

Developing the National Consulting Index: An Update on How to Estimate the Size of National Management Consulting Sectors

Professor Simon Haslam, FMR Research Ltd

Abstract

The National Consulting Index (NCI) is a means of determining the strength of a national management consulting sector, relative to other countries. It was first created in 2017 following research and analysis conducted by the author and a team at the International Council of Management Consulting Institutes. This paper provides an update to the NCI, taking into account market conditions in the Covid era and using multiple regression to strengthen the NCI formula.

The outputs of the research are a) an update of the NCI formula, showing a higher degree of fit with the data than previously experienced, and b) the ability to provide estimates of MC market sizes for any country where other data points are known. In the case of the NCI calculation outlined in this paper, these data points are Gross Domestic Product, Hofstede Individual-Collective culture, eGovernment index, and the Global Innovation Index.

Introduction

The National Consulting Index is a means of determining the strength of a national management consulting sector (MCS), relative to other countries. It was first created in 2017 following research and analysis conducted by a team at the International Council of Management Consulting Institutes¹. This paper provides an update to the NCI, taking into account market conditions in the Covid era and using multiple regression to strengthen the NCI formula.

The output of the research is a) an update of the NCI formula, showing a higher degree of fit with the data than previously experienced, and b) the ability to provide estimates of MC market sizes for any country where other data points are known. In the case of the NCI calculation outlined in this paper, these data points are Gross Domestic Product, Hofstede Individual-Collective culture, eGovernment Index and the Global Innovation Index.

Project Method

The starting point for this project is the original NCI study (ref). This research recognised that, in the absence of any other specific information, a country's Gross Domestic Product (GDP) is the most valuable way of estimating the size of its national MCS. As the original NCI research demonstrated, GDP correlates more capably with MCS than population data or any other single data source. Globally, Using Source's data for 2020² showed a global MC industry valued at \$241bn, which is 0.28% of world GDP³. The correlation between MCS and GDP however is far from perfectly linear, as the correlation between MCS and GDP was an R-squared value of 73%⁴, based on the data of fourteen countries to test the correlation.

The earlier NCI studies sought to increase the ability to estimate a country's MCS. They used correlation analysis, drawing on thirty-two different data sources and indicators as the basis for the analysis. The original NCI suggested the \$ value of a country's MCS could be estimated with reference to GDP along with the Hofstede Individual-Collective culture (IDV), Index of Economic Freedom (IEF), eGovernment Index (EGOV), Global Creativity Index (GCI) and Corruption Perception Index (CPI). Namely,

$$MCS = GDP * function (IDV, IEF, EGOV, GCI, CPI)$$

This equation came with an R-squared result of 83%.

¹ For the background to this research project see Haslam S, Bodienstien R and Abdel Jaber T, (2020) ICMCI National Consulting Index; estimating the size of management consulting markets around the world, Management Consulting Journal volume 3.1

² 2020 was the most recent year for which full-year data are available for the entire NCI data set

³ World GDP \$84,710bn

⁴ R-squared, or the 'coefficient of determination' is a statistical measure of how close data are to the fitted regression line. R-squared falls between 0% and 100%, 100% indicates that the model explains all the variability of the response data around its mean. In general, the higher the R-squared, the better the model fits the data.

This 2022 study presented the opportunity to further develop the NCI by using a higher level of data analytics. This was the first time the NCI has been able to run in a pandemic/post-pandemic world and it made sense to revisit the underpinning logic to the NCI given that it was highly unlikely the pre-Covid assumptions and factors would still be relevant. Rather than approach the tasks in the same way as the original NCI (which experimented with combinations of factors to arrive at the most powerful correlation through trial and error), it was decided to apply a deeper level of data analysis and build on the progress made in the original work. This study was able to use multiple regressions and Lasso (least absolute shrinkage and section operator) analysis using Python programming and Excel functionality. This capability was contracted into the research programme, with three data scientists working independently with the same data set such that approaches and results could be compared prior to a preferred approach being agreed upon.

To enable the calculations to be carried out, MCS data was made available by Source Global Research⁵ for 14 countries around the world. These reference countries were chosen for their diversity in terms of size, geography and culture. Source's main work is with larger consulting contracts (big consulting firms, substantial clients, and 'big ticket' consulting contacts). This means that Source's data needed to be modified to account for the 'long tail' of smaller consulting firms and smaller consulting projects that characterise the management consulting industry. Source's estimate is that the 'long tail' accounts for between 75%-80% of a country's MCS in financial terms, this NCI project applied a 77.5% 'long tail' adjustment to every country. Fig.1 below, shows the estimates for MCS for the fourteen reference countries in the study.

Country	MCS \$m (2020)	GDP \$bn (2020)
Australia	6,128	1,327.8
Austria	1,062	433.3
Brazil	2,480	1,444.7
Canada	5,459	1,645.4
China	14,043	14,722.7
Germany	15,289	3,846.4
Italy	2,724	1,888.7
Japan	4,673	5,057.7
Netherlands	2,860	913.8
Russian Fed.	1,294	1,483.5
Singapore	1,983	340.0
South Korea	679	1,637.9
UK	18,183	2,759.8
USA	92,798	20,953.0

Figure 1: Data on MCS and GDP for the fourteen reference countries in the study, incorporating the 'long tail' adjustment.

The executive team at the ICMCI provided the 2020 data around the factors within the original NCI calculation, at the same time replacing the Global Creativity Index (GCI) by the Global Innovation Index (GII), as the GCI was last updated in 2015 and considered potentially out of date. These data are shown in Fig 2 below.

⁵ <https://www.sourceglobalresearch.com>

Country	MCS \$m (2020)	GDP \$bn (2020)	Hofstede Individualism (IDV)	Index of Economic Freedom (IEF)	eGovernment Index (EGOV)	Global Innovation Index (GII)	Corruption Perception Index (CPI)
Australia	6,128	1,327.8	90	77.1	0.943	48.3	77
Austria	1,062	433.3	55	73.8	0.891	50.1	76
Brazil	2,480	1,444.7	38	53.3	0.768	31.9	38
Canada	5,459	1,645.4	80	76.6	0.842	52.3	77
China	14,043	14,722.7	20	48.0	0.795	53.3	42
Germany	15,289	3,846.4	71	76.1	0.852	56.6	80
Italy	2,724	1,888.7	67	65.4	0.823	45.7	53
Japan	4,673	5,057.7	76	69.9	0.899	52.7	74
Netherlands	2,860	913.8	46	79.5	0.923	58.8	82
Russian Fed.	1,294	1,483.5	80	56.1	0.824	35.6	30
Singapore	1,983	340.0	20	84.4	0.915	56.6	85
South Korea	679	1,637.9	51	74.6	0.956	56.1	61
UK	18,183	2,759.8	68	72.7	0.936	59.8	77
USA	92,798	20,953.0	89	72.1	0.930	60.6	67

Figure 2: Data used to determine the updated NCI

Data analysis was guided by correlations between the above factors and the Source Global Research derived data on national MCS sizes. The heat map (Fig 3) shows the strengths of correlation between the above factors.

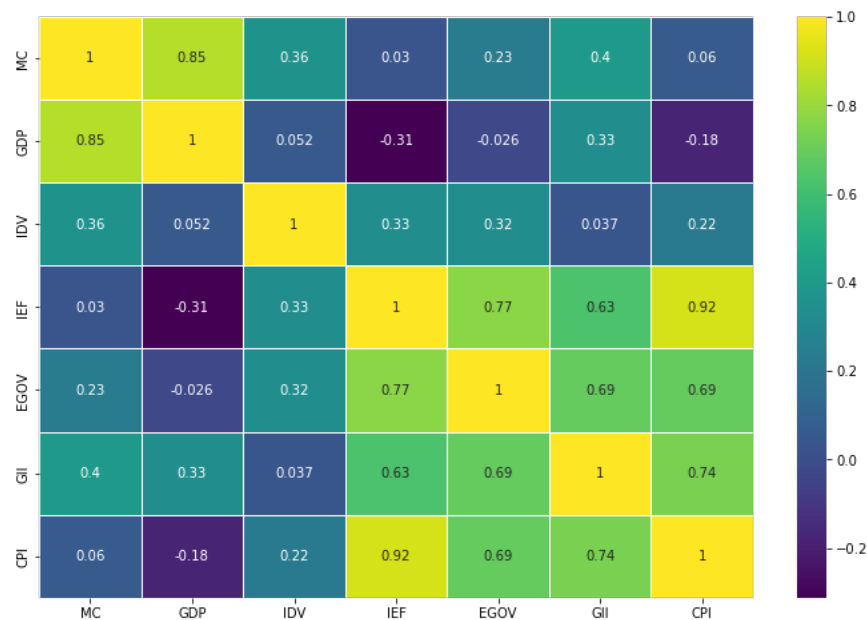


Figure 3: Heat map showing the correlation between the NCI candidate factors.
The darker the colour, the lower the correlation

Running the multiple regression analysis, the relationship which appeared the strongest candidate was:

$$MCS = (0.4 * GDP) * (0.00002 IDV) * (0.0019 EGOV) * (6000 * GII)$$

or

$$MCS = 0.0000912 * GDP * IDV * EGOV * GII$$

This presented an R-squared of 95.7%, meaning the equation was capable of embracing 95% of the variance in the data.

This is a straight-line relationship which goes through the origin of the graph (zero GDP equates to zero MCS) and the regression includes data on the world's four largest MC national sectors (USA, UK, Germany and China). This means the multiple regression analysis cover both extremes of the MCS distribution. The next section describes the results of the analysis and discusses the implications.

Project Results and Discussion

Using the results to estimate other MCS

This study is based on reference data for 14 countries and the data sources used deliberately chosen to be global in scope and reliable. The 14 reference countries account for around 70% of the global MC market and therefore should present a strong enough platform for the remaining 30% of the world's MC market to be determined. However, despite an R-squared value of 0.95, the NCI is a means only to an estimate. Fig 4 below, show the application of the NCI in estimating the MC market size for three different countries.

Country	GDP (\$bn)	Hofstede IDV	EGOV	GGI	MCS (\$m)
Bangladesh	323,056	20	0.5189	20.39	62.3
Finland	269,594	63	0.9452	57.02	834.8
Nigeria	432,294	30	0.4406	20.13	104.9

Using the results to estimate global presence

When the NCI formula is applied to the member countries of the ICMCI, it suggests ICMCI member countries cover geographies accounting for \$190bn, nearly 80% of the global MC industry⁶.

Correlation not causality at this stage

The role of the NCI is to facilitate the estimation of the national MC markets and it is not offered as an explanation of why some countries have stronger MC sectors than others. However, the factors that correlate with stronger national MC industries may suggest conditions that are encouraging to vibrant consulting sectors. These include the degree to which the prevailing culture is individualistic rather than collective, the degree to which government is digitally enabled, and the degree to which the country can be considered 'innovative'. These three items combine with GDP to create the means of estimating a country's MC sector. The high the score for each of these three items, the stronger the MC sector.

Variance between these results and other studies

Many countries may have a different view of the size of their MCS than Source's reference data. If so, this is likely to be the result of either differences in the definition of

⁶ This figure however, takes no account of the footprint of a country's Institute of Management Consulting within that country. In most cases, Institutes of Management Consulting have relatively low levels of penetration within the country's MC sector.

MC or differences in the way the data were gathered. Source's definition of MC is advisory services which include strategy, HR, operations, risk, M&A due diligence, and technology/digital strategy consulting⁷. One of the trends in the consulting sector generally is the progressive blurring of boundaries between MC work with other forms of consulting and commercial activity. For large firms this can include the fine line between forms of consulting, for example technology/digital consulting, project implementation, and financial planning as distinct from 'management' consulting. For smaller firms, it can mean the overlap between management consulting with executive coaching, training or other add-on services. It may be more difficult to make a clear and consistent distinction between MC and other forms of advisory or developmental intervention as time progresses.

Developing Further Insight

There are some factors which may intuitively suggest stronger rather than weaker national MC sectors. These include, for example, business school/MBA graduates and government expenditure on consulting. However, there is no robust data around these factors. There is either a lack of consistent approach to data collation from country to country or the data are only available for some countries. The absence of such data precludes these factors from being tested as a possible component of the NCI and they remain as hypotheses only.

This is an ongoing research project. The next phase will refresh and update the list of global indicators and re-run the regression analyses to help further develop the understanding of the relationship between a countries MCS and other national characteristics.

End.

⁷ This doesn't include implementation work, commissions on services sold to clients, provision of technology hardware and software.