ICMCI National Consultancy Index – estimating the size of management consulting markets around the world

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Introduction

The ICMCI National Consulting Index (NCI) is a method of estimating the size ($ value) of the management consulting (MC) sector in any country in the world. The NCI is founded on a ICMCI research workstream which started in 2018, the Consulting Readiness Index project.

The value of the global consulting industry is estimated at over $130bn (consultancy.org, 2018). It is generally accepted that the world's bigger economies are also where the bigger national MC sectors exist - the European Federation of Management Consultancies estimates that three countries (France, Germany and UK) generate nearly three quarters of consulting revenue (FEACO, 2017). However, there is also substantial cross-national variance in its prominence of MC as an activity   Data reported by consulting.org, based on World Bank information, suggested a seven-fold difference between the prominence of MC as a proportion of national gross domestic product across a sample of nations (Consulting.org, 2018).

The lack of cross-national insight in the consulting sector has been well recognised (Kipping M, and Wright C, 2012). The reasons why MC markets vary has much to do with how the broader field of management practice varies globally (O'Mahoney and Markham, 2013). Sturdy and O'Mahoney (2018) summarised five factors which their research showed drove national differences in management practice and influenced the propensity for MC to be part of that recipe. These are: 1) the economy (not just the size of the economy but economic ideology, financial systems and corporate governance; 2) the state (including regulation and public policy); 3) culture and ideologies; 4) organisations and their relationships (employee/industrial relations and inter-firm relationships); and 5) education. These form a useful platform for deeper investigation into differences in MC adoption

2. Creating the NCI

The aim of the NCI project was to be able to identify factors that seemed to account for variances in the strength of national MC sectors and then, by creating the NCI for each country, estimating the value of any country's MC market.

The first stage was to quantify of the degree of difference in the strength of MC between countries. For this, data from fourteen countries were selected for which the size of the MC sector was already known.   These countries were, by alphabetical order: Australia; Brazil;

Canada; China; France; Germany; Italy; Netherlands; Japan; Russia; Spain; Switzerland; UK, and USA. The size ($m) of the MC sectors in each of these countries, along with the countries' GDP data are shown in Table 1 (below).

The foundation for this research is data on these fourteen countries' MC markets provided by Source Global Research[1]. Those familiar with the global consulting sector will recognise Source Global Research as independent commercial body which researches the sector and acts a consultant/information source to many of the major players in the worldwide professional services. A single reference for MC market size was essential to enable valid comparisons country to country. Source's explanation of 'management consulting' embraces advisory services[2] but not implementation services (for example delivering technology/change projects) or additional fees that consultants may earn through consulting work (for example risk insurance commissions). The CRI study focuses on this understanding of MC, not the broader category of 'consulting'.

Country	Size of MC market $m (2017 reference data)	Gross Domestic Product GDP $bn (2017)
USA	81,131	19,390
UK	13,400	2,622
Germany	11,629	3,677
France	7,110	2,582
Australia	6,739	1,323
China	6,556	12,237
Canada	5,429	1,653
Spain	2,193	1,311
Italy	2,028	1,934
Netherlands	1,983	826
Japan	1,756	4,872
Switzerland	1,675	678
Brazil	1,552	732
Russia	607	670

Table 1 The value of national MC sectors and GCP data for the fourteen reference countries

[1] https://www.sourceglobalresearch.com
[2] Advisory services include strategy, HR, operations, risk, M&A due diligence, technology/digital strategy consulting.

The relationship between the size of a national economy (GDP) and the size of a country's MC sector can perhaps be seen in the data in Fig 1. Although a graphical presentation of these data shows a direct relationship between the two variables, is it not a precise correlation[3].
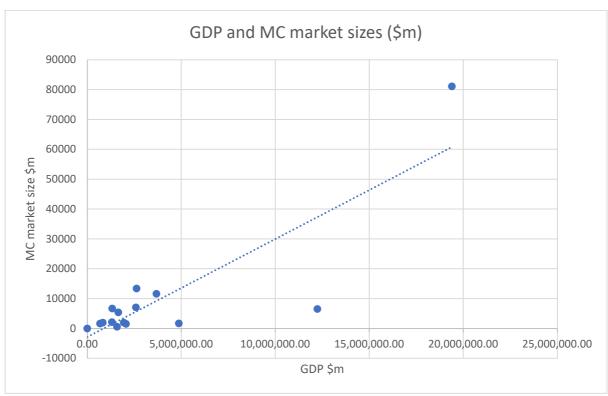

Fig. 1. The relationship between GDP and MC market strength for the fourteen reference countries

Exploring the correlation between GDP and an MC sector leads to the representation in Fig. 2. Here, the data from the fourteen reference countries are represented visually, demonstrating the degree of difference across the sample in relation to the proportion of a national GDP that is MC. The data show a ten-fold difference the country in the sample in which MC is the most prominent within the economy (UK) and the least (Japan). As well as illustrating the relative difference between countries in relation to MC activity, the data suggest a current maximum of around 0.5% in terms of MC as part of a national economy.

[3] Based on the relationship shown in Fig 1, and using $85 trillion as an estimate of global GDP, the value of the global MC sector is suggested as around $255 billion.
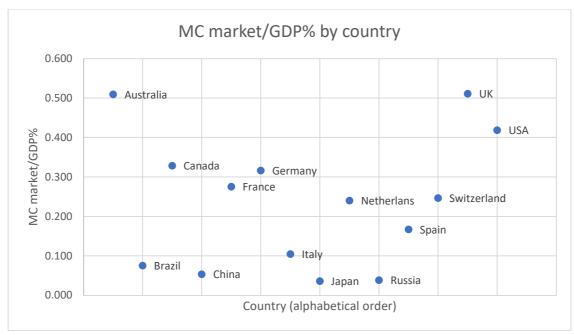
Fig. 2 Variances in the % of MC as a component of national GDP for the fourteen sample countries.

In identifying the factors that could account the variance in Fig 2, the assumption was that the variance was not a random happening but there were certain characteristics in countries that caused this pattern to occur and there would be factors capable of illuminating the national differences across MC markets,

The aim was to give the NCI worldwide applicability. This meant that factors of relevance to the NCI were those with global scope and global consistency in their provenance. This requirement had the effect of excluding some potentially useful factors at screening stage. But this requirement meant that whatever the NCI research concluded it could be used with confidence in any country in the world. There was an understanding that as an index, the NCI would draw in secondary data as primary research conducted faithfully across the 190+ countries on the planet would be both expensive and time consuming. We also suspected that no single extra factor would account for the MC variance and the NCI would be a multi-factor index.

We followed these principles in the creation of NCI:

a) to only work with factors which were reliable on a global basis, which means their data were based on the same assumptions and research method, which help facilitate relevant comparison between different countries anywhere in the world;

b) to only work with factors that were valid in this context, which means the factor (or combination of factors) show a strong correlation with the variance in Fig 2;

c) to not confuse correlation with causality, the role of the NCI is to provide a means of estimating the size of any country's management consulting sector; and

d) to exercise prudence in the creation of the NCI, with the starting point that each factor merits equal weighting and each factor should be different to other factors (recognizing

that some of the factors may be of multi-factor indices themselves and there was a danger of double counting an ingredient).

With the help of prior research into variances in national MC markets and input from the ICMCI's global network of academic fellows, a list of thirty-seven possible factors was created. These are shown in Table 2 (below). Each of these factors was considered from two perspectives, reliability and validity.

Reliability, which was a yes/no categorisation, was based on whether data that existed around that factor was comprehensive (worldwide) and generated consistently, irrespective of geography. Factors that weren't reliable were eliminated from further consideration.

A factors' validity was determined by calculating its correlation with the variance in the relative strength of MC in a country, as shown in Fig 2. The correlation function in MS Excel was used to show the 'r' value (r values range from -1 to +1) with perfect correlation being indicated by +1 and perfect inverse correlation being -1.

The results of this investigation into factor reliability and validity are shown in Fig 5. Some factors which were present in the literature on the relative strength of management consulting had to be eliminated from the analysis because of the absence of reliable data. This doesn't mean the factor is irrelevant in terms of MC market strength, just that there is no robust source of the necessary information upon which to carry out the analysis. For example, the presence of MBA graduates in a country could well indicate a strong MC sector, but at present there is global data on this. Some countries might be able to furnish a figure for the number of MBA graduates in its population, but not every country. And for those that have such a figure, there is no guarantee the method by which the figure has created is consistent across those geographies. Similarly, the presence of overseas aid in a country may indicate a disposition for countries to have a strong MC industry, but there is currently no reference source of presence of overseas aid on a country by country basis.

Some factors, despite their consistency of approach, had to be dis-regarded because their coverage wasn't fully global. Potential factors like the International Property Rights Index and the Global Innovation Index, which are reliable in their foundation, might have been found to have a role in the NCI if they had covered more countries.

By the same token, not all of the factors for which reliable data exist were valid. Some failed scrutiny when correlation was calculated and others lacked the granularity for correlation to be determined, for example the national presence of firms (such as 'Accenture office') is either a yes or no. Hence, with only the data points of 0% and 100%, lacks the granularity for any correlation to surface. The result of the analysis was nine factors which were both reliable and had a high correlation with the variance in strength of national MC sectors.

	Factor	Reliability	Validity (r)
1	Population	Yes	No (r = -0.33)
1	Nat econ growth rate	No (no standard reference)	
2	MBA population	No (no data)	
3	Business Schools providing MBA programmes	No (no standard definition)	
4	Consulting skills training	No (no standard definition)	
5	Government spend on consulting	No (no global data)	
6	Presence of overseas aid	No (no global data)	
7	National presence of big consulting firms	Yes	No (granularity)
8	McKinsey office	Yes	No (granularity)
9	Accenture office	Yes	No (granularity)
10	Hofstede: Power-Distance	Yes	No
11	Hofstede: Individualism-Collectivism	Yes	Yes (r = 0.85)
12	Hofstede: Masculine-Feminine	Yes	No
13	Hofstede: Uncertainty Avoidance	Yes	No
14	Hofstede: Long Term Orientation	Yes	No (r= 0.39)
15	No of consulting firms in the country	No (no data available)	
16	Presence of multinationals	No (unclear definition)	
17	Presence of professional consulting body	No (only ICMCI presence)	
18	Directory/register of consultants	No (no global data)	
19	No of Certified Management Consultants	No (no data available)	
20	Global Competitiveness Index (2017/8)	Yes	Yes (r = 0.85)
21	Ease of doing business (2017)	No (ranking only)	
22	Human Capital Index (2017)	Yes	No (r = 0.34)
23	Global Talent Competitiveness Index (2018)	Yes	Yes (r= 0.74)
24	Financial market development (8 measures)	Replaced by indicator 20	
25	VC/PE Attractiveness index (2018)	No (125 countries only)	
26	Int. Property Rights Index (2017)	No (133 countries only)	
27	Index of Economic Freedom (2017)	Yes (180 countries)	Yes (r= 0.76)
28	Economic Freedom of the World (2015 data)	Replaced by indicator 27	
29	e-Govt Development Index (2018)	Yes	Yes (r= 0.67)
30	Global Innovation Index (2017)	No (137 countries)	
31	Global Creativity Index (2015)	Yes	Yes (r= 0.86)
32	Property Index (2017)	No (149 countries)	
33	Human Development Index (2015)	Yes	Yes (r = 0.66)
34	Political stability/Absence of violence (2016)	Yes	No
35	KOF Index of Globalisation (2015)	Yes	Yes (r= 0.58)
36	Global Connectedness Index (2017)	Yes	No (r = 0.44)
37	Corruptions Perception Index (2017)	Yes	Yes (r = 0.72)

Table 2 The reliability and validity factors in relation to the relative strength of national MC sectors.

Having identified nine globally reliable and valid factors, the next step was to test combinations of factors with the objective of finding the combination with the highest 'r' value in respect of the cross-national MC variance. This combination would become the NCI. This involved the repeated testing of combinations of the nine factors ensuring each factor was equally weighted and no factors unwittingly duplicated certain aspects. The index was conceived as a product of its factors with the factor values multiplied together to create the NCI. The equal voice of factors was achieved in part by giving each factor the same 0-1 scale in the correlation testing.

The highest correlation came from a combination of five particular factors and based on analysis to date, is offered as the NCI. These five factors combined to give a correlation r = 0.931 with national variance in MC strength. This NCI equation is a function of five independent indicators and combines: cultural individualism (IDV); Index of Economic Freedom; e-Government Development (EGDI); Global Creativity Index (GCI); and Corruption Perceptions Index (CPI), and is represented as CRI = f (IDV, IEF, EGDI, GCI, CPI).

Table 3 shows the data around the CRI factors for the fourteen reference countries

Country	NCI	IDV/100 2017	IEF/100 2017	EGDI 2018	GCI 2015	CPI/100 2017
Australia	0.493	.90	.810	.905	.970	.77
UK	0.442	.89	.764	.900	.881	.82
USA	0.427	.91	.751	.877	.95	.75
Canada	0.375	.80	.785	.826	.920	.82
Netherlands	0.388	.80	.761	.858	.889	.82
Switzerland	0.316	.68	.815	.852	.822	.85
Germany	0.268	.67	.738	.877	.837	.81
France	0.208	.71	.633	.879	.822	.70
Italy	0.174	.76	.625	.821	.715	.50
Spain	0.141	.51	.636	.842	.811	.57
Japan	0.138	.46	.696	.878	.708	.73
Russia	0.059	.39	.571	.797	.579	.29
Brazil	0.052	.38	.529	.737	.667	.37
China	0.021	.20	.574	.681	.462	.41

Table 3 CRI and CRI factor data for the fourteen reference countries

The five NCI factors combine elements of societal individualism, the ability to trade openly/freely, the degree to which public services (hence society) embraces the digital agenda, ingredients around human creativity and the quality of human capital, societal tolerance and the absence or otherwise of corruption.

Hofstede: Individualism-Collectivism (IDV) This is a culture measure. It highlights the degree to which people in a society are integrated into groups (Hofstede, G., 2011). Individualistic societies have loose ties that, in the opinion of Hofstede, often only relate to an individual's immediate family. In collective societies, these integrated relationships tie extended families and others into 'in-groups'. These 'in-groups' are characterised by internal loyalty and mutual support, for example in the face of conflict with another group. IDV scores range from 0-100 with higher scores reflecting the more individualistic societies. High individualism correlates with a strong MC presence within management practice.

Index of Economic Freedom (IEF) (The Heritage Foundation, 2018)**.** The Index of Economic Freedom was created in 1995 by The Heritage Foundation and The Wall Street Journal. It is designed to measure the degree of economic freedom within a country. This is based on

twelve factors within four broad categories: the rule of law; government size; regulatory efficiency; and open markets. The index has a scale of 0-100, with higher scores representing countries with greater economic freedom (each of the twelve factors is equally weighted to create the index).

e-Government Development Index (EGDI) (United Nations, 2018). This index is a United Nations creation and has its roots in the UN General Assembly Resolution 66/288 'The Future We Want'. This strand of the resolution takes an information and communication technology focus and looks at the flow of information between governments and the public and recognises the power of communication technologies to promote knowledge exchange, technical cooperation and capacity building for sustainable development. The index scale is 0-1 with higher scores representing countries with the more developed e-government processes.

Global Creativity Index (GCI) (Florida, R., Mellander, C., King, K.M., 2015)**.** This is a four-dimensional ranking of countries. It combines individually ranked countries based on creativity, technology, talent and tolerance in the overall score. The CGI is published by the Martin Prosperity Institute which belongs to the University of Toronto's Rotman School of Management. The index ranges from 0-1 with higher score representing higher national creativity.

Corruption Perceptions Index (CPI). (Transparency International, 2018). This index has been published annually since 1995 by Transparency International. It ranks countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The index uses a scale of 0-100 where 0 is very corrupt and 100 is very clean.

Using the NCI to estimate management consultant sector values

Having established a high correlation (r = 0.931) between the strength of a national MC sector and the NCI, the next task involved determining the numerical values that were specific to that relationship. To do this, the best-fit straight-line relationship was calculated using a least-squares approach[4]. The results of that analysis are shown in Fig 3 below.

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[4] The assumption is that the relationship is describable as a straight line between the two variables.
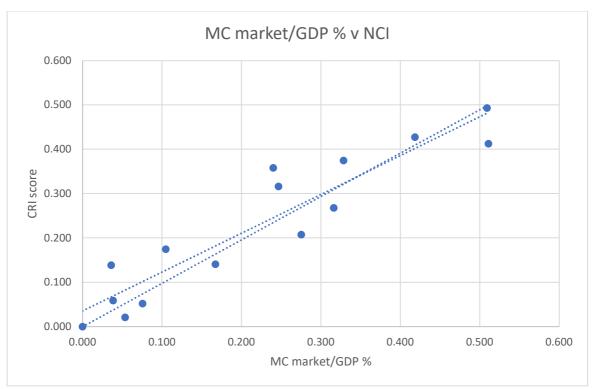
Fig. 3 'Best-fit' relationship between MC market strength and NCI for the fourteen reference countries

The optimal straight line fit in the data in Fig 3 follows the equation NCI = 0.8757 (MC market x 100/GDP) + 0.0355. This line crosses the vertical axis at 0.0355. We made a modification to the best fit line to acknowledge that in practice the line would need to pass through the graph's origin, which meant when the MC market is zero, the NCI is also zero. This adjustment changed the NCI equation to:

NCI = 0.9785 (MC market x 100)/GDP

or

MC market = (GDP x NCI) / 97.85

The NCI now provided the ability to make an estimate of the size ($ value) of the management consulting sector for any country in the world. In full, the equation for determining the value of country's MC market is…

MC market = GDP x ((IDV/100) x (IEF/100) x EGDI x GCI x (CPI/100))/97.85

… where MC is in $m and GDP is in $m.

The next stage was to test it against the reference data. Here seven additional countries were added where the size of the national management consulting market was also known (data provided by Source Global Research). These countries were Chile, Denmark, India, Ireland, Mexico, Poland, South Africa. The degree of closeness of the NCI-derived estimate between the national MC market and the known figure gives a sense of the applicability of the CRI approach to countries where the size of the MC market is not currently known.

The data are shown in Table 4 combines the fourteen reference countries with the seven additional countries. For each of these twenty-one countries, the reference data for size of the MC market is shown[5]. This is followed by the estimate of MC market size derived by the NCI equation. The third column of data is an MC market estimate derived purely from the country's GDP data using the best-fit straight line in Fig 1.

Country	Size of management consulting market $m (reference data)	Size of management consulting market $m (CRI derived)	Size of management consulting market $m (GDP derived)
Australia	6,779	6,668	3,970
Brazil	1,552	1,089	6,166
Canada	5,429	6,328	4,959
Chile	520	148	831
China	6,552	2,593	36,713
Denmark	1,368	1,391	947
France	7,110	5,476	7,747
Germany	11,629	10,062	11,032
India	3,443	477	7,791
Ireland	528	983	1,002
Italy	2,028	3,449	5,804
Japan	1,756	6,895	14,616
Mexico	1,292	177	3,450
Netherlands	1,983	3,021	2,478
Poland	826	534	1,572
Russia	607	946	4,732
South Africa	1,655	216	1,047
Spain	2,193	1,886	3,933
Switzerland	1,675	2,192	2,036
United Kingdom	13,400	11,047	7,867
United States	81,131	84,656	58,171

Table 4 MC sector sizes from: reference data (left column), CRI derived (middle column), and GDP derived (right column).

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[5] Source Global Research reference data

The data show that, in the majority of situations, the NCI provides a more accurate method to determining MC market size than using the single metric of GDP. There are instances where the NCI is extremely close but also occasions where the gap between what the NCI suggests and the reality of a national MC market in high.

Applications of the CRI to practice

While not definitive or conclusive, the NCI project has helped shine a light on the relative vibrancy of national MC sectors. The NCI doesn't assume or imply causality, neither does it assert that MC is the most effective means to organisational achievement - MC is only one mechanism within the wider realm of management practice. It does however provide a means of estimating MC sectors; it has the merits of a) being typically more accurate than using a country's GDP as an indicator of MC market strength and b) needing only widely available secondary data to populate it. The NCI also has global applicability, all its factors are available for 190+ countries. While the NCI is not precise route to estimating MC sector size, as present it is difficult to see a more powerful way of determining this for a country, without conducting primary research. To date, the NCI has three applications in practice.

First, the NCI has proved useful to global bodies such as the ICMCI in the prioritisation of opportunities. It has also been used by specific countries to estimate how big the country's own management consulting sector is. For example, using published data, the estimate of the MC market for Mongolia, whose GDP is $11.49bn, is $3.6m.

A **second** application for the NCI is a means to explaining why a country's management consulting sector is as vibrant as it is (or otherwise). When studying NCI data it is apparent which factors make the stronger contribution to the NCI and which hold it back. Additional insight into this comes from four of the five factors (IEF, EGDI, GCI, CPI) being globally ranked. This means as well as having the factor score to consider, any country can see its global position which enables it to understand in which of these four factor areas it may be particularly prominent and in which it might be comparably weak. An example is shown in Table 5, which displays the NCI data for Mongolia together with its global rank in the four factors. The smaller the rank number, the higher Mongolia is in the global rankings. Mongolia's strongest attribute (relative to other countries) is the Global Creativity Index, which is a function of the country's perceived creativity; technology; human capital/talent, and tolerance. Its weakest relative attribute is its Index of Economic Freedom which covers the rule of law in the country; government size; regulatory efficiency; and the openness of markets.

IDV/100 2017	IEF/100 2017	EGDI 2018	GCI 2015	CPI/100 2017
.70	.554 (rank 126)	.582 (rank 92)	.370 (rank 81)	.37 (rank 93)

Table 5 CRI data for Mongolia, showing its global rank (smaller the rank number, the higher the global position).

A **third** application of the NCI is to use it to help nations consider what would need to strengthen in order support a larger MC sector. Data can be considered retrospectively, and trend lines created to help forecast likely change. Table 6 shows the estimates in the MC sectors for Mongolia in 2015 and 2018. As well as inferring a growth of around 20% in MC sector size, the data suggest this was achieved despite a fall the overall economy (GDP) and the country's economic freedom but enabled by positive movement in its e-Government Development Index and its Global Creativity Index.

	MC ($m)	GDP ($bn)	NCI	IDV/100	IEF/100	EGDI	GCI	CPI/100
2018	3.64	11.49	0.031	.70	.554	.582	.370	.37
2015	3.00	11.75	0.025	.70	.592	.558	.270	.39

Table 6 2015 and 2018 MC and CRI comparison for Mongolia

Next steps and implications for further development

This paper is one step in a journey which started in 2018. Research into the role and use of the National Consultancy Index will continue. While its creation has increased the ability to estimate the size of a national MC market it his hoped further refinement will enhance its predictive accuracy.

Future development includes the potential integration of the data from the seven additional countries with that of the original fourteen countries to refine the NCI. Using this greater sample of twenty-one countries allows some to be fresh reference countries for NCI development and the others to become the countries against which revised NCI formulae can be tested. Robust methods of obtaining the data around some of the factors which thus far have not made the cut in terms of reliability may emerge. There could be also new additions to the current list thirty-seven NCI candidate factors. A higher 'r' value might also result from weighting the factors and considering a 'best fit' relationship that isn't based on a straight line. There is also the opportunity to approach the NCI from a different dimension and use country population to explore national cross-differences in MC. In summary, we see this work on the NCI and the Consulting Readiness Index project as a useful step forward, with more steps to come.

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