments – Difference From The Mean**



**Chart 14 | Zurich Average Assessments – Difference From The Mean**



*“London might have lost some freedom of movement, or at least gave skilled workers the impression of an unhelpful welcome. Luxembourg does not have a deep knowledge factory, and property prices are very high, limiting movement to Luxembourg. Frankfurt has some decent universities but is suffering from the image of being a less exciting place.”*

**Director Of Research Group, University, London**

## Middle East & Africa

- Tel Aviv continues to lead the region, although the top four centres in the region fell a few points in the ranking.
- Centres in the region score higher for Delivery Capability and lower for Creative Intensity on average.
- Respondents from Western Europe, North America, and Eastern Europe & Central Asia score Tel Aviv higher than average.

**Table 16 | Middle Eastern & African Centres In SCI 6: Ranks And Ratings**

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Tel Aviv	14	692	13	706	▼ 1	▼ 14
Dubai	26	661	23	681	▼ 3	▼ 20
Abu Dhabi	37	641	33	670	▼ 4	▼ 29
Cape Town	53	587	49	647	▼ 4	▼ 60
Johannesburg	54	586	62	622	▲ 8	▼ 36
Riyadh	69	561	69	600	0	▼ 39
Bahrain	70	557	73	576	▲ 3	▼ 19

**Table 17 | Middle Eastern & African Centres In SCI 6: SCI Dimensions**

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Tel Aviv	14	232	10	229	20	231
Dubai	30	220	20	223	33	218
Abu Dhabi	32	219	34	213	42	209
Cape Town	64	195	58	183	44	208
Johannesburg	59	198	56	184	51	204
Riyadh	65	195	72	167	57	199
Bahrain	73	187	60	179	65	191

**Chart 15 | Tel Aviv Average Assessments – Difference From The Mean**

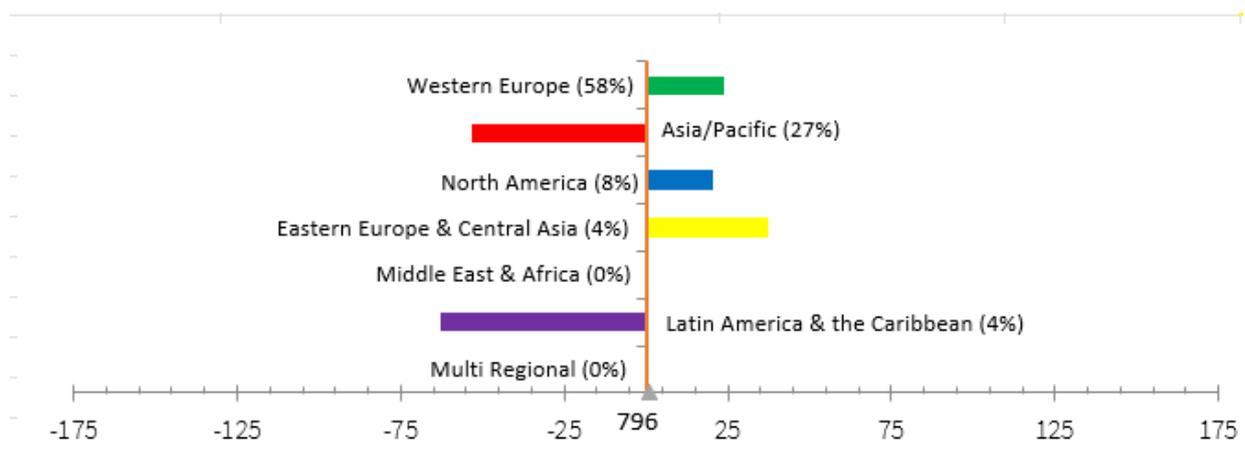
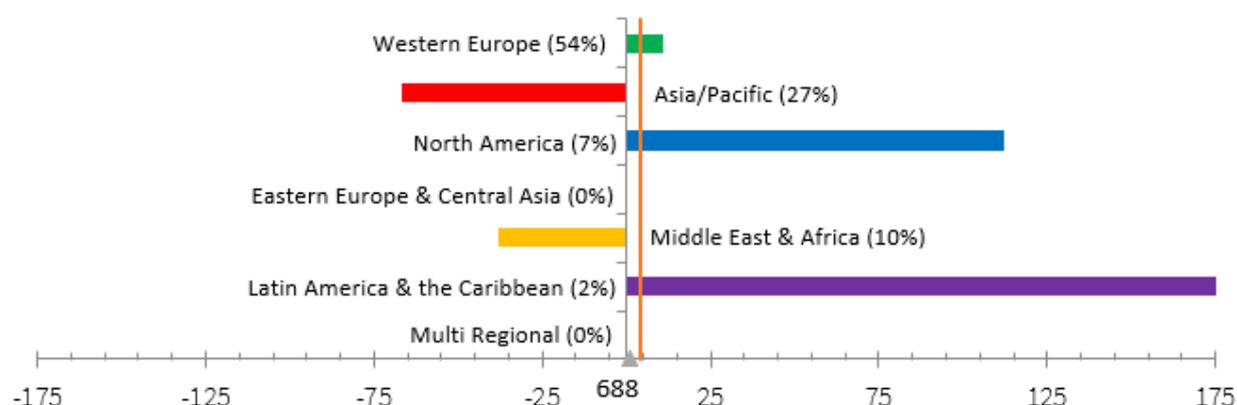


Chart 16 | Dubai Average Assessments – Difference From The Mean



## Eastern Europe & Central Asia

- Sofia overtook Prague to take the leading position in the region, although all centres other than Istanbul fell in the rankings.
- Centres in the region scored higher for Innovation Support than the other dimensions.
- Respondents from Western Europe scored Sofia higher than average.
- Astana joined the SCI for the first time.

Table 18 | Eastern European & Central Asian Centres In SCI 6: Ranks And Ratings

Centre	SCI 6		SCI 5		Change In	
	Rank	Rating	Rank	Rating	Rank	Rating
Sofia	41	622	37	666	▼ 4	▼ 44
Prague	45	613	36	667	▼ 9	▼ 54
Istanbul	50	599	58	627	▲ 8	▼ 28
Budapest	57	583	56	632	▼ 1	▼ 49
Astana	64	569	New	New	New	New
Warsaw	67	563	63	621	▼ 4	▼ 58
Moscow	68	562	68	604	0	▼ 42
Athens	72	537	67	605	▼ 5	▼ 68

Table 19 | Eastern European & Central Asian Centres In SCI 6: SCI Dimensions

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Sofia	30	220	47	194	45	208
Prague	49	204	45	196	37	214
Istanbul	53	201	52	189	43	209
Budapest	55	201	62	178	50	205
Astana	62	197	59	180	63	192
Warsaw	58	199	68	173	66	191
Moscow	67	192	67	174	61	196
Athens	63	196	71	167	73	174

Chart 17 | Sofia Average Assessments – Difference From The Mean

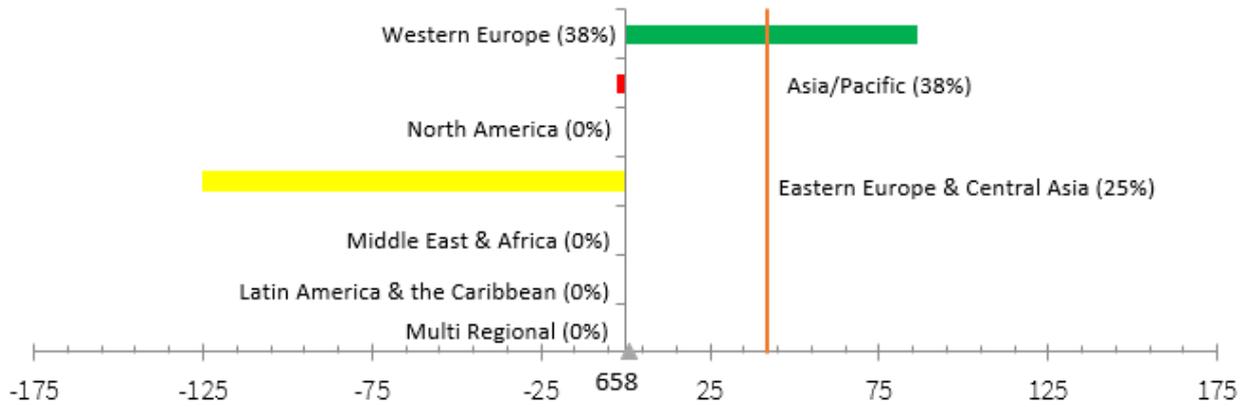
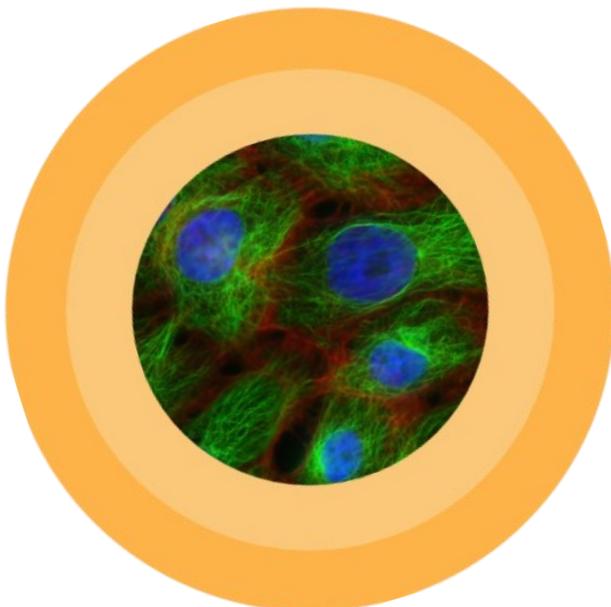
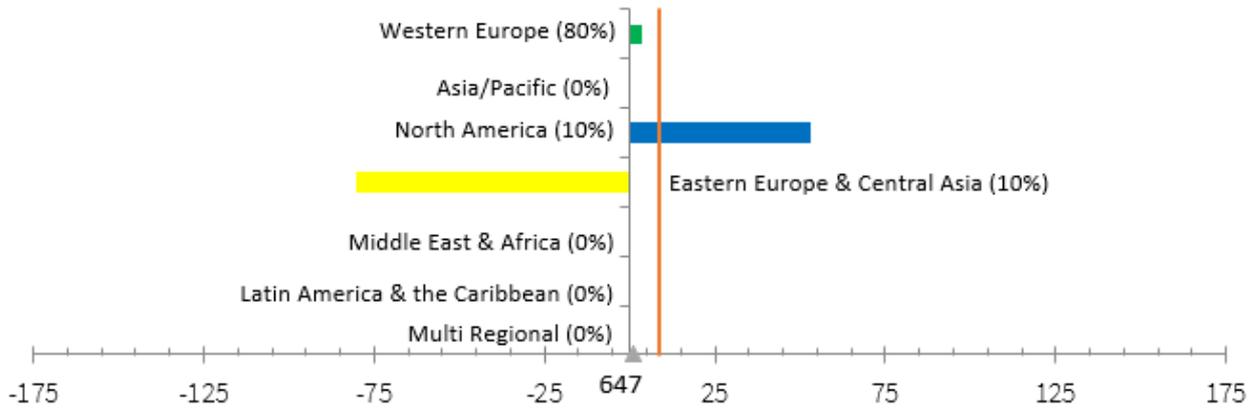


Chart 18 | Prague Average Assessments – Difference From The Mean



## Latin America & The Caribbean

- Mexico City held on to its lead in the region but fell 8 rank places, while Cayman Islands recovered some of the rank position it lost in SCI 5.
- Mexico City was rated highly by respondents from Western Europe and higher than average by those from Eastern Europe & Central Asia.

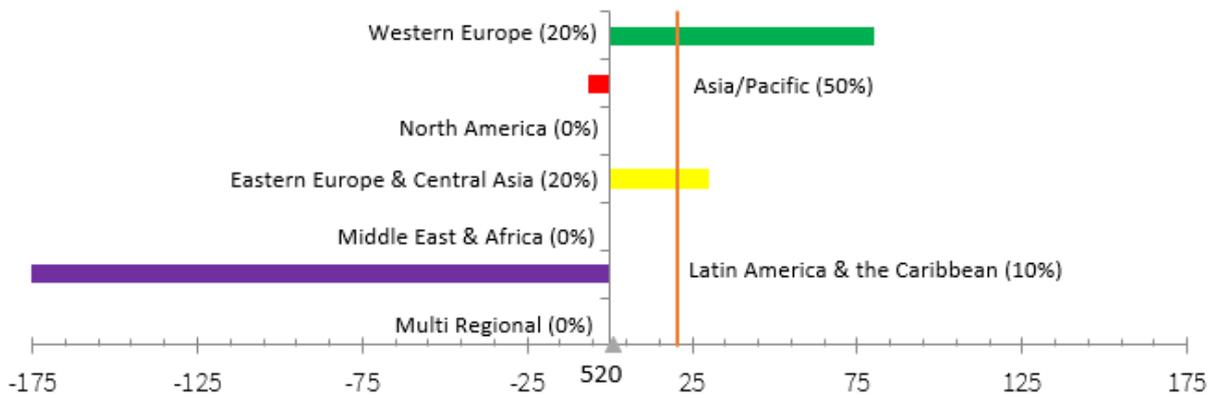
**Table 20 | Latin America & The Caribbean Centres In SCI 6: Ranks And Ratings**

Centre	SCI 6		SCI 5		Change In Rank	Change In Rating
	Rank	Rating	Rank	Rating		
Mexico City	59	577	51	645	▼8	▼68
Cayman Islands	66	564	72	585	▲6	▼21
Trinidad & Tobago	71	550	New	New	New	New

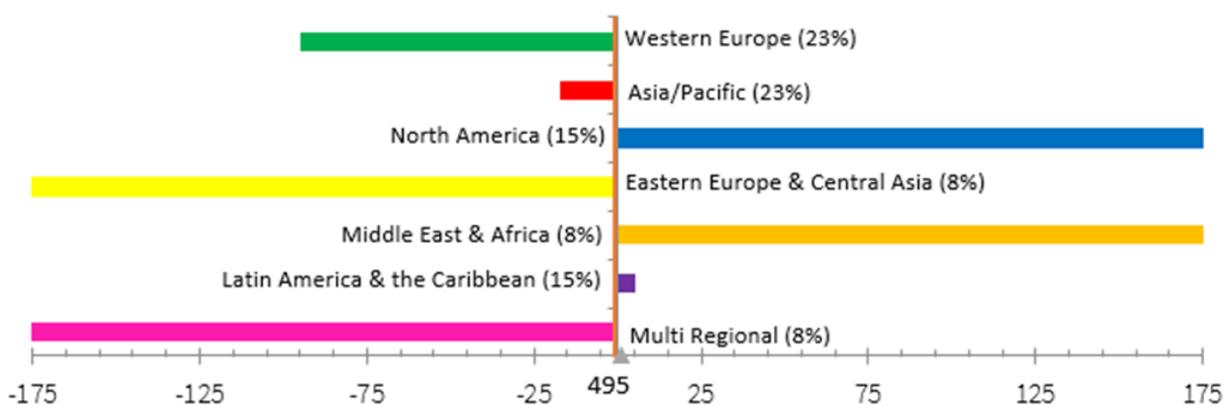
**Table 21 | Latin America & The Caribbean Centres In SCI 6: SCI Dimensions**

Centre	SCI 6 Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Rank	Rating	Rank	Rating	Rank	Rating
Mexico City	72	189	69	172	36	216
Cayman Islands	53	201	70	171	63	192
Trinidad & Tobago	66	193	66	175	71	182

**Chart 19 | Mexico City Average Assessments – Difference From The Mean**



**Chart 20 | Cayman Islands Average Assessments – Difference From The Mean**



## Appendix 1: Assessment Details

**Table 22 | Details Of SCI Assessments By Centre**

Centre	SCI 6 Rank	SCI 6 Rating	Assessments		
			Number	Average	St. Dev
New York	1	733	59	833	137
London	2	731	58	836	162
Los Angeles	3	714	19	814	143
San Francisco	4	708	28	825	200
Hong Kong	5	706	41	750	200
Zurich	6	705	30	796	186
Lugano	7	704	8	767	234
Singapore	8	703	48	776	225
Cambridge,	9	702	14	755	246
Oxford, UK	10	701	11	800	241
Chicago	11	697	24	778	118
Malta	12	696	9	733	148
Copenhagen	13	693	6	833	89
Tel Aviv	14	692	26	796	207
Seattle	15	691	8	663	317
Boston	16	689	21	770	206
Tokyo	17	677	21	635	318
Amsterdam	18	676	29	769	181
Toronto	19	675	17	743	196
Shanghai	20	674	27	672	266
Geneva	21	673	14	776	196
Busan	22	672	19	753	191
Stockholm	23	671	11	803	146
Seoul	24	669	21	665	285
Brussels	25	664	11	697	192
Dubai	26	661	41	688	224
Beijing	27	657	33	670	221
Luxembourg	28	656	22	689	191
Bangkok	29	655	9	526	222
Vancouver	30	654	15	691	222
Dublin	31	653	15	549	316
Shenzhen	32	652	12	600	327
Washington	33	651	13	646	243
Berlin	34	650	29	705	214
Osaka	35	649	14	533	320
Sydney	36	646	15	644	286
Abu Dhabi	37	641	16	663	244
Vienna	38	638	10	700	149

Centre	SCI 6 Rank	SCI 6 Rating	Assessments		
			Number	Average	St. Dev
Chengdu	39	636	8	467	276
Melbourne	40	635	10	470	317
Sofia	41	622	8	658	134
Gibraltar	42	621	8	725	256
Guangzhou	43	616	7	457	286
Frankfurt	44	615	27	719	190
Prague	45	613	10	647	167
Paris	46	609	22	668	157
GIFT City- Gujarat	47	607	138	790	133
Edinburgh	48	606	18	657	175
Hamburg	49	601	10	607	197
Istanbul	50	599	8	638	196
Tianjin	51	598	12	481	261
Milan	52	588	13	603	250
Cape Town	53	587	8	513	238
Johannesburg	54	586	5	580	189
Manila	55	585	10	523	284
Madrid	56	584	13	574	212
Budapest	57	583	12	600	163
Munich	58	582	11	591	208
Mexico City	59	577	10	520	203
Guernsey	60	575	5	600	313
Taipei	61	574	10	450	379
Kuala Lumpur	62	572	11	497	220
Stuttgart	63	570	8	471	268
Astana	64	569	10	570	151
Rome	65	566	5	473	312
Cayman	66	564	13	495	251
Warsaw	67	563	20	573	202
Moscow	68	562	18	585	258
Riyadh	69	561	9	611	232
Bahrain	70	557	10	540	234
Trinidad & Tobago	71	550	10	437	279
Athens	72	537	9	396	210
Isle of Man	73	533	7	410	301
Mumbai	74	498	78	156	178
New Delhi	75	454	74	123	105

Table 23 | Details Of Assessments Of SCI Dimensions By Centre

Centre	SCI Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Average	St. Dev	Average	St. Dev	Average	St. Dev
New York	837	145	825	133	836	132
London	848	161	831	162	828	161
Los Angeles	805	168	821	140	816	121
San Francisco	796	243	850	164	829	192
Hong Kong	739	213	766	178	746	207
Zurich	813	189	790	192	783	178
Lugano	825	149	738	262	738	292
Singapore	785	216	775	230	769	227
Cambridge, UK	764	241	714	282	786	214
Oxford, UK	809	274	773	249	818	199
Chicago	771	120	775	126	788	108
Malta	756	174	678	120	767	150
Copenhagen	850	55	833	137	817	75
Tel Aviv	823	192	773	205	792	224
Seattle	638	307	688	318	663	325
Boston	762	216	767	196	781	206
Tokyo	629	326	629	312	648	316
Amsterdam	759	164	793	183	755	196
Toronto	759	191	712	203	759	194
Shanghai	630	267	704	271	681	259
Geneva	829	164	743	210	757	214
Busan	747	204	747	187	763	183
Stockholm	818	140	800	100	791	197
Seoul	643	291	667	278	686	287
Brussels	727	135	673	233	691	207
Dubai	695	211	710	218	659	244
Beijing	615	243	694	222	700	198
Luxembourg	727	178	686	173	655	222
Bangkok	533	224	544	235	500	206
Vancouver	727	228	687	213	660	223
Dublin	573	326	553	295	520	326
Shenzhen	542	318	667	323	592	340
Washington DC	654	237	646	250	638	243
Berlin	728	225	676	232	710	186
Osaka	543	332	536	313	521	314
Sydney	660	285	620	283	653	290
Abu Dhabi	688	189	669	265	631	277
Vienna	730	149	650	158	720	140

Table 23 (Continued) | Details Of Assessments Of SCI Dimensions By Centre

Centre	SCI Dimensions					
	Innovation Support		Creative Intensity		Delivery Capability	
	Average	St.Dev	Average	St. Dev	Average	St. Dev
Chengdu	413	253	538	297	450	278
Melbourne	470	327	470	309	470	316
Sofia	688	146	625	116	663	141
Gibraltar	763	250	688	270	725	249
Guangzhou	371	281	500	289	500	289
Frankfurt	726	175	715	185	715	209
Prague	680	187	590	173	670	142
Paris	691	144	645	174	668	152
GIFT City-Gujarat	788	132	786	134	796	133
Edinburgh	683	192	644	192	644	142
Hamburg	610	213	590	197	620	181
Istanbul	625	205	638	207	650	177
Tianjin	483	252	475	263	483	269
Milan	623	262	615	248	569	239
Cape Town	500	233	488	230	550	251
Johannesburg	560	207	540	207	640	152
Manila	460	267	560	320	550	264
Madrid	615	203	546	203	562	229
Budapest	567	183	567	156	667	150
Munich	573	220	600	210	600	195
Mexico City	500	240	480	215	580	155
Guernsey	580	303	600	308	620	327
Taipei	460	381	460	375	430	380
Kuala Lumpur	473	179	509	234	509	247
Stuttgart	488	280	438	245	488	280
Astana	650	143	550	97	510	213
Rome	540	288	460	336	420	311
Cayman Islands	538	247	454	250	492	256
Warsaw	590	189	545	219	585	198
Moscow	583	285	567	250	606	239
Riyadh	633	173	589	226	611	298
Bahrain	570	241	550	207	500	254
Trinidad & Tobago	460	288	420	274	430	275
Athens	444	274	333	166	411	190
Isle of Man	457	257	386	313	386	334
Mumbai	158	186	150	164	160	184
New Delhi	122	101	119	85	128	128

## Appendix 2: Respondents' Details

**Table 24 | Respondents By Industry Sector**

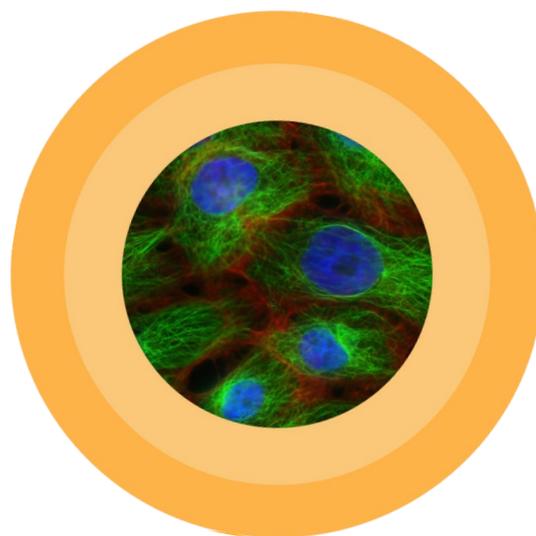
Industry Sector	Number Of Respondents	Percentage Of Respondents
Banking	16	6%
Debt Capital Markets	7	3%
Equity Capital Markets	5	2%
Insurance	10	4%
Investment Management	37	14%
Knowledge	27	10%
Policy and Public Finance	19	7%
Professional Services	41	15%
Technology	76	28%
Trading	24	9%
Not Specified	7	3%
<b>Total</b>	<b>269</b>	<b>100%</b>

**Table 25 | Respondents By Region**

Region	Number Of Respondents	Percentage Of Respondents
Western Europe	94	35%
Asia/Pacific	73	27%
North America	30	11%
Middle East & Africa	21	8%
Eastern Europe & Central Asia	30	11%
Latin America & the Caribbean	17	6%
Multi-Regional	4	1%
<b>Total</b>	<b>269</b>	<b>100%</b>

**Table 26 | Respondents By Size Of Organisation**

Size Of Organisation	Number Of Respondents	Percentage Of Respondents
Fewer than 50	165	61%
50 to 100	43	16%
100 to 500	12	4%
500 to 1,000	13	5%
1,000 to 2,000	12	4%
2,000 to 5,000	10	4%
More than 5,000	14	5%
Not Specified	0	0%
<b>Total</b>	<b>269</b>	<b>100%</b>



## Appendix 3: Methodology

The SCI provides ratings for the innovation and technology offerings of commercial and financial centres. The process involves taking two sets of ratings – one from survey respondents and one generated by a statistical model – and combining them into a single rating.

For the first set of ratings, the **Centre Assessments**, respondents use an online questionnaire to rate three dimensions:

- Innovation Support - the approach taken to regulation and support for the innovation and technology industry provided by the commercial ecosystem.
- Creative Intensity - the extent to which technology and innovative industries are embedded in the economy of the centre.
- Delivery Capability - the quality of the work being undertaken in the field in the centre.

Ratings are given using a 10 point scale ranging from very poor to excellent. Responses are sought from a range of individuals drawn from the financial services and technology sectors, non-governmental organisations, regulators, universities, and trade bodies.

For the second set of ratings, we use a database of indicators, or **Instrumental Factors**, that contain quantitative data about each centre. We use a machine learning algorithm to investigate the correlation between the financial centre assessments and these Instrumental Factors to predict how each respondent would have rated the centres they do not know. These 138 Instrumental Factors draw on data from a range of sources. A full list of the Instrumental Factors used in the model is in Appendix 4.

The respondents' actual ratings as well as their predicted ratings for the centres they did not rate, are then combined into a single table to produce ratings for each dimension. These are then added together, using equal weighting, to create the SCI rating.

### Factors Affecting The Inclusion Of Centres In The SCI

The questionnaire lists a total of 131 commercial and financial centres which can be rated by respondents. The questionnaire also asks whether there are centres not currently in the survey that will become significant over the next two to three years. Centres which are not currently within the questionnaire and which are mentioned repeatedly in response to this question will be added to the questionnaire for future editions.

We give a centre a SCI rating and ranking if it receives a statistically significant minimum number of assessments from individuals based in other geographical locations - at least 10 in SCI 6. This means that not all 131 centres in the questionnaire receive a ranking. We will keep this number under review for further editions of the index as the number of assessments increases.

We will also develop rules as successive indices are published as to when a centre may be removed from the rankings, for example, if over a 24 month period, a centre has not received a minimum number of assessments.

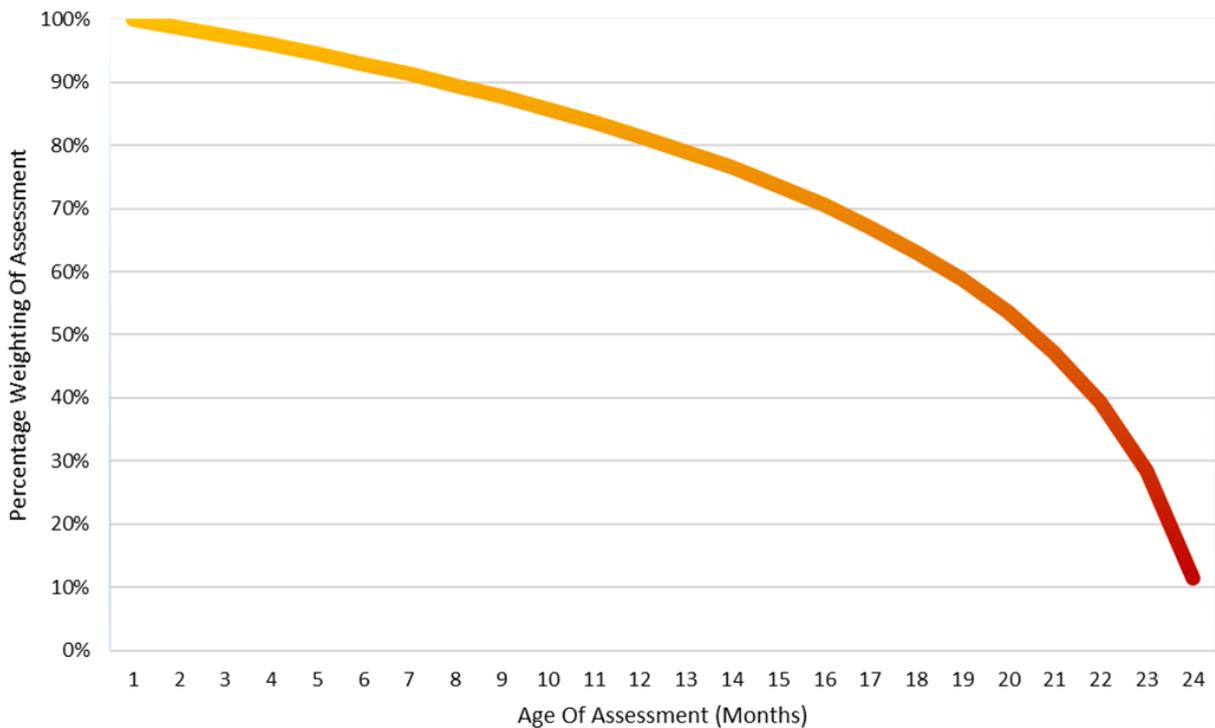
## Centre Assessments

Centre assessments are collected via an online questionnaire which runs continuously and which is at [www.smartcentresindex.net/survey/](http://www.smartcentresindex.net/survey/). A link to this questionnaire is emailed to a target list of respondents at regular intervals. Other interested parties can complete the questionnaire by following the link given in SCI publications.

In calculating the SCI:

- The score given by a respondent to their home centre, and scores from respondents who do not specify a home centre, are excluded from the model – this is designed to prevent home bias.
- Financial centre assessments are included in the SCI model for 24 months after they have been received – we consider that this is a period during which assessments maintain their validity.
- Financial centre assessments from the month when the SCI is created are given full weighting with earlier responses given a reduced weighting on a logarithmic scale as shown in Chart 21 - this recognises that older ratings, while still valid, are less likely to be up-to-date.

**Chart 21 | Reduction In Weighting As Assessments Become Older**



### Instrumental Factor Data

For the instrumental factors, we have the following data requirements:

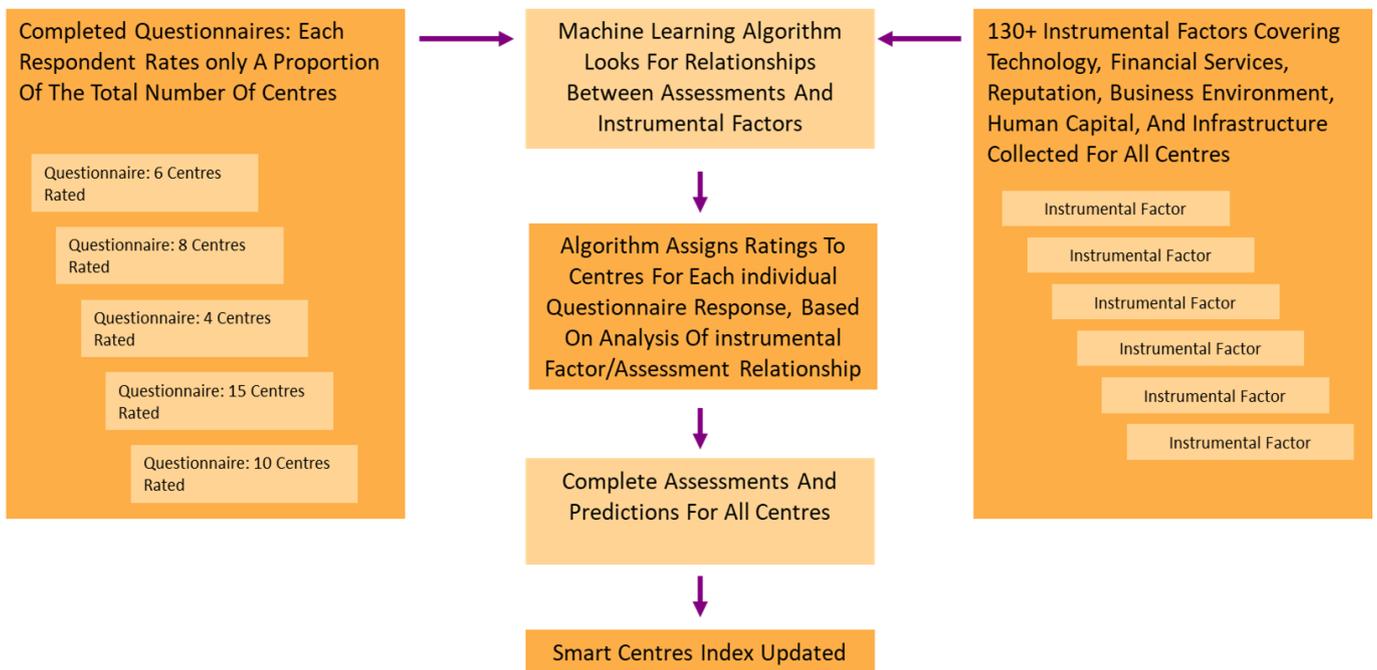
- Data series should come from a reputable body and be derived by a sound methodology.
- Data series should be readily available (ideally in the public domain) and be regularly updated.

The rules on the use of instrumental factor data in the model are as follows:

- Updates to the indices are collected and collated every six months.
- No weightings are applied to indices.
- Indices are entered into the SCI model as directly as possible, whether this is a rank, a derived score, a value, a distribution around a mean, or a distribution around a benchmark.
- If a factor is at a national level, the score will be used for all centres in that country; nation-based factors will be avoided if centre (city)-based factors are available.
- If an index has multiple values for a city or nation, the most relevant value is used.
- If an index is at a regional level, the most relevant allocation of scores to each centre is made (and the method for judging relevance is noted).
- If an index does not contain a value for a particular centre, a blank is entered against that centre (no average or mean is used).

The process of creating the SCI is outlined in Chart 22.

**Chart 22 | The SCI Process**



## Appendix 4: Instrumental Factors

**Table 27 | Instrumental Factor Correlation With SCI Ratings - Highest 30 Factors**

Instrumental Factors	R-squared
Fintech Activity Index	0.544
Global Innovation Index	0.534
Urban Mobility Readiness Index	0.516
Safe Cities	0.492
Adjusted Net National Income Per Capita	0.472
The Global Green Finance Index	0.462
Global Financial Centres Index	0.444
Telecommunication Infrastructure Index	0.441
Innovation Cities Global Index	0.428
Government Effectiveness	0.415
Business Environment Rankings	0.396
Best Countries For Business	0.393
Legatum Prosperity Index	0.391
Global Power City Index	0.370
Domestic Credit To Private Sector (% Of GDP)	0.366
Rule Of Law	0.362
E-Government Development Index	0.361
World Competitiveness Scoreboard	0.350
Household Net Financial Wealth	0.346
World Talent Rankings	0.346
Sustainable Economic Development	0.344
Fintech Index	0.335
Smart City Index	0.331
Regulatory Quality	0.330
Energy Transition Index	0.318
Financial Secrecy Index	0.312
Control Of Corruption	0.308
Operational Risk Rating	0.300
E-Participation Index	0.291
Global Competitiveness Index	0.290

Table 28 | Technology Factors

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
E-Government Development Index	United Nations	<a href="https://publicadministration.un.org/egovkb/Data-Center">https://publicadministration.un.org/egovkb/Data-Center</a>	N
UN International Sale Of Goods	United Nations	<a href="https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&amp;mtdsg_no=X-10&amp;chapter=10">https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&amp;mtdsg_no=X-10&amp;chapter=10</a>	N
ISO TC307 Participation	International Organisation For Standardisation	<a href="https://www.iso.org/committee/6266604.html?view=participation">https://www.iso.org/committee/6266604.html?view=participation</a>	Y
Internet Censorship Rank	comparitech	<a href="https://www.comparitech.com/blog/vpn-privacy/internet-censorship-map/">https://www.comparitech.com/blog/vpn-privacy/internet-censorship-map/</a>	Y
Volume Of Bitcoin Trades	Coin Dance	<a href="https://coin.dance/volume/localbitcoins">https://coin.dance/volume/localbitcoins</a>	Y
Legal Status Of Bitcoin	Coin Dance	<a href="https://coin.dance/poli/legality">https://coin.dance/poli/legality</a>	Y
Use Of Blockchain In Land Registration	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Identity Management	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain For Trade Finance	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Healthcare	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Use Of Blockchain In Voting	Airtable Blockchain in Government Tracker	<a href="https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true">https://airtable.com/universe/expsQEGKoZO2lExKK/blockchain-in-government-tracker?explore=true</a>	N
Global AI Index	Tortoise Intelligence	<a href="https://www.tortoisemedia.com/intelligence/ai">https://www.tortoisemedia.com/intelligence/ai</a>	Y
E-Participation Index	United Nations	<a href="https://publicadministration.un.org/egovkb/Data-Center">https://publicadministration.un.org/egovkb/Data-Center</a>	N
FinTech Index	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/</a>	Y
The Global Fintech Index	Findexable	<a href="https://findexable.com/">https://findexable.com/</a>	N
Global Cybersecurity Index	ITU	<a href="http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx">http://www.itu.int/en/ITU-D/Cybersecurity/Pages/GCI.aspx</a>	N
ICT Development Index	United Nations	<a href="http://www.itu.int/net4/ITU-D/idi/2017/index.html">http://www.itu.int/net4/ITU-D/idi/2017/index.html</a>	N
Telecommunication Infrastructure Index	United Nations	<a href="https://publicadministration.un.org/egovkb/en-us/Data-Center">https://publicadministration.un.org/egovkb/en-us/Data-Center</a>	N
Open Data Barometer	World Wide Web Foundation	<a href="https://opendatabarometer.org/4thedition/?_year=2016&amp;indicator=ODB">https://opendatabarometer.org/4thedition/?_year=2016&amp;indicator=ODB</a>	N
Worldwide Broadband Speed League	Cable	<a href="https://www.cable.co.uk/broadband/speed/worldwide-speed-league/">https://www.cable.co.uk/broadband/speed/worldwide-speed-league/</a>	N
Smart City Index	IMD	<a href="https://www.imd.org/smart-city-observatory/smart-city-index/">https://www.imd.org/smart-city-observatory/smart-city-index/</a>	N
Patent applications, residents	The World Bank	<a href="https://data.worldbank.org/indicator/IP.PAT.RESD?end=2020&amp;start=1980">https://data.worldbank.org/indicator/IP.PAT.RESD?end=2020&amp;start=1980</a>	New
Fintech Activity Index	World Bank	<a href="https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099735504212234006/p1730060695b370090908c0bf80ed27eba6">https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099735504212234006/p1730060695b370090908c0bf80ed27eba6</a>	New

Table 29 | Financial Sector Development Factors

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
Capitalisation Of Stock Exchanges	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/August-2022/market-statistics">https://focus.world-exchanges.org/issue/August-2022/market-statistics</a>	Y
Value Of Share Trading	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/August-2022/market-statistics">https://focus.world-exchanges.org/issue/August-2022/market-statistics</a>	Y
Volume Of Share Trading	The World Federation of Stock Exchanges	<a href="https://statistics.world-exchanges.org/ReportGenerator/Generator#">https://statistics.world-exchanges.org/ReportGenerator/Generator#</a>	Y
Broad Stock Index Levels	The World Federation of Stock Exchanges	<a href="https://focus.world-exchanges.org/issue/August-2022/market-statistics">https://focus.world-exchanges.org/issue/August-2022/market-statistics</a>	Y
Value of Bond Trading	The World Federation of Stock Exchanges	<a href="https://statistics.world-exchanges.org/ReportGenerator/Generator#">https://statistics.world-exchanges.org/ReportGenerator/Generator#</a>	Y
Domestic Credit To Private Sector (% Of GDP)	The World Bank	<a href="https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?most_recent_value_desc=false">https://data.worldbank.org/indicator/FS.AST.PRVT.GD.ZS?most_recent_value_desc=false</a>	Y
Percentage Of Firms Using Banks To Finance Investment	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=IC.FRM.BNKS.ZS">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=IC.FRM.BNKS.ZS</a>	Y
Total Net Assets of Regulated Open-End Funds	Investment Company Institute	<a href="http://www.icifactbook.org/">http://www.icifactbook.org/</a>	Y
Islamic Finance Country Index	Islamic Banks and Financial Institutions	<a href="http://www.gifr.net/publications">http://www.gifr.net/publications</a>	N
Net External Positions Of Banks	The Bank for International Settlements	<a href="http://www.bis.org/statistics/annex_map.htm">http://www.bis.org/statistics/annex_map.htm</a>	Y
External Positions Of Central Banks As A Share Of GDP	The Bank for International Settlements	<a href="http://www.bis.org/statistics/annex_map.htm">http://www.bis.org/statistics/annex_map.htm</a>	Y
Liner Shipping Connectivity Index	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?">http://databank.worldbank.org/data/reports.aspx?</a>	Y
Global Connectedness Index	DHL	<a href="https://www.dhl.com/global-en/spotlight/globalization/">https://www.dhl.com/global-en/spotlight/globalization/</a>	Y
Economic Performance Index	The Brookings Institution	<a href="https://www.brookings.edu/research/global-metro-monitor-">https://www.brookings.edu/research/global-metro-monitor-</a>	N
Financial System Green Alignment	Corporate Knights	<a href="https://www.finance-watch.org/publication/global-greenfinance-index-3/">https://www.finance-watch.org/publication/global-greenfinance-index-3/</a>	N
Labelled Green Bonds Issued By Country Of Issuer	Corporate Knights	<a href="https://www.finance-watch.org/publication/global-greenfinance-index-3/">https://www.finance-watch.org/publication/global-greenfinance-index-3/</a>	N
Climate-Aligned Bonds Outstanding By Country Of Issuer	Climate Bonds Initiative	<a href="https://www.finance-watch.org/publication/global-greenfinance-index-3/">https://www.finance-watch.org/publication/global-greenfinance-index-3/</a>	N
Sustainable Stock Exchanges (Y/N)	UN Sustainable Stock Exchange Initiative	<a href="https://sseinitiative.org/members/">https://sseinitiative.org/members/</a>	Y
Green Bond Segments On Stock Exchanges (Y/N)	Climate Bonds Initiative	<a href="https://www.climatebonds.net/green-bond-segments-stock-exchanges">https://www.climatebonds.net/green-bond-segments-stock-exchanges</a>	N
The Global Green Finance Index	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-green-finance-index/</a>	Y
The Global Financial Centres Index	Z/Yen	<a href="https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/">https://www.longfinance.net/programmes/financial-centre-futures/global-financial-centres-index/</a>	Y
Sovereign Green Bond (Y/N)	Climate Bonds Initiative	<a href="https://www.climatebonds.net/2021/11/cop26-briefing-">https://www.climatebonds.net/2021/11/cop26-briefing-</a>	New

Table 30 | Human Capital Factors

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
Graduates In Social Science, Business And Law (As % Of Total Graduates)	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=UIS.FOSGP.5T8.F400">http://databank.worldbank.org/data/reports.aspx?source=Education%20Statistics&amp;series=UIS.FOSGP.5T8.F400</a>	N
Gross Tertiary Graduation Ratio	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?">http://databank.worldbank.org/data/reports.aspx?</a>	N
Henley Passport Index	Henley Partners	<a href="https://www.henleypassportindex.com/passport">https://www.henleypassportindex.com/passport</a>	Y
Human Development Index	UN Development Programme	<a href="http://hdr.undp.org/en/2020-report/download">http://hdr.undp.org/en/2020-report/download</a>	N
Purchasing Power Index	Numbeo	<a href="https://www.numbeo.com/quality-of-life/rankings.jsp?title=2022-">https://www.numbeo.com/quality-of-life/rankings.jsp?title=2022-</a>	Y
Number Of High Net Worth Individuals	Capgemini	<a href="https://www.worldwealthreport.com/">https://www.worldwealthreport.com/</a>	Y
Homicide Rates	UN Office of Drugs & Crime	<a href="https://dataunodc.un.org/content/data/homicide/homicide-rate">https://dataunodc.un.org/content/data/homicide/homicide-rate</a>	N
Average Precipitation In Depth (mm Per Year)	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=AG.LND.PRCP.MM">http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&amp;series=AG.LND.PRCP.MM</a>	Y
Global Skills Index	Hays	<a href="https://www.hays.com/resources/reports/global-skills-index-2019">https://www.hays.com/resources/reports/global-skills-index-2019</a>	N
Linguistic Diversity	Ethnologue	<a href="https://www.ethnologue.com/guides/countries-most-languages">https://www.ethnologue.com/guides/countries-most-languages</a>	N
Global Terrorism Index	Institute for Economics & Peace	<a href="https://www.visionofhumanity.org/wp-content/uploads/2022/03/GTI-2022-web-09062022.pdf">https://www.visionofhumanity.org/wp-content/uploads/2022/03/GTI-2022-web-09062022.pdf</a>	Y
World Talent Rankings	IMD	<a href="https://www.imd.org/centers/world-competitiveness-center/">https://www.imd.org/centers/world-competitiveness-center/</a>	Y
Adjusted Net National Income Per Capita	The World Bank	<a href="https://data.worldbank.org/indicator/NY.ADJ.NNTY.PC.CD">https://data.worldbank.org/indicator/NY.ADJ.NNTY.PC.CD</a>	Y
Household Net Financial Wealth	OECD	<a href="https://stats.oecd.org/Index.aspx?DataSetCode=BLI">https://stats.oecd.org/Index.aspx?DataSetCode=BLI</a>	Y
Educational Attainment, At Least Bachelor's Or Equivalent, Population 25+, Total (%)	The World Bank	<a href="https://data.worldbank.org/indicator/SE.TER.CUAT.BA.ZS">https://data.worldbank.org/indicator/SE.TER.CUAT.BA.ZS</a>	Y
Life Expectancy At Birth, Total	The World Bank	<a href="https://data.worldbank.org/indicator/SP.DYN.LE00.IN">https://data.worldbank.org/indicator/SP.DYN.LE00.IN</a>	Y
Employees Working Very Long Hours	OECD	<a href="https://stats.oecd.org/Index.aspx?DataSetCode=BLI">https://stats.oecd.org/Index.aspx?DataSetCode=BLI</a>	Y
Human Freedom Index	Cato Institute	<a href="https://www.cato.org/human-freedom-index">https://www.cato.org/human-freedom-index</a>	N
Global Health Security Index	Nuclear Threat Initiative, Johns Hopkins Center for Health Security, and Economist Impact	<a href="https://www.ghsindex.org/">https://www.ghsindex.org/</a>	N
English proficiency	Education First	<a href="https://www.ef.com/wwen/epi/">https://www.ef.com/wwen/epi/</a>	New

Table 31 | Business Environment Factors

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
Business Environment Rankings	EIU	<a href="http://country.eiu.com/All">http://country.eiu.com/All</a>	Y
Ease of Doing Business Index	The World Bank	<a href="https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020">https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020</a>	N
Operational Risk Rating	EIU	<a href="http://www.eiu.com/site_info.asp?info_name=VW2_RISK_nib&amp;page=rk&amp;page_title=Risk%20table">http://www.eiu.com/site_info.asp?info_name=VW2_RISK_nib&amp;page=rk&amp;page_title=Risk%20table</a>	Y
Real Interest Rate	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=FR.INR.RINR">https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=FR.INR.RINR</a>	Y
Global Services Location	AT Kearney	<a href="https://www. Kearney.com/digital/article/?a/the-2021-kearney-global-services-location-index">https://www. Kearney.com/digital/article/?a/the-2021-kearney-global-services-location-index</a>	N
Corruption Perception Index	Transparency International	<a href="https://www.transparency.org/en/cpi/2021/">https://www.transparency.org/en/cpi/2021/</a>	Y
Corporate Tax Rates	KPMG	<a href="https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html">https://home.kpmg/xx/en/home/services/tax/tax-tools-and-resources/tax-rates-online/corporate-tax-rates-table.html</a>	N
Personal Tax Rates	OECD	<a href="https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I6">https://stats.oecd.org/index.aspx?DataSetCode=TABLE_I6</a>	Y
Tax Revenue as Percentage of GDP	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=2&amp;series=GC.TAX.TOTL.GD.ZS&amp;country=#">https://databank.worldbank.org/reports.aspx?source=2&amp;series=GC.TAX.TOTL.GD.ZS&amp;country=#</a>	Y
Bilateral Tax Information Exchange Agreements	OECD	<a href="http://www.oecd.org/ctp/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm">http://www.oecd.org/ctp/exchange-of-tax-information/taxinformationexchangeagreementstieas.htm</a>	N
Economic Freedom of the World	Fraser Institute	<a href="https://www.fraserinstitute.org/economic-freedom/map?geozone=world&amp;page=map&amp;year=2019">https://www.fraserinstitute.org/economic-freedom/map?geozone=world&amp;page=map&amp;year=2019</a>	N
Government Debt as % of GDP	CIA	<a href="https://www.cia.gov/the-world-factbook/field/public-debt/country-comparison">https://www.cia.gov/the-world-factbook/field/public-debt/country-comparison</a>	N
OECD Country Risk Classification	OECD	<a href="http://www.oecd.org/trade/topics/export-credits/documents/cre-crc-current-english.pdf">http://www.oecd.org/trade/topics/export-credits/documents/cre-crc-current-english.pdf</a>	Y
Global Peace Index	Institute for Economics & Peace	<a href="https://www.visionofhumanity.org/maps/#/">https://www.visionofhumanity.org/maps/#/</a>	Y
Financial Secrecy Index	Tax Justice Network	<a href="http://www.financialsecrecyindex.com/">http://www.financialsecrecyindex.com/</a>	Y
Government Effectiveness	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	N
Open Government	World Justice Project	<a href="http://worldjusticeproject.org/rule-of-law-index">http://worldjusticeproject.org/rule-of-law-index</a>	N
Regulatory Enforcement	World Justice Project	<a href="http://worldjusticeproject.org/rule-of-law-index">http://worldjusticeproject.org/rule-of-law-index</a>	N
Press Freedom Index	Reporters Without Borders (RSF)	<a href="https://rsf.org/en/ranking/2021">https://rsf.org/en/ranking/2021</a>	Y
Currencies	Swiss Association for Standardization (SNV)	<a href="https://www.six-group.com/en/products-services/financial-information/data-standards.html#scrollTo=current-historical-lists">https://www.six-group.com/en/products-services/financial-information/data-standards.html#scrollTo=current-historical-lists</a>	N
Commonwealth Countries	The Commonwealth	<a href="http://thecommonwealth.org/member-countries">http://thecommonwealth.org/member-countries</a>	N
Common Law Countries	CIA	<a href="https://www.cia.gov/the-world-factbook/countries/">https://www.cia.gov/the-world-factbook/countries/</a>	N
Inflation, GDP Deflator	The World Bank	<a href="https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG">https://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG</a>	Y
Rule of Law	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	N
Political Stability and Absence of Violence/Terrorism	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	N
Regulatory Quality	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	N
Control of Corruption	The World Bank	<a href="http://info.worldbank.org/governance/wgi/">http://info.worldbank.org/governance/wgi/</a>	N
Best Countries for Business	Forbes	<a href="https://www.forbes.com/best-countries-for-business/list/">https://www.forbes.com/best-countries-for-business/list/</a>	N

**Table 31 | (Continued) Business Environment Factors**

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
Open Budget Survey	International Budget Partnership	<a href="http://survey.internationalbudget.org/#download">http://survey.internationalbudget.org/#download</a>	Y
Refined oil products production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	Y
Global Business Complexity Index	TMF Group	<a href="https://www.tmf-group.com/en/news-insights/publications/2021/global-business-complexity-index/">https://www.tmf-group.com/en/news-insights/publications/2021/global-business-complexity-index/</a>	Y

**Table 32 | Reputational Factors**

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
World Competitiveness Scoreboard	IMD	<a href="https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2020/">https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2020/</a>	Y
Global Competitiveness Index	World Economic Forum	<a href="http://reports.weforum.org/global-competitiveness-report-2019/competitiveness-rankings/">http://reports.weforum.org/global-competitiveness-report-2019/competitiveness-rankings/</a>	N
Foreign Direct Investment Inflows	UNCTAD	<a href="http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740">http://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=96740</a>	Y
GDP Per Person Employed (Constant 2017 PPP \$)	The World Bank	<a href="https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=SL.GDP.PCAP.EM.KD">https://databank.worldbank.org/reports.aspx?source=world-development-indicators&amp;series=SL.GDP.PCAP.EM.KD</a>	Y
Global Innovation Index	WIPO	<a href="http://www.globalinnovationindex.org/content.aspx?page=GII-Home">http://www.globalinnovationindex.org/content.aspx?page=GII-Home</a>	N
International IP Index	GIPC	<a href="https://www.theglobalipcenter.com/ipindex2020/">https://www.theglobalipcenter.com/ipindex2020/</a>	Y
RPI (% Change On Year Ago)	The Economist	<a href="https://www.economist.com/economic-and-financial-indicators/2022/06/30/economic-data-commodities-and-markets">https://www.economist.com/economic-and-financial-indicators/2022/06/30/economic-data-commodities-and-markets</a>	Y
Number Of International Association Meetings	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=NRFAIREX">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=NRFAIREX</a>	N
Innovation Cities Global Index	2ThinkNow Innovation Cities	<a href="https://www.innovation-cities.com/city-rankings-2021/">https://www.innovation-cities.com/city-rankings-2021/</a>	N
Big Mac Index	The Economist	<a href="https://www.economist.com/news/2020/07/15/the-big-mac-index">https://www.economist.com/news/2020/07/15/the-big-mac-index</a>	Y
Sustainable Economic Development	Boston Consulting Group	<a href="https://www.bcg.com/en-gb/publications/2021/prioritizing-societal-well-being-seda-report">https://www.bcg.com/en-gb/publications/2021/prioritizing-societal-well-being-seda-report</a>	N
Level Of Internet Freedom	Freedom House	<a href="https://freedomhouse.org/countries/freedom-net/scores">https://freedomhouse.org/countries/freedom-net/scores</a>	New
Good Country Index	Good Country Party	<a href="https://www.goodcountry.org/index/results">https://www.goodcountry.org/index/results</a>	Y
Legatum Prosperity Index	Legatum Institute	<a href="http://www.prosperity.com/#1/ranking">http://www.prosperity.com/#1/ranking</a>	N
FDI Inward Stock (In Million Dollars)	UNCTAD	<a href="https://unctad.org/webflyer/world-investment-report-2021">https://unctad.org/webflyer/world-investment-report-2021</a>	Y
Quality Of Nationality Index	Henley Partners	<a href="https://nationalityindex.com/#">https://nationalityindex.com/#</a>	N
Global Power City Index	The Mori Memorial Foundation	<a href="http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml">http://mori-m-foundation.or.jp/english/ius2/gpci2/index.shtml</a>	N
Economic Freedom	The Heritage Foundation	<a href="https://www.heritage.org/index/ranking">https://www.heritage.org/index/ranking</a>	Y
Safe Cities Index	Economist	<a href="https://safecities.economist.com/">https://safecities.economist.com/</a>	N
The Global Green Economy Index	Dual Citizen	<a href="https://dualcitizeninc.com/global-green-economy-index/">https://dualcitizeninc.com/global-green-economy-index/</a>	Y

**Table 33 | Infrastructure Factors**

Instrumental Factor	Source	Website	Updated Since SCI 5 Y/N
Agility Emerging Markets Logistics Index	Agility	<a href="https://www.agility.com/en/emerging-markets-logistics-index/rankings/">https://www.agility.com/en/emerging-markets-logistics-index/rankings/</a>	New
JLL Real Estate Transparency Index	Jones Lang LaSalle	<a href="https://www.jll.co.uk/en/trends-and-insights/research/global-real-estate-transparency-index/">https://www.jll.co.uk/en/trends-and-insights/research/global-real-</a>	Y
Quality Of Domestic Transport Network	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=TRSP EFFICY">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=TRSP EFFICY</a>	N
Quality Of Roads	World Economic Forum	<a href="http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=EOSQ057">http://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/rankings/#series=EOSQ057</a>	N
Roadways Per Land Area	CIA	<a href="https://www.cia.gov/the-world-factbook/field/roadways/country-">https://www.cia.gov/the-world-factbook/field/roadways/country-</a>	Y
Railways Per Land Area	CIA	<a href="https://www.cia.gov/the-world-factbook/field/railways/country-">https://www.cia.gov/the-world-factbook/field/railways/country-</a>	Y
Protected Land Area % Of Land Area	The World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?">http://databank.worldbank.org/data/reports.aspx?</a>	Y
Energy Sustainability Index	World Energy Council	<a href="https://trilemma.worldenergy.org/">https://trilemma.worldenergy.org/</a>	N
Environmental Performance	Yale University	<a href="https://epi.yale.edu/epi-results/2020/component/epi">https://epi.yale.edu/epi-results/2020/component/epi</a>	Y
Global Sustainable Competitiveness Index	Solability	<a href="http://solability.com/the-global-sustainable-competitiveness-index/the-index">http://solability.com/the-global-sustainable-competitiveness-index/the-index</a>	N
Logistics Performance Index	The World Bank	<a href="http://lpi.worldbank.org/international/global">http://lpi.worldbank.org/international/global</a>	N
Proportion Of Population Using Safely-Managed Drinking-Water Services (%)	WHO	<a href="https://www.who.int/data/gho/publications/world-health-statistics">https://www.who.int/data/gho/publications/world-health-statistics</a>	Y
INRIX Traffic Scorecard	INRIX	<a href="http://inrix.com/scorecard/">http://inrix.com/scorecard/</a>	N
Forestry Area	World Bank	<a href="http://databank.worldbank.org/data/reports.aspx?">http://databank.worldbank.org/data/reports.aspx?</a>	N
CO2 Emissions Per Capita	World Bank	<a href="https://databank.worldbank.org/reports.aspx?">https://databank.worldbank.org/reports.aspx?</a>	Y
4G Availability	Open Signal	<a href="https://www.opensignal.com/reports/2020/05/global-state-of-the">https://www.opensignal.com/reports/2020/05/global-state-of-the</a>	N
Share Of Wind And Solar In Electricity Production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	Y
Energy Intensity Of GDP	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	Y
Share Of Renewables In Electricity Production	Enerdata Statistical Yearbook	<a href="https://yearbook.enerdata.net/download/">https://yearbook.enerdata.net/download/</a>	Y
Energy Transition Index	World Economic Forum	<a href="https://www.weforum.org/reports/1edb4488-deb4-4151-9d4f-ff355eec499a/in-full/rankings">https://www.weforum.org/reports/1edb4488-deb4-4151-9d4f-ff355eec499a/in-full/rankings</a>	N
Urban Mobility Readiness Index	Oliver Wyman	<a href="https://www.oliverwymanforum.com/mobility/urban-mobility-">https://www.oliverwymanforum.com/mobility/urban-mobility-</a>	N
The Green Future Index	MIT Technology Review	<a href="https://www.technologyreview.com/2022/03/24/1048253/the-green-future-index-2022/">https://www.technologyreview.com/2022/03/24/1048253/the-green-future-index-2022/</a>	Y

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[www.adgm.com/](http://www.adgm.com/) [info@adgm.com](mailto:info@adgm.com)



The Long Finance initiative grew out of the London Accord, a 2005 agreement among investment researchers to share environmental, social and governance research with policy-makers and the public. Long Finance was established more formally by Z/Yen Group and Gresham College from 2007 with the aim of exploring long-term thinking across a global network of people.

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[www.longfinance.net](http://www.longfinance.net)



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<https://www.rfl.rw/>  
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Since 2009 Busan Metropolitan City has been developing a financial hub specialising in maritime finance and derivatives. With its strategic location in the center of the southeast economic block of Korea and the crossroads of a global logistics route, Busan envisions growing into an international financial city in Northeast Asia. Busan Finance Center (BFC) will continue to develop and implement measures to promote Busan as a financial hub and bolster the local financial industry, while working together with various local economic players to pursue sustainable growth of the financial sector including FinTech. These efforts will enable BFC to play a leading role in taking Busan to the next level and become the international financial center and maritime capital of Northeast Asia.

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[www.aifc.kz](http://www.aifc.kz)



Casablanca Finance City is an African financial and business hub located at the crossroads of continents. Recognized as the leading financial center in Africa, and partner of the largest financial centers in the world, CFC has built a strong and thriving community of members across four major categories: financial companies, regional headquarters of multinationals, service providers, and holdings.

CFC offers its members an attractive value proposition and a premium "Doing Business" support that fosters the deployment of their activities in Africa. Driven by the ambition to cater to its community, CFC is committed to promoting its members expertise across the continent, while enabling fruitful business and partnership synergies through its networking platform.

Manal Bernoussi at [manal.bernoussi@cfca.ma](mailto:manal.bernoussi@cfca.ma)  
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It is sure that Seoul will become a top star of global financial hubs in the near future! Pay close attention to Seoul's potentials and pre-emptively gain a foothold in the Seoul financial hub. Seoul is the gateway to Northeast Asia and the world.

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[www.seoul.go.kr/main/index.jsp](http://www.seoul.go.kr/main/index.jsp)



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Among others, FSDC focuses on topics including Mainland and international connectivity, green and sustainable finance, FinTech, as well as asset and wealth management.

[enquiry@fsdc.org.hk](mailto:enquiry@fsdc.org.hk)  
<https://www.fsdc.org.hk/en>



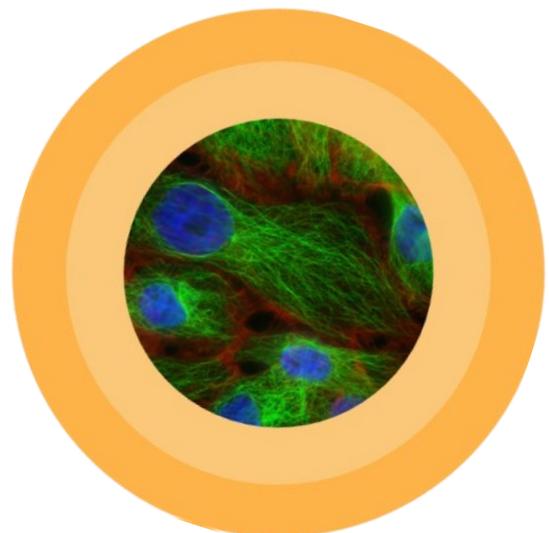
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Our vision is to be an internationally recognised financial supervisor committed to the sustained development of Mauritius as a sound and competitive financial services centre.

The FSC aims to:

- promote the development, fairness, efficiency and transparency of financial institutions and capital markets;
- suppress crime and malpractices so as to provide protection to members of the public investing in non-banking financial products; and
- ensure the soundness and stability of the financial system in Mauritius.

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The Smart Centres Index is designed to track commercial centres' ability to create, develop, and deploy technology. It aims to measure how attuned centres and their regulatory systems are to attracting innovation and growth in Science, Technology, Energy Systems, Machine Learning, Distributed Ledgers, and Fintech.

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[www.distributedfutures.net](http://www.distributedfutures.net)

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